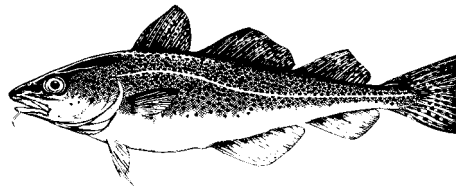


Public Review Draft

ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/ INITIAL REGULATORY FLEXIBILITY ANALYSIS

for Proposed **AMENDMENT 85** to the
Fishery Management Plan for Groundfish
of the Bering Sea/Aleutian Islands Management Area

ALLOCATION OF PACIFIC COD AMONG SECTORS and APPORTIONMENT OF SECTOR ALLOCATIONS BETWEEN BERING SEA AND ALEUTIAN ISLANDS SUBAREAS



Abstract: Part I of this Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis analyzes the impacts of revising the separate apportionments of the BSAI Pacific cod ITAC among the fixed gear sectors (hook-and-line catcher processors, $\geq 60'$ hook-and-line catcher vessels, pot catcher processors, $\geq 60'$ pot catcher vessels, and pot/hook-and-line vessels $< 60'$ in length), jig sector, and trawl sectors based on recent sector catch histories. This action also proposes to implement a further split of the trawl sectors' allocations between the non-AFA trawl catcher processor, AFA trawl catcher processor, non-AFA trawl catcher vessel, and AFA trawl catcher vessel sectors. This action also considers increasing the BSAI Pacific cod allocation to the western Alaska Community Development Quota Program. Part I is intended to reduce uncertainty and provide stability by revising the sector allocations to reflect historic use by sector and other considerations. Part II of this action would establish a methodology by which to apportion each sector's allocation between the BS and AI subareas, in the event that the BSAI Pacific cod ABC and TAC are apportioned between the BS and AI subareas in a future harvest specifications process. This action would ensure that the benefits of sector allocations could be maintained should the TAC split occur and is intended to recognize differences in dependency among gear groups and sectors that fish for Pacific cod in the BS and AI.

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EXECUTIVE SUMMARY

This document is an Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) for proposed Amendment 85 to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (BSAI FMP). There are two primary parts to the action under consideration.

Part I: Revisions to the current BSAI Pacific cod sector allocations

Part II: Apportionment of BSAI Pacific cod sector allocations to the BS and AI subareas

The first part of the action proposes to revise the sector allocations of the BSAI Pacific cod ITAC among the various fixed gear, trawl gear, and jig gear sectors. The ITAC refers to the portion of the TAC available to the industry sectors after the reserve to the western Alaska Community Development Quota (CDQ) Program has been subtracted. For the purposes of this amendment, the fixed and jig gear sectors are defined as follows:

hook-and-line catcher processor

hook-and-line catcher vessel $\geq 60'$

pot catcher processor

pot catcher vessel $\geq 60'$

hook-and-line and pot catcher vessel $< 60'$

jig catcher vessel

This action also proposes to further apportion the trawl vessel sector allocations between those vessels that are eligible under the American Fisheries Act (AFA) and those that are not. Currently, there exists one trawl catcher vessel allocation and one trawl catcher processor allocation. Thus, the potential trawl sectors that could receive BSAI Pacific cod allocations under this amendment are as follows:

non-AFA trawl catcher vessel

AFA trawl catcher vessel

AFA trawl catcher processor

non-AFA trawl catcher processor

Thus, there are ten potential (non-CDQ) sectors that may be directly affected by this amendment. **In addition, Part I of this amendment also considers:**

- increasing the amount of the BSAI Pacific cod TAC allocated to the CDQ Program;
- modifying seasonal apportionments to the various sectors;
- apportioning the annual halibut and crab bycatch allowances among the trawl sectors; and
- apportioning the annual halibut bycatch allowance between the hook-and-line catcher processor and hook-and-line catcher vessel sectors.

Part II of this action would establish a methodology by which to apportion each gear sector's allocation between the BS and AI subareas, in the event that the Council decides to apportion the BSAI Pacific cod ABC and TAC between the BS and AI subareas in a future specifications process. This action would ensure that the benefits of sector allocations could be maintained in that case, as well as recognize differences in dependency among gear groups and sectors that fish for Pacific cod in the BS and AI. Part II of this action only applies to the ten (non-CDQ) sector allocations discussed above. In the event the BSAI Pacific cod TAC is split by subarea in the future, the CDQ Program reserve would be established as an equal percentage in each area.

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in a significant impact on the human environment. NEPA requires a description of the purpose and need for the proposed action as well as a description of alternatives which may address the problem. This information is included in **Chapter 1** of this document. **Chapter 2** contains a description of the affected human environment and information on the impacts of the alternatives on that environment, specifically addressing potential impacts on endangered species, marine mammals, and cumulative effects.

Executive Order 12866 (E.O. 12866) requires preparation of a Regulatory Impact Review (RIR) to assess the social and economic costs and benefits of available regulatory alternatives, in order to determine whether a proposed regulatory action is economically “significant” as defined by the order. **Chapter 3** contains a description and analysis of the economic and social impacts of each of the alternatives.

Chapter 4 addresses the requirements of other applicable laws, including the Magnuson Stevens Act (MSA), Marine Mammal Protection Act, and Regulatory Flexibility Act (RFA), which includes the Initial Regulatory Flexibility Analysis (IRFA). The RFA requires analysis of adverse impacts on small entities which would be directly regulated by the proposed action.

The references and literature cited are in **Chapter 5**, the list of preparers is in **Chapter 6**, and the list of agencies and individuals consulted is in **Chapter 7**.

Background

The BSAI Pacific cod fishery is a fully prosecuted fishery, targeted by multiple gear types, primarily by trawl gear and hook-and-line catcher processors, and smaller amounts by hook-and-line catcher vessels, jig vessels, and pot gear. Final 2006 – 2007 harvest specifications, effective in early March 2006, implement a 2006 BSAI Pacific cod TAC of 194,000 mt. Under a 2006 TAC of 194,000 mt, the 7.5% reserve allocated to the western Alaska Community Development Quota (CDQ) Program is 14,550 mt and the (non-CDQ) ITAC is 179,450 mt. The BSAI Pacific cod TAC has been apportioned among the different gear sectors since 1994, and a series of amendments have modified or continued the allocation system. The CDQ reserve was established in 1998.

Cod allocations among the jig, trawl and fixed gear sectors

Beginning in 1994, BSAI Amendment 24 allocated the total allowable catch (TAC)¹ for non-CDQ BSAI Pacific cod to the various gear sectors as follows: 44% fixed gear (hook-and-line and pot); 54% trawl gear; and 2% jig gear. These percentages roughly represented the existing harvests of each sector during 1991 - 1993, with the exception of the jig sector. The two percent jig allocation exceeded the existing historical harvest by that sector and was intended to allow for growth in the jig sector.

Beginning in 1997, BSAI Amendment 46 allocated the BSAI Pacific cod ITAC among the same sectors as follows: **51% fixed gear; 47% trawl gear; and 2% jig gear. The amendment also split the trawl apportionment between catcher vessels and catcher processors 50/50, but did not split the fixed gear allocation among hook-and-line and pot sectors.** This action also included authorization for NMFS to reallocate any portion of the Pacific cod allocations that were projected to remain unused among the various sectors if necessary.

¹Note that unless otherwise specified, the “BSAI Pacific cod ITAC” referenced throughout this document means the amount of the TAC that is distributed to various gear sectors less the CDQ reserve (7.5%).

The allocations under Amendment 46 have been in place since 1997. While there is no sunset provision or regulatory requirement to review or modify these allocations, the Council's motion on Amendment 46 included a provision to review the allocations four years after implementation. This review, originally intended at the end of 2000, has not yet occurred.

Cod allocations among the fixed gear sectors

Vessels began fishing in Federal waters off Alaska under the License Limitation Program (LLP) on January 1, 2000. Since the LLP was approved, changes in the fixed gear fleets prompted industry to petition the Council to further allocate cod in the BSAI among the various sectors of the fixed gear fleets. Amendment 64, implemented September 1, 2000, further apportioned the 51% of the BSAI Pacific cod TAC allocated to fixed (hook-and-line and pot) gear. Because Amendment 64 was scheduled to expire at the end of 2003, Amendment 77 was initiated to continue or modify the fixed gear apportionments beyond 2003. Under Amendment 77, the Council approved continuing the same overall fixed gear allocations as under Amendment 64, including a new apportionment between the pot sectors. The existing apportionment of the fixed gear portion of the BSAI Pacific cod ITAC is as follows:

- 80% hook-and-line catcher processor
- 0.3% hook-and-line catcher vessel
- 3.3% pot catcher processor
- 15.0% pot catcher vessel
- 1.4% hook-and-line and pot vessel <60' LOA²

With the exception of the pot split, the percentage allocations selected closely represent the harvests in this fishery during 1995 – 1998 or 1999, with an additional allocation for catcher vessels <60' LOA in order to allow for growth in the small boat sector. The pot sector allocations were based on harvests from 1998 – 2001. The percentage allocations under Amendments 64 or 77 did not reflect harvests of any quota that had been reallocated annually to the fixed gear sectors.

Reallocations of BSAI Pacific cod among sectors

Note that all of the recent BSAI Pacific cod allocation amendments provide direction on how to reallocate quota that is projected to remain unused by a particular sector at the end of the year. Since the BSAI Pacific cod allocations have been in effect, NMFS has reallocated quota each year from the trawl and jig sectors to the pot and hook-and-line sectors. In some years, quota has also been reallocated from the pot sectors to the hook-and-line sector. Reallocations between gear types (e.g., trawl CP to trawl CV, or hook-and-line CV to hook-and-line CP) have occurred less frequently and in lower amounts. In terms of metric tons, the majority of reallocations have been from the trawl sectors (CVs and CPs) since the gear specific allocations were established in 1994. With the exception of the jig sector, because any unused *seasonal apportionment* to a particular sector is reallocated to the next seasonal allowance for that sector, reallocations from one gear sector to another occur in the last season. Typically, reallocations from trawl to the fixed gear sectors occur in October and November, and always during the trawl C season (June 10 – Nov. 1). **Table E - 1** provides a summary of reallocations by sector in 2000 - 2004.

²The hook-and-line and pot CV <60' sectors were allowed to fish off of the general hook-and-line CV allocation and general pot CV allocation when these fisheries were open, respectively. When these fisheries were closed, the <60' sector harvest accrued toward the <60' hook-and-line/pot CV allocation of 1.4%.

Table E - 1 Average BSAI Pacific cod reallocations by sector, 2000 - 2004

Average 2000 - 2004	Initial Allocation (mt)	Reallocations (mt)	Reallocation as % of initial allocation
Jig	3,715	-3,309	-89%
HAL/POT CV < 60	1,312	309	24%
HAL Catcher/Processors	75,006	16,861	22%
HAL Catcher Vessels	283	120	42%
Pot gear	17,244	-739	-4%
Trawl catcher/processors	43,649	-8,483	-19%
Trawl catcher vessels	43,469	-4,760	-11%
Average of total	184,678	17,291	9%

Source: NMFS Blend data (2000 – 2002) and catch accounting database (2003 – 2004).

The primary reason reallocations occur from the jig sector is due to insufficient effort in that sector in the BSAI. There are several reasons commonly cited for the trawl reallocations. These include increased difficulty catching cod with trawl gear late in the year when cod are less aggregated; seasonal apportionments for trawl gear under Steller sea lion mitigation measures starting in 2001; closure of the directed trawl fisheries due to the halibut bycatch cap; relatively high annual quotas of alternative trawl fisheries such as pollock (for AFA vessels); and high value alternative trawl fisheries such as yellowfin sole, rock sole, and flathead sole (for non-AFA catcher processors).

Note that the increased difficulty in harvesting cod in the second half of the year is not unique to one sector. All gear sectors have increased difficulty harvesting cod later in the year when cod are less aggregated, and weather is a significant factor for the smaller vessel sectors in the fall season. The hook-and-line sectors (CPs and CVs) are also limited by halibut bycatch in the second half of the year, as these sectors do not have a halibut bycatch allowance from June 10 – August 15. In addition, while the fixed gear cod allocation was seasonally apportioned prior to 2001, these apportionments changed in 2001 with the Steller sea lion mitigation measures, and thus also reduced the amount of cod that the fixed gear sectors could harvest in the first half of the year. Finally, incidental take of seabirds by the hook-and-line sector is lower in the first half of the year compared to the second half. Thus, the hook-and-line sector would also prefer to harvest its cod allocation earlier in the year to decrease incidental take of seabirds.

The primary change from the status quo with regard to reallocations under Amendment 77 was to apportion the jig sector's allocation (2% of the BSAI Pacific cod ITAC) on a trimester basis and reallocate any unused jig quota to the <60' vessels using hook-and-line or pot gear on a *seasonal basis*, as opposed to only in the last season. This allows the <60' pot and hook-and-line vessels to receive additional quota during the spring and summer months when it is most advantageous for the small boat fleet. It was also intended to reduce the risk of having to close the fishery intermittently while waiting for a potential reallocation from the jig sector. Previously, both unused jig and trawl quota was reallocated 95% to the hook-and-line catcher processors and 5% to pot sectors. Amendment 77 retained this distribution for reallocating unused *trawl* quota, with an additional split for the pot sectors (0.9% to pot catcher processors; and 4.1% to pot catcher vessels).

In sum, the existing overall allocations to the trawl, fixed, and jig gear sectors have been in place for nine years (since 1997), and the further split among the fixed gear sectors has been in place for a little over five years (since September 2000). The separate allocations between the pot catcher processor and pot catcher vessel sectors have been in place for two years (since 2004).

Cod allocation to the CDQ Program

The western Alaska CDQ Program was implemented in November 1992 as part of the inshore/offshore allocations of pollock in the BSAI. In 1996, amendments to the Magnuson Stevens Act institutionalized the program. Originally, the CDQ Program was only allocated an annual BSAI pollock reserve. The CDQ Program has since been amended several times and now includes allocations of pollock, halibut, sablefish, crab, and all of the remaining groundfish species in the BSAI. The percentages of the CDQ reserves are as follows: 10% of pollock; 10% of crab species (with the exception of Norton Sound red king crab at 7.5%); 20% of fixed gear sablefish; 20%-100% of halibut; and 7.5% of all other groundfish and prohibited species. The 7.5% allocation of BSAI Pacific cod to the CDQ Program was established when the multi-species reserves were implemented in 1998.

State water Pacific cod fishery in the Aleutian Islands

Note that while the 2006 ABC and TAC equal 194,000 mt at the time of the writing of this document, the Alaska Board of Fisheries (Board) took action in late February 2006 to establish a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude. The Board's action established this fishery for two years: 2006 and 2007. This fishery has a guideline harvest level (GHL) equal to 3% of the BSAI Pacific cod ABC, which represents about 5,820 mt (or 12,830,772 lbs) in 2006. Accounting for the GHL reduces the 2006 BSAI Pacific cod TAC to 188,180 mt.³

The State AI fishery is established such that it will start on or after March 15, and only after the Federal Pacific cod trawl catcher vessel A season is closed. NMFS closed the directed trawl catcher vessel Pacific cod fishery in the BSAI on March 8, 2006, in order to avoid exceeding the A season allocation, thus, the expectation is that the 2006 State water AI fishery would begin at noon on March 15.

As the 2006 TAC has already been specified and sectors are currently fishing under specified allocations, NMFS will effect an inseason adjustment under Federal regulations (50 CFR 679.25) to re-specify the TAC to accommodate the 3% reduction for the GHL. This will necessitate re-calculating the sector allocations and seasonal apportionments that are currently published in Federal regulations.⁴ This modification is expected to occur in mid-March. The State action will also necessarily affect the 2006 BSAI Pacific cod CDQ reserve, as that reserve is calculated as 7.5% of the BSAI Pacific cod TAC. Thus, all sectors will realize a proportional reduction of 3% of their current Federal allocations as a result of this action.

The primary elements of the State water AI Pacific cod fishery are outlined in Section 3.3.2 of the analysis. Note again that the Board's action established this fishery only for 2006 and 2007. Thus, while the overall effect on the Federal BSAI Pacific cod fishery is that the ABC would be reduced by 3% prior to the TAC and sector allocations being established, this action may be limited to two years. In that case, the State water AI Pacific cod fishery may or may not overlap with the action being considered under Amendment 85, depending on the timing of implementation. **This analysis continues to use the 2006 TAC of 194,000 mt and the projected 2007 TAC of 148,000 mt for illustrative purposes, without the 3% reduction for the State water GHL.**

³Under a revised 2006 TAC of 188,180 mt, the CDQ reserve (7.5%) would be 14,114 mt and the ITAC would be 174,067 mt.

⁴See Table 5 (*2006 and 2007 Gear Shares and Seasonal Allowances of the BSAI Pacific cod TAC*) in 71 FR 10870, March 3, 2006.

Problem Statement

Amendment 85 was initiated in large part due to the substantial reallocations of quota that occur late in the season each year from the trawl and jig sectors to the fixed gear sectors (primarily the hook-and-line catcher processor sector). The non-CDQ Pacific cod allocations have not been revisited since 1997, and the CDQ Pacific cod reserve has not been revisited since it was established in 1998. In October 2005, the Council approved the following problem statement, to address concerns that the allocations should be adjusted to better reflect historic use by sector (Part I), and to anticipate a BSAI TAC split (into BS and AI subarea TACs) in the future (Part II). This amendment is also intended to establish more refined allocations to the BSAI Pacific cod sectors, by evaluating the potential for establishing separate and distinct allocations for the non-AFA trawl CP and AFA trawl CP sectors and the non-AFA trawl CV and AFA trawl CV sectors. The overall effort to constrain and protect the harvest distribution among all of the BSAI Pacific cod sectors is noted as a necessary step toward comprehensive rationalization.

BSAI Amendment 85 Problem Statement

Part I: BSAI Pacific Cod Sector Allocations

The BSAI Pacific cod fishery is fully utilized and has been allocated among gear groups and to sectors within gear groups. The current allocations among trawl, jig, and fixed gear were implemented in 1997 (Amendment 46) and the CDQ allocation was implemented in 1998. These allocations are overdue for review. Harvest patterns have varied significantly among the sectors resulting in annual inseason reallocations of TAC. As a result, the current allocations do not correspond with actual dependency and use by sectors.

Participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the allocations to the trawl, jig, fixed gear, and CDQ sectors. To reduce uncertainty and provide stability, allocations should be adjusted to better reflect historic use by sector. The basis for determining sector allocations will be catch history as well as consideration of socio-economic and community factors.

As other fisheries in the BSAI and GOA are incrementally rationalized, historical participants in the BSAI Pacific cod fishery may be put at a disadvantage. Each sector in the BSAI Pacific cod fishery currently has different degrees of license requirements and levels of participation. Allocations to the sector level are a necessary step on the path towards comprehensive rationalization. Prompt action is needed to maintain stability in the BSAI Pacific cod fisheries.

Part II: Apportionment of BSAI Pacific Cod Sector Allocations between the BS and AI

In the event that the BSAI Pacific cod ABC/TAC is apportioned between the BS and the AI management areas, a protocol needs to be established that would continue to maintain the benefits of sector allocations and minimize competition among gear groups; recognize differences in dependence among gear groups and sectors that fish for Pacific cod in the BS and AI; and ensure that the distribution of harvest remains consistent with biomass distribution and associated harvest strategy.

Alternatives under Consideration

There are six primary alternatives under consideration in Amendment 85. **Table E - 2** outlines the current suite of alternatives, components, and options. **Part I contains Alternatives 1 and 2.** Both alternatives under Part I are comprised of the same eight components. Alternative 1 does not include multiple options under each component, as it represents the no action alternative (status quo). Alternative 2 includes several options under each component. This means that an option must be selected under each component in Alternative 2 in order for it to be whole.

Part II contains Alternatives 3 – 6. The analysis is structured such that, at final action, the Council would choose one alternative in Part I and one alternative in Part II. Any of the alternatives under Part II may be selected in conjunction with either alternative in Part I.

Table E - 2 Summary of the Alternatives under Part I and II

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS				
Components	Alternative 1 (No Action)		Alternative 2 (Revise allocations)	
1. Sectors for which allocations are established	Trawl CP Trawl CV Hook-and-line CP Hook-and-line CV	Pot CP Pot CV H&L/pot CV <60' Jig CV	AFA Trawl CP AFA Trawl CV Non-AFA Trawl CP Non-AFA Trawl CV Pot CV ≥60'	Pot CP Hook-and-line CP Hook-and-line CV ≥60' H&L/pot CV <60' Jig CV
2. Sector allocations	51% fixed gear: (80% hook-and-line CP) (0.3% hook-and-line CV) (3.3% pot CP) (15.0% pot CV) (1.4% hook-and-line/pot <60') 47% trawl gear: (50% trawl CP) (50% trawl CV) 2% jig gear		Six options to revise sector allocations based on sector's average annual harvest share during the years: 1995 – 2002 1997 – 2000 1997 – 2003 1998 – 2002 1999 – 2003 2000 – 2003 Drop year provisions exist under each option. The Council can select any allocations within the range provided. Options exist to provide allocations (combined or separate) to the <60' fixed gear and jig gear sectors not to exceed: 2.71%, 3%, or 4%.	
3. Seasonal apportionments	<u>Trawl CV:</u> 70% (Jan. 20 - Apr. 1) 10% (Apr. 1 - June 10) 20% (June 10 - Nov. 1) <u>Trawl CP:</u> 50% (Jan. 20 - Apr. 1) 30% (Apr. 1 - June 10) 20% (June 10 - Nov. 1) <u>H&L gear >60':</u> 60% (Jan. 1 - June 10) 40% (June 10 - Dec. 31) <u>Pot gear >60':</u> 60% (Jan. 1 - June 10) 40% (Sept. 1 - Dec. 31) <u>Fixed gear <60':</u> no seasonal apportionments <u>Jig gear:</u> 40% (Jan. 1 - Apr. 30) 20% (Apr. 30 - Aug. 31) 40% (Aug. 31 - Dec. 31)		Option to maintain status quo seasons (see Alt. 1). Option to maintain the current % of ITAC allocation to the A and B seasons for trawl gear and the A season for fixed gear. Option to maintain the current % of the ITAC allocated to the A season for trawl gear. Three suboptions exist to apportion the reduction to the trawl sectors' allocations between the B and C season. Option 3.4: to modify the jig apportionments to: 60% (Jan. 1 - Apr. 30) 20% (Apr. 30 - Aug. 31) 20% (Aug. 31 - Dec. 31)	
4. Rollovers	Unused trawl sector allocations are first considered for reallocation to other trawl sector Unused pot sector allocations are first considered for reallocation to other pot sector Reallocation from trawl to fixed gear: 0.9% pot CP 4.1% pot CV 95% hook-and-line CP Reallocation from jig to <60' fixed gear on seasonal basis Unused <60' fixed gear, pot, and hook-and-line CV quota is reallocated to hook-and-line CP sector		Options to generally maintain status quo rollover provisions, with accommodation of new trawl sectors (see Alt. 1). Options to modify the rollovers from trawl to fixed gear according to the new fixed gear allocations determined under Component 2. Options to reallocated unused quota from an inshore sector to the other inshore sectors before reallocating to offshore sectors.	

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS		
Components	Alternative 1 (No Action)	Alternative 2 (Revise allocations)
5. CDQ allocation	7.5% of the BSAI Pacific cod TAC	Options exist to maintain 7.5% BSAI Pacific cod CDQ allocation or to increase to 10% or 15%.
6. Apportionment of trawl halibut and crab PSC to cod trawl fishery group	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.
7. Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors	No apportionment of cod trawl halibut and crab PSC between the trawl sectors.	Options to apportion the cod trawl halibut and crab PSC among the trawl sectors determined in Component 1 according to their cod allocations or according to their directed cod harvest.
8. Apportionment of cod non-trawl halibut PSC	No apportionment of the cod non-trawl halibut PSC between hook-and-line CP and CV sectors.	Apportion the cod non-trawl halibut PSC between hook-and-line CP and CV sectors either 1) in proportion to their cod allocations, or 2) 10 mt for CVs, remainder for CPs.

PART II: APPORTIONMENT OF BSAI PACIFIC COD SECTOR ALLOCATIONS TO BS AND AI SUBAREAS			
Alternative 3 (No Action)	Alternative 4 (Sector allocations remain BSAI)	Alternative 5 (BS and AI equal %)	Alternative 6 (Based on history in AI)
A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. The only approach that could be implemented without a new regulatory amendment is Alt. 5.	Sectors would have a BSAI allocation from Part I to fish in either subarea (BS or AI) if the subarea is open for directed fishing and TAC is available.	The allocation the sector receives under Part I would be applied to both the BS and AI subareas.	The sector's BSAI allocation from Part I is maintained. Four options exist to determine the sector's AI allocation, based on the sector's AI harvest during: 1995 – 2002 1997 – 2003 2000 – 2003 2002 – 2003 The remainder of the sector's overall BSAI allocation is in the BS.

Note: An alternative must be selected under both Part I and Part II. Any of Alternatives 3 – 6 can be selected in conjunction with Alternative 1 or 2 from Part I.

Part I, Alternative 1

Under **Alternative 1 (no action)**, there would be no change to the current sector allocations of the BSAI Pacific cod ITAC. Sector allocations would remain as follows:

51% fixed gear:

- (80% hook-and-line catcher processors)
- (0.3% hook-and-line catcher vessels)
- (3.3% pot catcher processors)
- (15.0% pot catcher vessels)
- (1.4% hook-and-line/pot vessels <60' LOA)

47% trawl gear:

- (50% trawl catcher vessels)
- (50% trawl catcher processors)

2% jig gear

The overall split between fixed, trawl, and jig gear mirrors the circumstances present in the fishery since 1997, and the further fixed gear split has been in place since September 2000, with the exception of the pot split, which was implemented in 2003. No further split would be made between the trawl CP and trawl CV sectors; the AFA trawl CV and CP sectors would continue to be subject to a BSAI Pacific cod sideboard, as opposed to having their own separate allocation of Pacific cod.

Under Alternative 1, the CDQ reserve of BSAI Pacific cod would continue to be 7.5% of the BSAI Pacific cod TAC, and this reserve would come off the top of the overall TAC prior to the apportionment to the non-CDQ sectors. The current seasonal apportionments would apply. Under Alternative 1, it is expected that a substantial portion of the cod quota would continue to be reallocated on an annual basis due to projections that the quota would remain used. Unused quota from the trawl sectors would continue to be reallocated to the fixed gear sectors, with 95% to the hook-and-line CP sector, 0.9% to the pot CP sector, and 4.1% to the pot CV sector. Unused jig quota would first be considered for reallocation to the <60' fixed gear sector at the end of each jig season, before being considered for reallocation to the other fixed gear sectors above. The trawl sectors would continue to share halibut and crab bycatch allowances established for the trawl cod fishery group as a whole. Similarly, the hook-and-line sectors would continue to share an annual halibut bycatch allowance for the hook-and-line cod trawl fishery group.

Part I, Alternative 2

Under Alternative 2, the sector allocations of the BSAI Pacific cod ITAC would be revised. There are multiple combinations of options that could result in various allocation scenarios, the range of which is provided below in **Table E - 3**. The effects of all of the options are detailed in Section 3.4.3.

Which sectors receive separate BSAI Pacific cod allocations is the issue addressed in **Component 1**, and the allocations established for each sector is the issue addressed in **Component 2** (see Table E - 3 below). The remaining components under Alternative 2 affect the seasonal apportionment of the resulting allocations (Component 3); how unused quota is reallocated inseason (Component 4); the CDQ reserve (Component 5); and sector apportionments of PSC allowances (Components 6 – 8).

In brief, the BSAI Pacific cod allocations to the hook-and-line sectors would increase under Alternative 2 compared to status quo (Alternative 1). The allocations to the trawl sectors would generally decrease under Alternative 2 compared to the status quo, with the exception of the AFA trawl CV sector when Component 1, Option 1.1 is applied. The allocations to the pot sectors could increase or decrease under the proposed options. The allocations to the <60' fixed gear and jig gear sectors would decrease under any of the options based on catch history in Alternative 2 compared to the status quo. However, Alternative 2, Option 2.8 would make no changes to the jig sector allocation and would either maintain or increase the distinct allocation to the <60' fixed gear sector compared to Alternative 1.

Table E - 3 Range of proposed BSAI Pacific cod allocations (as % of BSAI Pacific cod ITAC) by sector under Components 1 and 2, compared to historical catch and status quo allocations

Sectors	Range of potential sector allocations resulting from Components 1 & 2	Current allocation	Difference between proposed and status quo allocations	Annual share of retained cod harvests, average 1995–2003
<60' hook-and-line/pot CV	0.1% – 2%	0.7%	-0.6% to 1.3%	0.4%
AFA trawl CP	0.9% – 3.7%	23.5% (AFA CP sector is subject to sideboard of 6.1%)	-2.4% to -5.2%	1.7%
Non-AFA trawl CP	12.7% – 16.2%		n/a	13.6%
Jig CV	0.1% – 2%	2%	-1.9% to 0%	0.1%
Hook-and-line CP	45.8% – 50.3%	40.8%	5% to 9.5%	49.6%
Hook-and-line CV ≥60'	0.1% – 0.4%	0.2%	0% to 0.3%	0.1%
AFA trawl CV	17.8% – 24.4%	23.5% (non-exempt AFA CV sector is subject to sideboard of 20.2%)	-2.4% to 4.2%	21.7%
Non-AFA trawl CV	0.5% – 3.1%		n/a	2.1%
Pot CP	1.4% – 2.3%	1.7%	-0.3% to 0.6%	2.1%
Pot CV ≥60'	7.3% – 9.2%	7.7%	-0.4% to 1.5%	8.6%

Note: The <60' fixed gear sector is currently allocated 0.71% of the BSAI Pacific cod ITAC. However, this sector can currently fish off the general hook-and-line CV and pot CV Pacific cod allocations when those directed fisheries are open, respectively, by gear type. The proposed amendment would allow the <60' fixed gear sector to only fish off its direct allocation.

Note: The last column denoting annual average harvest share excludes harvests by the AFA 9. If the AFA 9 are included, the average share of the AFA trawl CP sector increases to 2.7%. The non-AFA trawl CP and ≥60' pot CV sectors' shares are each reduced by 0.1%. The AFA trawl CV sector share is reduced by 0.2% and the hook-and-line CP sector share is reduced by 0.5%.

There are four options of note under **Component 3** that address seasonal apportionments. The first three options (Options 3.1 – 3.3) are mutually exclusive and provide direction on how allocations determined in Component 2 would be seasonally apportioned. Option 3.1 retains the current seasonal apportionments for each sector (see Table E - 2). The current apportionments are primarily a result of the temporal dispersion measures resulting from the 2001 Biological Opinion on Steller sea lions. These measures are implemented to meet a seasonal target of 70% (Jan. 1 – June 10) and 30% (June 10 – Dec. 31).

Option 3.2 under Component 3 would change the seasonal apportionments by sector compared to the status quo, but would not change the percentage of the BSAI Pacific cod ITAC harvested by each gear sector in the first half of the year. In effect, any reduction to the trawl sectors' allocation would be applied only to their C season allocations. This option maintains the 70% apportionment of the overall BSAI Pacific cod TAC to the first half of the year. Under the current range of proposed allocations, however, Option 3.2 would result in a negative C season allocation for the trawl CP sectors. In effect, the proposed options in Component 2 do not result in a large enough allocation to the trawl CP sectors that would support maintaining both their current A and B season allocations and attributing the entire reduction in their overall allocation to the C season.

Option 3.3 under Component 3 would change the seasonal apportionments by sector compared to the status quo, but would not change the percentage of the BSAI Pacific cod ITAC currently harvested by the trawl sector in the A season. In effect, any reduction to the trawl sectors' allocations would be applied to their B and C season allocations. Any increase in the fixed gear sectors' allocation would be applied to both their A and B seasons. In addition, there are three suboptions that address how the reduction to the trawl sectors' allocations would be applied: Suboption 1) proportionately between the B and C seasons;

Suboption 2) equally between the B and C seasons; and Suboption 3) taking the maximum from the trawl sectors' C season before reducing the trawl sectors' B season, and increasing the fixed gear sectors' A season to the extent possible without exceeding the 70% - 30% Steller sea lion seasonal apportionment measures.

Option 3.3 does not create any negative C season apportionments as discussed above. Suboption 1 and Suboption 2 slightly exceed the 70% target for the first half of the year under some of the proposed allocation options in Component 2. Suboption 3 provides that if the 70% target is exceeded, the hook-and-line CP sector's A season allocation is reduced to the extent necessary to meet the 70% threshold. In general, Suboption 3 results in exceeding the 70% far more so than Suboption 1 or 2, as the entire reduction to the trawl allocations is taken from their C season allocations only, and thus, the hook-and-line CP sector's A season is reduced under this suboption.

Finally, Option 3.4 proposes to modify the jig seasonal apportionment to 60% - 20% - 20%. In effect, this would shift an additional 20% of the jig allocation, which currently represents 0.4% of the BSAI Pacific cod ITAC, to the first season. This would likely benefit the <60' fixed gear fleet compared to the status quo, due to the larger potential reallocation of cod in the first trimester. Notwithstanding a considerable increase in effort in the jig sector, the jig sector would be minimally affected, if at all. Upon selection of a preferred alternative, it will be easier to discern the potential effects of the resulting combination of Components 2 and 3.

Component 4 addresses how to reallocate BSAI Pacific cod quota that is projected to remain unused. Options exist in Alternative 2 to reallocate unused quota first among the inshore sectors before reallocating to the offshore sectors. This represents a change from the status quo, but would continue to retain flexibility for NMFS to consider the likelihood of a sector's capability to harvest reallocated quota.

Component 5 proposes to increase the 7.5% CDQ allocation of BSAI Pacific cod to 10% or 15% under Alternative 2. Pacific cod is currently the second most important species to the CDQ Program in terms of volume, and is typically the second or third most important in terms of value (royalties). An increase to a 10% or 15% reserve would potentially increase CDQ royalties generated from Pacific cod harvest by one-third or one-half, respectively. It is extremely likely that the CDQ groups could harvest the proposed increase. In addition, a subset of the hook-and-line catcher processor sector that harvests the non-CDQ Pacific cod fishery currently partners with the CDQ groups to also prosecute the CDQ Pacific cod fishery. Current CDQ allocations of non-target species harvested incidentally in the target CDQ Pacific cod fishery appear sufficient to support an increase in the CDQ Pacific cod allocation. Selection of either option to increase the CDQ allocation would reduce the amount of the BSAI Pacific cod TAC allocated to the non-CDQ sectors, effectively reducing their allocations proportionately, by 2.5% or 7.5%.

Components 6 and 7 address apportioning the crab and halibut PSC allowances among the trawl sectors. Under Alternative 1, there is a shared amount of halibut PSC, for example (3,400 mt) that is then further divided among the trawl fishery groups (e.g., Pacific cod trawl fisheries, rock sole/other flatfish/flathead sole trawl fisheries, etc.). Component 6 addresses the amount of the trawl halibut PSC and crab PSC that is established overall for the trawl fisheries. Alternatives 1 and 2 are the same in this regard, and do not propose to change these amounts. Component 7, however, proposes to further split the amount of the halibut and crab PSC apportioned to the *trawl cod fishery group* among the four trawl sectors that are proposed to receive Pacific cod allocations under this amendment. This is likely one of the most complicated issues addressed in this amendment, and is complicated further by the simultaneous consideration of BSAI Amendment 80, which proposes to establish flatfish allocations for the non-AFA trawl CP sector, as well as *PSC allocations for all fisheries* associated with that sector, including Pacific cod. Potential effects of Amendment 80 are taken into account in the analysis of these components.

In brief, it is uncertain which amendment would be implemented first, if approved by the Secretary of Commerce. The ongoing assumption of Amendment 85 is such that any allocation of PSC established under Amendment 80 will take precedence over any PSC allocation established under Amendment 85 for the non-AFA trawl CP sector. Halibut PSC is provided as an example here, as it is more of a limiting factor in the fishery than crab PSC. Thus, upon implementation of Amendment 80, the amount of trawl halibut PSC allocated among the remaining three trawl sectors would be reduced, by as much as 39% - 79% according to the current options under Amendment 80 (see **Table E - 4** below).

Table E - 4 Estimates of halibut PSC allocations to the non-AFA trawl CP sector under proposed Amendment 80

	Sector's historic usage (all fisheries) - option 6.1.1		Sector's historic usage (A 80 species and Pacific cod) - option 6.1.2		Portion of fishery usage based on sector's allocation - option 6.1.3							
	Maximum	Minimum	Maximum	Minimum	retained/retained		total/total		retained/total		target fishery bycatch rate	
					Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum
Non-AFA CP Trawl Sector allocation as a percent of trawl halibut PSC	79.4	64.8	75.7	61.8	70.1	60.4	67.1	55.0	51.5	39.4	72.1	64.7
Non-AFA CP Trawl Sector allocation (assuming 3,400 mt trawl PSC allocation)	2,700	2,203	2,574	2,101	2,383	2,054	2,281	1,870	1,751	1,340	2,451	2,200
PSC remaining for other trawl sectors (assuming 3,400 mt trawl PSC allocation)	700	1,197	826	1,299	1,017	1,346	1,119	1,530	1,649	2,060	949	1,200

Component 7 under Amendment 85 provides two options for allocating PSC among the trawl sectors, whether the allocation is made to the three trawl sectors excluding the non-AFA trawl CP sector, or to all four trawl sectors in the case that there is lag time between implementation of Amendment 80 and 85, assuming both are approved. Under Amendment 85, PSC can be divided either based on each trawl sector's Pacific cod allocation determined in Component 2 or based on each trawl sector's allocation and percentage of *directed* Pacific cod harvest during the years selected to determine the allocation. The effect of these two options on halibut PSC is provided below.

Table E - 5 Estimates of halibut PSC allocations to the trawl sectors under Amendment 85

Sector	Option 7.1				Option 7.2			
	Halibut allocation (mt)	% halibut PSC allocation	Halibut allocation (mt)	% halibut PSC allocation	Halibut allocation (mt)	% halibut PSC allocation	Halibut allocation (mt)	% halibut PSC allocation
	Maximum		Minimum		Maximum		Minimum	
AFA Trawl CP	126.6	8.8%	32.9	2.3%	135.2	9.4%	35.9	2.5%
AFA Trawl CV	861.8	60.1%	688.0	48.0%	1004.3	70.0%	829.9	57.9%
Non-AFA Trawl CP	606.6	42.3%	476.8	33.2%	429.2	29.9%	325.3	22.7%
Non-AFA Trawl CV	113.4	7.9%	17.1	1.2%	146.3	10.2%	21.7	1.5%
Remaining trawl PSC (for fisheries other than P. cod)	2,000		2,000		2,000		2,000	
P. cod related PSC allocation to all sectors <u>excluding</u> non-AFA trawl CP	827		957		1,005		1,109	
Remaining trawl PSC (<u>including</u> PSC for other non-AFA trawl CP sector fisheries)	2,573		2,443		2,395		2,291	

Note: Halibut PSC allocations by sector are based on the current total halibut PSC limit of 1,434 mt allocated to the BSAI cod trawl fishery group. The last row assumes the current total trawl halibut PSC allocation of 3,400 mt.

Table E - 4 shows that the total trawl halibut PSC amount remaining after the Amendment 80 allocation to the non-AFA trawl CP sector ranges from 700 metric tons to 2,060 metric tons. This residual would be used to support both Pacific cod and all other fisheries for the three remaining trawl sectors. At the low end, 700 mt is far less than the amount projected to be allocated to other trawl sectors under Amendment 85 (see **Table E - 5**, between 827 mt and 1,109 mt), and these options are only intended to support the other three trawl sector's *Pacific cod* fisheries. Thus, if the maximum allocation is made under Amendment 80, the remaining halibut PSC allowance would be insufficient to maintain the allocations of PSC to the other trawl sectors in the Pacific cod fishery (using the current 1,434 mt halibut PSC allocation

to the cod trawl fishery group) and would leave no PSC to support other (non-Pacific cod) trawl fisheries. Overall, the 700 mt residual amount is approximately 64% of the average use of the three other trawl sectors in all fisheries (1,094 mt). At the upper end, the residual remaining after the PSC allocation to the non-AFA trawl CP sector (2,060 mt) is almost twice the maximum annual halibut usage of all other trawl sectors (1,094 mt). **A middle range allocation to the non-AFA trawl CP sector (slightly more than 2,000 mt) and a similar middle range allocation to other three trawl sectors in the Pacific cod fishery (900 mt) would leave approximately 500 mt of halibut mortality to support other trawl fisheries, which appears sufficient using the historic average during 1995 – 2003.**

Table E - 6 shows historic use of halibut PSC for selected trawl sectors and fisheries.

Table E - 6 Historic halibut PSC usage (1995-2003)

	maximum	minimum	average
Non-AFA trawl CP sector (all fisheries)	2,802	1,586	2,362
All other trawl sectors (all fisheries)	1,863	472	1,094
Pacific cod trawl fishery	1,640	672	1,234
Pacific cod trawl fishery excluding non-AFA CP trawl sector	1,359	267	775
All trawl fisheries except Pacific cod	2,573	2,005	2,223
Non-AFA trawl CP sector - all fisheries except Pacific cod	2,368	1,234	1,904
All trawl fisheries except Pacific cod excluding non-AFA trawl CP sector	782	84	319

Source: NPFMC PSC data files, 1995 – 2003.

Establishing separate PSC allocations to each sector is expected to better allow the trawl sectors that operate under a cooperative management system (the AFA sectors, and potentially, the non-AFA trawl CP sector) to manage their fisheries and incidental catch internally. However, there may be some economic impacts associated with further dividing PSC among the various sectors. Currently, Federal regulations do not include specific provisions for reallocating PSC among different fishery categories within the same gear sector. Nevertheless, reallocating unutilized PSC, specifically halibut PSC, by a specific fishery group has been an important economic benefit of in-season management adjustments routinely administered by NMFS toward the end of each fishing year. Movement of halibut PSC within the trawl fisheries, primarily from the cod trawl fishery group to the flatfish trawl fishery group, has enabled late season flatfish fisheries that otherwise could not have occurred. Allocating PSC by individual trawl sector, as proposed under Alternative 2, reduces the flexibility to shift PSC among trawl sectors and fisheries to some extent, as the PSC allocated to one trawl sector cannot be allocated outside of that sector. However, Amendment 85 does not contain any options to explicitly prohibit inseason managers from continuing to have the flexibility to shift PSC from within one trawl sector fishery group to another fishery group *within the same sector* if necessary. (Note that this will not be an issue for the non-AFA trawl CP sector should Amendment 80 be implemented, as this sector's PSC would not be allocated to separate fishery groups. Instead, the sector would be able to use its PSC allocation as needed for any of its target fisheries, as determined by the sector through the cooperative structure.)

Exceeding the trawl crab PSC allowance has not been of great concern in the BSAI Pacific cod trawl fisheries in most years, because the historical use has been less than the amount available. However, areas have been closed occasionally due to crab PSC in the past. The effect of Alternative 2 on the crab PSC apportionments is in Section 3.4.3.7.

Note also that the Amendment 85 options only distribute the PSC allowance among the different trawl sectors in the Pacific cod fishery group. The amount of the Pacific cod PSC allowance to the trawl sectors (currently 1,434 mt) is left to the specification process, which allows for periodic adjustments in response to changing circumstances.

Component 8 under Alternative 2 proposes to apportion the shared halibut PSC allowance for the Pacific cod hook-and-line sectors between the hook-and-line catcher processor and catcher vessel sectors. Halibut PSC allowances have not typically constrained the hook-and-line Pacific cod fishery in the past. The options to split the allowance would potentially allow for different seasonal allowances of halibut PSC for each of the sectors in the future, and prevent one sector from being constrained by the other's halibut PSC catch. There is currently no halibut bycatch allowance for these sectors during the summer months (June 10 – Aug. 15), however, the hook-and-line catcher vessel sector may prefer to fish in the summer due to better weather and in order to compete with the <60' pot catcher vessels for the <60' fixed gear allocation of Pacific cod that is not seasonally apportioned. In recent years, the <60' pot catcher vessels have harvested the vast majority of the <60' fixed gear allocation, about a third of which has been harvested from May through August.

Depending on the overall BSAI allocations selected under Component 2, Option 8.1 would apportion a range of 3 mt – 34 mt to the hook-and-line catcher vessel cod sector, leaving the remaining 741 mt – 772 mt for the hook-and-line catcher processor cod fishery. Option 8.2 would apportion 10 mt of halibut mortality to the hook-and-line catcher vessel cod sector and 765 mt to the hook-and-line catcher processor cod sector. (The results of both options assume the current halibut mortality allowance of 775 mt for the hook-and-line cod fishery group.) Given halibut mortality rates per metric ton of BSAI Pacific cod estimated for each hook-and-line sector, the proposed apportionments may be slightly less than necessary for the hook-and-line catcher vessel sector to fully prosecute the upper range of its potential BSAI Pacific cod allocation under this amendment. The proposed amounts appear sufficient for the hook-and-line catcher processor sector.

Part II, Alternatives 3 - 6

Part II proposes four alternatives to establish a methodology by which to maintain sector allocations and minimize competition among gear groups, should the BSAI Pacific cod TAC be apportioned between the BS and AI subareas in a future TAC specifications process. The stock assessment model for Pacific cod is configured to represent the portion of the Pacific cod population inhabiting the BS survey area. The model projections are then adjusted to include biomass in the AI survey area. **The best estimate of long-term average biomass distribution is 85% in the BS and 15% in the AI** (Thompson and Dorn 2005). On average during 1995 – 2003, almost 14% of the BSAI Pacific cod catch came from the AI subarea and 86% from the BS subarea. If the timeframe is shortened to the most recent years (2000 – 2003), the share percentages change to almost 18% in the AI and 82% in the BS. While the data set is not exactly comparable, 2004 and 2005 data are also provided in Part II for reference. In 2004 and 2005, the AI share of the total BSAI Pacific cod harvest is estimated at 14.4% and 11.3%, respectively.

Under **Alternative 3** (no action), NMFS could likely only implement equal allocations in both areas (e.g., if a sector receives a 40% BSAI allocation, it would receive 40% in the BS and 40% in the AI upon a TAC split). While this is one of the methodologies evaluated, the public and the Council raised concerns about this methodology being the only potential solution by default. The primary concern being that it does not reflect recent historical catch by sector in the Aleutian Islands subarea. In general, the trawl sectors have increased the percentage of their total harvest taken from the AI in recent years, and the fixed gear sectors have reduced their share in the AI.

Alternative 4 proposes to maintain Pacific cod sector allocations at the BSAI level as determined in Part I, and a sector could fish that allocation anywhere in the BS or AI as long as TAC was available in the subarea. This alternative provides the greatest flexibility for sectors and may be the easiest for NMFS inseason management to monitor. However, one may risk creating a race for fish in one subarea, most likely the AI, depending on shifts in the location of the stock, desire to deliver to a new port, or a number of factors that may prompt a sector to shift more of its fishing in the AI than has historically been harvested.

Alternative 5 proposes allocating to sectors the same percentage of the BS TAC and AI TAC as determined by the BSAI sector allocations determined in Part I. Thus, Alternative 5 has the same result as Alternative 3 (no action). In effect, each sector would be allowed to harvest 85% of its BSAI allocation determined in Part I in the BS and 15% in the AI. Most sector's recent historical harvest patterns in the BS and AI do not closely mirror an 85% (BS) and 15% (AI) split. In general, Alternative 5 would allocate a lower share of the trawl sectors' BSAI allocations to the AI than has been harvested in the AI in the recent past. In contrast, Alternative 5 would allocate a higher share of the fixed and jig gear sectors' BSAI allocations to the AI than has been harvested there in the recent past.

The Council identified Alternative 6 as its preliminary preferred alternative in February 2006. **Alternative 6** proposes to define the sector allocations for the BS and AI based on the relative percentages of Pacific cod that were harvested in the AI by the sectors during a specified series of years. There are four options for the series of years: 1995 – 2002; 1997 – 2003; 2000 – 2003; and 2002 - 2003. The overall BSAI allocation would remain for each sector, as determined in Part I. Each sector would then receive its historical share of the AI TAC, and the remainder of the sector's allocation is established in the BS. One fundamental concern under Alternative 6 is that TAC fluctuations will have disproportionate impacts on sectors that are allocated the greatest percentage of the subarea with the declining TAC.

Because it is uncertain how TACs in the BS and AI would fluctuate relative to one another in the future, and because the subarea allocations under Alternative 6 are dependent first on maintaining the overall BSAI allocation to each sector, it is possible that Alternative 6 could result in negative allocations in the BS subarea for one or more sectors. Of particular concern is the non-AFA trawl CV sector under Option 6.4, since this sector may receive a very small overall BSAI allocation but has harvested an estimated 13.2% of the overall AI harvest in 2002 – 2003. Regardless of the resulting AI and BS allocations under the preferred option, because of potential fluctuations in the TACs, the Council may consider including language that addresses potential negative allocations in one subarea. A related concern under Alternative 6 is that some AI sector allocations will not be large enough to open a directed fishery in the AI.

Environmental Effects

Overall, the environmental analysis of the alternatives did not identify significant effects on the biological, physical, and human environment. The current fishery management program was analyzed in detail in the Groundfish Programmatic Supplemental Environmental Impact Statement (NOAA 2004a), and is updated in the annual TAC-setting Environmental Assessment. The effects of Alternative 1 (no action) on Steller sea lions have been analyzed in the 2001 Biological Opinion and found not to cause jeopardy or adverse modification of critical habitat.

Alternative 2 changes sector and potentially seasonal allocations of Pacific cod to reflect average annual harvest share by sector. These catch patterns have been analyzed in the Programmatic SEIS (2004a) and in the biological opinions, and have been shown to have no adverse impact on marine mammals, including Steller sea lions. Under Alternative 2, the overall effort in the Pacific cod fishery will remain similar to recent years, as the TAC will continue to be set in accordance to Pacific cod biomass. The

effect of the options related to seasonal apportionments range from a slight increase or decrease in the percentage of the ITAC that the hook-and-line CP sector may harvest in the first half of the year (A season) compared to status quo. These same options result in either no change or a slight decrease in the percentage of the ITAC that the trawl sectors may harvest in the first half of the year compared to status quo. There is a slight difference between the hook-and-line and trawl fisheries in terms of mean annual mortality rate of marine mammals and seabirds. The analysis also indicates that the number of seabirds taken in the hook-and-line CP sector, and the rate at which seabirds are taken, is higher in the B season than in the A season. However, the likely change in catch by these gear types is minimal, and is not of such a degree as to have a significant impact at a population level. No significant impacts on marine mammals, seabirds, habitat, or the ecosystem are identified.

As discussed previously, there are some options under Alternative 2 that would allow changes to the seasonal apportionments of Pacific cod catch that may, at their extreme, change the ratio of catch in the first half of the year to slightly exceed 70% of the TAC. This would exceed the objective of the 2001 Steller sea lion protection measures, to limit Pacific cod catch during the first half of the year to 70% of the overall allowable harvest. NMFS Protected Resources Division has informed the Council that consultation, either informal or formal, may be required to change the seasonality of Pacific cod catch from the status quo. NMFS will provide informal consultation on the action upon selection of a Council preferred alternative.

Alternatives 3 – 6 define a methodology for apportioning BSAI sector allocations among the BS and AI subareas and are not likely to have significant environmental impacts. This action does not propose establishing separate subarea TACs in the BS and AI, but instead positions the Council to recommend subarea TACs if that is desired in the future. Regardless, under any of the proposed sector allocation alternatives, it is not expected that subarea TACs will be exceeded, and thus no significant impact to the Pacific cod stock is expected. Current Pacific cod harvest by subarea approximates the amount of catch that would be allowed to occur in each subarea should subarea-specific TACs be established in the future, and existing spatial and temporal dispersion measures will continue to protect Steller sea lion habitat and forage availability under any of the alternatives.

Economic Effects

Production efficiency, as defined as the difference between production revenues and production costs, is not expected to change significantly under either alternative in Part I; however, there are some potential increases in Alternative 2 worth noting compared to Alternative 1. Under the no action alternative, for the most part, production efficiency is limited by the race for fish in the current limited access fishery. Only the AFA trawl CV and CP sectors currently operate under the cooperative system. Sector allocations under Alternative 2 could provide additional production efficiency benefits, such that both AFA sectors and potentially the non-AFA catcher processor sector (upon implementation of proposed Amendment 80) should be able to better manage direct Pacific cod allocations through cooperatives. In addition, increased production efficiency could be realized by establishing a separate allocation to the AFA trawl CV sector and allowing the three participants with the greatest harvest history in the non-AFA trawl CV sector to fish off the AFA trawl CV allocation (given that their cod history would be attributed to the AFA trawl CV sector in determining that sector's allocation). This means that a greater percentage of the trawl CV allocation would be managed under a cooperative system, and the three participants with the greatest cod history in the non-AFA trawl CV sector would be capable of fishing under a more rationalized system via contracts with the AFA CV sector.

Overall, the intent of Alternative 2 is to revise the BSAI Pacific cod allocation such that the initial allocations established at the beginning of the year better reflect the actual historical harvests by sector.

Meaning, under Alternative 1, one would expect that substantial amounts of cod quota would continue to be reallocated among sectors near the end of the fishing year, in order to prevent foregone catch. To the extent that the options under Alternative 2 would establish distinct BSAI Pacific cod allocations that limit the need to reallocate catch during the year, participants in the sectors receiving those reallocations could benefit from the increased ability to plan their fishing year. Instead of being uncertain of the level and timing of reallocated quota from the trawl sectors late in the year, the harvest history that represents the reallocations would be incorporated in the fixed gear sector's initial allocations. This would reduce overall uncertainty and allow these sectors, particularly the hook-and-line catcher processor sector, to better plan their annual operations.

Production efficiency is not expected to change significantly under Alternatives 3 – 6. Alternatives 3 – 6 establish a methodology by which to apportion sector allocations between the BS and AI, should the BSAI TAC be split between those two areas in the future. In effect, Alternatives 3 and 5 would result in the same sector allocation percentage in the BS and AI as the sector receives for the BSAI under Part I. Thus, regardless of harvest history between the two subareas, the sector would receive the same percentage in each area. If a sector had very little fishing history in one of the two areas, creating equal percentages in each area may serve to reduce production efficiency by forcing participants into unfamiliar fishing grounds. This could be either a short-term effect as participants gain experience in the fishing grounds of a new subarea or a long-term effect as a particular gear type may not be well suited for the subarea. The division of the TAC between the Aleutian Islands and Bering Sea could lower production efficiency, if it serves to create a greater race for fish in one subarea than exists overall in the BSAI. While speculative, this potential exists if the allowable catch allocated to a subarea is not sufficient to support the number of participants that want to fish in the area. This may be the case under Alternative 4, since each sector would be limited by an allocation that could be harvested in either area until the TAC for that area was fully harvested.

Alternative 6 is based on sector catch history in the Aleutian Islands, which is likely the limiting factor for the BSAI sector allocations. If Alternative 6 establishes the sector allocations in the AI based on recent catch history, it is not expected to significantly affect production efficiency and would likely have less of an effect than Alternatives 3 – 5. However, if a sector received its entire BSAI allocation in the AI subarea, there may be considerable impacts on the number of vessels that could continue to fish Pacific cod in the future, due to the number of AI endorsements by sector. In particular, the non-AFA trawl CV sector has the potential to receive all of its BSAI allocation in the AI, and only a small subset of the sector has an AI LLP endorsement (6 of 50 LLPs have AI endorsements). Finally, if some sectors receive an extremely small allocation in the AI, particularly those that operate under a limited access regime as opposed to a cooperative structure, it may not be of sufficient amount to open a directed fishery.

The allocations proposed under Alternative 2 are intended to reflect actual retained catch over a series of years, including reallocated quota. Production mixes are not anticipated to change significantly from previous years. Some minor quality improvement could occur because of the direct sector allocation made to sectors that operate under cooperatives (AFA trawl sectors and potentially the non-AFA trawl CP sector); however, they are unlikely to be substantial. Overall, U.S. consumers could realize a minor benefit from the improved product quality, but are unlikely to realize any notable change in benefits under this action.

In sum, a few factors could potentially contribute to an increase in net benefits to the Nation under Alternative 2. The increased certainty in the total annual allowable harvest by sector and the reduction in reallocated quota could increase the ability of participants to plan the fishing year, potentially increasing net benefits in production. In addition, given that ex-vessel and first wholesale prices are slightly higher for fixed gear compared to trawl gear, to the extent that this action provides the fixed gear sector with a more certain future allocation (by moving unused trawl quota that has historically been reallocated from

the trawl sectors to the fixed gear sectors into the fixed gear sector's *initial* allocation) this may result in increased revenues. Absent cost data, however, whether this potential increase in revenues results in a net benefit to the Nation cannot be established.

Effects on Management, Monitoring, and Enforcement Costs

No changes are expected to the existing management system under Alternative 1, thus, no effects on management, monitoring, or enforcement are expected. NMFS would continue to monitor eight separate sector allocations, with seasonal apportionments for each sector, with the exception of the <60' hook-and-line catcher vessel sector. NMFS would also be expected to continue its current practice of reallocating Pacific cod quota inseason that is projected to remain unused by a particular sector.

The option exists under Alternative 2 to create ten sector allocations, meaning NMFS would be required to monitor ten allocations of BSAI Pacific cod, as opposed to the current eight under Alternative 1. This results from splitting the current trawl CV and trawl CP allocations by AFA and non-AFA sectors. However, the frequency and level of inseason reallocations of cod quota among sectors is expected to decline, as the allocations are adjusted under Alternative 2 to better reflect actual catch history.

The sectors identified under Alternative 2 that continue to operate in a competitive limited access system, specifically the non-trawl sectors and the non-AFA trawl CV sector, would not expect any changes in agency management or monitoring. The current intent under Alternative 2 is for the AFA trawl CV and CP sectors, as well as the non-AFA trawl CP sector cooperatives, to manage their own Pacific cod allocations under a hard cap. If the industry can control and limit its catch, it can best decide how much of its allocation is necessary to apply to a directed fishery and how much is needed for incidental catch in other target fisheries. In effect, this allows the industry to realize the greater benefit from the fishery than by having NMFS determine the level of incidental catch needs. The greater the uncertainty, the greater the ICA established by NMFS. The greater the ICA, the less opportunity the industry has to extract the greatest value from the fishery.

Another important issue under Alternative 2 is the potential to divide the trawl cod fishery group halibut and crab bycatch allowances among the four trawl sectors. While it may be beneficial to the AFA sectors and non-AFA trawl CP sector to be able to manage a certain apportionment of the halibut and crab bycatch allowances, more refined apportionments can also make it difficult for a sector whose bycatch needs are relatively variable from year to year. While a further apportionment of the non-trawl halibut bycatch allowance is also proposed under Alternative 2 between the hook-and-line CP and CV sectors, the historical level and rate of halibut bycatch in the non-trawl sectors reduces this concern.

In a future TAC-setting process, the Council may recommend splitting the BSAI Pacific cod TAC into BS and AI subarea TACs. Under Alternative 1 and a TAC split, NMFS would effectively be managing two subarea allocations for each of eight sectors, notwithstanding seasonal apportionments. Under Alternative 2 and a TAC split, NMFS could potentially be managing two subarea allocations for each of ten sectors, notwithstanding seasonal apportionments. Under either alternative, this task may prove difficult if the seasonal allocations to a particular sector in the AI are extremely small, given the relatively small potential TAC and the number of apportionments. Note, however, that the action under Alternatives 3 – 6 is not to determine *whether* to split the BSAI TAC into BS and AI subareas; it is limited to determining how to divide the sector allocations by subarea should separate TACs be established in a future specifications process. Effects on industry and the ability of NMFS to manage seasonal sector allocations in each subarea as a result of the proposal to split the BSAI Pacific cod TAC by subarea would need to be considered in the final TAC-setting environmental analysis.

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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	m	meter(s)
ADF&G	Alaska Department of Fish and Game	MMPA	Marine Mammal Protection Act
AFA	American Fisheries Act	MRA	maximum retainable amount
AI	Aleutian Islands	MSA	Magnuson-Stevens Fishery Conservation and Management Act
APICDA	Aleutian Pribilof Islands Community Development Association	mt	metric ton(s)
BBEDC	Bristol Bay Economic Development Corporation	N.	North
BiOp	Biological Opinion	nm	nautical miles
BS	Bering Sea	NMFS	National Marine Fisheries Service
BSAI	Bering Sea and Aleutian Islands	NOAA Fisheries	National Marine Fisheries Service
C.F.R.	Code of Federal Regulations	NPFMC	North Pacific Fishery Management Council
CAI	Central Aleutian Islands District	°	degrees
CBSFA	Central Bering Sea Fishermen's Association	PBR	potential biological removal
CDQ	Community Development Quota	POP	Pacific ocean perch
Council	North Pacific Fishery Management Council	PSC	prohibited species catch
CP	catcher processor vessel	PSQ	prohibited species quota
CV	catcher vessel	RFA	Regulatory Flexibility Act
CVRF	Coastal Villages Region Fund	RIR	Regulatory Impact Review
E.	East	SEIS	Supplemental Environmental Impact Statement
EA	Environmental Assessment	TAC	total allowable catch
EBS	eastern Bering Sea	U.S.C.	United States Code
EFH	essential fish habitat	USFWS	United States Fish and Wildlife Service
ESA	Endangered Species Act	VMS	Vessel monitoring system
F/V	Fishing Vessel	W.	West
FMP	fishery management plan	WAI	Western Aleutian Islands District
FR	Federal Register	WPR	Weekly Production Report
ft	foot/feet	YDFDA	Yukon Delta Fisheries Development Association
FY	Federal Year		
GOA	Gulf of Alaska		
H&L	hook and line		
ICA	incidental catch allowance		
IFQ	individual fishing quota		
IPHC	International Pacific Halibut Commission		
IR/IU	Improved Retention/Improved Utilization Program		
IRFA	Initial Regulatory Flexibility Analysis		
ITAC	initial total allowable catch		

1 INTRODUCTION

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 Bering Sea/Aleutian Islands Groundfish Fishery Management Plan (BSAI FMP), as developed by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The FMP was approved by the Secretary of Commerce and became effective in 1982.

This document is an Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) for proposed Amendment 85 to the BSAI FMP. There are two primary parts to the action under consideration: 1) revisions to the current sector allocations of the BSAI Pacific cod TAC (total allowable catch), and 2) establishing a methodology to apportion the sector allocations selected between the Bering Sea (BS) and Aleutian Islands (AI) management areas.

The first part of the action proposes to revise the sector allocations of the BSAI Pacific cod TAC among catcher processors (CPs) and catcher vessels (CVs) using hook-and-line, pot, trawl, and jig gear. For the purposes of this amendment, the fixed gear sectors are defined as follows: hook-and-line catcher processors, hook-and-line catcher vessels $\geq 60'$, pot catcher processors, pot catcher vessels $\geq 60'$, and hook-and-line and pot catcher vessels $< 60'$ length overall. This action also proposes to further apportion the trawl vessel sector allocations between those vessels that are eligible under the American Fisheries Act (AFA) and those that are not. Thus, the trawl catcher vessel allocation could potentially be further apportioned between the non-AFA trawl catcher vessel sector and the AFA trawl catcher vessel sector, and the trawl catcher processor allocation could be further apportioned between the non-AFA trawl catcher processor sector and the AFA trawl catcher processor sector. This action also proposes to increase the BSAI Pacific cod reserve allocated to the western Alaska Community Development Quota (CDQ) Program.

The second part of this action would establish a methodology by which to apportion each gear sector's allocation between the BS and AI subareas, in the event that the BSAI Pacific cod ABC and TAC is apportioned between the BS and AI subareas in a future specifications process. This action would ensure that the benefits of sector allocations could be maintained in that case as well as recognize differences in dependency among gear groups and sectors that fish for Pacific cod in the BS and AI.

An environmental assessment is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in a significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

The purpose of the EA is to analyze the environmental impacts of the proposed Federal action to apportion the BSAI Pacific cod TAC among the fixed, trawl, and jig gear sectors and the CDQ Program according to the historical harvest distribution and other considerations. The human environment is defined by the Council on Environmental Quality as the natural and physical environment and the relationships of people with that environment (40 CFR 1508.14). This means that economic or social effects are not intended by themselves to require preparation of an EA. However, when an EA is prepared and socio-economic and natural or physical environmental impacts are interrelated, the EA must discuss all of these impacts on the quality of the human environment. NEPA requires a description of the purpose and need for the proposed action as well as a description of alternatives which may address the problem. This information is included in **Chapter 1** of this document.

Chapter 2 contains a description of the affected human environment and information on the impacts of the alternatives on that environment, specifically addressing potential impacts on endangered species, marine mammals, and cumulative effects.

Executive Order 12866 (E.O. 12866) requires preparation of a Regulatory Impact Review (RIR) to assess the social and economic costs and benefits of available regulatory alternatives, in order to determine whether a proposed regulatory action is economically “significant” as defined by the order. **Chapter 3** contains a systematic description and analysis of the economic and social impacts of each of the alternatives to allocate the BSAI Pacific cod TAC among the various gear sectors and CDQ Program and between the Bering Sea and Aleutian Islands management areas.

Chapter 4 addresses the requirements of other applicable laws, including the Magnuson Stevens Act (MSA), Marine Mammal Protection Act, and Regulatory Flexibility Act (RFA), which includes the Initial Regulatory Flexibility Analysis (IRFA). The RFA requires analysis of adverse impacts on small entities which would be directly regulated by the proposed action. The major goals of the RFA are to: (1) increase agency awareness and understanding of the impact of their regulations on small businesses, (2) require that agencies communicate and explain their findings to the public, and (3) encourage agencies to use flexibility and provide regulatory relief to small entities. The preparation of an IRFA emphasizes predicting significant adverse impacts on small regulated 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.

The references and literature cited are in **Chapter 5**, the list of preparers is in **Chapter 6**, and the list of agencies and individuals consulted is in **Chapter 7**.

1.1 Purpose and Need for the Action

1.1.1 Background

The BSAI Pacific cod fishery is targeted by multiple gear types, primarily trawl gear and hook-and-line catcher processors, and smaller amounts by hook-and-line catcher vessels, jig vessels, and pot gear. This is a fully prosecuted fishery, with a 2006 ABC and TAC of 194,000 mt. Excluding the 7.5% allocated to the CDQ Program reserve, the 2006 non-CDQ TAC (or ITAC) is 179,450 mt. The BSAI Pacific cod TAC has been apportioned among the different gear sectors since 1994, and the CDQ Program has received a BSAI Pacific cod allocation since 1998.

A series of amendments have modified or continued the allocation system, and the current BSAI Pacific cod allocations were established using a step-wise approach. Currently, Federal regulations at 50 CFR 679.20(a)(7) authorize distinct BSAI Pacific cod allocations for the following sectors:

- Jig vessels
- Trawl catcher processors
- Trawl catcher vessels
- Hook-and-line catcher processors
- Hook-and-line catcher vessels
- Pot catcher processors
- Pot catcher vessels
- Hook-and-line and pot catcher vessels <60’ LOA⁵

⁵Note that while the <60’ fixed gear (hook-and-line and pot) catcher vessels receive a separate allocation of BSAI Pacific cod, these vessels fish off the general hook-and-line catcher vessel and pot catcher vessel allocations, respectively by gear type, when those fisheries are open.

The remainder of this section outlines the amendments that have authorized the various (non-CDQ) BSAI Pacific cod allocations among industry sectors. Table 1-2 provides a reference sheet for each of the past amendments and its primary provisions. Additional detail on the purpose and effects of these amendments is provided in Chapter 3.

State water Pacific cod fishery in the Aleutian Islands

Note that while the 2006 ABC and TAC currently equal 194,000 mt, the Alaska Board of Fisheries took action in late February 2006 to establish a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude. This fishery has a guideline harvest level (GHL) equal to 3% of the BSAI Pacific cod ABC, which represents about 5,820 mt (or 12,830,772 lbs) in 2006. This reduces the 2006 BSAI Pacific cod TAC to 188,180 mt.⁶ The State AI fishery will start on or after March 15, and only after the Federal Pacific cod trawl catcher vessel A season is closed. NMFS closed the directed trawl catcher vessel Pacific cod fishery in the BSAI on March 8, 2006, in order to avoid exceeding the A season allocation, thus, the expectation is that the 2006 State water AI fishery would begin at noon on March 15.

As the 2006 TAC has already been specified and sectors are currently fishing under specified allocations, NMFS will need to effect an inseason adjustment under Federal regulations (50 CFR 679.25) to re-specify the TAC to accommodate the 3% reduction for the GHL. This will necessitate re-calculating the sector allocations and seasonal apportionments currently published in Federal regulations.⁷ This modification is expected to occur in mid-March. The State action will also necessarily affect the 2006 BSAI Pacific cod CDQ reserve, as that reserve is calculated as 7.5% of the BSAI Pacific cod TAC. Thus, all sectors will realize a proportional reduction of 3% of their current Federal allocations as a result of this action.

The primary elements of the State water AI Pacific cod fishery are outlined in Section 2.3.9.2 of this analysis. Note that the Board's action established this fishery only for 2006 and 2007. Thus, while the overall effect on the Federal BSAI Pacific cod fishery is that the ABC would be reduced by 3% prior to the TAC and sector allocations being established, this action may be limited to two years. In that case, the State water AI Pacific cod fishery may or may not overlap with the action being considered under Amendment 85, depending on the timing of implementation. Note that the 2006 and 2007 BSAI Pacific cod TACs are used throughout the document for illustrative purposes. Because of the potential two-year timeframe for the State waters AI Pacific cod fishery, **the analysis continues to use the 2006 TAC of 194,000 mt and the projected 2007 TAC of 148,000 mt for illustrative purposes, without the 3% reduction for the State water GHL.**

Cod allocations among the jig, trawl and fixed gear sectors

Beginning in 1994, **BSAI Amendment 24** allocated the total allowable catch (TAC)⁸ for non-CDQ BSAI Pacific cod to the various gear sectors as follows:

- 44% fixed gear (hook-and-line and pot)
- 54% trawl gear
- 2% jig gear

⁶Under a revised 2006 TAC of 188,180 mt, the CDQ reserve (7.5%) would be 14,114 mt and the ITAC would be 174,067 mt.

⁷See Table 5 (*2006 and 2007 Gear Shares and Seasonal Allowances of the BSAI Pacific cod TAC*) in 71 FR 10870, March 3, 2006.

⁸Note that unless otherwise specified, the "BSAI Pacific cod TAC" referenced throughout this document means the amount of the TAC that is distributed to various gear sectors less the CDQ reserve (7.5%).

These percentages roughly represented the existing harvests of each sector during 1991–1993, with the exception of the jig sector. The two percent jig allocation exceeded the existing historical harvest by that sector and was intended to allow for growth in the jig sector. The Council designed this allocation such that it would expire in three years, at the end of 1996. Amendment 24 also authorized NMFS to divide the fixed gear allocation of Pacific cod into three seasons of four months duration. The intent of Amendment 24 was to provide stability in the trawl, fixed, and jig gear fisheries by establishing designated allocations of the Pacific cod TAC, which were expected to increase the net benefits received from the harvest of Pacific cod.

In 1995, the Council initiated **BSAI Amendment 46**, to extend the allocations authorized by Amendment 24 beyond 1996. To guide the analysis of alternatives for Amendment 46, the Council adopted the following problem statement:

The BSAI Pacific cod fishery continues to manifest many of the problems that led the Council to adopt Amendment 24 in 1993. These problems include compressed fishing seasons, periods of high bycatch, waste of resource, and new entrants competing for the resource due to crossovers allowed under the Council's moratorium program. Since the allocation of BSAI Pacific cod TAC between fixed gear, jig, and trawl gear was implemented in January 1994 when Amendment 24 went into effect, the trawl, jig and fixed gear components have harvested the TAC with demonstrably differing levels of PSC mortality, discards, and bycatch of non-target species. Management measures are needed to ensure that the Pacific cod TAC is harvested in a manner which reduces discards in the target fisheries, reduces PSC mortality, reduces nontarget bycatch of Pacific cod and other groundfish species, takes into account the social and economic aspects of variable allocations and addresses impacts of the fishery on habitat. In addition, the amendment will continue to promote stability in the fishery as the Council continues on the path towards comprehensive rationalization.

Under Amendment 46, the general BSAI Pacific cod allocations were modified as follows in 1997:

- 51% fixed gear
- 47% trawl gear (50% trawl catcher vessels/50% trawl catcher processors)
- 2% jig gear

The overall allocations under Amendment 46 were the result of an industry negotiating committee appointed by the Council, which selected percentages that closely represented the current harvest percentages taken by the trawl and fixed gear sectors under the existing halibut prohibited species catch (PSC) limits. The 2% jig allocation was also retained as part of this agreement. In addition to the overall split among sectors, Amendment 46 also split the trawl sector portion of the BSAI Pacific cod TAC between trawl catcher processors (50%) and trawl catcher vessels (50%), meaning each sector receives 23.5% of the annual BSAI Pacific cod TAC. The further trawl apportionments were the result of a separate negotiation by representatives of the different trawl fleets. This action also included authorization for NMFS to reallocate any portion of the Pacific cod allocations that were projected to remain unused among the various sectors if necessary. Amendment 46 specified that any unused trawl allocation (catcher processor or catcher vessel) would first be made available to the other trawl sector before it would be reallocated to any other gear type.

The allocations under Amendment 46 have been in place since 1997. While there is no sunset provision or regulatory requirement to review or modify these allocations, the Council's motion on Amendment 46 included a provision to review the allocations four years after implementation. This review, originally intended at the end of 2000, has not yet occurred.

Cod allocations among the fixed gear sectors

Vessels began fishing in Federal waters off Alaska under the License Limitation Program (LLP) on January 1, 2000. Since the LLP was approved, changes in the fixed gear fleets prompted industry to petition the Council to further allocate cod in the BSAI among the various sectors of the fixed gear fleets. The following problem statement guided the analysis of alternatives for **BSAI Amendment 64**:

The hook-and-line and pot fisheries for Pacific cod in the BSAI are fully utilized. Competition for this resource has increased for a variety of reasons, including increased market value of cod products and a declining acceptable biological catch and total allowable catch.

Longline and pot fishermen who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries need protection from others who have little or limited history and wish to increase their participation in the fishery. This requires prompt action to promote stability in the BSAI fixed gear cod fishery until comprehensive rationalization is completed.

Amendment 64, approved by the Council in October 1999 and implemented September 1, 2000, further apportioned the 51% of the BSAI Pacific cod TAC allocated to fixed (hook-and-line and pot) gear as follows:

- 80% hook-and-line catcher processors
- 0.3% hook-and-line catcher vessels
- 18.3% pot vessels (CP and CV)
- 1.4% hook-and-line and pot vessels <60' LOA⁹

The percentage allocations selected closely represent the harvests in this fishery during 1995–1998, with an additional allocation for catcher vessels <60' LOA in order to allow for growth in the small boat sector. The percentage allocations did not reflect harvests of any quota that had been reallocated annually to the fixed gear sectors. In addition to the fixed gear apportionments, Amendment 64 addressed how to reallocate quota that was projected to remain unused by specific sectors. Any unused hook-and-line catcher vessel or <60' vessel allocation would be reallocated to the hook-and-line catcher processor sector, in part because that sector primarily 'funded' the <60' allocation. In addition, any unused jig or trawl allocations would be reallocated 95% to hook-and-line catcher processors and 5% to pot gear. This split reflected the actual harvest of reallocated quota from the trawl and jig sectors harvested by each sector during 1996–1998. The amendment expired December 31, 2003.

At the same time the Council approved Amendment 64, it acknowledged that a further split between the pot sectors was potentially necessary to stabilize the harvests of pot catcher processors and pot catcher vessels in the BSAI Pacific cod fishery. Concern was expressed that the pot sector needed the same stability of direct fleet allocations, such as was done for the hook-and-line fleets. With several years of reduced *C. opilio* guideline harvest levels, the BSAI Pacific cod fishery realized an influx of pot vessels that previously fished primarily crab in the BSAI. The pot catcher processor sector petitioned the Council for a further split between the pot sectors, recognizing that a pot split would enable the pot catcher processor sector to avoid competing with a fluctuating and increasing number of pot catcher vessels moving into the cod fishery, and allow the sector to determine its best time to fish according to market factors. Increased competition for 'A season' Pacific cod was the driving factor in the need for the overall

⁹The hook-and-line and pot CV <60' sectors were allowed to fish off of the general hook-and-line CV allocation and general pot CV allocation when these fisheries were open, respectively. When these fisheries were closed, the <60' sector harvest accrued toward the <60' hook-and-line/pot CV allocation of 1.4%.

pot split and the split between the pot sectors. However, because the public had not been given specific notice that this action might be taken under Amendment 64, the Council decided to delay action on the pot split and instead include the proposal in a follow-up amendment.

Further changes to the BSAI fixed gear cod fishery were approved by the Council in April 2000 under **BSAI Amendment 67**. Amendment 67 requires that fixed gear vessels $\geq 60'$ participating in the BSAI Pacific cod fishery must qualify for a Pacific cod endorsement, which would be part of the participant's LLP. Eligibility for a cod endorsement is based on past participation in the BSAI fixed gear fisheries during specific combinations of the years 1995-1999. Four different endorsements are available, depending on the gear used to harvest cod (hook-and-line or pot) and whether the cod was processed onboard the harvesting vessel (catcher vessel or catcher processor). Amendment 67 exempts catcher vessels $< 60'$ LOA from the requirement to have a cod endorsement to participate in the directed BSAI fixed gear Pacific cod fisheries. Amendment 67 effectively granted exclusive access to longtime participants in the BSAI fixed gear cod fishery, and thus reduced the number of allowable participants. This amendment became effective January 1, 2003.

Subsequent to the decision on Amendment 64, the Council initiated the follow-up amendment to apportion the pot gear share of the BSAI Pacific cod TAC between the pot catcher processor sector and the pot catcher vessel sector. **Amendment 68** proposed to further split the 18.3% of the fixed gear Pacific cod TAC allocated to pot gear according to recent catch histories from 1995 to 1999. The Council reviewed the analysis for Amendment 68 in June 2002 and decided to take no action on the amendment at that time, partly due to the potential implications of the Pacific cod endorsement required under BSAI Amendment 67, which was effective January 1, 2003. The Council also noted the pending expiration of BSAI Amendment 64. Because Amendment 64 was designed to sunset on December 31, 2003, it necessitated approval of a new plan amendment to either continue or modify the fixed gear apportionments beyond 2003. The Council thus decided to defer action on the separate allocations to the pot sectors until they could be considered within the new amendment package that would be necessary to continue the overall fixed gear allocations.

Amendment 77 represented the new plan amendment to continue or modify the fixed gear apportionments beyond 2003. Amendment 77 was initiated to respond to concerns that, absent a gear split, there is no mechanism to prevent one sector from increasing its effort in the fishery and eroding another sector's relative historical share. Amendment 77 proposed to continue the Pacific cod allocations among the fixed gear sectors, with an additional alternative that would create separate allocations for the pot catcher processor and pot catcher vessel sectors. Because Amendment 77 addressed both the overall fixed gear split and proposed to split the pot sectors' share of the TAC, the following two problem statements were adopted to guide analysis of Amendment 77:

Problem Statement 1: Overall fixed gear allocations

The fixed gear fisheries for Pacific cod in the BSAI are fully utilized. The fishermen who hold licenses in the BSAI Pacific cod fisheries have made substantial investments and are significantly dependent on BSAI Pacific cod.

The longline and pot gear allocations currently in place for the BSAI Pacific cod fishery under Amendment 64 expire December 31, 2003. Without action by the North Pacific Fishery Management Council, serious disruption to the BSAI Pacific cod fixed gear fisheries will occur. Prompt action is required to maintain stability in the BSAI fixed gear Pacific cod fishery until comprehensive rationalization is completed.

Problem Statement 2: Separate allocations for pot catcher processors and pot catcher vessels

The catcher processor and catcher vessel pot fisheries for Pacific cod in the Bering Sea/Aleutian Islands are fully utilized. Pot catcher processors who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries need protection from pot catcher vessels who want to increase their Pacific cod harvest. This requires prompt action to promote stability in the BSAI pot cod fishery until comprehensive rationalization is completed.

Under Amendment 77, the Council approved continuing the same overall fixed gear allocations under which the fixed gear Pacific cod fisheries had been operating since 2000. The apportionment among the hook-and-line catcher processors, hook-and-line catcher vessels, and pot vessels were based closely on 1995–1998 or 1995–1999 harvests by each sector, and the new apportionment between the pot sectors was based on catch history during 1998–2001. The catch history on which the allocations were based excluded any quota that was reallocated from another gear sector during the fishing year. The allocation to the <60' sector continued to represent an increase over historical harvests, in order to allow for growth in this small boat, shorebased sector.

The allocations approved under **Amendment 77** are as follows:

- 80% hook-and-line catcher processors
- 0.3% hook-and-line catcher vessels
- 15.0% pot catcher vessels
- 3.3% pot catcher processors
- 1.4% hook-and-line and pot vessels <60' LOA¹⁰

BSAI Amendment 77, with the exception of the alternative to split the pot share of the BSAI Pacific cod TAC, did not include any other fundamentally different alternatives than were considered under the original Amendment 64. While the availability of more recent data spurred the inclusion of new options for determining the split among the fixed gear sectors, the basic alternatives remained the same. This amendment did not affect the jig or trawl apportionment of BSAI Pacific cod, nor did it affect the size of the overall BSAI Pacific cod TAC.

Note that all of the recent BSAI Pacific cod allocation amendments also provide direction on how to reallocate quota that is projected to remain unused by a particular sector at the end of the year (see Table 1-2). Since the BSAI Pacific cod allocations have been in effect starting in 1994, NMFS has reallocated quota each year from the trawl and jig sectors to the pot and hook-and-line sectors. Reallocations between gear types (e.g., trawl CP to trawl CV, or hook-and-line CV to hook-and-line CP) have occurred less frequently and in lower amounts. In terms of metric tons, the majority of reallocations have been from the trawl sectors (CVs and CPs) since the gear specific allocations were established in 1994. With the exception of the jig sector, because any unused *seasonal apportionment* to a particular sector is reallocated to the next seasonal allowance for that sector, reallocations from one gear sector to another occur in the last season. Typically, reallocations from trawl to the fixed gear sectors occur in October and November, and always during the trawl C season (June 10 – Nov. 1).

The primary reason reallocations occur from the jig sector is due to insufficient effort in that sector in the BSAI. There are several reasons commonly cited for the trawl reallocations. These include increased

¹⁰This sector can currently fish off of the general hook-and-line CV allocation and general pot CV allocation when these fisheries are open, respectively. When these fisheries are closed, the <60' sector harvest accrues to the <60' hook-and-line/pot CV allocation of 1.4%.

difficulty catching cod with trawl gear late in the year when cod are less aggregated (lower CPUE); seasonal apportionments for trawl gear under Steller sea lion mitigation measures starting in 2001; closure of the directed trawl fisheries due to the halibut bycatch cap; relatively high annual quotas of alternative trawl fisheries such as pollock (for AFA vessels); and high value alternative trawl fisheries such as yellowfin sole, rock sole, and flathead sole (for non-AFA catcher processors).

Note that the increased difficulty in harvesting cod in the second half of the year, however, is not unique to one sector. All gear sectors have increased difficulty harvesting cod later in the year when cod are less aggregated, and weather is a significant factor for the smaller vessel sectors in the fall season. The hook-and-line sectors (CPs and CVs) are also limited by halibut bycatch in the second half of the year, as these sectors do not have any halibut bycatch allowance from June 10 – August 15. This effectively delays the start of the cod hook-and-line season until August 15, when halibut bycatch becomes available. And, while the fixed gear cod allocation was seasonally apportioned prior to 2001, these apportionments changed in 2001 with the Steller sea lion mitigation measures, and also reduced the amount of cod that the fixed gear sectors could harvest in the first half of the year. Detail on the historical level of and reason for reallocations is provided in Chapter 3.0.

The primary change from the status quo with regard to reallocations under Amendment 77 was to apportion the jig sector's allocation (2% of the BSAI Pacific cod TAC) on a trimester basis (40%–20%–40%) and reallocate any unused jig quota to the <60' vessels using hook-and-line or pot gear on a seasonal basis, as opposed to once at the end of the year. This allows the <60' pot and hook-and-line vessels to receive additional quota during the spring and summer months when it is most advantageous for the small boat fleet.¹¹ It was also intended to reduce the risk of having to close the fishery intermittently while waiting for a potential reallocation from the jig sector. Previously, both unused jig and trawl quota was reallocated 95% to the hook-and-line catcher processors and 5% to pot sectors. Amendment 77 retained this distribution for reallocating unused *trawl* quota, with an additional split for the pot sectors (0.9% to pot catcher processors; and 4.1% to pot catcher vessels).

In sum, the existing overall allocations to the trawl, fixed, and jig gear sectors have been in place for nine years (since 1997), and the further split among the fixed gear sectors has been in place for a little over five years (since September 2000). The separate allocations between the pot catcher processor and pot catcher vessel sectors have been in place for two years (since 2004). The 2005 and 2006 gear shares and seasonal apportionments of the BSAI Pacific cod ITAC and TAC are provided below in Table 1-1.

¹¹Note that the hook-and-line Pacific cod vessels do not have a halibut PSC allowance during the period June 10 – August 15, so any <60' fixed gear quota available in the summer months primarily supports a <60' pot fishery.

Table 1-1 2005 AND 2006 GEAR SHARES AND SEASONAL ALLOWANCES OF THE BSAI PACIFIC COD ITAC and TAC (Amounts are in metric tons)

Gear Sector	Percent	2005 Share of gear sector total	2005 Subtotal percentages for gear sectors	2005 Share of gear sector total	2005 Seasonal apportionment ¹		2006 Share of gear sector total	2006 Subtotal percentages for gear sectors	2006 Share of gear sector total	2006 Seasonal apportionment ¹	
					Date	Amount				Date	Amount
Total hook-and-line/pot gear	51	97,181	.....	.....	.....	.....	91,520	.....	.....	.....	.....
Hook-and-line/pot ICA	.....	.....	.....	500	.....	.....	.....	.....	500	.....	.....
Hook-and-line/pot sub-total	.....	96,681	.....	.....	.....	.....	91,020	.....	.....	.....	.....
Hook-and-line C/P	.....	.....	80	77,344	Jan 1-Jun 10 Jun 10-Dec 31	46,407 30,938	.....	80	72,816	Jan 1-Jun 10 Jun 10-Dec 31	43,690 29,126
Hook-and-line CV	.....	.....	0.3	290	Jan 1-Jun 10 Jun 10-Dec 31	174 116	.....	0.3	273	Jan 1-Jun 10 Jun 10-Dec 31	164 109
Pot C/P	.....	.....	3.3	3,190	Jan 1-Jun 10 Sept 1-Dec 31	1,914 1,276	.....	3.3	3,004	Jan 1-Jun 10 Sept 1-Dec 31	1,803 1,201
Pot CV	.....	.....	15	14,502	Jan 1-Jun 10 Sept 1-Dec 31	8,701 5,801	.....	15	13,653	Jan 1-Jun 10 Sept 1-Dec 31	8,192 5,461
CV < 60 feet LOA using Hook-and-line or Pot gear	.....	.....	1.4	1,354	.....	.....	.....	1.4	1,274	.....	.....
Total Trawl Gear	47	89,559	.....	.....	.....	.....	84,342	.....	.....	.....	.....
Trawl CV	.....	.....	50	44,779	Jan 20-Apr 1 Apr 1-Jun 10 Jun 10-Nov 1	31,345 4,478 8,956	.....	50	42,171	Jan 20-Apr 1 Apr 1-Jun 10 Jun 10-Nov 1	29,520 4,217 8,434
Trawl CP	.....	.....	50	44,779	Jan 20-Apr 1 Apr 1-Jun 10 Jun 10-Nov 1	22,390 13,434 8,956	.....	50	42,171	Jan 20-Apr 1 Apr 1-Jun 10 Jun 10-Nov 1	21,086 12,651 8,434
Jig	2	3,811	.....	.....	Jan 1-Apr 30 Apr 30-Aug 31 Aug 31-Dec 31	1,524 762 1,524	3,589	.....	.....	Jan 1-Apr 30 Apr 30-Aug 31 Aug 31-Dec 31	1,436 718 1,435
Total ITAC ²	92.5	190,550	.....	.....	.....	.....	179,450	.....	.....	.....	.....
CDQ	7.5	15,450	.....	.....	.....	.....	14,550	.....	.....	.....	.....
Total TAC	100	206,000	.....	.....	.....	.....	194,000	.....	.....	.....	.....

¹ For most non-trawl gear the first season is allocated 60 percent of the ITAC and the second season is allocated 40 percent of the ITAC. For jig gear, the first season and third seasons are each allocated 40 percent of the ITAC and the second season is allocated 20 percent of the ITAC. No seasonal harvest constraints are imposed for the Pacific cod fishery by catcher vessels less than 60 feet (18.3 m) LOA using hook-and-line or pot gear. For trawl gear, the first season is allocated 60 percent of the ITAC and the second and third seasons are each allocated 20 percent of the ITAC. The trawl catcher vessels' allocation is further allocated as 70 percent in the first season, 10 percent in the second season and 20 percent in the third season. The trawl catcher/processors' allocation is allocated 50 percent in the first season, 30 percent in the second season and 20 percent in the third season. Any unused portion of a seasonal Pacific cod allowance will be reapportioned to the next seasonal allowance.

² The ITAC is the TAC minus the 7.5% for the CDQ reserve.

Note: This table does not account for the State waters AI Pacific cod fishery GHL, approved by the Alaska Board of Fisheries in late February 2006. The GHL is calculated as 3% of the BSAI Pacific cod ABC (in 2006 ABC = TAC), thus, a 3% reduction (5,820 mt) would be subtracted from the 2006 TAC prior to all other allocations being made. NMFS will effect an inseason adjustment of the 2006 TAC, which would result in a recalculation of the above apportionments, in mid-March.

Table 1-2 BSAI Pacific Cod Allocation and Endorsement Amendments

Amendments	Am. 24	Am. 46	Am. 64	Am. 67	Am. 77
Action	Allocation of BSAI P.cod TAC among trawl gear, fixed gear, and jig gear.	Allocation of BSAI P. cod TAC among trawl gear, fixed gear, and jig gear. Allocation between trawl CP and CV.	Allocation of fixed gear BSAI P.cod TAC (51%) among pot gear, hook-and-line CPs, hook-and-line CVs, and <60' vessels.	LLP Pacific cod endorsement requirements for ?60' fixed gear vessels in the directed BSAI P.cod fishery.	Revised allocation of fixed gear P.cod TAC (51%) among pot CPs, pot CVs, hook-and-line CPs, hook-and-line CVs, and <60' vessels.
Allocations	Trawl: 54% Fixed: 44% Jig: 2%	Trawl: 47% Trawl CP (50%) Trawl CV (50%) Fixed: 51% Jig: 2%	Of fixed gear 51%: H&L CPs 80.0% H&L CVs 0.3% pot (CP and CV) 18.3% <60' pot/H&L 1.4%	Endorsement requirement (based on participation and landings criteria) for the following sectors: hook-and-line CP, hook-and-line CV, pot CP and pot CV. Not required for <60' fixed gear vessels.	Of fixed gear 51%: H&L CPs 80.0% H&L CVs 0.3% pot CPs 3.3% pot CVs 15.0% <60' pot/H&L 1.4%
Allocation basis	Approximate harvest during 1991 - 1993, with exception of increased jig allocation	Industry negotiation: based closely on current harvest percentages of each sector under current halibut PSC limits	Based closely on 1995 - 1998 harvests by each sector, with the additional allocation to the <60' vessels.	N/A	Hook-and-line CP, hook-and-line CV, and pot gear split based closely on 1995-1998 harvests. Pot CP and CV split based on 1998-2001 harvests. Additional allocation to <60' vessels.
Other actions	Authorized three seasons for fixed gear sector. <u>Reallocations:</u> 1) Authorized NMFS to reallocate unused P.cod from trawl to fixed gear and vice versa. 2) Reallocation of unused jig allocation to other gear sectors on or about Sept. 1.	Authorized three seasons for fixed gear sectors. <u>Reallocations:</u> 1) Authorized NMFS to reallocate unused P.cod within gear types and then between trawl and fixed gear. 2) Reallocation of unused jig allocation to fixed gear sectors specified for Sept. 15.	Authorized three seasons for fixed gear sectors. <u>Reallocations:</u> 1) Unused hook-and-line CV and <60' vessel allocation will be reallocated to hook-and-line CP sector. 2) Reallocation of unused jig allocation to fixed gear sectors specified for Sept. 15. 3) Unused trawl or jig allocations are reallocated: 95% to hook-and-line CP and 5% to pot sectors.	N/A	Authorized two seasons for fixed gear sectors. <u>Reallocations:</u> 1) Unused hook-and-line CV and <60' vessel allocation will be reallocated to hook-and-line CP sector. 2) Established 3 seasons for jig gear allocation. Any unused portion of a seasonal jig allocation will be reallocated to <60' fixed gear CVs. 3) Unused trawl allocations are reallocated: 95% to hook-and-line CPs; 0.9% to pot CPs; 4.1% to pot CVs. 4) Unused pot CP or CV quota will be reallocated to the other pot sector before it is reallocated to other fixed gear sectors.
Date effective	Feb. 28, 1994	Jan. 1, 1997	Sept. 1, 2000	Jan. 1, 2003	Jan. 1, 2004
Sunset date	Dec. 31, 1996	none	Dec. 31, 2003	none	none

Note: The fixed gear allocations established under Am. 64 and Am. 77 were determined excluding quota reallocated from other gear (trawl or jig) sectors. Including reallocated quota would have reduced the percentage of catch harvested in 1995 - 1999 by the pot sector by about 0.5 percentage points and increased the percentage of catch harvested by the longline catcher processor sector by the same amount.

Cod allocation to 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. As stated in the BSAI FMP, the purpose of the 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.

The FMP language above, which outlines the intent of the program, was based on a 1992 document entitled “Western Alaska Community Development Quota Program Criteria and Procedures.” This document, developed by the State of Alaska, was adopted by the Council with several revisions and provided the basis for the initial Federal regulations governing the program. The corresponding NMFS regulations (50 CFR 679.1(e)) stating the goal of the program are as follows:

The goals and purpose of the CDQ Program are to allocate CDQ to eligible western Alaska communities to provide the means for starting or supporting commercial fisheries business activities that will result in an ongoing, regionally-based, fisheries-related economy.

The original CDQ Program regulations were effected November 18, 1992, and have been amended numerous times since then. In general, the program allows for a percentage of the BSAI TACs to be allocated to the CDQ Program as a CDQ reserve, and the majority of these CDQ reserves are then allocated among non-profit corporations representing eligible communities. Currently, 65 communities in western Alaska participate in the CDQ Program, based on eligibility criteria listed in the MSA and Federal regulations. The eligible communities have formed six non-profit corporations (CDQ groups) to manage and administer the CDQ allocations, investments, and economic development projects.

In 1996, amendments to the Maguson Stevens Act institutionalized the program. Originally, the CDQ Program was only allocated an annual pollock reserve. Since 1992, the CDQ Program has expanded several times and now includes allocations of pollock, halibut, sablefish, crab, and all of the remaining groundfish species. The percentage of the CDQ reserve allocated to the CDQ Program for each species is authorized in various statutes and regulations. Currently, the pollock CDQ allocation is 10% under the American Fisheries Act. The percentages of other CDQ reserves are as follows: 10% of crab species (with the exception of Norton Sound red king crab at 7.5%); 20% of fixed gear sablefish; 20%–100% of halibut; and 7.5% of all other groundfish and prohibited species. Thus, the current annual CDQ Program reserve of Pacific cod is 7.5% of the BSAI Pacific cod TAC. This allocation was implemented in 1998.

Problem Statement

In October 2004, the Council modified the elements and options for BSAI Amendment 80 and removed Pacific cod allocations from that amendment package. The intent was to streamline the analysis and shift it back to its original intent, to provide the non-AFA trawl catcher processor sector with a tool to meet the groundfish retention standards adopted in BSAI Amendment 79. The Council also reaffirmed that

modifications to the Pacific cod allocations could be addressed in a separate amendment. To that end, the Council initiated a new plan amendment to alter the current BSAI Pacific cod allocations.

In December 2004, the Council reviewed a discussion paper outlining prior Council actions regarding BSAI Pacific cod allocations, the relevant problem statements associated with these past actions, and potential decision points related to structuring new alternatives and options for analysis. Upon review of the discussion paper, the Council approved a problem statement and a strawman document outlining draft components and options for the new amendment (BSAI Amendment 85). The problem statement and suite of alternatives and options have been revised several times since that initial discussion. The problem statement was last revised by the Council in October 2005. The problem statement focuses on two issues: (1) BSAI Pacific cod allocations to all sectors (trawl, jig, hook-and-line, pot, and CDQ); and (2) apportionment of the BSAI Pacific cod sector allocations between the BS and AI subareas.

BSAI Amendment 85 Problem Statement

Part I: BSAI Pacific Cod Sector Allocations

The BSAI Pacific cod fishery is fully utilized and has been allocated among gear groups and to sectors within gear groups. The current allocations among trawl, jig, and fixed gear were implemented in 1997 (Amendment 46) and the CDQ allocation was implemented in 1998. These allocations are overdue for review. Harvest patterns have varied significantly among the sectors resulting in annual inseason reallocations of TAC. As a result, the current allocations do not correspond with actual dependency and use by sectors.

Participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the allocations to the trawl, jig, fixed gear, and CDQ sectors. To reduce uncertainty and provide stability, allocations should be adjusted to better reflect historic use by sector. The basis for determining sector allocations will be catch history as well as consideration of socio-economic and community factors.

As other fisheries in the BSAI and GOA are incrementally rationalized, historical participants in the BSAI Pacific cod fishery may be put at a disadvantage. Each sector in the BSAI Pacific cod fishery currently has different degrees of license requirements and levels of participation. Allocations to the sector level are a necessary step on the path towards comprehensive rationalization. Prompt action is needed to maintain stability in the BSAI Pacific cod fisheries.

Part II: Apportionment of BSAI Pacific Cod Sector Allocations between the BS and AI

In the event that the BSAI Pacific cod ABC/TAC is apportioned between the BS and the AI management areas, a protocol needs to be established that would continue to maintain the benefits of sector allocations and minimize competition among gear groups; recognize differences in dependence among gear groups and sectors that fish for Pacific cod in the BS and AI; and ensure that the distribution of harvest remains consistent with biomass distribution and associated harvest strategy.

The first part of the problem statement notes the annual reallocations of TAC among gear sectors and concerns that the current BSAI Pacific cod allocations do not adequately reflect actual use by sector. While there is no sunset provision or regulatory requirement to review or modify the sector allocations, the Council's motion on Amendment 46 included a provision to review the overall gear sector allocations four years after implementation. This review, originally intended at the end of 2000, has not yet occurred.

This amendment is intended to modify the sector allocations currently in place to better reflect actual dependency and use by sector, in part by basing the allocations on each sector's historical retained catch. Thus, the catch history on which the allocations are based would include any quota that was reallocated from one sector to another due to the sector's projected inability to harvest its entire allocation by the end of the year. There are noted exceptions to basing the allocations on recent catch history, as reflected in the allocation options for the <60' fixed gear, jig gear, and CDQ sectors.

This amendment is also intended to establish more refined allocations to the BSAI Pacific cod sectors, by evaluating the potential for establishing separate and distinct allocations for the non-AFA trawl CP and AFA trawl CP sector and the non-AFA trawl CV and AFA trawl CV sectors. The trawl CP sectors currently have a combined BSAI Pacific cod allocation of 23.5% of the non-CDQ BSAI Pacific cod TAC, as do the trawl CV sectors. Thus, all trawl gear combined currently receives 47% of the non-CDQ BSAI Pacific cod TAC. The overall effort to constrain and protect the harvest distribution among all of the BSAI Pacific cod gear sectors is noted as a necessary step toward comprehensive rationalization.

The second part of the problem statement addresses the need to establish a methodology by which to maintain sector allocations and minimize competition among gear groups, should the BSAI Pacific cod TAC be apportioned between the BS and AI subareas during a future specifications process. The BSAI Pacific cod ABC is currently based on an Eastern Bering Sea assessment model and expanded by a multiplier into a BSAI-wide amount. The issue of whether to split the combined BSAI ABC (and TAC) by subarea has been raised at Plan Team, Science and Statistical Committee (SSC), and Council meetings during the last several years. In December 2003, the SSC recommended that the ABC should be split between BS and AI subareas, but noted that management implications may preclude the Council from adopting separate subarea TACs in the specifications process. The SSC requested that the assessment authors evaluate potential methods for splitting the ABC and their potential management implications, so that specific recommendations could be made to the Council in the future. Note that it is uncertain whether this recommendation would continue to be made in the future.

Given the management implications related to the numerous sector allocations in the BSAI, the Pacific cod TAC has continued to be established for the entire BSAI management area. However, if the Council determines that it is likely that the TAC groupings will be modified in the foreseeable future, it would be beneficial to provide direction to NMFS regarding the formula for establishing new subarea allocations to each sector. The second part of this amendment package provides alternative approaches for this action. The intent is to provide direction to NMFS regarding how to establish sector allocations in the BS and AI management areas prior to separate TACs being issued in the annual specifications process. Absent this direction, there is concern that the time necessary to undergo an analysis and notice and comment rulemaking after the TAC is divided would cause significant interruption of the cod fisheries. In addition, absent a new regulatory or plan amendment, NMFS could likely only implement equal allocations in both areas (e.g., if a sector receives a 40% BSAI allocation, it would receive 40% in the BS and 40% in the AI upon a TAC split). While this is one of the methodologies evaluated in this analysis, the public and the Council raised concerns about this methodology being the only potential solution by default. The primary concern being that it does not reflect recent historical catch by sector in the Aleutian Islands subarea.

1.2 Alternatives Considered

The following sections identify the alternatives and options for consideration in this amendment package. Part I contains Alternatives 1 and 2, and Part II contains Alternatives 3–6. Any of the alternatives under Part II may be selected in conjunction with the alternatives in Part I. Table 1-3 at the end of the section provides a summary of the alternatives and components in both parts.

1.2.1 Part I: BSAI Pacific cod sector allocations

Part I of this action addresses the allocations of BSAI Pacific cod to the various gear sectors and includes two alternatives. Alternative 1 is the no action alternative, meaning the BSAI Pacific cod allocations for the jig, trawl, fixed gear (hook-and-line and pot), and CDQ sectors would continue as in current regulations. Alternative 2 would modify the current BSAI Pacific cod allocations among the jig, trawl, and fixed gear (hook-and-line and pot) sectors according to a set of catch history years or other considerations. Alternative 2 also proposes to increase the BSAI Pacific cod allocation to the CDQ Program. Alternatives 1 and 2 each consist of the following components:

- Component 1: Sectors for which allocations will be established
- Component 2: Sector allocations
- Component 3: Seasonal apportionments
- Component 4: Rollovers between gear sectors
- Component 5: CDQ allocation of Pacific cod
- Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group
- Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors
- Component 8: Apportionment of cod non-trawl halibut PSC

ALTERNATIVE 1. No Action. BSAI Pacific cod allocations for the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as in current regulations.

Allocation of BSAI Pacific Cod to Sectors

Component 1: Sectors for which allocations are established

BSAI Pacific cod allocations will continue to be established in Federal regulations for the following sectors:

- Trawl CPs
- Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs
- Pot CPs
- Pot CVs
- Hook-and-line and pot CVs <60'
- Jig CVs

Component 2: Sector Allocations

BSAI Pacific cod allocations to the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as determined under BSAI Amendments 46 and 77:

- **51% fixed gear**
 (80% hook-and-line catcher processors)
 (0.3% hook-and-line catcher vessels)
 (3.3% pot catcher processors)
 (15.0% pot catcher vessels)
 (1.4% hook-and-line/pot vessels <60' LOA)¹²
- **47% trawl gear**
 (50% trawl catcher vessels)
 (50% trawl catcher processors)
- **2% jig gear**

The BSAI Pacific cod TAC that is allocated to the above sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Component 3: Seasonal Apportionments

The seasonal apportionments of each sector's allocation would remain as shown below. Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector.

Trawl CV:	70%	(Jan. 20 – April 1)
	10%	(April 1 – June 10)
	20%	(June 10 – Nov. 1)
Trawl CP:	50%	(Jan. 20 – April 1)
	30%	(April 1 – June 10)
	20%	(June 10 – Nov. 1)
Hook-and-line gear ≥60':	60%	(Jan. 1 – June 10)
	40%	(June 10 – Dec. 31)
Pot gear ≥60':	60%	(Jan. 1 – June 10)
	40%	(Sept. 1 – Dec. 31)
Fixed gear <60':	No seasonal apportionments	
Jig gear:	40%	(Jan. 1 – April 30)
	20%	(April 30 – Aug. 31)
	40%	(Aug. 31 – Dec. 31)

¹²While the <60' fixed gear (hook-and-line and pot) sector receives a separate allocation of BSAI Pacific cod, these vessels fish off the general hook-and-line CV and pot CV allocations, respectively by gear type, when those fisheries are open.

Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

- Projected unused trawl sector allocations are considered for reallocation to the other trawl sector before being reallocated to the fixed gear sectors.
- Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.
- Projected unused allocation in the jig sector is considered for reallocation to the $<60'$ fixed gear CV sector on a seasonal basis.
- Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) is considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- Projected unused allocation in the $<60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ is reallocated to the hook-and-line CP sector.

Component 5: CDQ Allocation of BSAI Pacific Cod

The CDQ Program reserve is 7.5% of the BSAI Pacific cod TAC. The reserve is removed from the TAC prior to the allocation to all other sectors.

Apportionment of BSAI PSC to Sectors

Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The trawl halibut PSC is typically 3,400 mt, which is apportioned between Pacific cod; yellowfin sole; rocksole/other flatfish/flathead sole; pollock/Atka mackerel/other. Generally, about 1,400 mt is apportioned to the cod trawl fishery group.

The crab PSC for 2005 and 2006 is 182,225 red king crab in Zone 1; 4,494,569 *C. opilio* in the *C. Opilio* Bycatch Limitation Zone (COBLZ); and 906,500 *C. bairdi* in Zone 1 and 2,747,250 *C. bairdi* in Zone 2. The cod trawl fishery group bycatch allowance (2005–2006) is 26,563 red king crab; 139,331 *C. opilio*, 183,112 *C. bairdi* in Zone 1; and 324,176 *C. bairdi* in Zone 2.

Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

There is no further apportionment of the cod trawl fishery group halibut and crab PSC to the trawl sectors (trawl CV sector and trawl CP sector).

Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The non-trawl halibut PSC allowance is typically 833 mt, which is apportioned between the Pacific cod and 'other non-trawl' fisheries. Generally, about 775 mt is apportioned to the cod non-trawl fishery group. No further apportionment of the halibut bycatch allowance is made between the hook-and-line CP sector and the hook-and-line CV sector.

ALTERNATIVE 2: Modify the current BSAI Pacific cod allocations among the jig, trawl, and fixed gear (hook-and-line and pot) sectors according to a set of catch history years or other considerations.

Allocation of BSAI Pacific Cod to Sectors

Component 1: Sectors for which allocations will be established

Catch history will be calculated for the following sectors. The Council may choose to establish allocations for combined sectors; however each sector's catch history will be calculated separately.

- AFA Trawl CPs (AFA 20)¹³
 - Suboption a: Include catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
 - Suboption b: Exclude catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
- Non-AFA Trawl CPs
- AFA Trawl CVs
- Non-AFA Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs $\geq 60'$
- Pot CPs
- Pot CVs $\geq 60'$
- Hook-and-line and pot CVs $< 60'$
- Jig CVs

Eligibility criteria for non-AFA trawl catcher vessels to be included in the AFA CV sector for purposes of the Pacific cod allocations:

- Option 1.1 The holder of a license that arose from a vessel/history that made a minimum of 100 mt of Pacific cod landings during each of the years 1995–1997.

Component 2: Sector Allocations

For each of the years under consideration, each sector's annual harvest share will be calculated for that individual year as a percentage of the total retained legal catch by all sectors. For each of the sets of catch history years analyzed, each sector's harvest percentage will be calculated as the sector's average of the annual harvest share. For purposes of determining catch history, a sector's 'catch' means all retained legal catch (including rollovers) from both the Federal fishery and parallel fishery in the BSAI (less CDQ). This includes retained legal catch from both LLP and non-LLP vessels.

One set of years will be selected for all sectors. There is a suboption under each set of years to drop one year. Each sector would drop its worst year (smallest annual harvest share percentage for that sector). This results in an aggregate percentage greater than 100% for a set of years for all sectors combined; thus, the result would be scaled back to 100%.

In all options and suboptions, the $< 60'$ fixed gear CV sector will only fish from the direct allocation to that sector.

¹³Refers to the 20 trawl catcher processors listed in Section 208(e) of the American Fisheries Act (AFA).

The BSAI Pacific cod TAC that is allocated to the above sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted off the top from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Option 2.1: 1995–2002

Option 2.2: 1997–2000

Option 2.3: 1997–2003

Option 2.4: 1998–2002

Option 2.5: 1999–2003

Option 2.6: 2000–2003

Suboption 1 (applies to Options 2.1–2.6): Drop one year.

Option 2.7: The Council can select percentages for cod allocated to each sector that fall within the range of percentages analyzed.

Option 2.8: Allocations (whether combined or separate) to the <60' fixed gear CV sector and jig sector shall collectively not exceed:

Suboption 1: Actual catch history percentage for jig and <60' fixed gear CVs combined (from the set of years selected for all sectors under Op. 2.1–2.7)

Suboption 2: 2.71% (represents 2% jig allocation plus 0.71% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 3: 3% (represents 2% jig allocation plus 1% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 4: 4% (represents 2% jig allocation plus 2% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Component 3: Seasonal Apportionments

Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector. Options 3.1, 3.2, and 3.3 are mutually exclusive.

Option 3.1 Status quo. Allocations determined under this amendment would be apportioned seasonally among the gear sectors as in current regulation (see Alternative 1).

Option 3.2 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A and B seasons for trawl gear and the A season for fixed gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the C season for trawl gear. Provide that any increase in the overall fixed gear allocation resulting from the options would be applied only in the B season for fixed gear.

Option 3.3 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A season for trawl gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the B and C seasons for trawl gear:

Suboption 1: Reduction applied proportionately to B and C seasons

Suboption 2: Reduction applied equally to B and C seasons

Suboption 3: Provide that any reduction in the overall trawl allocation resulting from the options would first be applied in the C season and then in the B season. Any increase in the allocation to fixed gear would be applied in the A season. Any reduction in the trawl allocation in the B or C seasons will be made proportionately between the AFA CP, non-AFA CP, and AFA CV, non-AFA CV sectors based on their new allocation percentages. In the event that this suboption exceeds the 70% - 30% Steller sea lion seasonal apportionment, the hook-and-line CP sector's A season allocation will be adjusted as necessary by shifting A season allocation to the B season.

Option 3.4 Apportion the BSAI Pacific cod jig allocation on a trimester basis as follows:

60% (Jan. 1 – April 30)

20% (April 30 – August 31)

20% (August 31 – December 31)

Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

Option 4.1 Modified status quo. The suite of provisions below comprises Option 4.1.

4.1.1 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).

4.1.2 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.

Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.

4.1.3 Projected unused allocation in the jig sector is considered for reallocation to the $<60'$ fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the $<60'$ fixed gear CV sector on September 1.

4.1.4 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.

4.1.5 Projected unused allocations in the $<60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Option 4.2 Projected unused allocations to any sector delivering inshore must be considered for reallocation to other inshore sectors before being considered for reallocation to any offshore sector. The suite of provisions below comprises Option 4.2.

- 4.2.1 Projected unused allocation in the jig sector is considered for reallocation to the <60' fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the <60' fixed gear CV sector on September 1.
- 4.2.2 Any unused allocation from any inshore sector will first be considered for reallocation to the jig sector and/or <60' fixed gear CV sector; then to the hook-and-line CV $\geq 60'$ or pot CV $\geq 60'$ sector; then to the trawl CV sectors. Any CV allocation that is not likely to be harvested through this hierarchy will be reallocated as per components 4.2.3–4.2.6 below.
- 4.2.3 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).
- 4.2.4 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.
 - Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.
- 4.2.5 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- 4.2.6 Projected unused allocations in the <60' fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Component 5: CDQ Allocation of BSAI Pacific Cod

The CDQ Program reserve for BSAI Pacific cod shall be removed from the TAC prior to the allocation to all other sectors at percentage amounts equal to one of the following options:

- Option 5.1 7.5% (status quo)
- Option 5.2 10%
- Option 5.3 15%

Apportionment of BSAI PSC to Sectors

Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

The total amount of trawl halibut PSC for the non-CDQ fisheries is 3,400 mt, which is apportioned between Pacific cod, yellowfin sole, rocksole/other flatfish/flathead sole, pollock/Atka mackerel/other. Generally, 1,400 mt is apportioned to the cod trawl fishery group, but this amount and actual use can vary annually. A significant amount of Pacific cod is taken incidentally in other trawl fisheries so the PSC use associated with that Pacific cod harvest would be attributed to a fishery group other than cod trawl. Amendment 80 will also allocate halibut PSC to the H&G trawl sector so that the amount of halibut PSC available to the remaining trawl sectors will be reduced.

Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

- Option 7.1: The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the cod allocation percentages determined for each sector under Component 2.

Option 7.2: The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the sector's directed cod fishery harvests during the qualifying period under Component 2.

Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is 833 mt. The 833 mt is normally apportioned between cod hook-and-line sectors and other non-trawl fisheries during the annual specifications process. Generally, 775 mt is apportioned to hook-and-line cod fisheries and 58 mt to other non-trawl. This component would divide the halibut PSC amount apportioned to non-trawl cod between the hook-and-line CP sector and hook-and-line CV sector (for CVs $\geq 60'$ and CVs $< 60'$ combined).

Option 8.1 In proportion to the BSAI Pacific cod TAC allocated to the sectors

Option 8.2 10 mt for CVs, remainder for CPs

1.2.2 Part II: Apportionment of BSAI Pacific cod sector allocations to BS and AI subareas

Part II provides a no action alternative and three action alternatives to apportion BSAI Pacific cod sector allocations to the BS and AI areas in the event that the BSAI Pacific cod ABC/TAC is apportioned to the BS and AI areas during the specifications process. **Any of Alternatives 3–6 can be selected in conjunction with Alternatives 1 or 2 from Part I. Alternatives 3–6 are mutually exclusive.**

ALTERNATIVE 3: No action. A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. (If this alternative was selected, only the approach described under Alternative 5 could be implemented by NMFS without a new regulatory or plan amendment.)

ALTERNATIVE 4: Sector allocations remain as BSAI (with BS and AI TACs)

No allocation to a sector of a specific percentage of a sub-area. Sectors would have a BSAI allocation (in Part I) to fish in either sub-area (BS and AI) if the sub-area is open for directed fishing and TAC is available.

ALTERNATIVE 5: BS and AI sector allocations based on equal percentage from BSAI sector allocations

Allocation to a sector of an equal percentage in both sub-areas. The allocation percentage of BSAI TAC a sector receives in Part I would result in that same percentage being applied to both the BS and AI sub-areas so that a sector would have the same percentage in both sub-areas.

ALTERNATIVE 6: (Preliminary preferred alternative). BS and AI sector allocations based on a sector's historic harvest in the AI with remainder of sector's overall BSAI allocation to be caught in the BS. Sector's BSAI allocation is maintained and used in annual calculation.

Option 6.1 1995 – 2002

Option 6.2 1997 – 2003

Option 6.3 2000 – 2003

Option 6.4 2002 – 2003

Table 1-3 Summary of the Alternatives under Part I and II

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS				
Components	Alternative 1 (No Action)		Alternative 2 (Revise allocations)	
1. Sectors for which allocations are established	Trawl CP Trawl CV Hook-and-line CP Hook-and-line CV	Pot CP Pot CV H&L/pot CV <60' Jig CV	AFA Trawl CP AFA Trawl CV Non-AFA Trawl CP Non-AFA Trawl CV Pot CV ≥60'	Pot CP Hook-and-line CP Hook-and-line CV ≥60' H&L/pot CV <60' Jig CV
2. Sector allocations	51% fixed gear: (80% hook-and-line CP) (0.3% hook-and-line CV) (3.3% pot CP) (15.0% pot CV) (1.4% hook-and-line/pot <60') 47% trawl gear: (50% trawl CP) (50% trawl CV) 2% jig gear		Six options to revise sector allocations based on sector's average annual harvest share during the years: 1995–2002 1997–2000 1997–2003 1998–2002 1999–2003 2000–2003 Drop year provisions exist under each option. The Council can select any allocations within the range provided. Options exist to provide allocations (combined or separate) to the <60' fixed gear and jig gear sectors not to exceed: 2.71%, 3%, or 4%.	
3. Seasonal apportionments	<u>Trawl CV:</u> 70% (Jan. 20 – Apr. 1) 10% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>Trawl CP:</u> 50% (Jan. 20 – Apr. 1) 30% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>H&L gear >60':</u> 60% (Jan. 1 – June 10) 40% (June 10 – Dec. 31) <u>Pot gear >60':</u> 60% (Jan. 1 – June 10) 40% (Sept. 1 – Dec. 31) <u>Fixed gear <60':</u> no seasonal apportionments <u>Jig gear:</u> 40% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 40% (Aug. 31 – Dec. 31)		Option to maintain status quo seasons (see Alt. 1). Option to maintain the current % of ITAC allocation to the A and B seasons for trawl gear and the A season for fixed gear. Option to maintain the current % of the ITAC allocated to the A season for trawl gear. Three suboptions exist to apportion the reduction to the trawl sectors' allocations between the B and C seasons. Option to modify the jig apportionments to: 60% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 20% (Aug. 31 – Dec. 31)	
4. Rollovers	Unused trawl sector allocations are first considered for reallocation to other trawl sector Unused pot sector allocations are first considered for reallocation to other pot sector Reallocation from trawl to fixed gear: 0.9% pot CP 4.1% pot CV 95% hook-and-line CP Reallocation from jig to <60' fixed gear on seasonal basis Unused <60' fixed gear, pot, and hook-and-line CV quota is reallocated to hook-and-line CP sector		Options to generally maintain status quo rollover provisions, with accommodation of new trawl sectors (see Alt. 1). Options to modify the rollovers from trawl to fixed gear according to the new fixed gear allocations determined under Component 2. Options to reallocated unused quota from an inshore sector to the other inshore sectors before reallocating to offshore sectors.	

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS		
Components	Alternative 1 (No Action)	Alternative 2 (Revise allocations)
5. CDQ allocation	7.5% of the BSAI Pacific cod TAC	Options exist to maintain 7.5% BSAI Pacific cod CDQ allocation or to increase to 10% or 15%.
6. Apportionment of trawl halibut and crab PSC to cod trawl fishery group	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.
7. Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors	No apportionment of cod trawl halibut and crab PSC between the trawl sectors.	Options to apportion the cod trawl halibut and crab PSC among the trawl sectors determined in Component 1 according to the cod allocations determined in Component 2 or according to their directed cod harvest.
8. Apportionment of cod non-trawl halibut PSC	No apportionment of the cod non-trawl halibut PSC between hook-and-line CP and CV sectors.	Apportion the cod non-trawl halibut PSC between hook-and-line CP and CV sectors either 1) in proportion to their cod allocations, or 2) 10 mt for CVs, remainder for CPs.

PART II: APPORTIONMENT OF BSAI PACIFIC COD SECTOR ALLOCATIONS TO BS AND AI SUBAREAS			
Alternative 3 (No Action)	Alternative 4 (Sector allocations remain BSAI)	Alternative 5 (BS and AI equal %)	Alternative 6 (Based on history in AI)
A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. The only approach that could be implemented without a new regulatory amendment is Alt. 5.	Sectors would have a BSAI allocation from Part I to fish in either subarea (BS or AI) if the subarea is open for directed fishing and TAC is available.	The allocation the sector receives under Part I would be applied to both the BS and AI subareas.	The sector's BSAI allocation from Part I is maintained. Four options exist to determine the sector's AI allocation, based on the sector's AI harvest during: 1995 - 2002 1997 - 2003 2000 - 2003 2002 - 2003 The remainder of the sector's overall BSAI allocation is in the BS.

Note: An alternative must be selected under both Part I and Part II. Any of Alternatives 3–6 can be selected in conjunction with Alternative 1 or 2 from Part I.

1.3 Proposed changes to the BSAI FMP

The proposed action is Amendment 85 to the FMP for Groundfish of the Bering Sea and Aleutian Islands Management Area. This amendment would potentially require changing language in Section 3.2.6.3 related to BSAI Pacific cod. The current FMP language is provided below:

3.2.6.3 Pacific Cod

3.2.6.3.1 Gear Allocations

Among gear groups

The BSAI Pacific cod TAC shall be allocated among gear groups as follows: 2 percent to vessels using jig gear; 51 percent to vessels using hook-and-line or pot gear; and 47 percent to vessels using trawl gear. The trawl apportionment will be divided 50 percent to catcher vessels and 50 percent to catcher processors.

Among vessels using hook-and-line or pot gear

The Regional Administrator annually will estimate the amount of Pacific cod taken as incidental catch in directed fisheries for groundfish other than Pacific cod by vessels using hook-and-line or pot gear and deduct that amount from the portion of Pacific cod TAC annually allocated to hook-and-line or pot gear. The remainder will be further allocated as directed fishing allowances as follows:

- a. 80 percent to catcher/processor vessels using hook-and-line gear;*
- b. 0.3 percent to catcher vessels using hook-and-line gear;*
- c. 3.3 percent to catcher/processor vessels using pot gear;*
- d. 15 percent to catcher vessels using pot gear; and*
- e. 1.4 percent to catcher vessels less than 60 ft length overall that uses either hook-and-line gear or pot gear.*

Specific provisions for the accounting of these directed fishing allowances and the transfer of unharvested amounts of these allowances to other vessels using hook-and-line or pot gear will be set forth in regulations.

3.2.6.3.2 Seasonal Allocations

The amount of Pacific cod allocated to gear groups under Section 3.2.6.3.1 may be seasonally apportioned. Criteria for seasonal apportionments and the seasons authorized to receive separate apportionments will be set forth in regulations.

Under **Part I**, should the Council select Alternative 1, the current allocations would not change and thus the FMP language above would remain. Should the Council select Alternative 2, the allocation percentages listed in 3.2.6.3.1 would be modified accordingly. Language would also be added to authorize splitting the trawl CV share of the BSAI Pacific cod TAC between non-AFA trawl CVs and AFA trawl CVs and the trawl CP share between non-AFA trawl CPs and AFA trawl CPs, should this be part of the Council's preferred alternative.

Part I of this amendment also proposes increasing the amount of the BSAI Pacific cod TAC allocated to the western Alaska CDQ Program. Should the CDQ reserve for BSAI Pacific cod be increased to greater than the current 7.5%, the following section of the BSAI FMP would also require modification:

3.7.4.4 Multispecies Groundfish and Prohibited Species Allocations

In addition to the CDQ allocations authorized in Section 3.7.4.2 and Section 3.7.4.3, 7.5 percent of the TAC for all BSAI groundfish species or species groups, except squid, will be issued as a CDQ allocation from the groundfish reserve. A pro-rata share of PSC species also will be issued. PSC will be allocated before the trawl/non-trawl splits. The program is patterned after the pollock CDQ program.

Under **Part II**, should the Council select one of the action alternatives (Alternatives 4, 5, or 6), language would likely be added to Section 3.2.6.3.1 of the FMP that would provide the methodology for apportioning the BSAI Pacific cod ITAC among sectors should the Council recommend splitting the TAC between subareas in a future specifications process. In the event of this future action, language would be added to authorize the allocation of the Bering Sea subarea TAC and the Aleutian Islands subarea TAC for Pacific cod.

Note that methods to apportion the BSAI Pacific cod CDQ reserve between the BS and AI subareas is not included under Part II; Alternatives 3–6 only apply to the non-CDQ fisheries. Under 50 CFR 679.20(b)(1)(iii), paragraph (C)(1) addresses the apportionment of the overall CDQ reserves by TAC category, and (C)(2) discusses splitting or combining TACs. The regulations require that if a groundfish TAC category exists, the CDQ reserve is 7.5%, unless a different percentage is explicitly authorized elsewhere (e.g., pollock under the AFA) or a species is explicitly not allocated to the program (e.g., squid). Thus, the CDQ Program would receive 7.5% of the BS TAC and 7.5% of the AI TAC, should the BSAI TAC be split in a future harvest specifications process.

The action considered in this amendment package is limited to amending the BSAI FMP and would not affect the FMP for the Gulf of Alaska. The nature and intent of the action is to apportion the BSAI Pacific cod TAC among the following sectors: non-AFA trawl CP, AFA trawl CP, non-AFA trawl CV, AFA trawl CV, pot CV $\geq 60'$, pot CP, hook-and-line CV $\geq 60'$, hook-and-line CP, hook-and-line and pot CV $< 60'$, jig CV. The action would also potentially increase the allocation of BSAI Pacific cod to the CDQ Program. The action is also intended to provide a methodology for establishing gear specific sector allocations in the event that the BSAI TAC is apportioned between the BS and AI subareas.

1.4 Consistency with the Problem Statement

The alternatives under consideration are consistent with the problem statements. Under the no action alternative in Part I, the current apportionments of the BSAI Pacific cod TAC to the fixed, trawl, jig gear, and CDQ sectors would continue, and no further apportionments would be made between the AFA and non-AFA sectors. The problem identified is that the current allocations among trawl, jig, and fixed gear were implemented in 1997, as well as the CDQ allocation in 1998, and these allocations are overdue for review. Because harvest patterns have varied significantly among the sectors, NMFS annually reallocates quota from one gear sector to another in the non-CDQ BSAI Pacific cod fishery in order to avoid foregone harvest. As a result, the current (non-CDQ) sector allocations do not correspond with actual dependency and use by sectors in recent years. Part I of the problem statement also notes that participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the form of sector allocations, and that the basis for determining sector allocations should be catch history and other socio-economic and community factors. The problem statement in Part I states that allocations at the sector level are a necessary step on the path towards comprehensive rationalization.

The proposed alternatives and options would continue or modify the sector allocations and potentially also split the trawl CV and trawl CP allocations between non-AFA and AFA trawl vessel sectors. The intent of the action is to establish direct allocations for each specified gear sector in the BSAI Pacific cod fishery, in order to protect the relative historical catch distribution among those sectors. Thus, the proposed alternatives and options for Part I meet the concerns expressed in the problem statement. In addition, Part I references the CDQ allocation as a separate sector, and provides the context for considering revising the CDQ allocation as part of the overall action to modify the Pacific cod gear sector allocations. The problem statement states that catch history, as well as socio-economic and community concerns, should be the basis for determining sector allocations. This package contains options to establish BSAI Pacific cod allocations to the jig sector, <60' fixed gear sector, and CDQ sector that are based on identified percentages of the TAC, and not actual catch history.

Part II of the problem statement expresses concern with being able to maintain the benefits of sector allocations in the event that the BSAI Pacific cod TAC is apportioned between the BS and AI management areas in a future specifications process. The statement recognizes the likelihood of differences in dependence on the Pacific cod fishery in the Bering Sea and the Aleutian Islands by gear sector, and expresses concern that absent an approved methodology, the BSAI gear sector allocations could not be appropriately apportioned between the two subareas without a new regulatory or FMP amendment. The amendment and regulatory process is a relatively slow, deliberate process, and the concern is that should the TAC be apportioned by subarea, it would take a long time to then initiate and implement a regulatory change to apportion the BSAI sector allocations after the fact. Thus, the problem statement states the need to approve such a methodology prior to the BSAI Pacific cod TAC being apportioned by subarea, should it ever occur. Thus, the alternatives and options proposed under Part II meet the concerns expressed in the problem statement by establishing a methodology for establishing gear specific sector allocations in the event that the BSAI TAC is apportioned between the BS and AI subareas.

Amending the BSAI FMP and Federal regulations at 50 CFR 679.20(a)(7)(i) is required to allow the proposed changes under Part I, Alternative 2 or Part II, Alternatives 4, 5, or 6. Under Part I, changes to the provisions addressing unused quota and seasonal apportionments of the jig allocation will require changes to 50 CFR 679.20(a)(7)(ii) and (iii), respectively. Changes to the halibut apportionment in the non-trawl categories will require changes to 679.21(e)(4), and changes to the PSC apportionment in the trawl fishery categories will require changes to 679.21(e)(1) and 679.21(e)(3). Changes to the amount of the BSAI Pacific cod CDQ reserve will require changes to 50 CFR 679.31, to create a separate category for the BSAI Pacific cod reserve amount that is different from the remainder of the groundfish reserves specified at 679.20(b)(1)(iii). Therefore, with proper justification, the Council may make the recommended changes with approval of the Secretary of Commerce.

2 ENVIRONMENTAL ASSESSMENT

The purpose of this section is to analyze the environmental impacts of the proposed Federal actions: to revise the allocations of Bering Sea and Aleutian Islands (BSAI) Pacific cod total allowable catch (TAC) among the various fixed gear, trawl gear, and jig gear sectors; to increase the BSAI Pacific cod reserve allocated to the Community Development Quota (CDQ) Program; and to establish a methodology to apportion the sector allocations selected between the Bering Sea and Aleutian Islands management subareas. 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).

Three of the four required components of an environmental assessment (EA) are included below. These include brief discussions of: the need for the proposal (Section 2.1), the alternatives (Section 2.2), and the environmental impacts of the proposed action and alternatives (Section 2.3). A list of agencies and persons consulted is included later in this document in Section 7.

2.1 Purpose and Need

The Council has identified the following problem statement for these actions. Further elaboration on the background of the proposed action can be found in Section 1.1.

2.1.1 Part I: BSAI Pacific Cod Sector Allocations

The BSAI Pacific cod fishery is fully utilized and has been allocated among gear groups and to sectors within gear groups. The current allocations among trawl, jig, and fixed gear were implemented in 1997 (Amendment 46) and the CDQ allocation was implemented in 1998. These allocations are overdue for review. Harvest patterns have varied significantly among the sectors resulting in annual inseason reallocations of TAC. As a result, the current allocations do not correspond with actual dependency and use by sectors.

Participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the allocations to the trawl, jig, fixed gear, and CDQ sectors. To reduce uncertainty and provide stability, allocations should be adjusted to better reflect historic use by sector. The basis for determining sector allocations will be catch history as well as consideration of socio-economic and community factors.

As other fisheries in the BSAI and GOA are incrementally rationalized, historical participants in the BSAI Pacific cod fishery may be put at a disadvantage. Each sector in the BSAI Pacific cod fishery currently has different degrees of license requirements and levels of participation. Allocations to the sector level are a necessary step on the path towards comprehensive rationalization. Prompt action is needed to maintain stability in the BSAI Pacific cod fisheries.

2.1.2 Part II: Apportionment of BSAI Pacific Cod Sector Allocations between the BS and AI

In the event that the BSAI Pacific cod ABC/TAC is apportioned between the BS and the AI management areas, a protocol needs to be established that would continue to maintain the benefits of sector allocations and minimize competition among gear groups; recognize differences in dependence among gear groups and sectors that fish for Pacific cod in the BS and AI; and ensure that the distribution of harvest remains consistent with biomass distribution and associated harvest strategy.

2.2 Alternatives

Two alternatives have been identified for analysis under the first action: BSAI Pacific cod sector allocations. Both Alternative 1 and 2 are comprised of eight components, and Alternative 2 contains a number of options under each of the components. Four alternatives have been selected for analysis under the second action: apportionment of sector allocations to the Bering Sea and Aleutian Islands subareas. A detailed description of these alternatives can be found in Section 1.2 of this document. A summary of the alternatives under each action is included below in Table 2-1 and Table 2-2.

Table 2-1 Summary of the Alternatives under Part I, BSAI Pacific Cod Sector Allocations

Components	Alternative 1 (No Action)		Alternative 2 (Revise allocations)	
1. Sectors for which allocations are established	Trawl CP Trawl CV Hook-and-line CP Hook-and-line CV	Pot CP Pot CV H&L/pot CV <60' Jig CV	AFA Trawl CP AFA Trawl CV Non-AFA Trawl CP Non-AFA Trawl CV Pot CV ≥60'	Pot CP Hook-and-line CP Hook-and-line CV ≥60' H&L/pot CV <60' Jig CV
2. Sector allocations	51% fixed gear: (80% hook-and-line CP) (0.3% hook-and-line CV) (3.3% pot CP) (15.0% pot CV) (1.4% hook-and-line/pot <60') 47% trawl gear: (50% trawl CP) (50% trawl CV) 2% jig gear		Six options to revise sector allocations based on sector's average annual harvest share during the years: 1995–2002 1997–2000 1997–2003 1998–2002 1999–2003 2000–2003 Drop year provisions exist under each option. The Council can select any allocations within the range provided. Options exist to provide allocations (combined or separate) to the <60' fixed gear and jig gear sectors not to exceed: 2.71%, 3%, or 4%.	
3. Seasonal apportionments	<u>Trawl CV:</u> 70% (Jan. 20 – Apr. 1) 10% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>Trawl CP:</u> 50% (Jan. 20 – Apr. 1) 30% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>H&L gear >60':</u> 60% (Jan. 1 – June 10) 40% (June 10 – Dec. 31) <u>Pot gear >60':</u> 60% (Jan. 1 – June 10) 40% (Sept. 1 – Dec. 31) <u>Fixed gear <60':</u> no seasonal apportionments <u>Jig gear:</u> 40% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 40% (Aug. 31 – Dec. 31)		Option to maintain status quo seasons (see Alt. 1). Option to maintain the current % of ITAC allocation to the A and B seasons for trawl gear and the A season for fixed gear. Option to maintain the current % of the ITAC allocated to the A season for trawl gear. Three suboptions exist to apportion the reduction to the trawl sectors' allocations between the B and C seasons. Option to modify the jig apportionments to: 60% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 20% (Aug. 31 – Dec. 31)	

Components	Alternative 1 (No Action)	Alternative 2 (Revise allocations)
4. Rollovers	<p>Unused trawl sector allocations are first considered for reallocation to other trawl sector</p> <p>Unused pot sector allocations are first considered for reallocation to other pot sector</p> <p>Reallocation from trawl to fixed gear: 0.9% pot CP 4.1% pot CV 95% hook-and-line CP</p> <p>Reallocation from jig to <60' fixed gear on seasonal basis</p> <p>Unused <60' fixed gear, pot, and hook-and-line CV quota is reallocated to hook-and-line CP sector</p>	<p>Options to generally maintain status quo rollover provisions, with accommodation of new trawl sectors (see Alt. 1).</p> <p>Options to modify the rollovers from trawl to fixed gear according to the new fixed gear allocations determined under Component 2.</p> <p>Options to reallocated unused quota from an inshore sector to the other inshore sectors before reallocating to offshore sectors.</p>
5. CDQ allocation	7.5% of the BSAI Pacific cod TAC	Options exist to maintain 7.5% BSAI Pacific cod CDQ allocation or to increase to 10% or 15%.
6. Apportionment of trawl halibut and crab PSC to cod trawl fishery group	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.
7. Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors	No apportionment of cod trawl halibut and crab PSC between the trawl sectors.	Options to apportion the cod trawl halibut and crab PSC among the trawl sectors determined in Component 1 according to their cod allocations in Component 2 or according to their directed cod harvest.
8. Apportionment of cod non-trawl halibut PSC	No apportionment of the cod non-trawl halibut PSC between hook-and-line CP and CV sectors.	Apportion the cod non-trawl halibut PSC between hook-and-line CP and CV sectors either 1) in proportion to their cod allocations, or 2) 10 mt for CVs, remainder for CPs.

Table 2-2 Alternatives under Part II, Apportionment of BSAI Pacific Cod Sector Allocations to Bering Sea and Aleutian Islands Subareas

Alternative 3 (No Action)	Alternative 4 (Sector allocations remain BSAI)	Alternative 5 (BS and AI equal %)	Alternative 6 (Based on history in AI)
A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. The only approach that could be implemented without a new regulatory amendment is Alt. 5.	Sectors would have a BSAI allocation from Part I to fish in either subarea (BS or AI) if the subarea is open for directed fishing and TAC is available.	The allocation the sector receives under Part I would be applied to both the BS and AI subareas.	<p>The sector's BSAI allocation from Part I is maintained.</p> <p>Four options exist to determine the sector's AI allocation, based on the sector's AI harvest during: 1995 - 2002 1997 - 2003 2000 - 2003 2002 - 2003</p> <p>The remainder of the sector's overall BSAI allocation is in the BS.</p>

Note: An alternative must be selected under both Part I and Part II. Any of Alternatives 3 to 6 can be selected in conjunction with Alternative 1 or 2 from Part I.

Section 3.3.4.3 provides detailed information about the potential change to sector allocations that could occur under Alternative 2. A summary of the range of difference between the average catch by sector during 2001–2004, and proposed allocations under Alternative 2, is illustrated in Table 2-3.

Table 2-3 Range of proposed BSAI Pacific cod allocations by sector under Alternative 2, compared to status quo

Sectors	Range of potential sector allocations resulting from Components 1 & 2 (% of BSAI P. cod ITAC)	Current allocation (% of BSAI Pacific cod ITAC)	Average catch by sector, 2001-2004	Difference between proposed allocations and status quo (% of BSAI P. cod ITAC)
Hook-and-line CP	45.8% – 50.3%	40.8%	50.0%	-4.2% to 0.3%
Hook-and-line CV ≥60'	0.1% – 0.4%	0.2%	0.2%	-0.1% to 0.2%
Pot CP	1.4% – 2.3%	1.7%	9.1%	-0.4% to 2.4%
Pot CV ≥60'	7.3% – 9.2%	7.7%		
AFA trawl CP	0.9% – 3.7%	23.5% (AFA CP sector is subject to sideboard of 6.1%)	18.8%	-5.2% to 1.1%
Non-AFA trawl CP	12.7% – 16.2%			
AFA trawl CV	17.8% – 24.4%	23.5% (non-exempt AFA CV sector is subject to sideboard of 20.2%)	19.9%	-1.6% to 7.6%
Non-AFA trawl CV	0.5% – 3.1%			
<60' hook-and-line/pot CV	0.1% – 2%	0.7%	(included with hook-and-line CV and pot CV)	--
Jig CV	0.1% – 2%	2%	.08%	0.02% to 1.2%

Note: The <60' fixed gear sector is currently allocated 0.71% of the BSAI Pacific cod ITAC. However, this sector can currently fish off the general hook-and-line CV and pot CV Pacific cod allocations when those directed fisheries are open, respectively, by gear type. The proposed amendment would allow the <60' fixed gear sector to only fish off its direct allocation.

Note also that the AFA trawl CP sector is subject to cod sideboards, as are the non-exempt AFA trawl CVs.

2.3 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 Pacific cod target fisheries, by revising BSAI Pacific cod sector allocations and establishing a methodology for apportioning sector allocations between the BSAI subareas. Note that the decision to establish separate BS and AI subarea ABCs and TACs is not part of this action, as that decision would be made in a future harvest specifications process. The apportionment of the sector allocations between the BS and AI areas is provided in this amendment, should that action be necessary in the future.

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: Pacific cod, other groundfish and prohibited species caught incidentally in the Pacific cod target fishery, seabirds and marine mammals, benthic habitat and essential fish habitat, economic and socioeconomic components, and the ecosystem as a whole.

2.3.1 Criteria Used to Evaluate the Alternatives

The intent of the EA is to determine whether the proposed action is likely to produce significant impacts on the environment, in which case preparation of an Environmental Impact Statement (EIS) 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 EIS.

In order to assess whether impacts are significant, the analysts have established the criteria listed in Table 2-4. 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 the environmental assessment.

Table 2-4 Criteria Used to Evaluate the Alternatives

Component	Criteria
Fish species	An effect is considered to be significant if it can reasonably be 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 fluctuations.
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 ecosystem.

2.3.2 Pacific Cod

Pacific cod (*Gadus macrocephalus*) is widely distributed over the eastern Bering Sea and Aleutian Islands areas, and occurs at depths from shoreline to 500 m. Information on Pacific cod in this section is taken from Thompson and Dorn (2005). Pacific cod is managed as a single unit in the BS and AI. Figure 2-1 illustrates the Federal management subareas of the Bering Sea and Aleutian Islands (the Aleutian Islands are comprised of Federal reporting areas 541 – 543). Historically, the great majority of the BSAI Pacific cod catch has come from the BS management subarea. Table 2-5 provides a history of biomass estimates for the eastern Bering Sea area, as well as catch specifications and actual catch. Between 2001 and 2005, TAC averaged about 96% of ABC, and aggregate commercial catch averaged about 98% of TAC. During the same period, the eastern Bering Sea accounted for an average of about 85.3% of the BSAI catch.

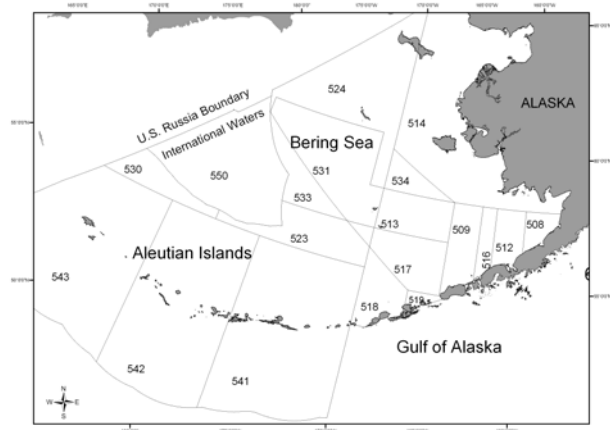


Figure 2-1 Federal reporting areas in the BSAI

The stock assessment model for Pacific cod is configured to represent the portion of the Pacific cod population inhabiting the BS survey area. Retained incidental catch of Pacific cod in halibut IFQ fishery is accounted for in the model, but not cod used as bait in the crab fishery. The model projections are then adjusted to include biomass in the AI survey area. The best estimate of long-term average biomass distribution is 85% in the BS and 15% in the AI. There is insufficient evidence to confirm or refute the

hypotheses that BS and AI stocks are separate, or that cod form a single stock throughout the AI (Grant Thompson, AFSC, pers. comm. 3/2/06).

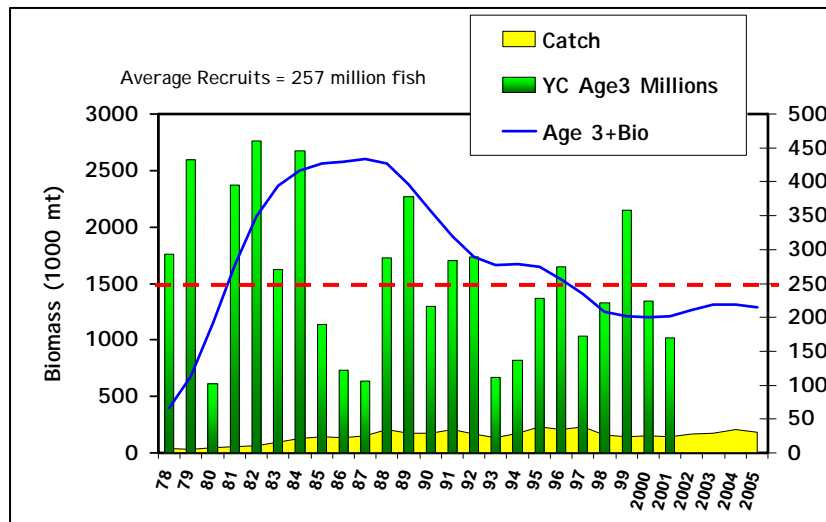
Table 2-5 Biomass (mt, in EBS survey area, from survey data), pre-season catch specifications (mt), and total catches (mt, including discards) of Pacific cod in the BSAI, 1981–2006

Year	EBS Biomass	BSAI ABC	BSAI TAC	BSAI Catch
1981	1,034,629	160,000	78,700	63,941
1982	1,020,550	168,000	78,700	69,501
1983	1,176,305	298,200	120,000	103,231
1984	1,001,940	291,300	210,000	133,084
1985	961,050	347,400	220,000	150,384
1986	1,134,106	249,300	229,000	142,511
1987	1,142,450	400,000	280,000	163,110
1988	959,544	385,300	200,000	208,236
1989	960,436	370,600	230,681	182,865
1990	708,551	417,000	227,000	179,608
1991	532,590	229,000	229,000	219,266
1992	546,707	182,000	182,000	208,046
1993	690,524	164,500	164,500	167,389

Year	EBS Biomass	BSAI ABC	BSAI TAC	BSAI Catch
1994	1,368,109	191,000	191,000	193,802
1995	1,003,046	328,000	250,000	245,029
1996	890,793	305,000	270,000	240,673
1997	604,881	306,000	270,000	257,762
1998	534,141	210,000	210,000	193,253
1999	583,259	177,000	177,000	173,995
2000	528,466	193,000	193,000	191,056
2001	833,272	188,000	188,000	176,659
2002	620,520	223,000	200,000	197,352
2003	605,681	223,000	207,500	209,114
2004	596,988	223,000	215,500	213,810
2005	603,788	206,000	206,000	203,726
2006	--	194,000	194,000	--

Model predictions indicate that this stock is neither overfished nor approaching an overfished condition. Figure 2-2 illustrates the trends in biomass and recruitment for the eastern Bering Sea. Although the 1999 year class is above average, subsequent year classes are not, and the biomass trend will decline slowly.

Figure 2-2 Biomass (mt), Catch (mt) and Year Class (millions of fish) Statistics for BSAI Pacific Cod, 1978-2005



The BSAI Pacific cod ITAC is allocated by regulation according to gear type, however typically, as the harvest year progresses; it becomes apparent that one or more gear types will be unable to harvest their full allotment by the end of the year. This is addressed by reallocating TAC between gear types in the second half of each year, typically October through December. Most often, such reallocations shift TAC

to the hook-and-line catcher processor sector. Further information on these allocations and rollovers is provided in Section 3.3.5.7.

The BSAI Pacific cod TAC is not currently split out by subarea. The split is not currently recommended by the stock assessment author, the Plan Team, or the SSC, due to management complications arising from allocation formulas. The stock assessment report notes that had a separate ABC been designated in 2004, it would have been approximately 6% lower than the 2004 AI catch.

Major trends in the most important prey or predator species of Pacific cod could be expected to affect the dynamics of the species to some extent. Small Pacific cod feed mostly on invertebrates, while large Pacific cod are mainly piscivorous. Pacific cod prey on polychaetes, amphipods, crangonid shrimp, walleye pollock, fishery offal, yellowfin sole, and crustaceans. Predators of Pacific cod include Pacific cod, halibut, salmon shark, northern fur seals, Seller sea lions, harbor porpoises, various whale species, and tufted puffin.

Effects of the Alternatives

The current fishery management program was analyzed in detail in the Groundfish PSEIS (NOAA 2004a), and updated in the annual Environmental Assessment of Harvest Specifications (NMFS 2005d). These analyses concluded that the Pacific cod stock is at a sustainable population level. Under the existing management program, the probability that overfishing would occur is low, as risk averse measures are built into the management program. As a result, impacts on Pacific cod under Alternative 1 are determined not to be significant.

Alternative 2 changes sector or seasonal allocations of Pacific cod to reflect average annual harvest share by sector. The alternative does not change the overall Pacific cod TAC, nor the scientific method by which ABC is determined. The alternative will adjust initial allocations to more accurately reflect actual harvest patterns by sector (see Table 2-3). Some options within the alternative may change the seasonality of catch, resulting in a slightly higher proportion of catch being taken in the first half of the year. The total amount of Pacific cod, however, will not change under this alternative as compared to Alternative 1, and all retained and discarded harvest will be counted against the TAC. As a result, the alternative is not expected to jeopardize the sustainability of Pacific cod, and thus will not result in a significant impact.

Alternatives 3–6 designate a methodology for sector allocations should the Pacific cod TAC be apportioned by BS and AI subarea. Under any of the alternatives, subarea TACs will not be exceeded, and thus no significant impact to the Pacific cod TAC is expected.

2.3.3 Groundfish and Other Fish Species Caught Incidentally in the Pacific Cod Target Fishery

Incidental Catch in the Pacific Cod Target Fishery

Table 2-6 shows the distribution of catch in the 2004 Pacific cod target fisheries, by season and gear type. Pot, jig, hook-and-line CVs, and to a lesser extent, hook-and-line CPs, catch predominantly Pacific cod in their target fishery. Trawl vessels have a higher rate of incidental catch, of which some is retained.

Table 2-6 Distribution of catch in the 2004 Pacific cod target fisheries; Pacific cod (mt and as percent of total) and incidental catch (mt and percent retained) in target hauls

Gear	Season	CP-CV	Pacific cod		Incidental catch in Pacific cod target							
					Squid and "Other Species"		Round fish ¹		Flatfish		Rockfish	
			mt	% of total ²	mt	% retained	mt	% retained	mt	% retained	mt	% retained
Hook and Line	Jan 1 – May 31	CP	49,060	83%	7,386	21%	2,010	90%	506	4%	38	4%
		CV	543	99%	-	-	2	100%	0	100%	1	100%
	Jun 1 – Dec 31	CP	47,726	79%	7,874	23%	2,679	84%	2,199	17%	119	19%
		CV	98	98%	1	0%	1	100%	-	-	0	100%
Pot	Jan 1 – May 31	CP	2,061	99%	10	11%	2	100%	2	0%	-	-
		CV	10,385	97%	214	14%	27	3%	31	3%	2	0%
	Jun 1 – Dec 31	CP	1,173	97%	1	0%	1	100%	32	0%	-	-
		CV	3,609	95%	86	30%	84	2%	19	0%	1	0%
Trawl	Jan 1 – Mar 31	CP	12,868	66%	450	4%	1,339	53%	4,885	29%	100	13%
		CV	32,192	86%	493	11%	2,972	21%	1,638	1%	50	12%
	Apr 1 – May 31	CP	1,891	42%	221	32%	705	43%	1,652	29%	42	15%
		CV	2,537	76%	107	4%	462	23%	250	2%	1	0%
	Jun 1 – Nov 1	CP	7,252	38%	975	24%	4,274	31%	6,553	16%	110	24%
		CV	2,685	57%	217	16%	657	15%	1,135	1%	2	0%
Jig	Jan 1 – Apr 30	CV	49	100%	-	-	-	-	-	-	0	100%
	May 1 – Aug 31	CV	180	100%	0	100%	-	-	-	-	0	100%
	Sep 1 – Dec 31	CV	1	100%	-	-	-	-	-	-	-	-

¹Roundfish comprises pollock, sablefish, and Atka mackerel.

²Prohibited species catch is not included in this total.

Table 2-7 shows 2003 and 2004 incidental catch by gear type of squid and "other species", and those non-specified species for which catch is greater than 20 mt. The "other species" management category comprises skates, sculpins, sharks, and octopuses, which are all managed under a single TAC in the BSAI. Fisheries are not allowed to target species in the "other species" management category, and they are only taken incidentally in other directed fisheries. An amendment has been initiated to separate out the four species groups, as they have very different life histories. Incidental catch of "other species" is reported in aggregate, information on "other species" and non-specified species is derived from observer data. A complete identification of non-target incidental catch in the Pacific cod target fisheries since 1997 can be found in the Pacific cod chapter of the BSAI Stock Assessment and Fishery Evaluation report (Thompson and Dorn 2005).

Table 2-7 Incidental catch, by gear type, of squid, 'other species' (skate, sculpin, shark, octopus), and certain non-specified species¹ in eastern Bering Sea (EBS) and Aleutian Islands (AI) Pacific cod target fisheries, 2003- 04

Gear & Target fishery	Species group	Catch in EBS Pacific cod target fishery (t)		Proportion of total EBS catch of that species group		Catch in AI Pacific cod target fishery (t)		Proportion of total AI catch of that species group	
		2003	2004	2003	2004	2003	2004	2003	2004
Hook and Line Cod	skate	13,519	13,863	74%	75%	105	402	20%	48%
	large sculpins	194	1,087	14%	24%	28	133	14%	19%
	other sculpins	993	234	25%	44%	31	63	8%	41%
	shark	140	146	50%	42%	0	0	1%	8%
	octopus	41	37	30%	10%	8	8	54%	49%
	squid	0	0	0%	0%	none	0	-	0%
	sea star	288	288	7%	10%	1	6	10%	47%
	grenadier	221	202	8%	10%	48	8	1%	1%
	sea anemone unidentified	79	94	58%	53%	0	0	24%	23%
	misc fish	44	58	9%	12%	1	3	1%	2%
Pot ² Cod	skate	0	0	0%	0%				
	large sculpins	122	191	9%	4%				
	other sculpins	133	13	3%	3%				
	shark	none	none	-	-				
	octopus	49	57	35%	15%				
	squid	none	none	-	-				
Trawl Cod	skate	1,010	1,355	6%	7%	72	76	13%	9%
	large sculpins	547	1,422	39%	32%	78	159	37%	23%
	other sculpins	854	95	22%	18%	122	1	31%	1%
	shark	10	29	3%	8%	0	2	1%	43%
	octopus	14	44	10%	12%	6	5	36%	28%
	squid	5	4	0%	0%	3	2	10%	11%
	schypho jellies	727	699	11%	10%	0	0	17%	49%
	misc fish	174	152	35%	30%	28	15	23%	10%
	sea star	118	91	3%	3%	5	3	49%	27%
	eelpouts	62	27	27%	30%	0	1	8%	51%
	corals bryozoans	1	1	28%	25%	24	11	40%	35%
	sponge unidentified	3	7	1%	8%	24	18	30%	13%

¹Non-specified species for which catch is greater than 20 mt in either the EBS or the AI.

²Incidental catch data for 2003-2004 for the AI Pacific cod pot gear target fishery was not available.

Source: Thompson and Dorn, 2005.

The hook-and-line fishery is primarily responsible for skate bycatch in the eastern BS, and also shark and 'other sculpin' incidental catch. Most of this catch is discarded. The pot fishery catches much of the octopus catch in the eastern BS, and the trawl fishery much of the sculpin catch in the BSAI. It is not possible to determine whether the 'other species' complex is overfished or whether it is approaching an overfished condition. However, even though the complex is managed under a single ABC and TAC, the stock assessment author recommended component ABCs for each species group. Catch in 2005 did not exceed these ABC recommendations (NMFS 2005a).

Incidental catch of prohibited species, halibut, crab, salmon, and herring, by the Pacific cod fisheries, is described in Sections 3.3.5.8 and 3.4.2.5 to 3.4.2.7. There are various ESA-listed salmon and steelhead that may range into the BSAI groundfish management area. Catch of salmon and herring by the Pacific cod fisheries is very slight, however. Prohibited species catch limits for halibut (hook-and-line and trawl) and crab (trawl) constrain incidental catch, and attainment of these seasonal limits closes the target fisheries. Table 2-8 describes PSC limits for crab and halibut, and mortality in the Pacific cod target fisheries. Bycatch in the Pacific cod fishery is accounted for in species stock assessments.

Table 2-8 Prohibited species catch (PSC) limits and mortality in the Pacific cod target fisheries, for halibut and crab

	How PSC limit is set	2006 limit for all groundfish fisheries (mt for halibut; number of animals for crab)	2006 limit for Pacific cod target fisheries (mt for halibut; number of animals for crab)	Mortality in 2003-2005 Pacific cod target fishery (% of Pacific cod limit)
Halibut	- PSC limit is set in regulations, and is not tied to the halibut population assessment - groundfish bycatch is accounted for in halibut stock assessment	4575 mt (divided between trawl, non-trawl, and CDQ fisheries)	<u>Trawl</u> 1434 mt <u>Hook-and-line</u> 775 mt <u>Pot and jig</u> exempt	<u>Trawl</u> 2003 86% 2004 106% 2005 91% <u>Non-trawl</u> 2003 63% 2004 56% 2005 70%
Crab	- PSC limit fluctuates with species biomass - PSC limit is tied to catch levels within specified PSC limitation zones	(trawl fisheries only) <u>Red king crab</u> (Zone 1) 182,225 <u>C. Opilio</u> (COBLZ) 4,494,569 <u>C. bairdi</u> 906,500 (Zone 1) 2,747,250 (Zone 2)	<u>Red king crab</u> 26,563 <u>C. Opilio</u> 139,331 <u>C. bairdi</u> 183,112 (Zone 1) 324,176 (Zone 2)	<u>Red king crab</u> 2003 9% 2004 3% 2005 2% <u>C. Opilio</u> 2003 47% 2004 41% 2005 23% <u>C. bairdi</u> (Zone 1) (Zone 2) 2003 28% 2003 31% 2004 33% 2004 42% 2005 38% 2005 15%

Effects of the Alternatives

The fish species that are caught incidentally in the Pacific cod fisheries are described in the section above. The target groundfish are assessed annually and are managed using conservative catch quotas. Beginning in 2005, the “other species” component species will also be assessed annually, and catch in 2005 was below the ABC limit that would have been recommended. Catch of prohibited species is low for herring and salmon, and is constrained for crab and halibut. Minimal interaction occurs between the Pacific cod fisheries and forage fish or non-specified species. The Groundfish PSEIS (NOAA 2004a), and the Harvest Specifications Environmental Assessment (NMFS 2005d) 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. As a result, impacts on these species under Alternative 1 are not significant.

Alternative 2 changes sector allocations to reflect the average actual catch by each sector. The alternative also includes options for slight changes to the seasonality of the catch. Any shift in effort between gear types will have a corresponding impact on incidental catch, particularly catch of ‘other species’ as it is monitored as a complex rather than under individual species group TACs. The intent of the alternative, however, is for allocations to mimic actual catch patterns among gear types, based on a recent historical average (see Table 2-3). As a result, the potential allocations are not substantially modified from Alternative 1, and impacts are not expected to be significant.

Alternatives 3–6 provide a methodology for separating allocations among the BS and AI subareas. Current Pacific cod catch by subarea approximates the amount of catch that would be allowed to occur in each subarea should subarea-specific TACs be recommended in the future. None of the alternatives would result in a substantial change from current fishing patterns, and they would not have a significant impact on incidentally-caught fish species.

2.3.4 Marine Mammals

Interactions of the Pacific cod target fishery with marine mammals

Marine mammals occur in diverse habitats in the BSAI, including deep oceanic waters, the continental slope, and the continental shelf. Most are resident throughout the year, while others seasonally migrate into or out of the management area. A list of species is below.¹⁴ The Groundfish PSEIS (NOAA 2004a) provides descriptions of the range, habitat, diet, abundance, and population status for these marine mammals. Additionally, stock assessment reports completed by the National Marine Mammal Laboratory provide population estimates, population trends, and estimates of potential biological removals.¹⁵

NMFS Managed Species

- *Pinnipeds*: Steller sea lion (Western U.S., Eastern U.S.), Northern fur seal (Eastern Pacific), Harbor seal (Southeast Alaska, Gulf of Alaska, Bering Sea), Spotted seal (Alaska), Bearded seal (Alaska), Ringed seal (Alaska), Ribbon seal (Alaska),
- *Cetaceans*: Beluga Whale (Beaufort Sea, Eastern Chukchi Sea, Eastern Bering Sea, Bristol Bay, Cook Inlet), Killer whale (Eastern North Pacific Northern Resident, Eastern North Pacific transient), Pacific White-sided dolphin (North Pacific), Harbor porpoise (Southeast Alaska, Gulf of Alaska), Dall’s porpoise (Alaska), Sperm whale (North Pacific), Baird’s beaked whale (Alaska), Cuvier’s beaked whale (Alaska), Stejneger’s beaked whale (Alaska), Gray whale (Eastern North Pacific), Humpback whale (Western North Pacific, Central North Pacific), Fin whale (Northeast Pacific), Minke whale (Alaska), North Pacific right whale (North Pacific), Bowhead whale (Western Arctic)

USFWS Managed Species

- *Carnivores*: Polar bear (Chukchi/Bering Seas, Southern Beaufort Sea), Northern sea otter (Southeast Alaska, Southcentral Alaska, Southwest Alaska)
- *Pinnipeds*: Pacific walrus (Alaska)

Direct and indirect interactions between marine mammals and groundfish fisheries may occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities.

¹⁴ Source: NMFS, 2004b, Appendix O.

¹⁵ These reports are available at http://www.nmfs.noaa.gov/pr/PR2/Stock_Assessment_Program/individual_sars.html.

The Pacific cod target fisheries are evaluated under the Marine Mammal Protection Act and are included in the List of Fisheries for 2004 (69 FR 48407, August 10, 2004). The fisheries are listed as Tier II, Category III fisheries, based on the criterion that each fishery interacts with marine mammal stocks with annual mortality and serious injury less than or equal to 1 percent of the marine mammal's potential biological removal (PBR) level.¹⁶ Taking of marine mammals is monitored through the observer program.

Table 2-9 lists ESA-listed species found in the fishery management area. Sei whales are included because distribution information available indicates that they are widespread in the Atlantic and Pacific waters, but they have not been sited in Alaska waters. An FMP level Section 7 consultation Biological Opinion (BiOp) was completed for the groundfish fisheries in November 2000 (NMFS 2000) for listed species managed by NMFS. This BiOp covers marine mammals, turtles, and Pacific salmon. In the BiOp, the western distinct population segment of Steller sea lions was the only ESA-listed species identified as likely to be adversely affected by the groundfish fisheries. A new FMP-level BiOp is being reinitiated in 2006. NMFS is also currently consulting with the USFWS on the southwest Alaska distinct population segment of northern sea otters.

Table 2-9 ESA-listed marine mammal species that range in the management area

Common Name	Scientific Name	ESA Status
Steller Sea Lion (Western Population)	<i>Eumetopias jubatus</i>	Endangered
Steller Sea Lion (Eastern Population)	<i>Eumetopias jubatus</i>	Threatened
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Bowhead Whale	<i>Balaena mysticetus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Right Whale	<i>Balaena glacialis</i>	Endangered
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Northern Sea Otter ¹	<i>Enhydra lutris</i>	Threatened

¹The Northern sea otter is under the jurisdiction of the U.S. Fish and Wildlife Service.

Following the 2000 FMP-level BiOp, a new biological opinion specifically on the newly-adopted Steller sea lion protection measures was issued in 2001 (NMFS 2001b, Appendix A). The 2001 BiOp found that groundfish fisheries, including the Pacific cod fisheries, conducted in accordance with the Steller sea lion protection measures were unlikely to cause jeopardy of extinction or adverse modification or destruction of critical habitat for Steller sea lions. The protection measures include fishery-specific closed areas around rookeries and haulouts, and season and gear apportionments. Pacific cod is one of the four most important prey items of Steller sea lions in terms of frequency of occurrence, averaged over years, seasons, and sites, and was especially important in winter (Sinclair and Zeppelin 2002). In order to limit the amount of total cod harvest that could be taken in the first half of the year, for the benefit of foraging Steller sea lions, the protection measures established a seasonal dispersion target for the Pacific cod fishery of 70% in the first season (January 1–June 10) and 30% in the second season (June 10–December 31).¹⁷ The spatial and temporal dispersion measures that apply specifically to the Pacific cod fishery are outlined in Table 2-10.

¹⁶The MMPA (16 U.S.C. 1362 (20)) defines the PBR level as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

¹⁷Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

Table 2-10 Spatial and temporal dispersion measures for the protection of Steller sea lions which apply to the Pacific cod fishery

Gear Type	Seasonal and TAC apportionments	Pacific cod rollover in the BSAI	Area restrictions
Pot	Jan 1 – June 10 (60%), Sept 1 – Dec 31 (40%) Pot catcher vessels <60' do not have seasonal apportionments.	Unharvested cod TAC can be rolled over from one season to the next.	<u>Aleutian Islands</u> - No fishing in critical habitat east of 173° W. to western boundary of Area 9, 0-10 nm closures at Buldir, 0-20 nm closure at Agligadak. <u>Bering Sea</u> - 0-3 nm closures around all rookeries and haulouts. 0-7 nm closure around Amak rookeries
Hook and Line (and Jig)	Jan 1 – June 10 (60%), June 10 – Dec 31 (40%) Hook-and-line catcher vessels <60' do not have seasonal apportionments.	Unharvested cod TAC can be rolled over from one season to the next.	<u>Aleutian Islands</u> – Same as for pot gear above. <u>Bering Sea</u> – Same as for pot gear above, plus 0-10 nm closure around Bishop Point and Reef Lava haulouts in Area 8 for hook-and-line vessels ≥60'. The 0-3 nm closures around haulouts does not apply for jig gear.
Trawl	Jan 20 – April 1 (60%), April 1 – June 10 (20%); June 10 – Nov 1 (20%)	Unharvested cod TAC can be rolled over from one season to the next.	<u>Aleutian Islands – East of 178° W.:</u> 0-10 nm closures around rookeries, except 0-20 nm at Agligadak; 0-3 nm closures around haulouts. <u>Aleutian Islands – West of 178° W.:</u> 0-20 nm closures around haulouts and rookeries until the Atka mackerel fishery inside critical habitat A or B season, respectively, is completed, at which time trawling for cod can occur outside 3 nm of haulouts and 10 nm of rookeries. <u>Bering Sea</u> – 0-10 nm closure around all rookeries and haulouts (except Pribilof haulouts that are closed 0-3 nm).

Since 2000, the population trend for the western stock of Steller sea lions has increased. However, the 2004 count, at 38,513 animals, is still 7.4% below the 1996 count and 32.6% below the 1990 count. The count represents a minimum population estimate, as it has not been corrected to account for animals that were at sea during the surveys (Angliss and Outlaw, in prep.). Incidental mortality of Steller sea lions due to the BSAI Pacific cod target fisheries is described in Table 2-11. The Pacific cod fisheries contribute approximately 6% of the total mortality to Steller sea lions attributed to commercial fisheries. Based on available data, however, the estimated annual level of total human-caused mortality and serious injury is below the PBR level (231 animals) for this stock.

Table 2-11 Summary of incidental mortality of Steller sea lions (western U. S. stock) due to BSAI Pacific cod target fisheries from 1999 through 2003, based on observer data, and calculation of the mean annual mortality rate

Fishery	Years	Range of observer coverage	Observed mortality (in given years)	Estimated mortality (in given years)	Mean annual mortality
BSAI Pacific cod trawl	1999	50.6	1	1	1.09 (CV = 0.58)
	2000	N/A	0	0	
	2001	N/A	0	0	
	2002	N/A	0	0	
	2003	49.9	2	4	
BSAI Pacific cod hook-and-line	1999	N/A	0	0	0.74 (CV = 0.86)
	2000	N/A	0	0	
	2001	N/A	0	0	
	2002	29.6	1	4	
	2003	N/A	0	0	

N/A indicates that data are not available.

Source: Angliss and Outlaw, in prep.

Effects of the Alternatives on Marine Mammals

The FMP-level BiOp of 2000 (NMFS 2000) and the Groundfish PSEIS (NOAA 2004a) concluded that, with the exception of impacts on Steller sea lions, the groundfish fisheries do not adversely affect ESA-listed or other marine mammals. The effects of Alternative 1, no action, on Steller sea lions have been analyzed in the 2001 Biological Opinion and found not to cause jeopardy or adverse modification of critical habitat (NMFS 2001b, Appendix A). As a result, the alternative is not determined to have a significant impact on Steller sea lions or other marine mammals.

The options under Alternative 2 to change sector allocations are intended to bring allocations in line with actual harvest share patterns by sector, as averaged over time. Table 2-3 demonstrates that the proposed sector allocations are similar to current catch patterns by sector. These catch patterns have been analyzed in the Programmatic SEIS (2004a) and in the BiOps, and have been shown to have no adverse impact on marine mammals, including Steller sea lions. Under Alternative 2, the overall effort in the Pacific cod fishery will remain similar to recent years, as the TAC will continue to be set in accordance to Pacific cod biomass. Table 2-11 shows that there is a slight difference between the hook-and-line and trawl fisheries in terms of mean annual mortality rate of Steller sea lions, however the likely change in catch by these gear types is slight, and is not of such a degree as to have a significant impact at a population level.

The options under Alternative 2 that would allow changes to the seasonal apportionments of Pacific cod catch may, at their extreme, change the ratio of catch in the first half of the year to 70.8%. This would exceed the objective of the 2001 Steller sea lion protection measures, to cap Pacific cod catch during the first half of the year to 70% of the overall harvest. NMFS Protected Resources Division has informed the Council that consultation, either informal or formal, may be required to change the seasonality of Pacific cod catch from the status quo (see Appendix B). Currently, on average, approximately 62.3% of the TAC is taken prior to June 10, and 36.1% is taken in the latter half of the year. The implications of selecting a combination of options that would allow the seasonal catch for the first half of the year to exceed the 70% limit may trigger consultation. NMFS Protected Resources Division will informally consult on this action after the Council selects a preferred alternative.

Alternatives 3–6 define a methodology for apportioning BSAI allocations among the BS and AI subareas and are not likely to have a significant impact on marine mammals. Current Pacific cod harvest by

subarea approximates the amount of catch that would be allowed to occur in each subarea should subarea-specific TACs be established in the future, and existing spatial and temporal dispersion measures will continue to protect Steller sea lion habitat and forage availability under any of the alternatives.

2.3.5 Seabirds

Interactions of the Pacific cod target fishery with seabirds

Various species of seabirds occur in the BSAI, including those that nest in Alaska, and migratory seabirds that visit Alaska waters when they are not breeding. A list of species is below.¹⁸ The Groundfish PSEIS (NOAA 2004a) provides descriptions of the range, habitat, diet, abundance, and population status for these seabirds.

Species nesting in Alaska

- *Tubenoses-Albatrosses and relatives*: Northern fulmar, Fork-tailed storm-petrel, Leach's storm-petrel
- *Kittiwakes and terns*: Black-legged kittiwake, Red-legged kittiwake, Arctic tern, Aleutian tern
- *Pelicans and cormorants*: Double-crested cormorant, Brandt's cormorant, Pelagic cormorant, Red-faced cormorant
- *Jaegers and gulls*: Pomarine jaeger, Parasitic jaeger, Bonaparte's gull, Mew gull, Herring gull, Glaucous-winged gull, Glaucous gull, Sabine's gull
- *Auks*: Common murre, Thick-billed murre, Black guillemot, Pigeon guillemot, Marbled murrelet, Kittlitz's murrelet, Ancient murrelet, Cassin's auklet, Parakeet auklet, Least auklet, Wiskered auklet, Crested auklet, Rhinoceros auklet, Tufted puffin, Horned puffin

Seabirds that visit Alaskan waters when they are not breeding

- *Tubenoses*: Short-tailed albatross, Black-footed albatross, Laysan albatross, Sooty shearwaters, Short-tailed shearwater
- *Gulls*: Ross's gull, Ivory gull

The northern fulmar accounts for the vast majority of incidental take that occurs in the hook-and-line fishery, and is one of the most abundant species that breeds in Alaska colonies.

There are three ESA-listed species that occur in waters off Alaska, as listed in Table 2-12. The USFWS is the agency with primary responsibility for seabird management, and ESA-listed seabird species are under its jurisdiction. The USFWS has completed an FMP-level (USFWS 2003a) and project-level BiOp (USFWS 2003b) for the groundfish fisheries. Both BiOps concluded that the groundfish fisheries, including the BSAI Pacific cod target fishery and its TAC levels, were unlikely to cause jeopardy of extinction, or adverse modification or destruction of critical habitat, for ESA-listed birds. Critical habitat has been established for the Steller's eider (66 FR 8850, February 2, 2001) and for the spectacled eider (66 FR 9146, February 6, 2001). The Kittlitz murrelet has been proposed as a candidate species by the USFWS (69 FR 24875, May 4, 2004).

¹⁸Source: (USFWS web site "Seabirds. Species in Alaska. Accessed at <http://alaska.fws.gov/mbsp/mbm/seabirds/species.htm> on December 29, 2005).

Table 2-12 ESA-listed and candidate seabird species that range in the management area

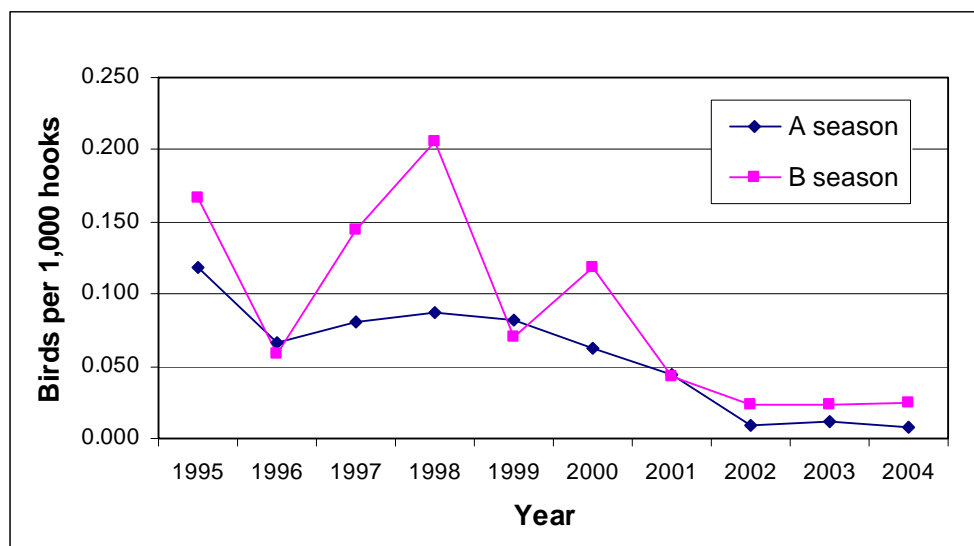
Common Name	Scientific Name	ESA Status
Short-tailed Albatross	<i>Phoebastria albatrus</i>	Endangered
Steller's Eider	<i>Polysticta stelleri</i>	Threatened
Spectacled Eider	<i>Somateria fishcheri</i>	Threatened
Kittlitz Murrelet	<i>Brachyramphus brevirostris</i>	Candidate

The Pacific cod fishery may have both direct and indirect effects on seabirds. Seabirds can be killed (taken) when they are attracted to baited hooks as they are being set, and become entangled in the gear, or caught on the hooks. They are also taken when they are attracted to trawling operations, perhaps by the presence of offal discards from fishing operations, and become entangled in the lines connecting the trawl to the vessel or in the trawl mesh. Hook-and-line and trawl gear account for most seabird takings, pot and jig gear for very little.

Fisheries may also reduce the biomass of prey species available to seabird populations, or they may create feeding opportunities by the discard of fish or fish processing wastes (offal). Fishing gear may disturb bottom habitat used by bottom-feeding seabirds, reducing available prey. Bottom trawl gear is the primary source of concern for an indirect impact through benthic habitat disturbance.

Hook-and-line gear accounts for the majority of seabird take in the North Pacific groundfish fisheries. Depending on which trawl estimates are used, hook-and-line gear accounted for 94% or 65% of total average annual seabird bycatch in the BSAI and GOA combined (Fitzgerald et al. 2005). Based on average annual estimates from 1993–2003, 93% of hook-and-line seabird take is caught in the BSAI. Annual BSAI hook-and-line bycatch of seabirds has been substantially reduced over that time, however, to the current numbers of about 5,000 birds annually. The average bycatch rate for 2002 through 2004 was 0.018 birds per 1,000 hooks (Figure 2-3). This reduction has largely been due to the use of seabird avoidance techniques such as paired streamer lines. The species composition for seabird bycatch in the combined BSAI hook-and-line fisheries is 59% fulmars, 20% gull species, 12% unidentified seabirds, 4% albatross species, 3% shearwater species, and 2% ‘all other’ species (Fitzgerald et al. 2005).

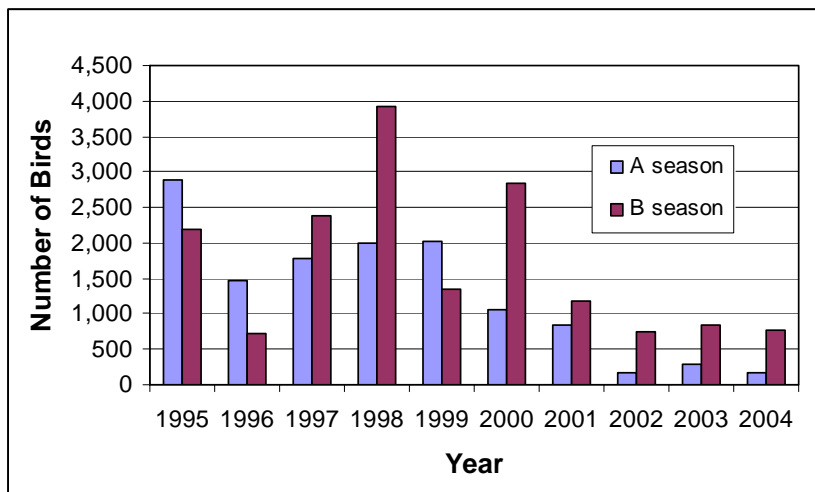
Figure 2-3 Seabird catch rates in the hook-and-line CP sector by season, 1995-2004



Source: AFSC. Data include hook-and-line CP CDQ fisheries.

Figure 2-4 identifies observed seabird takes in the hook-and-line CP sector between 1995 and 2004, for the A (January 1 – June 10) and B (June 10 – December 31) seasons. These numbers are not extrapolated to represent the annual seabird take by the fleet, and they represent observed seabird takes in all target fisheries by the (CDQ and non-CDQ) hook-and-line CP fleet. Figure 2-3 illustrates the relative seasonal catch rates of the hook-and-line CP fleet, based on the estimated total number of birds taken (as extrapolated from observed numbers) per 1,000 hooks. The figures demonstrate that the number of seabirds taken, and the rate at which seabirds are taken, is generally higher in the B season than in the A season. This trend continues after 2001, when the seabird avoidance measures were adopted by the hook-and-line CP fleet. The number of seabirds taken in the hook-and-line CP sector, and the rate at which seabirds are taken, is higher in the B season than in the A season.

Figure 2-4 Observed seabird incidental take in the hook-and-line CP sector by season, 1995-2004



Source: AFSC, observer data. Data include hook-and-line CP CDQ fisheries.

Due to sampling procedures on trawl vessels, two alternative sets of estimates are calculated for seabird bycatch, and it is unknown which is more accurate, although actual bycatch is probably somewhere between them. The low and high estimates for average annual combined trawl take of seabirds in the BSAI and GOA groundfish trawl fisheries between 1999 and 2003 were 1,343 and 15,343 birds. Northern fulmars are most commonly taken, representing about 53% of bycatch.

Seabird bycatch from groundfish pot fishing has traditionally been very limited. The average bycatch in this fishery from 1993–2003 is 55 seabirds, and represents less than 1% of the total annual average groundfish fishery bycatch.

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 seabirds with the Pacific cod fisheries are not likely to create a population-level impact on these species. Alternative 1 is not considered to have a significant impact on seabirds.

Alternative 2 changes sector allocations for the Pacific cod fisheries, and will not substantially change catch patterns among sectors. Table 2-3 describes the potential change in allocations due to the options in Alternative 2. As sector allocations under Alternative 2 will remain relatively consistent with current fishing patterns, this amendment will not modify the actions already analyzed in previous BiOps, is not

likely to adversely affect ESA-listed species beyond the effects already analyzed, and is not likely to cause the incidental take statements of ESA species to be exceeded. Therefore, the triggers to reinstate consultation are not met. The alternative is not likely to have a significant impact on seabirds at a population level.

Alternative 2 also includes options to modify the seasonal allocations for the fisheries, including options that would change the relative share of Pacific cod taken by the various sectors in the first and second halves of the year. However, note that the overall amount of Pacific cod allocated to each sector under Alternative 2 is based on actual historical harvest by sector. There is no data to determine the effect of a seasonal change in trawl catch on seabirds. For the hook-and-line CP fleet, Figure 2-3 indicates that the catch rate of seabirds is lower in the A season than in the B season.

Alternatives 3–6, which provide a methodology for apportioning sector allocations among BS and AI subareas, will likely limit catches in the subareas to current levels. As a result, these alternatives will not have a significant impact on seabirds.

2.3.6 Benthic Habitat and Essential Fish Habitat

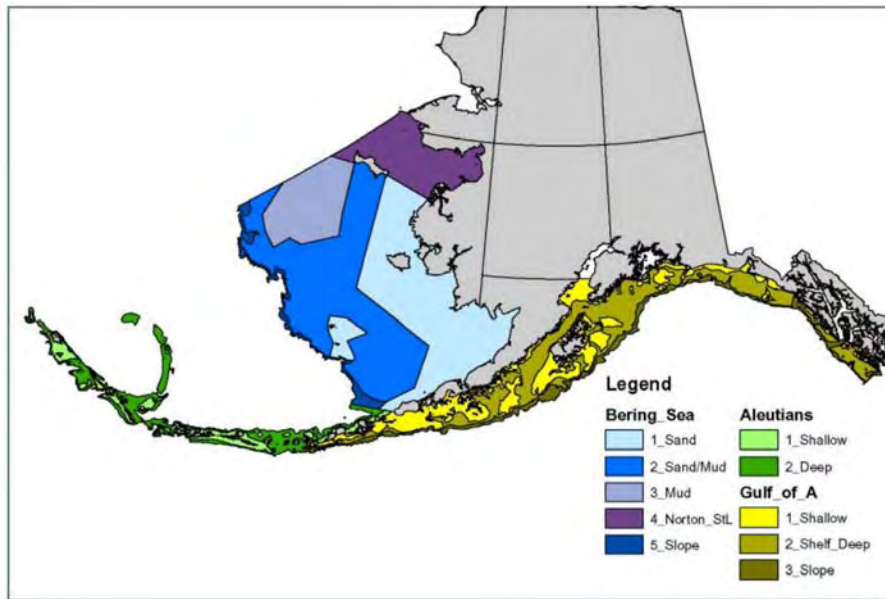
Interactions between the Pacific cod target fishery and habitat

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 (NOAA 2004a) contains a discussion of the effects of fishing, including hook-and-line, pot, jig, and bottom trawl gear used by the Pacific cod trawl sectors, on habitat. In the BS, both hook-and-line and trawl effort in 2005 was concentrated north of False Pass (Unimak Island) and along the shelf edge represented by the boundary of Areas 513, 517 (in addition, hook-and-line effort was concentrated along the shelf edge represented by the boundary of Areas 521-533). In the AI in 2005, both hook-and-line and trawl effort was dispersed over a wide area along the shelf edge. The catcher vessel hook-and-line fishery in the AI occurred primarily over mud bottoms. Hook-and-line catcher processors in the AI tended to fish more over rocky bottoms (Thompson and Dorn 2005).

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 2-5). 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 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 2-5 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 2005e). The document provides a description of the fisheries' interaction with benthic habitat. The Pacific cod hook-and-line fishery's gear components that contact the bottom include the anchors, groundline, gangions, and hooks. The Pacific cod pot fishery has a very small footprint (an estimated 0.17 square mile footprint combined). The jig fishery has no intentional contact with the bottom, although such contact may occur. The trawl fishery's contact with the seafloor is primarily from doors, sweeps, and bobbins on the net, although modern doors are designed to spread with minimal bottom contact.

Effects of the Alternatives

The effects of the Pacific cod fisheries on benthic habitat and EFH were analyzed in the EFH EIS (NMFS 2005e). Recent closures in the Aleutian Islands (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 under Alternative 1, and are not considered to be significant.

Alternative 2 proposes changes to sector and seasonal allocations, in order to bring allocations in line with actual harvest patterns by sector in the fisheries (see Table 2-3). The overall amount of effort in the fisheries will remain the same as under Alternative 1, as the overall Pacific cod TAC is not affected under this alternative. As a result, impacts on benthic and essential fish habitat under this alternative should remain similar to those under Alternative 1, and are not expected to result in a significant impact.

2.3.7 Economic and Socioeconomic

Effects on Production Efficiency

In the simplest terms, production efficiency as considered here 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 cost, quantity, and quality of outputs produced and the cost, quantity, and quality of the various inputs (e.g., fuel, vessels, and labor) used for that production. The effects of the components and options under Alternatives 1 and 2 on the affected sectors are described in Sections 3.4.2 and 3.4.3, from which an understanding of the effects on production efficiency can be developed.

Production efficiency is not expected to change significantly under either alternative; however, there are some increases worth noting compared to Alternative 1. Under the no action alternative, for the most part, production efficiency is limited by the race for fish in the current limited access fishery. Only the AFA trawl CV and CP sectors currently operate under the cooperative system. While that system was formed for the prosecution of the BSAI pollock fishery under the AFA, these sectors currently manage their Pacific cod sideboards under inter-cooperative agreement. Since the sideboards are constraining, these sectors have effectively managed the sideboard similar to management of an allocation. Both AFA sectors are likely to continue to receive the benefits of cooperative management of the sideboards under the no action alternative. There is also a current amendment under consideration to allow the non-AFA trawl CP sector to operate under a cooperative system (BSAI Amendment 80). When implemented, that amendment will limit the sector's Pacific cod harvest using a sideboard, similar to the AFA sideboard. If members of that sector are constrained by the sideboard, it is possible that some benefit could come from the cooperatives internal management of the sideboard as an allocation under the no action alternative. In the remaining industry sectors, participants have (and will continue to) race for Pacific cod with other sector participants, when the fisheries are open.

Sector allocations under Alternative 2 could provide additional production efficiency benefits. Both AFA sectors and the non-AFA catcher processor sector (on implementation of Amendment 80) should be able to manage their Pacific cod allocations through cooperatives. Although the non-AFA sectors (with the possible exception of the non-AFA trawl catcher processor sector) will continue to race for fish under Alternative 2, some improvement in production efficiency could be realized by those sectors. In addition, increased production efficiency could be realized by establishing a separate allocation to the AFA trawl CV sector and allowing the three participants with the greatest harvest history in the non-AFA trawl CV sector to fish off the AFA trawl CV allocation (given that their cod history would be attributed to the AFA trawl CV sector in determining that sector's allocation). This means that a greater percentage of the trawl CV allocation would be managed under a cooperative system, and the three participants with the greatest cod history in the non-AFA trawl CV sector would be capable of fishing under a more rationalized system via contracts with the AFA CV sector.

Overall, the intent of Alternative 2 is to revise the BSAI Pacific cod allocation such that the initial allocations established at the beginning of the year better reflect the actual historical harvests by sector. Meaning, under Alternative 1, one would expect that substantial amounts of cod quota would continue to need to be reallocated among sectors near the end of the fishing year, in order to prevent it from remaining unharvested. While the frequency and level of reallocation varies annually, on average during 2000–2004, NMFS has annually reallocated 17,291 mt of BSAI Pacific cod quota among the existing sectors, which represents about 9% of the total initial allocation. Reallocations from the trawl sectors accounted for about 77% of the reallocations on average during this time period, with most of the remaining reallocations from the jig sector. Jig and trawl reallocations have occurred every year since the cod allocation was apportioned among the jig, fixed, and trawl gear sectors in 1994. To the extent that the options under Alternative 2 would establish distinct BSAI Pacific cod allocations that limit the need to reallocate catch during the year, participants in the sectors receiving those reallocations could benefit from the increased ability to plan their fishing year. Instead of being uncertain of the level and timing of reallocated quota from the trawl sectors late in the year, the harvest history that represents the reallocations would be incorporated in the fixed gear sector's initial allocation. This would reduce overall

uncertainty and allow these sectors, particularly the hook-and-line CP sector, to better plan their annual operations.

Production efficiency is not expected to change significantly under Alternatives 3–6; however, there are some potential differences worth noting among alternatives. In effect, Alternatives 3 and 5 would result in the same sector allocation percentage in the BS and AI as the sector receives under Part I. For example, if the sector received 30% of the BSAI Pacific cod ITAC in Part I, the sector would receive 30% of the AI Pacific cod ITAC and 30% of the BS Pacific cod ITAC under Alternative 3 or 5. Thus, regardless of harvest history between the two subareas, the sector would receive the same percentage in each area. If a sector had very little fishing history in one of the two areas, for example, the Aleutian Islands, creating equal percentages in each area may serve to reduce production efficiency by forcing participants into unfamiliar fishing grounds. This could be either a short-term effect as participants gain experience in the fishing grounds of a new subarea or a long-term effect as a particular gear type may not be well suited for the subarea. The division of the TAC between the Aleutian Islands and Bering Sea could lower production efficiency, if it serves to create a greater race for fish in one subarea than exists overall in the BSAI. While speculative, this potential exists if the allowable catch allocated to a subarea is not sufficient to support the number of participants that want to fish in the area. The recent model applied by stock assessment scientists shows that the BSAI Pacific cod ITAC may be split in the range of 85% in the BS and 15% in the AI. The potential for decreased production efficiency is greater under Alternative 4, since each sector would be limited by an allocation that could be harvested in either area until the TAC for that area was fully harvested.

Finally, Alternative 6 is based on catch history in the Aleutian Islands, which is likely the limiting factor for the BSAI sector allocations. If Alternative 6 establishes the sector allocations in the AI based on recent catch history, it is not expected to significantly affect production efficiency and would likely have less of an effect than Alternatives 3–5. Note again that production efficiency overall in the BSAI Pacific cod fishery is limited by the race for fish under the current limited access program for most sectors. The exceptions are the AFA trawl sectors, and potentially in the future, the non-AFA trawl CP sector.

Effects on Consumers

In the current cod fishery, catcher processors for all gear types produce mostly eastern and western cut headed and gutted (H&G) products and a few ancillary products. Shorebased processors taking catcher vessel deliveries produce fillets, salted and split, and H&G products, along with a wide variety of ancillary products. Under any alternative, consumers are likely to continue to be supplied with products from the various BSAI Pacific cod fisheries that are currently produced under the status quo. As mentioned above, this means primarily frozen head and gut and whole fish from the catcher processor sectors, as well as fillets and ancillary products from shorebased plants. Recall that the allocations proposed under Alternative 2 are intended to reflect actual retained catch over a series of years, including reallocated quota. Thus, production mixes are not anticipated to change significantly from previous years. Alternatives 3–6 are limited to apportioning the sector allocations between the BS and AI subareas, if necessary in the future. It does not affect the overall allocations to each sector. Market prices for these products will continue to depend on world cod markets and should be unaffected by the choice of alternatives under this action.

Some minor quality improvement could occur because of the direct sector allocation made to those sectors that operate under cooperatives (AFA trawl sectors and potentially the non-AFA trawl CP sector), however, they are unlikely to be substantial. Overall, U.S. consumers could realize a minor benefit from the improved product quality, but are unlikely to realize any notable change in benefits under this action.

Effects on the CDQ Program

Alternative 2 includes two options to increase CDQ BSAI Pacific cod reserve from 7.5% (Alternative 1) to 10% or 15%. Increasing CDQ allocations for BSAI Pacific cod could directly benefit the CDQ groups by increasing the amount of BSAI Pacific cod catch and the resulting royalties associated with that catch. Note that on average during 2001–2003, Pacific cod royalties comprised over 6% or \$3.0 million of the total royalties for the CDQ groups combined. During that time period, the average royalty payment to the CDQ groups was \$232 per metric ton of Pacific cod. Using the 2006 TAC, the two options to increase the CDQ reserve under Alternative 2 to 10% or 15% represent estimated increases of 4,875 mt and 14,625 mt to the CDQ Pacific cod reserve, respectively. Using the average royalty rates from the most recent time period available (2001–2003), one could estimate that the projected increase in royalty payments to the CDQ groups combined would be \$1.13 million and \$3.39 million, respectively. It is also anticipated that current CDQ allocations of non-target species harvested incidentally in the Pacific cod fishery appear sufficient to support an increase in the CDQ cod allocation.

Alternatives 3–6 would not affect the CDQ Program. The CDQ Program would be affected by the decision to establish separate Pacific cod BS and AI subarea TACs, but that decision would be made in the annual specifications process and is not part of this amendment. The regulations for the CDQ reserves are at 50 CFR 679.20(b)(1)(iii). If a new TAC is established, the CDQ Program receives its 7.5% allocation, unless a species is explicitly allocated at a different percentage (e.g., pollock is 10% under the AFA) or explicitly not allocated to the program (e.g., squid). Thus, if the BSAI Pacific cod TAC is split into BS and AI subarea TACs, under the status quo allocations, the CDQ Program would receive 7.5% of the BS TAC and 7.5% of the AI TAC.

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 under any of the alternatives. NMFS will continue to conduct annual stock assessments to establish the overfishing level, ABC, and TAC for BSAI Pacific cod through the specifications process. NMFS would continue to credit both directed harvest of Pacific cod and the incidental harvest of Pacific cod against the Pacific cod TACs to ensure that Pacific cod are not overharvested.

Under Alternative 2, distinct cod sector allocations could be made for each of the ten sectors identified, including the four trawl sectors: non-AFA trawl CV; AFA trawl CV; non-AFA trawl CP; and AFA trawl CP. Note that the AFA sectors operate under a cooperative system and the non-AFA trawl CP sector is being considered for a cooperative management regime under Amendment 80. Thus, to the extent distinct cod allocations to the four trawl sectors reduce the race for fish within the overall trawl CV and trawl CP sectors, these measures could potentially reduce bycatch and discards, contributing additional non-use benefits that arise from more productive use of the resource.

Note also that options exist under Alternative 2 to revise the seasonal apportionments to the trawl, fixed, and jig gear sectors (Component 3). The current seasonal apportionments are primarily a result of the 2001 Biological Opinion and Steller sea lion mitigation measures. The 2001 opinion consulted on a comprehensive management regime, of which temporal dispersion of the BSAI Pacific cod fishery was one part. These measures were established to meet a seasonal target of 70% harvest of TAC in the first season (Jan. 1 – June 10) and 30% in the second season (June 10 – Dec. 31), such that the prey species were protected for foraging Steller sea lions in the first half of the year.

Options exist under Alternative 2 that would establish seasonal apportionments that exceed the 70%–30% target established in the Biological Opinion. In sum, there are options that would modify the allocations and seasons for each sector such that overall, up to 70.8% of the BSAI Pacific cod ITAC would be

allowed in the first half of the year, and 29.6% in the second half. Upon selection of a preferred alternative, NMFS Protected Resources staff may informally consult on this issue. Note that options also exist under Alternative 2 that would either maintain the 70%–30% target, or decrease the apportionment to the first half of the year such that it is less than 70%.

Public non-use benefits derived from the management of healthy stocks of these species are likely to be maintained under Part II, Alternatives 3–6. NMFS will continue to conduct annual stock assessments to establish the overfishing level, ABC, and TAC for BSAI Pacific cod through the specifications process. Should this process compel NMFS to recommend establishing separate BS and AI subarea ABCs and TACs, Alternatives 4–6 would establish a way to further split the sector allocations in accordance with the new subarea TACs. NMFS would continue to credit both directed harvest of Pacific cod and the incidental harvest of Pacific cod against the Pacific cod TACs to ensure that Pacific cod are not overharvested.

Effects on Management, Monitoring, and Enforcement Costs

No changes are expected to the existing management system under Alternative 1, thus, no effects on management, monitoring, or enforcement are expected. NMFS would continue to monitor eight separate sector allocations, with seasonal apportionments for each sector, with the exception of the <60' hook-and-line catcher vessel sector. NMFS would also be expected to continue its current practice of reallocating cod quota inseason that is projected to remain unused by a particular sector to other sectors that could potentially use it. In sum, on average 2000–2004, NMFS has annually reallocated 17,291 mt of BSAI Pacific cod quota among the sectors, which represents about 9% of the total initial allocation. Reallocations from the trawl sectors accounted for about 77% of the reallocations on average during this time period, with most of the remaining reallocations from the jig sector. The frequency and level of reallocations varies annually.

Under some options under Alternative 2, NMFS would be required to monitor ten sector allocations of BSAI Pacific cod, as opposed to the current eight under Alternative 1. This results from splitting the current trawl CV and trawl CP allocations by AFA and non-AFA sectors. However, the frequency and level of inseason reallocations of cod quota among sectors is expected to decline, as the allocations are adjusted under Alternative 2 to better reflect actual catch history. Note that while the management of the fixed gear sectors, the jig sector, and the non-AFA trawl CV sector are expected to remain the same as status quo, the management of the AFA trawl CV, AFA trawl CP, and non-AFA trawl CP cod allocations could be modified under this amendment. If the industry can control and limit its catch, it can best decide how much of its allocation is necessary to apply to a directed fishery and how much is needed for incidental catch in other target fisheries. In effect, this allows the industry to realize the greater benefit from the fishery than by having NMFS determine the level of incidental catch needs. The more uncertain the level of incidental catch of a species, the greater the ICA established by NMFS. The greater the ICA, the less opportunity the industry has to extract the greatest value from the fishery.

The sectors identified under Alternative 2 that continue to operate in a competitive limited access system, specifically the non-trawl sectors, would not expect any changes in agency management or monitoring. Many have little incidental catch and catch rates are slow enough to allow the agency to consistently monitor and close the fishery accurately. The intent under any of the options under Alternative 2 is for NMFS to continue to manage the non-trawl sectors, as well as the non-AFA trawl catcher vessel sector. The fixed gear cod sectors would continue to be managed using an ICA established at the beginning of the year during the annual specifications process. The non-AFA trawl CV sector would continue to be managed by NMFS through Federal Register notice. While the non-AFA trawl CV sector typically only targets Pacific cod in the BSAI, if this sector started targeting other fisheries, NMFS could establish a DFA and ICA inseason at such time that the sector started to reach its allocation.

The current intent under Alternative 2 is for the AFA trawl CV and CP sectors, as well as the non-AFA trawl CP sector cooperatives, to manage their own Pacific cod allocations under a hard cap. The AFA trawl sectors currently operate in a cooperative system established through the AFA for BSAI pollock, and also manage their Pacific cod sideboards through inter-cooperative agreement. The AFA trawl sectors have relatively predictable incidental Pacific cod catch needs for their directed pollock fishery and currently closely regulate both directed and incidental catch through legal agreements. It is expected that these sectors' existing structure could continue to manage Pacific cod if it represented a direct allocation. In the non-AFA trawl CP sector, there is increased variability in the amount of incidental catch of Pacific cod in their other target fisheries, and catch rates are frequently higher. A cooperative structure is currently being developed for the non-AFA trawl CP sector under Amendment 80. Thus, the non-AFA trawl CP sector should also have all of the tools necessary to manage its own Pacific cod allocation under Amendment 80.

Another important issue under Alternative 2 is the potential to divide the trawl cod fishery group halibut and crab bycatch allowances among the four trawl sectors. While it may be beneficial to the AFA sectors and non-AFA trawl CP sector to be able to manage a certain apportionment of the halibut and crab bycatch allowances, depending on the outcome, more refined apportionments can also make it difficult for a sector whose bycatch needs are relatively variable from year to year. Monitoring of trawl PSC will be a considerable task for both the trawl sectors and NMFS. While a further apportionment of the non-trawl halibut bycatch allowance is also proposed under Alternative 2 between the hook-and-line CP and hook-and-line CV sectors, the level and rate of halibut bycatch in the non-trawl sectors reduces this concern.

If the (potentially) ten BSAI Pacific cod sector allocations under Alternative 2 are further split by BS and AI subarea in the future, NMFS would effectively be managing two subarea allocations for each of the ten sectors, notwithstanding seasonal apportionments. Under Alternative 1, NMFS would effectively be managing two subarea allocations for each of eight sectors, notwithstanding seasonal apportionments. This task may prove difficult if the seasonal allocations to a particular sector in the AI are extremely small, given the relatively small potential TAC and the number of apportionments. Note, however, that the action under Alternatives 3–6 is not to determine *whether* to split the BSAI TAC into BS and AI subareas; it is limited to determining how to divide the sector allocations by subarea should separate TACs be established in a future specifications process. Effects on industry and the ability of NMFS to manage seasonal sector allocations in each subarea as a result of the proposal to split the BSAI Pacific cod TAC by subarea would need to be addressed in the final TAC-setting EA.

Alternatives 1–6 would have no effect on current observer coverage requirements to which the various sectors are subject. The direct costs of observer coverage are borne by the vessels and processors, and management costs of the observer program are borne by NMFS. The agency costs are not expected to change significantly as a result of this action, although the existing monitoring program and NMFS database would need to be revised such that the system could account for any newly identified sectors and/or the new subarea split.

2.3.8 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.

Potentially, fisheries for Pacific cod can have effects on other species in the ecosystem through a variety of mechanisms, for example by relieving predation pressure on shared prey species (i.e., species which serve as prey for both Pacific cod and other species), by reducing prey availability for predators of Pacific cod, by altering habitat, by imposing bycatch mortality, or by “ghost fishing” caused by lost fishing gear.

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 (NMFS 2005b) and the Groundfish PSEIS (NOAA 2004a).

Effects of the Alternatives

An evaluation of the effects of the Pacific cod fisheries on the ecosystem is undertaken annually in the Ecosystem Assessment section of the Stock Assessment and Fishery Evaluation report (NMFS 2005b) and in the Harvest Specifications EA (NMFS 2005d). The assessment considers predator-prey relationships, energy flow and removal, and diversity (species, functional, and genetic). These analyses conclude that there is not a significant adverse impact on the ecosystem from the groundfish fisheries, including the Pacific cod fishery.

Alternative 2 will result in the same overall level of Pacific cod harvest as Alternative 1. Changes to the sector allocations will align regulatory allocations with averaged sector harvest levels. The options to change the seasonality of catch represent minor changes which cannot be distinguished at an ecosystem level. As a result, the alternative is not likely to have a significant impact on the ecosystem.

Alternatives 3–6, which designate a methodology for apportioning sector allocations among the BS and AI subareas, will also not represent a change from current fishing patterns. Current catch among the subareas approximates the catch levels that would be imposed should the TAC be split by subarea in a future harvest specifications process.

2.3.9 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; NOAA 2004a) 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 Pacific cod fishery sectors as a result of the proposed action in combination with other actions. As discussed below, participants in the Pacific cod target fisheries 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 these sectors.

2.3.9.1 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 Pacific cod fishery sectors. 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 Pacific cod fishery sectors.

By the time the Magnuson Fishery Conservation and Management Act went into effect in 1977, foreign catches of Pacific cod had consistently been in the 30,000–70,000 mt range for a full decade. In 1981, a U.S. domestic trawl fishery and several joint venture fisheries began operations in the BSAI. The foreign and joint venture sectors dominated catches through 1988, but by 1989 the domestic sector was dominant and by 1991 the foreign and joint venture sectors had been displaced entirely. A description of the history of Pacific cod sector allocations among fixed gear, trawl gear, and jig gear sectors is provided in Section 3.3.1.

The mid- to late-1980s saw increased restrictions on the domestic groundfish fisheries, 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 Pacific cod fisheries, as it often resulted in the early closure of target fisheries.

A sequence of Steller sea lion protection measures that began in the 1990s limited the Atka mackerel, Pacific cod and rockfish harvests. The measures closed some of the best fishing grounds for these target species, thereby adversely affecting the profitability of the sectors.

In 1996, the U.S. 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 improved retention/improved utilization measures for pollock and Pacific cod in both the GOA and BSAI in 1998. A positive outcome of the measures 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.

Note that a series of FMP amendments also influenced the participants in the BSAI Pacific cod fishery. Beginning in 1994, BSAI Amendment 24 allocated the BSAI Pacific cod TAC among the trawl, jig, and fixed gear sectors. This apportionment was modified starting in 1997 under Amendment 46. In 2000, the Federal License Limitation Program went into effect in the GOA and BSAI, limiting future opportunities in both areas. Qualifying years for LLP area endorsements were January 1, 1992 through June 17, 1995. Following implementation of the LLP, a series of amendments apportioned the fixed gear portion of the BSAI Pacific cod ITAC among the various fixed gear sectors. Finally, the Council made a decision on the Pacific cod endorsement for the $\geq 60'$ fixed gear sectors in April 2000. These actions may have provided incentive for vessels to fish in a manner that they would not have otherwise. However, it is not possible to determine exactly how or whether participation patterns were influenced by these amendments. Section 3.4.3.3 provides additional information on the participation patterns by sector during 1995–2003; this section notes that the first and last year for LLP endorsement qualification were years that many vessels fishing in just one year participated.

Note also that in 1998, Congress approved the American Fisheries Act (AFA). The AFA created pollock allocations and a cooperative management system for eligible CV and CP vessels in the BSAI pollock trawl fishery. Although separate BSAI Pacific cod allocations are not currently established for the AFA CP and AFA CV sectors, the implementing regulations for the AFA also established sideboards on the participation by AFA-qualified vessels in the other BSAI (non-pollock) groundfish fisheries, including Pacific cod. The AFA allowed eligible trawl vessels to manage their BSAI pollock (and Pacific cod sideboards) in a more rational manner through internal agreements.

In February 2005, the Council took action to conserve 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 Pacific cod fisheries, but the extent of the negative impacts 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.

Also in February 2005, the Council 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 (hook-and-line, pot, trawl, 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 Pacific cod fishery sectors.

Lastly, the Consolidated Appropriations Act of 2005 (P.L. 108-792) (Act) established catcher processor sector definitions for participation in the catcher processor sectors of the BSAI non-pollock groundfish fisheries¹⁹ and the fishing capacity reduction program authorized by Congress. The following sectors are defined in the Act under Section 219(a): AFA trawl catcher processor, non-AFA trawl catcher processor, hook-and-line catcher processor, and pot catcher processor.

With the exception of the non-AFA catcher processor sector, the Act does not appear to establish new eligibility requirements for participating in the BSAI Pacific cod fishery as part of the catcher processor sectors.²⁰ Only the non-AFA trawl catcher processor sector is defined differently than the status quo, in effect, this sector is reduced to 26 qualified vessels. Note that the Act also established requirements for participating in a capacity reduction program by sector. As of the writing of this document, staff is aware of only one sector (the hook-and-line CP sector) that is in the formal process of developing a cooperative for the purpose of participating in the capacity reduction program. To date, the cooperative has agreed to develop a buyback program for the hook-and-line CP sector in the BSAI non-pollock fisheries, and it has organized the buyout rules and procedures and submitted them to the Secretary.

2.3.9.2 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 the Council. Four reasonably foreseeable management actions relevant to this analysis were identified: 1) BSAI Amendment 80 to allocate five target flatfish species and PSC to the non-AFA trawl CP sector and establish a cooperative structure for that sector, 2) GOA groundfish rationalization, 3) protection of EFH in the Bering Sea, and 4) 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 create a State water Pacific cod fishery in the Aleutian Islands.

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

¹⁹The non-pollock groundfish fishery is defined as ‘target species of Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole harvested in the BSAI.’

²⁰Note that the AFA trawl CP definition does not include any vessel that met the requirements in 208(e)(21) to be eligible to harvest the pollock directed fishing allowance allocated to CPs and CVs delivering to CPs. NOAA GC has determined that the vessel that qualifies under 208(e)(21) of the AFA qualifies for the non-AFA trawl catcher processor sector based on the qualifications in the Consolidated Appropriations Act of 2005.

significant economic impacts on the Pacific cod fishery sectors in the future, a discussion of what those effects might be would be speculative.

Allocation of Non-Pollock Groundfish and Development of a Cooperative Program for the Non-AFA Trawl Catcher Processor Sector (BSAI Amendment 80)

The non-AFA trawl CP sector primarily participates in multi-species fisheries in a limited access system. Although the overall retention level in that sector has increased in the last decade, it is still well below other BSAI sectors. In addition, improved retention rates are the intended effect of the impending groundfish retention standard (GRS) action approved by the Council. Amendment 79, if approved by the Secretary, would phase in the GRS over a four-year period. To provide the sector with a tool to increase economic efficiency when reducing incidental catch and minimizing waste, the Council initiated BSAI Amendment 80 in October 2002. Amendment 80 would provide target flatfish allocations (Atka mackerel, flathead sole, Pacific Ocean perch, rock sole, yellowfin sole) to the 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 harvest. Four alternatives are considered to compare the impacts of the proposed program components: status quo and three alternatives that would allow the formation of multiple or single cooperatives. Note that Amendment 80 also includes options to apportion separate PSC allowances to the non-AFA trawl CP sector for all of its fisheries, including that associated with this sector's Pacific cod fishery.

An increase (from 7.5% to 10% or 15%) is also proposed for the target flatfish species allocated to the CDQ Program under Amendment 80, as well as increases of all other CDQ allocations of non-target species and PSC incidental to the CDQ target flatfish species. Final Council action on Amendment 80 is scheduled for April 2006.

Anticipated Effects

Upon future implementation of the non-AFA trawl CP cooperatives under Amendment 80, this sector should be better able to utilize their PSC in relation to their target fisheries, which may result in harvesting a greater share of the BSAI Pacific cod allocated to the trawl CP sector than has been harvested in the past. Currently, the entire trawl CP sector is allocated 23.5% of the BSAI Pacific cod ITAC and the non-AFA trawl CP sector has harvested about 13%–14% of the ITAC on average during 1995–2003, with the highest shares in the most recent years (1999–2003). Note that the AFA CP sector has harvested about 2%–3% of the ITAC on average during 1995–2003, with the lowest shares in the most recent years (2000–2003). Together the two trawl CP sectors harvested (retained catch) an average of 15%–16% of the BSAI Pacific cod ITAC, compared to the 23.5% allocated.

In addition, there is a wide range of potential PSC allocations proposed in Amendment 80 to the non-AFA trawl CP sector. Depending upon the PSC amount allocated to the non-AFA trawl CP sector under Amendment 80, the PSC allowance that is leftover to be allocated to the remaining three trawl sectors (non-AFA trawl CV, AFA CV, AFA CP) could be relatively small. The preferred alternative in Amendment 80 will determine whether or not sufficient PSC is available for the other trawl sectors' cod fishery, based on historical use.

In addition, the preferred alternative on the CDQ provisions in Amendment 80 may affect whether non-target CDQ species and PSC species harvested incidentally in the CDQ target Pacific cod fishery would also need to be addressed. Amendment 80 proposes to also increase the CDQ reserves of the species caught incidentally in the CDQ flatfish fisheries, and these are the same species that are incidentally caught in the BSAI Pacific cod fisheries. Thus, there does not appear to be a need to further increase the non-target species CDQ allocations (e.g., halibut, arrowtooth flounder, shortraker rockfish, rougheye

rockfish, Bering Sea other rockfish, and ‘other species’) that are caught incidentally in the Pacific cod fisheries under Amendment 85. Note that even without the proposed increase under Amendment 80, the economic analysis of the proposed CDQ Pacific cod reserve increase under Amendment 85 did not show there is a need to increase CDQ reserves of species caught incidentally to Pacific cod.

Gulf of Alaska Groundfish Rationalization

The Council is considering alternative management approaches to “rationalize” the GOA groundfish fisheries. Rationalization may improve the economic stability of 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 and Congress 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 community entities. Final action on Gulf rationalization is not currently scheduled.

Anticipated Effects

The EIS for this action has not yet been completed, as the Council continues to develop its primary alternatives. However, the intention of the rationalization program is to provide economic and socioeconomic benefits to participants in GOA groundfish fisheries, including those that also participate in the BSAI Pacific cod fishery sectors. 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. Because the effects of the alternatives have not been comprehensively evaluated, the economic impacts are uncertain. It is not possible to speculate whether individual participants in the BSAI Pacific cod sectors will be better or worse off under GOA groundfish rationalization.

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 Final EIS. The analysis will include the existing alternative in the EFH Final EIS, an alternative to leave the rolling closure area open, and options to open 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 Pacific cod sectors, 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. The 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 Pacific cod fishery sectors, 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, the Council, 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) until October 2006.

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 the BSAI Pacific cod fishery sectors.

Aleutian Islands Pacific Cod Fishery in State Waters

At its December 2005 meeting, the Board generated a proposal (BOF proposal 399) to create a new regulation establishing a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude. To date, the Pacific cod fishery in State waters has been 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. Upon request of the Council, the Board and the Council met jointly to discuss the proposal on February 3 in Anchorage, and the Board took action on this proposal during its February 23–25, 2006 meeting in Ketchikan.

The Board voted to establish a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude, which would start on or after March 15, and only after the Federal Pacific cod trawl CV A season is closed. The Board is establishing this fishery through an emergency regulation, such that the fishery can begin in March 2006. The primary elements of the fishery include:

1. The guideline harvest level (GHL) for the state waters fishery will be an amount calculated as 3% of the Federal BSAI Pacific cod ABC. The future calculation (the “source” of the GHL) will be the Council’s decision should the BSAI ABC be split into separate AI and BS ABCs in a future TAC specifications process. The State water fishery, however, would remain the equivalent of 3% of the combined BS and AI ABC.
2. The fishery will only be authorized for 2006 and 2007. The fishery may occur only from March 15 through December 31 each year, or until the GHL is taken.
3. Legal fishing gear will be pot, jig, hand troll, non-pelagic trawl, and longline gear. Non-pelagic trawl and longline gear may not be used during May 1 – September 15, unless these vessels are operating in the <60’ vessel size limitation areas near Adak Island. (In Sitkin Sound, near Adak Island, the vessel size limit is in effect year-round for all gear types.)
4. The fishery will start only on or after March 15, and also only after the Federal Pacific cod trawl catcher vessel A season is closed.
5. A maximum of 70% of the GHL may be harvested prior to June 10. Any unharvested GHL during the first season can be rolled into the second season such that not more than 70% of the total annual GHL can be harvested in the first season.
6. During the year, the Commissioner of ADF&G may determine that a portion of the GHL may be left unharvested. The Commissioner will notify NMFS and the Council of that amount so that it may be reallocated to the Federal fisheries that are still open at that time.
7. The fishery requires registration with ADF&G of the type of gear to be used.
8. The daily trip limit is 150,000 lbs of Pacific cod; there is also a limit of up to 300,000 lbs of unprocessed Pacific cod onboard the vessel. A vessel may not have more processed fish onboard than the round weight equivalent of the fish reported on ADF&G fishtickets during the AI state waters Pacific cod fishery. Participants must notify ADF&G daily of the amount harvested and the total amount on board.
9. All Pacific cod harvested must be retained. If a participant harvests an amount in excess of the daily trip limit, that excess amount of product must be forfeited to the State. No penalty for overages will be assigned to a participant who immediately reports the overage.
10. The Commissioner of ADF&G may impose bycatch limitations or retention requirements.

The State regulations authorizing this fishery allow the fishery to begin on or after March 15, 2006, upon closure of the Federal BSAI trawl CV cod A season.²¹ NMFS closed the directed trawl CV Pacific cod fishery in the BSAI on March 8, 2006, in order to avoid exceeding the A season allocation, thus, the expectation is that the State water AI fishery would begin at noon on March 15. As the 2006 TAC has already been specified and sectors are currently fishing under the existing allocations, NMFS will need to effect an inseason adjustment under Federal regulations (50 CFR 679.25) to re-specify the TAC, accounting for the 3% reduction for the GHL. This will necessitate re-calculating the sector allocations and seasonal apportionments that are currently published in Federal regulations.²² This modification is expected to occur in mid-March.

This action will also necessarily affect the 2006 BSAI Pacific cod CDQ reserve, as that reserve is calculated as 7.5% of the BSAI Pacific cod TAC. Thus, all sectors will realize a proportional reduction of 3% of their current Federal allocations as a result of this action. Three percent of the 2006 ABC of 194,000 mt represents about 5,820 mt (or 12,830,772 lbs).

Anticipated Effects

As stated above, the overall effect of a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude is that all sectors, including the CDQ fishery, will realize a proportional reduction of 3% of their current Federal allocations. Because the same gear types are allowed to fish the GHL as are allowed in the Federal fishery, recognizing that trawl and hook-and-line are excluded from the AI State water fishery during May 1 – September 15, it is not clear to what extent each sector will participate in and benefit from the State water fishery in the Aleutians.

The overall economic effect on the sectors is uncertain absent an analysis. However, it is anticipated that while the intent is to allow additional harvests by the identified sectors in State waters west of 170° W longitude, the overall effect will be a redistribution of cod harvests and associated revenues from vessels of all gear types that fish in Federal waters in the AI or in the Bering Sea (within Federal or State waters) and from ports east of 170° W. Thus, there will likely be a disproportionate negative effect on those sectors that do not desire to fish in State waters in the Aleutian Islands, compared to those sectors that have harvested and want to continue to harvest Pacific cod in the Aleutians and within State waters. In general, the fixed gear and jig gear sectors have reduced the AI share of their total BSAI Pacific cod harvest in recent years, while the trawl sectors have generally increased the AI share of their total BSAI Pacific cod harvest (see Section 3.4.4.3 for details on AI harvest by sector).

Note also that the State fishery is limited to 70% of the total GHL in the first half of the year (prior to June 10) and any unharvested quota from the first season is rolled over to the second season (on or after June 10). Under a 5,820 mt GHL, this equates to 4,074 mt in the first season and 1,746 mt in the second season. This provision mirrors the overall Pacific cod seasonal apportionments in place under the current Steller sea lion mitigation measures.

The press release announcing the AI State Pacific cod fishery also states that bycatch limits that apply in the parallel fishery will apply in the State waters fishery (ADF&G news release, 3/1/06). Halibut mortality from a State waters groundfish fishery cannot be deducted from a Federal fishery category, thus, the PSC allowances for the Federal Pacific cod fisheries will not be modified as a result of this action.

²¹ Amendment 85 includes an option to establish separate BSAI Pacific cod allocations for the non-AFA trawl CV and AFA trawl CV sectors. Staff is uncertain, should the Council choose this option, whether the State water AI Pacific cod fishery would only begin after both Federal BSAI Pacific cod trawl CV sector A seasons are closed.

²² See Table 5 (2006 and 2007 Gear Shares and Seasonal Allowances of the BSAI Pacific cod TAC) in 71 FR 10870, March 3, 2006.

The State could choose to enforce Federal closures that result from reaching PSC limits in State waters, but that decision is at the Commissioner's discretion. Note that both trawl and longline gear are prohibited from participating in the State water AI fishery from May 1 – September 15; these are the only gear sectors that are subject to PSC bycatch allowances in the Federal Pacific cod fishery. Pot and jig gear are exempt from PSC limits due to very low bycatch rates. However, the duration of the State water fishery is uncertain. Given a March 15 start date, it may take less than a week to harvest the first season GH of 4,074 mt, and all identified gear types are allowed to participate prior to May 1.

Note that observer coverage is not required under a State water fishery. However, it is assumed that this fishery will operate similarly to the Gulf of Alaska State Pacific cod fishery, in that if the vessel in the State fishery has a Federal Fisheries Permit (FFP), then any time the vessel operates in the State fishery it is subject to observer coverage requirements, and any time an observer is onboard in the State fishery can be counted toward the Federal observer coverage requirements. One presumes that this is based on the premise that any time a vessel has an FFP, it is authorized to fish in the EEZ when the fishery is open. When the Federal GOA Pacific cod fishery closes, generally, the majority of the fleet surrenders the FFP in order to relieve itself of observer coverage requirements. A few vessels, however, sometimes choose to continue to keep their FFP and carry observers in the State water cod fishery, in order to satisfy their observer coverage requirements.

Finally, note that the Board's action to establish a State water AI Pacific cod fishery was limited to 2006 and 2007. Thus, while the overall effect on the Federal BSAI Pacific cod fishery is that the ABC would be reduced by 3% prior to the TAC and sector allocations (including CDQ) being established, this action may be limited to two years. In that case, the State water AI Pacific cod fishery may not overlap with the action being considered under Amendment 85, depending on the timing of implementation. Should the Council select a preferred alternative on Amendment 85 in April 2006, it is possible that, upon approval of the Secretary of Commerce, the action could be implemented by January 2007. However, there is the potential that the amendment could not be fully implemented until January 2008.

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 includes a description of the purpose and need for the action and the management objectives, a description of the alternatives proposed to meet those objectives, identification of the individuals or groups that may be affected by the action, the nature of those impacts (quantifying the economic impacts where possible), and discussion of the tradeoffs. The economic impacts of the alternatives under consideration are summarized in Section 3.4.

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 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.

3.1 Purpose and Need for the Action

The BSAI Pacific cod fishery is targeted by multiple gear types, primarily by trawl gear and hook-and-line catcher processors, and smaller amounts by hook-and-line catcher vessels, jig vessels, and pot gear. This is a fully prosecuted fishery, with a 2006 TAC of 194,000 mt.²³ Excluding the 7.5% allocated to the western Alaska Community Development Quota (CDQ) Program reserve, the 2006 non-CDQ TAC is

²³Note that in late February 2006, the Alaska Board of Fisheries established a State water Aleutian Islands fishery through emergency rule. This fishery is limited by a guideline harvest level of 3% of the BSAI Pacific cod ABC, which equates to 5,820 mt of the 2006 BSAI Pacific cod ABC and TAC. NMFS is expected to re-specify the 2006 TAC in mid-March to account for the 3% reduction. The revised 2006 ITAC would be 188,180 mt. The State water fishery was implemented for 2006 and 2007 and is expected to begin on March 15, 2006. This document continues to use a 2006 TAC of 194,000 mt for illustrative purposes. More detail on the elements of the State water AI fishery is provided in Section 2.3.9.2.

179,450 mt. The BSAI Pacific cod TAC has been apportioned among the different gear sectors since 1994, and a series of amendments have modified or continued the allocation system. Thus, the current BSAI Pacific cod allocations were established using a step-wise approach. Currently, Federal regulations at 50 CFR 679.20(a)(7) authorize distinct (non-CDQ) BSAI Pacific cod sector allocations as shown Table 3-1.

Problem Statement

In October 2004, the Council modified the elements and options for BSAI Amendment 80 and removed Pacific cod allocations from that amendment package. The intent was to streamline the analysis and shift it back to its original intent, to provide the non-AFA trawl catcher processor sector with a tool to meet the groundfish retention standards adopted in BSAI Amendment 79. The Council also reaffirmed that modifications to the Pacific cod allocations could be addressed in a separate amendment. To that end, the Council initiated a new plan amendment to alter the current BSAI Pacific cod allocations (see Table 3-1).

Table 3-1 Non-CDQ BSAI Pacific cod allocations

Total trawl	47%
Trawl CP	50%
Trawl CV	50%
Total fixed gear²	51%
Hook-and-line CP	80%
Hook-and-line CV	0.3%
Pot CP	3.3%
Pot CV	15.0%
Fixed gear <60'	1.4%
Total jig gear	2%

¹7.5% of the BSAI P.cod TAC is deducted for the CDQ Program before the remaining sector allocations are made.
²The fixed gear ICA is deducted from the total fixed gear allocation of 51% before it is further allocated among the fixed gear sectors.

In December 2004, the Council reviewed a discussion paper outlining prior Council actions regarding BSAI Pacific cod allocations, the relevant problem statements associated with these past actions, and potential decision points related to structuring new alternatives and options for analysis. Upon review of the discussion paper, the Council approved a problem statement and a strawman document outlining draft components and options for the new amendment. The problem statement focuses on two issues: 1) BSAI Pacific cod allocations to all gear sectors (trawl, jig, hook-and-line, pot, and CDQ); and 2) apportionment of the BSAI Pacific cod sector allocations between the BS and AI subareas.

The first part of the problem statement notes the annual reallocations of TAC among gear sectors and concerns that the current BSAI Pacific cod allocations do not adequately reflect actual use by sector. While there is no sunset provision or regulatory requirement to review or modify the sector allocations, the Council's motion on Amendment 46 included a provision to review the overall gear sector allocations four years after implementation. This review, originally intended at the end of 2000, has not yet occurred.

This amendment is intended to modify the sector allocations currently in place to better reflect actual dependency and use by sector, in part by basing the allocations on total retained catch by sector. Thus, the catch history on which the allocations are based would include any quota that was reallocated from one sector to another due to the sector's projected inability to harvest its entire allocation by the end of the year. There are noted exceptions to basing the allocations on recent catch history, as reflected in the allocation options for the <60' fixed gear sector, jig sector, and CDQ reserve.

BSAI Pacific Cod Sector Allocations: Problem Statements

Part I: BSAI Pacific Cod Sector Allocations

The BSAI Pacific cod fishery is fully utilized and has been allocated among gear groups and to sectors within gear groups. The current allocations among trawl, jig, and fixed gear were implemented in 1997 (Amendment 46) and the CDQ allocation was implemented in 1998. These allocations are overdue for review. Harvest patterns have varied significantly among the sectors resulting in annual inseason reallocations of TAC. As a result, the current allocations do not correspond with actual dependency and use by sectors.

Participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the allocations to the trawl, jig, fixed gear, and CDQ sectors. To reduce uncertainty and provide stability, allocations should be adjusted to better reflect historic use by sector. The basis for determining sector allocations will be catch history as well as consideration of socio-economic and community factors.

As other fisheries in the BSAI and GOA are incrementally rationalized, historical participants in the BSAI Pacific cod fishery may be put at a disadvantage. Each sector in the BSAI Pacific cod fishery currently has different degrees of license requirements and levels of participation. Allocations to the sector level are a necessary step on the path towards comprehensive rationalization. Prompt action is needed to maintain stability in the BSAI Pacific cod fisheries.

Part II: Apportionment of BSAI Pacific Cod Sector Allocations between the BS and AI

In the event that the BSAI Pacific cod ABC/TAC is apportioned between the BS and the AI management areas, a protocol needs to be established that would continue to maintain the benefits of sector allocations and minimize competition among gear groups; recognize differences in dependence among gear groups and sectors that fish for Pacific cod in the BS and AI; and ensure that the distribution of harvest remains consistent with biomass distribution and associated harvest strategy.

This amendment is also intended to establish more refined allocations to the BSAI Pacific cod sectors, by evaluating the potential for establishing separate and distinct allocations for the non-AFA trawl CP and AFA trawl CP sector and the non-AFA trawl CV and AFA trawl CV sectors. The trawl CP sectors currently have a combined BSAI Pacific cod allocation, as do the trawl CV sectors. The trawl allocation is split equally between the trawl CP and CV sectors, thus, each trawl sector currently receives 23.5% of the non-CDQ BSAI Pacific cod TAC. The overall effort to constrain and protect the harvest distribution among all of the BSAI Pacific cod gear sectors is noted as a necessary step toward comprehensive rationalization.

The second part of the problem statement addresses the need to establish a methodology by which to maintain sector allocations and minimize competition among gear groups, should the BSAI Pacific cod TAC be apportioned between the BS and AI subareas during a future specifications process. The BSAI Pacific cod ABC is currently based on an Eastern Bering Sea assessment model and expanded by a multiplier into a BSAI-wide amount. The issue of whether to split the combined BSAI ABC (and TAC) by subarea has been raised at Plan Team, Science and Statistical Committee (SSC), and Council meetings during the last several years. In December 2003, the SSC recommended that the ABC should be split between BS and AI areas, but noted that management implications may preclude the Council from

adopting separate area TACs in the specifications process. The SSC requested that the assessment authors evaluate potential methods for splitting the ABC and their potential management implications, so that specific recommendations could be made to the Council in the future.

Given the management implications related to the numerous sector allocations in the BSAI, the Pacific cod TAC has continued to be established for the entire BSAI management area. However, if the Council determines that it is likely that the TAC groupings will be modified in the foreseeable future, it would be beneficial to provide direction to NMFS regarding the formula for establishing new subarea allocations to each sector. The second part of this amendment package provides alternative approaches for this action. The intent is to provide direction to NMFS regarding how to establish allocations in the BS and AI management areas prior to separate TACs being issued in the annual specifications process. Absent this direction, there is concern that the time necessary to undergo an analysis and notice and comment rulemaking after the TAC is divided would cause significant interruption of the cod fisheries. In addition, absent a new regulatory or plan amendment, NMFS could likely only implement equal allocations in both areas (e.g., if a sector receives a 40% BSAI allocation, it would receive 40% in the BS and 40% in the AI upon a TAC split). While this is one of the methodologies evaluated in this analysis, the public and the Council raised concerns about this methodology being the only potential solution by default. The primary concern being that it does not reflect recent historical catch by sector in the Aleutian Islands subarea.

3.2 Description of the Alternatives

The following sections identify the alternatives and options for consideration in this amendment package. Part I contains Alternatives 1 and 2, and Part II contains Alternatives 3–6. Any of the alternatives under Part II may be selected in conjunction with the alternatives in Part I. Table 3-2 at the end of the section provides a summary of the alternatives and components in both parts.

3.2.1 Part I: BSAI Pacific cod sector allocations

Part I of this action addresses the allocations of BSAI Pacific cod to the various gear sectors and includes two alternatives. Alternative 1 is the no action alternative, meaning the BSAI Pacific cod allocations for the jig, trawl, fixed gear (hook-and-line and pot) and CDQ sectors would continue as in current regulations. Alternative 2 would modify the current BSAI Pacific cod allocations among the jig, trawl, and fixed gear (hook-and-line and pot) sectors according to a set of catch history years or other considerations. Alternative 2 also contains options to maintain the CDQ reserve of BSAI Pacific cod or increase the reserve. Alternatives 1 and 2 each consist of the following components:

- Component 1: Sectors for which allocations will be established
- Component 2: Sector allocations
- Component 3: Seasonal apportionments
- Component 4: Rollovers between gear sectors
- Component 5: CDQ allocation of Pacific cod
- Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group
- Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors
- Component 8: Apportionment of cod non-trawl halibut PSC

ALTERNATIVE 1. No Action. BSAI Pacific cod allocations for the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as in current regulations.

Allocation of BSAI Pacific Cod to Sectors

Component 1: Sectors for which allocations are established

BSAI Pacific cod allocations will continue to be established in Federal regulations for the following sectors:

- Trawl CPs
- Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs
- Pot CPs
- Pot CVs
- Hook-and-line and pot CVs <60'
- Jig CVs

Component 2: Sector Allocations

BSAI Pacific cod allocations to the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as determined under BSAI Amendments 46 and 77:

51% fixed gear

- (80% hook-and-line catcher processors)
- (0.3% hook-and-line catcher vessels)
- (3.3% pot catcher processors)
- (15.0% pot catcher vessels)
- (1.4% hook-and-line/pot vessels <60' LOA)²⁴

47% trawl gear

- (50% trawl catcher vessels)
- (50% trawl catcher processors)

2% jig gear

The BSAI Pacific cod TAC that is allocated to the above sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Component 3: Seasonal Apportionments

The seasonal apportionments of each sector's allocation would remain as shown below. Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector.

²⁴While the <60' fixed gear (hook-and-line and pot) sector receives a separate allocation of BSAI Pacific cod, these vessels fish off the general hook-and-line CV and pot CV allocations, respectively by gear type, when those fisheries are open.

Trawl CV:	70%	(Jan. 20 – April 1)
	10%	(April 1 – June 10)
	20%	(June 10 – Nov. 1)
Trawl CP:	50%	(Jan. 20 – April 1)
	30%	(April 1 – June 10)
	20%	(June 10 – Nov. 1)
Hook-and-line gear $\geq 60'$:	60%	(Jan. 1 – June 10)
	40%	(June 10 – Dec. 31)
Pot gear $\geq 60'$:	60%	(Jan. 1 – June 10)
	40%	(Sept. 1 – Dec. 31)
Fixed gear $< 60'$:	No seasonal apportionments	
Jig gear:	40%	(Jan. 1 – April 30)
	20%	(April 30 – Aug. 31)
	40%	(Aug. 31 – Dec. 31)

Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

Projected unused trawl sector allocations are considered for reallocation to the other trawl sector before being reallocated to the fixed gear sectors.

Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.

Projected unused allocation in the jig sector is considered for reallocation to the $< 60'$ fixed gear CV sector on a seasonal basis.

Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) is considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.

Projected unused allocation in the $< 60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ is reallocated to the hook-and-line CP sector.

Component 5: CDQ Allocation of BSAI Pacific Cod

The CDQ Program reserve is 7.5% of the BSAI Pacific cod TAC. The reserve is removed from the TAC prior to the allocation to all other sectors.

Apportionment of BSAI PSC to Sectors

Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The trawl halibut PSC is typically 3,400 mt, which is apportioned between Pacific cod; yellowfin sole; rocksole/other flatfish/flathead sole; pollock/Atka mackerel/other. Generally, about 1,400 mt is apportioned to the cod trawl fishery group.

The crab PSC for 2005 and 2006 is 182,225 red king crab in Zone 1; 4,494,569 *C. opilio* in the *C. Opilio* Bycatch Limitation Zone (COBLZ); and 906,500 *C. bairdi* in Zone 1 and 2,747,250 *C. bairdi* in Zone 2. The cod trawl fishery group bycatch allowance (2005–2006) is 26,563 red king crab; 139,331 *C. opilio*, 183,112 *C. bairdi* in Zone 1; and 324,176 *C. bairdi* in Zone 2.

Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

There is no further apportionment of the cod trawl fishery group halibut and crab PSC to the trawl sectors (trawl CV sector and trawl CP sector).

Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The non-trawl halibut PSC allowance is typically 833 mt, which is apportioned between the Pacific cod and ‘other non-trawl’ fisheries. Generally, about 775 mt is apportioned to the cod non-trawl fishery group. No further apportionment of the halibut bycatch allowance is made between the hook-and-line CP sector and the hook-and-line CV sector.

ALTERNATIVE 2: Modify the current BSAI Pacific cod allocations among the jig, trawl, and fixed gear (hook-and-line and pot) sectors according to a set of catch history years or other considerations.

Allocation of BSAI Pacific Cod to Sectors

Component 1: Sectors for which allocations will be established

Catch history will be calculated for the following sectors. The Council may choose to establish allocations for combined sectors; however each sector’s catch history will be calculated separately.

- AFA Trawl CPs (AFA 20)²⁵
 - Suboption a: Include catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
 - Suboption b: Exclude catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
- Non-AFA Trawl CPs
- AFA Trawl CVs
- Non-AFA Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs $\geq 60'$
- Pot CPs
- Pot CVs $\geq 60'$
- Hook-and-line and pot CVs $< 60'$
- Jig CVs

Eligibility criteria for non-AFA trawl catcher vessels to be included in the AFA CV sector for purposes of the BSAI Pacific cod allocations:

Option 1.1 The holder of a license that arose from a vessel/history that made a minimum of 100 mt of Pacific cod landings during each of the years 1995–1997.

²⁵Refers to the 20 trawl catcher processors listed in Section 208(e) of the American Fisheries Act (AFA).

Component 2: Sector Allocations

For each of the years under consideration, each sector's annual harvest share will be calculated for that individual year as a percentage of the total retained legal catch by all sectors. For each of the sets of catch history years analyzed, each sector's harvest percentage will be calculated as the sector's average of the annual harvest share. For purposes of determining catch history, a sector's 'catch' means all retained legal catch (including rollovers) from both the Federal fishery and parallel fishery in the BSAI (less CDQ). This includes retained legal catch from both LLP and non-LLP vessels.

One set of years will be selected for all sectors. There is a suboption under each set of years to drop one year. Each sector would drop its worst year (smallest annual harvest share percentage for that sector). This results in an aggregate percentage greater than 100% for a set of years for all sectors combined; thus, the result would be scaled back to 100%.

In all options and suboptions, the <60' fixed gear CV sector will only fish from the direct allocation to that sector.

The BSAI Pacific cod TAC that is allocated to the above sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted off the top from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Option 2.1: 1995–2002

Option 2.2: 1997–2000

Option 2.3: 1997–2003

Option 2.4: 1998–2002

Option 2.5: 1999–2003

Option 2.6: 2000–2003

Suboption 1 (applies to Options 2.1–2.6): Drop one year.

Option 2.7: The Council can select percentages for cod allocated to each sector that fall within the range of percentages analyzed.

Option 2.8: Allocations (whether combined or separate) to the <60' fixed gear CV sector and jig sector shall collectively not exceed:

Suboption 1: Actual catch history percentage for jig and <60' fixed gear CVs combined (from the set of years selected for all sectors under Op. 2.1–2.7)

Suboption 2: 2.71 % (represents 2% jig allocation plus 0.71% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 3: 3% (represents 2% jig allocation plus 1% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 4: 4% (represents 2% jig allocation plus 2% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Component 3: Seasonal Apportionments

Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector. Options 3.1, 3.2, and 3.3 are mutually exclusive.

- Option 3.1 Status quo. Allocations determined under this amendment would be apportioned seasonally among the gear sectors as in current regulation (see Alternative 1).
- Option 3.2 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A and B seasons for trawl gear and the A season for fixed gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the C season for trawl gear. Provide that any increase in the overall fixed gear allocation resulting from the options would be applied only in the B season for fixed gear.
- Option 3.3 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A season for trawl gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the B and C seasons for trawl gear:
- Suboption 1: Reduction applied proportionately to B and C seasons
 - Suboption 2: Reduction applied equally to B and C seasons
 - Suboption 3: Provide that any reduction in the overall trawl allocation resulting from the options would first be applied in the C season and then in the B season. Any increase in the allocation to fixed gear would be applied in the A season. Any reduction in the trawl allocation in the B or C seasons will be made proportionately between the AFA CP, non-AFA CP, and AFA CV, non-AFA CV sectors based on their new allocation percentages. In the event that this suboption exceeds the 70/30 Steller sea lion seasonal apportionment, the hook-and-line CP sector's A season allocation will be adjusted as necessary by shifting A season allocation to the B season.
- Option 3.4 Apportion the BSAI Pacific cod jig allocation on a trimester basis as follows:
- 60% (Jan. 1 – April 30)
 - 20% (April 30 – August 31)
 - 20% (August 31 – December 31)

Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

- Option 4.1** Modified status quo. The suite of provisions below comprises Option 4.1.
- 4.1.2 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).
 - 4.1.2 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.
 - Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.
 - 4.1.6 Projected unused allocation in the jig sector is considered for reallocation to the $<60'$ fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the $<60'$ fixed gear CV sector on September 1.

- 4.1.7 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- 4.1.8 Projected unused allocations in the $< 60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Option 4.2 Projected unused allocations to any sector delivering inshore must be considered for reallocation to other inshore sectors before being considered for reallocation to any offshore sector. The suite of provisions below comprises Option 4.2.

- 4.2.2 Projected unused allocation in the jig sector is considered for reallocation to the $< 60'$ fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the $< 60'$ fixed gear CV sector on September 1.
- 4.2.2 Any unused allocation from any inshore sector will first be considered for reallocation to the jig sector and/or $< 60'$ fixed gear CV sector; then to the hook-and-line CV $\geq 60'$ or pot CV $\geq 60'$ sector; then to the trawl CV sectors. Any CV allocation that is not likely to be harvested through this hierarchy will be reallocated as per components 4.2.3–4.2.6 below.
- 4.2.3 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).
- 4.2.7 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.
 - Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.
- 4.2.8 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- 4.2.9 Projected unused allocations in the $< 60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Component 5: CDQ Allocation of BSAI Pacific Cod

The CDQ Program reserve for BSAI Pacific cod shall be removed from the TAC prior to the allocation to all other sectors at percentage amounts equal to one of the following options:

- Option 5.1 7.5% (status quo)
- Option 5.2 10%
- Option 5.3 15%

Apportionment of BSAI PSC to Sectors

Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

The total amount of trawl halibut PSC for the non-CDQ fisheries is 3,400 mt, which is apportioned between Pacific cod, yellowfin sole, rocksole/other flatfish/flathead sole, pollock/Atka mackerel/other. Generally, 1,400 mt is apportioned to the cod trawl fishery group, but this amount and actual use can vary annually. A significant amount of Pacific cod is taken incidentally in other trawl fisheries so the PSC use associated with that Pacific cod harvest would be attributed to a fishery group other than cod trawl.

Amendment 80 will also allocate halibut PSC to the H&G trawl sector so that the amount of halibut PSC available to the remaining trawl sectors will be reduced.

Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

- Option 7.1 The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the cod allocation percentages determined for each sector under Component 2.
- Option 7.2 The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the sector's directed cod fishery harvests during the qualifying period under Component 2.

Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is 833 mt. The 833 mt is apportioned between cod hook-and-line sectors and other non-trawl fisheries during the annual specifications process. Generally, 775 mt is apportioned to hook-and-line cod fisheries and 58 mt to other non-trawl. This component would divide the halibut PSC amount apportioned to non-trawl cod between the hook-and-line CP sector and hook-and-line CV sector (for CVs $\geq 60'$ and CVs $< 60'$ combined):

- Option 8.1 In proportion to the BSAI Pacific cod TAC allocated to the sectors
- Option 8.2 10 mt for CVs, remainder for CPs

3.2.2 Part II: Apportionment of BSAI Pacific cod sector allocations to BS and AI subareas

Part II provides a no action alternative and three action alternatives to apportion BSAI Pacific cod sector allocations to the BS and AI areas in the event that the BSAI Pacific cod ABC/TAC is apportioned to the BS and AI areas during the specifications process. **Any of Alternatives 3–6 can be selected in conjunction with Alternatives 1 or 2 from Part I. Alternatives 3–6 are mutually exclusive.**

ALTERNATIVE 3: No action.

A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. (If this alternative was selected, only the approach described under Alternative 5 could be implemented by NMFS without a new regulatory or plan amendment.)

ALTERNATIVE 4: Sector allocations remain as BSAI (with BS and AI TACs)

No allocation to a sector of a specific percentage of a sub-area. Sectors would have a BSAI allocation (in Part I) to fish in either sub-area (BS and AI) if the sub-area is open for directed fishing and TAC is available.

ALTERNATIVE 5: BS and AI sector allocations based on equal percentage from BSAI sector allocations

Allocation to a sector of an equal percentage in both sub-areas. The allocation percentage of BSAI TAC a sector receives in Part I would result in that same percentage being applied to both the BS and AI sub-areas so that a sector would have the same percentage in both sub-areas.

ALTERNATIVE 6: (Preliminary preferred alternative).

BS and AI sector allocations based on a sector's historic harvest in the AI with remainder of sector's overall BSAI allocation to be caught in the BS. Sector's BSAI allocation is maintained and used in annual calculation.

Option 6.1	1995 – 2002
Option 6.2	1997 – 2003
Option 6.3	2000 – 2003
Option 6.4	2002 – 2003

Table 3-2 Summary of the alternatives under Part I and II

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS				
Components	Alternative 1 (No Action)		Alternative 2 (Revise allocations)	
1. Sectors for which allocations are established	Trawl CP Trawl CV Hook-and-line CP Hook-and-line CV	Pot CP Pot CV H&L/pot CV <60' Jig CV	AFA Trawl CP AFA Trawl CV Non-AFA Trawl CP Non-AFA Trawl CV Pot CV ≥60'	Pot CP Hook-and-line CP Hook-and-line CV ≥60' H&L/pot CV <60' Jig CV
2. Sector allocations	51% fixed gear: (80% hook-and-line CP) (0.3% hook-and-line CV) (3.3% pot CP) (15.0% pot CV) (1.4% hook-and-line/pot <60') 47% trawl gear: (50% trawl CP) (50% trawl CV) 2% jig gear		Six options to revise sector allocations based on sector's average annual harvest share during the years: 1995–2002 1997–2000 1997–2003 1998–2002 1999–2003 2000–2003 Drop year provisions exist under each option. The Council can select any allocations within the range provided. Options exist to provide allocations (combined or separate) to the <60' fixed gear and jig gear sectors not to exceed: 2.71%, 3%, or 4%.	
3. Seasonal apportionments	<u>Trawl CV:</u> 70% (Jan. 20 – Apr. 1) 10% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>Trawl CP:</u> 50% (Jan. 20 – Apr. 1) 30% (Apr. 1 – June 10) 20% (June 10 – Nov. 1) <u>Fixed gear >60':</u> 60% (Jan. 1 – June 10) 40% (June 10 – Dec. 31) <u>Fixed gear <60':</u> no seasonal apportionments <u>Jig gear:</u> 40% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 40% (Aug. 31 – Dec. 31)		Option to maintain status quo seasons (see Alt. 1). Option to maintain the current % of ITAC allocation to the A and B seasons for trawl gear and the A season for fixed gear. Option to maintain the current % of the ITAC allocated to the A season for trawl gear. Three suboptions exist to apportion the reduction to the trawl sectors' allocations between the B and C season. Option to modify the jig apportionments to: 60% (Jan. 1 – Apr. 30) 20% (Apr. 30 – Aug. 31) 20% (Aug. 31 – Dec. 31)	
4. Rollovers	Unused trawl sector allocations are first considered for reallocation to other trawl sector Unused pot sector allocations are first considered for reallocation to other pot sector Reallocation from trawl to fixed gear: 0.9% pot CP 4.1% pot CV 95% hook-and-line CP Reallocation from jig to <60' fixed gear on seasonal basis Unused <60' fixed gear, pot, and hook-and-line CV quota is reallocated to hook-and-line CP sector		Option to generally maintain status quo rollover provisions, with accommodation of new trawl sectors (see Alt. 1). Option to modify the rollovers from trawl to fixed gear according to the new fixed gear allocations determined under Component 2. Option to reallocate unused quota from an inshore sector to the other inshore sectors before reallocating to offshore sectors.	

PART I: BSAI PACIFIC COD SECTOR ALLOCATIONS		
Components	Alternative 1 (No Action)	Alternative 2 (Revise allocations)
5. CDQ allocation	7.5% of the BSAI Pacific cod TAC	Options exist to increase CDQ allocation of BSAI Pacific cod to 10% or 15%.
6. Apportionment of trawl halibut and crab PSC to cod trawl fishery group	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.	The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process.
7. Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors	No apportionment of cod trawl halibut and crab PSC between the trawl sectors.	Apportion the cod trawl halibut and crab PSC among the trawl sectors determined in Component 1, according to their cod allocations determined in Component 2.
8. Apportionment of cod non-trawl halibut PSC	No apportionment of the cod non-trawl halibut PSC between hook-and-line CP and CV sectors.	Apportion the cod non-trawl halibut PSC between hook-and-line CP and CV sectors either 1) in proportion to their cod allocations, or 2) 10 mt for CVs, remainder for CPs.

PART II: APPORTIONMENT OF BSAI PACIFIC COD SECTOR ALLOCATIONS TO BS AND AI SUBAREAS			
Alternative 3 (No Action)	Alternative 4 (Sector allocations remain BSAI)	Alternative 5 (BS and AI equal %)	Alternative 6 (Based on history in AI)
The Council would not select a methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas. The only approach that could be implemented without a new regulatory amendment is Alt. 5.	Sectors would have a BSAI allocation from Part I to fish in either subarea (BS or AI) if the subarea is open for directed fishing and TAC is available.	The allocation the sector receives under Part I would be applied to both the BS and AI subareas.	The sector's overall BSAI allocation from Part I is maintained. Four options exist to determine the sector's AI allocation, based on the sector's AI harvest during: 1995 – 2002 1997 – 2003 2000 – 2003 2002 – 2003 The remainder of the sector's overall BSAI allocation is in the BS.

Note: An alternative must be selected under both Part I and Part II. Any of Alternatives 3 – 6 can be selected in conjunction with Alternative 1 or 2 from Part I.

3.3 Description of the Pacific cod fishery

The most recent descriptions of the Pacific cod fishery are contained in the Stock Assessment and Fishery Evaluation (SAFE) report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Islands Area: Economic Status of the Groundfish Fisheries off Alaska, 2004 (Hiatt et al, 2005) and the Groundfish PSEIS (NMFS, 2004a). The SAFE document includes information on the catch and revenues from the fisheries, the numbers and sizes of fishing vessels and processing plants, and other economic variables that describe or relate to the performance of the fisheries. Section 3.9.2 of the Groundfish PSEIS describes the characteristics and activities of trawl, pot, hook-and-line, and jig catcher vessels and catcher processors of various lengths operating in the BSAI. In addition to reporting the catch and revenues from the BSAI Pacific cod fishery by sector, that document contains detailed information on the owners by region of residence, the annual cycle of operations and dependence on groundfish fisheries, and crew

employment. While this information is summarized in this section and in Chapter 4, please see these documents for further details.

Table 3-3 BSAI Pacific cod ABCs, TACs, and catch (1,000 mt round weight), 1991 – 2006

As stated previously, the Pacific cod stock is targeted by multiple gear types, principally by trawls and hook-and-line catcher processors, and smaller amounts by hook-and-line catcher vessels, jig, and pot gear. Behind pollock, Pacific cod is the second most dominant species in the commercial groundfish catch off Alaska, accounting for about 270,500 mt or 12.5% of the total 2004 commercial groundfish catch (Economic SAFE, 2005). About 80% of the total commercial Pacific cod catch off Alaska is harvested in the BSAI, with the remaining 20% from the Gulf of Alaska.

<u>Year</u>	<u>ABC</u>	<u>TAC</u>	<u>Catch</u>
1991	229,000	229,000	218.1
1992	182,000	182,000	207.3
1993	164,500	164,500	167.4
1994	191,000	191,000	193.8
1995	328,000	250,000	45.0
1996	305,000	270,000	240.7
1997	306,000	270,000	257.8
1998	210,000	210,000	195.8
1999	177,000	177,000	173.9
2000	193,000	193,000	191.1
2001	188,000	188,000	176.7
2002	223,000	200,000	196.7
2003	223,000	207,500	209.8
2004	223,000	215,500	213.8
2005	206,000	206,000	190.3*
2006	194,000	194,000	--

Source: 2004 Economic SAFE, Nov. 2005. Processor reports and fish ticket data are used for 1989 – 1990. Blend estimates for 1991 – 2002. Catch accounting system estimates for 2003 - 2005. Includes catch from Federal and State waters. *Data are preliminary for 2005.

A history of Pacific cod catch in the domestic fisheries is provided in Section 3.3.5 and in Table 3-3. Catches from foreign trawl and hook-and-line vessels (through 1987) and joint venture trawling (1980–1990) are not included. In general, trawl landings ranged from 82,000 to 132,000 mt per year since the late 1980s; PSC

halibut limits and later allocation decisions prohibited additional cod from being taken with trawl gear. Harvests from fixed gear vessels increased as these fisheries developed. Hook-and-line catch greatly increased from 1988 (2,600 mt) through 1995 (103,000 mt) and has since fluctuated around 95,000 mt. Vessels using pot gear began to make significant landings in the early 1990s of several thousand metric tons, increasing to a high of over 32,000 mt in 1996. Jig vessels starting participating in the BSAI Pacific cod fishery in the early 1990s, and have averaged a couple hundred metric tons per year since then.

Hook-and-line harvested cod are mostly taken along the slope of the continental shelf break and along the Aleutian Islands. The pot gear fisheries for Pacific cod have also concentrated along the slope and the north side of Unalaska Island, Unimak Island and Unimak Pass, with some relatively minor effort adjacent to the Aleutian Islands. The majority of Pacific cod harvested by trawl gear is taken in shallow waters on the eastern Bering Sea shelf (Groundfish PSEIS, 2004).

Figure 3-1 through Figure 3-12 indicate the location of Pacific cod fishing effort by hook-and-line, pot, and trawl gear during 1995 - 2000 and 2001 -2003, when an observer was onboard.

Figure 3-1 Location of hook-and-line catcher processor sector Pacific cod catch, 2001–2003

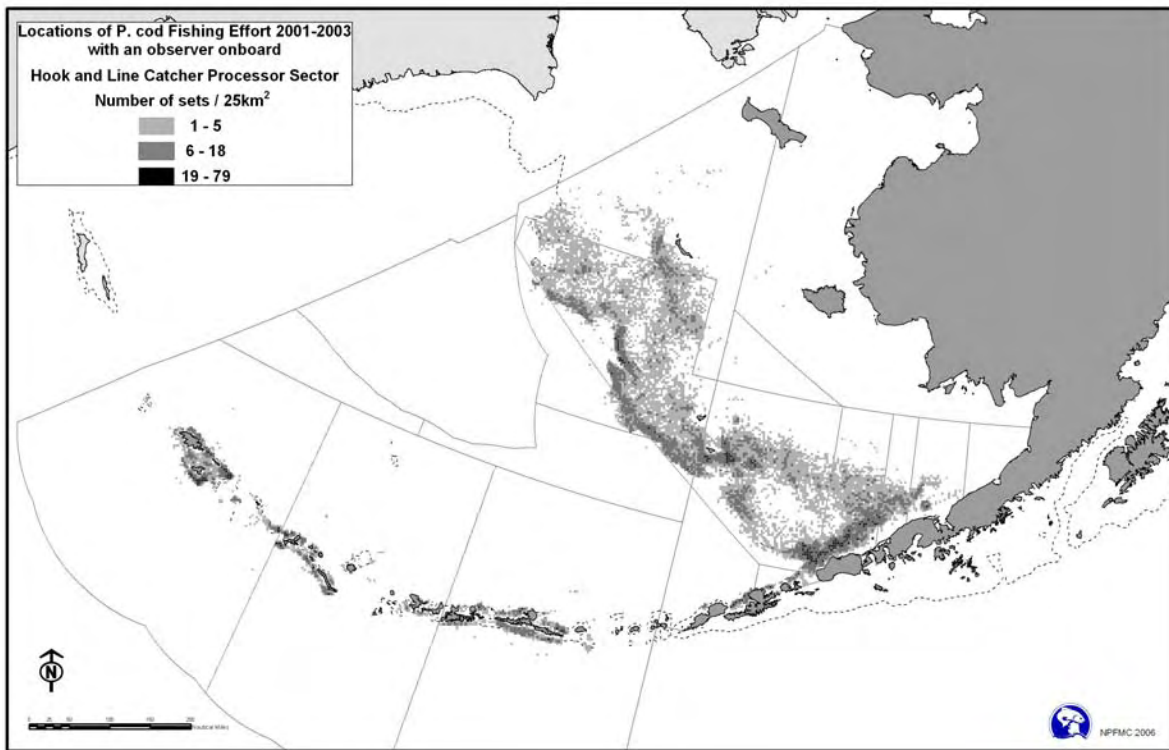


Figure 3-2 Location of hook-and-line catcher processor sector Pacific cod catch, 1995–2000

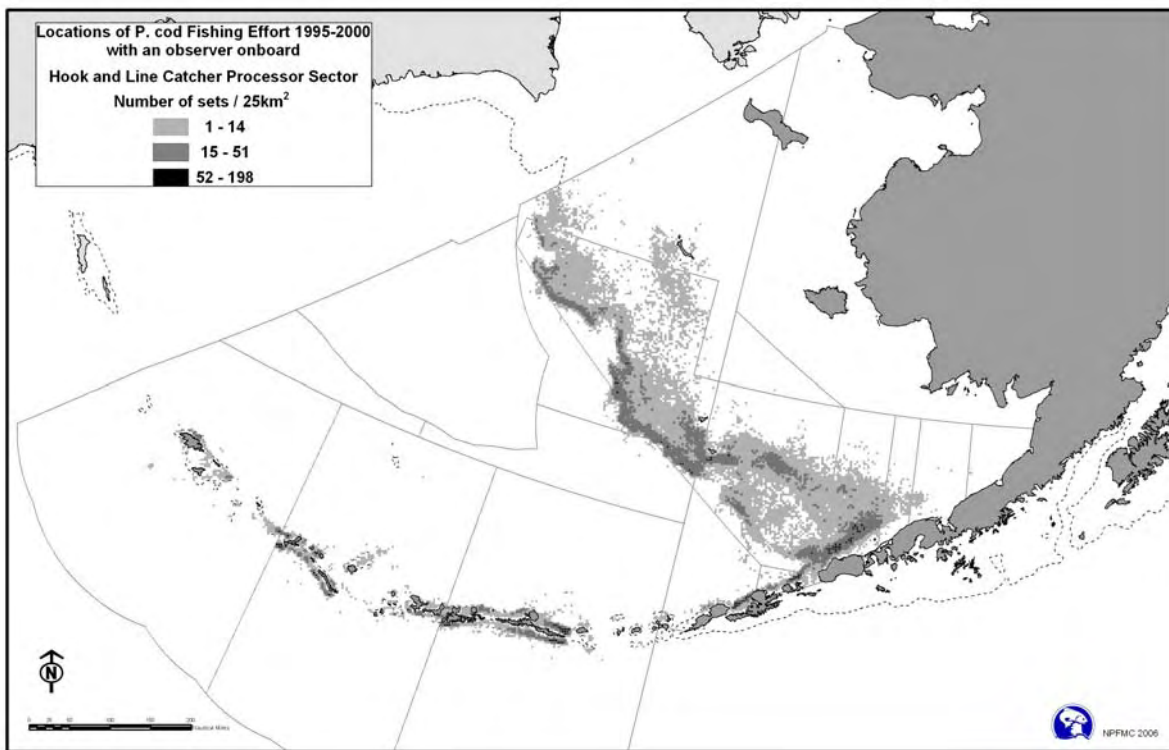


Figure 3-3 Location of hook-and-line catcher vessel sector Pacific cod catch, 2001–2003

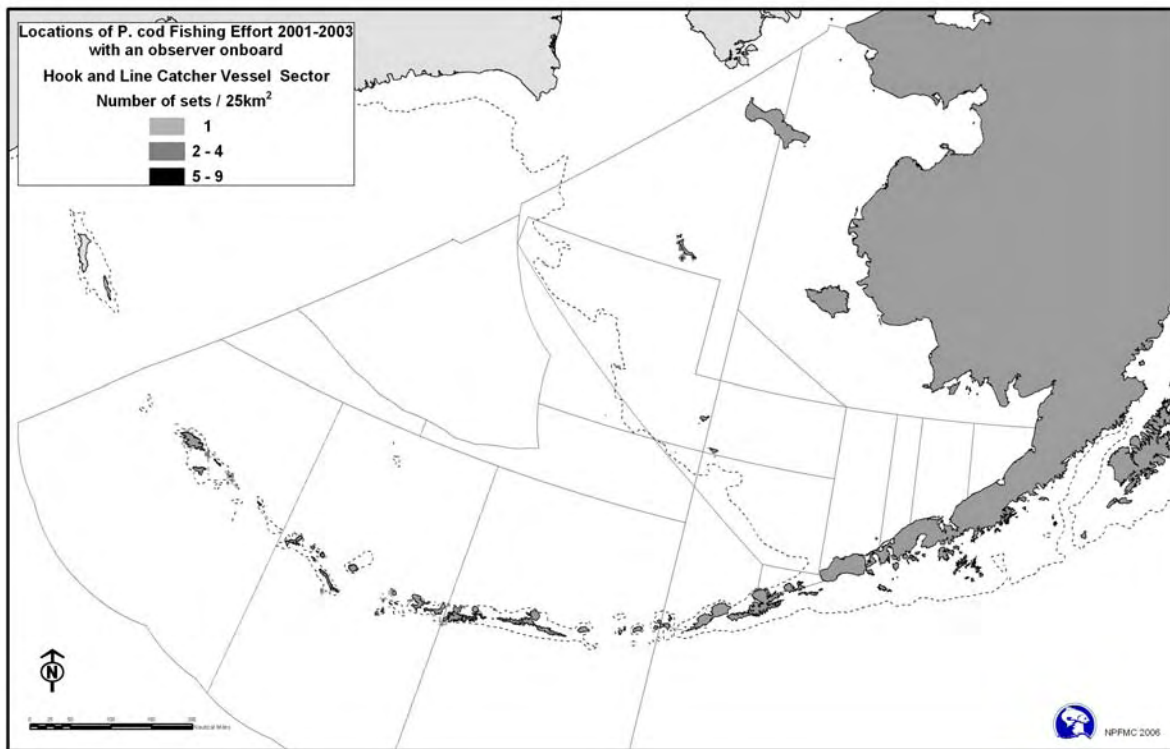


Figure 3-4 Location of hook-and-line catcher vessel sector Pacific cod catch, 1995–2000

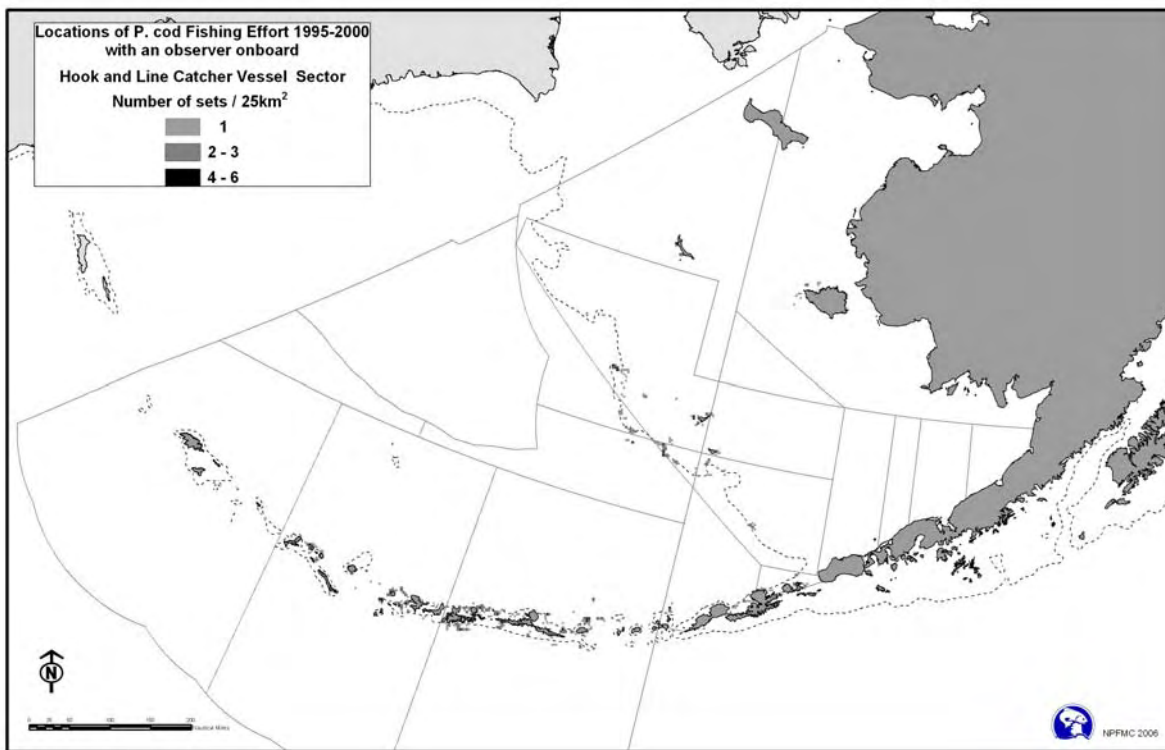


Figure 3-5 Location of pot catcher processor sector Pacific cod catch, 2001–2003

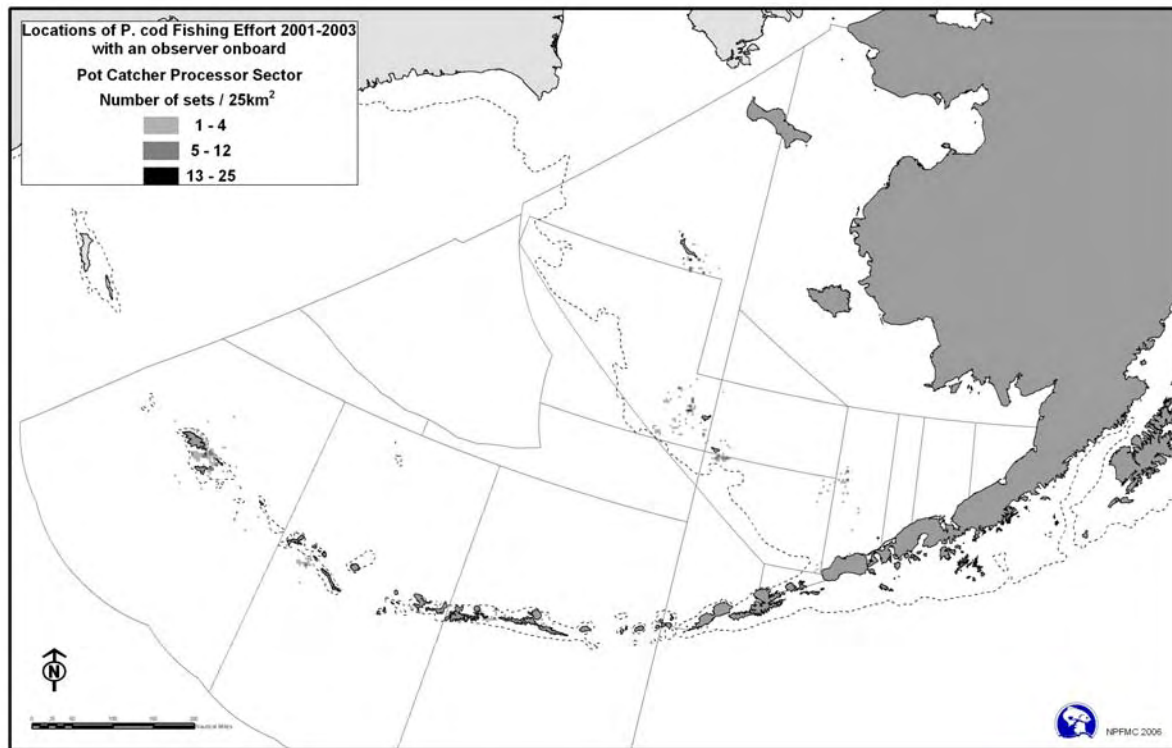


Figure 3-6 Location of pot catcher processor sector Pacific cod catch, 1995–2000

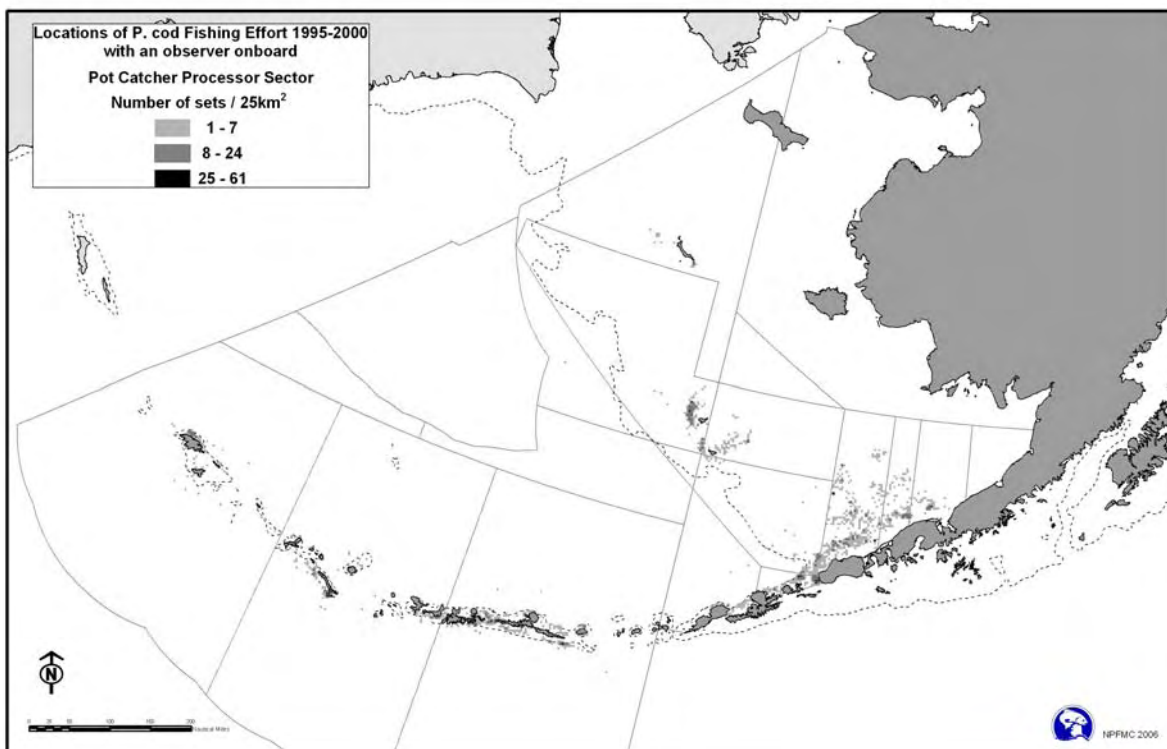


Figure 3-7 Location of pot catcher vessel sector Pacific cod catch, 2001–2003

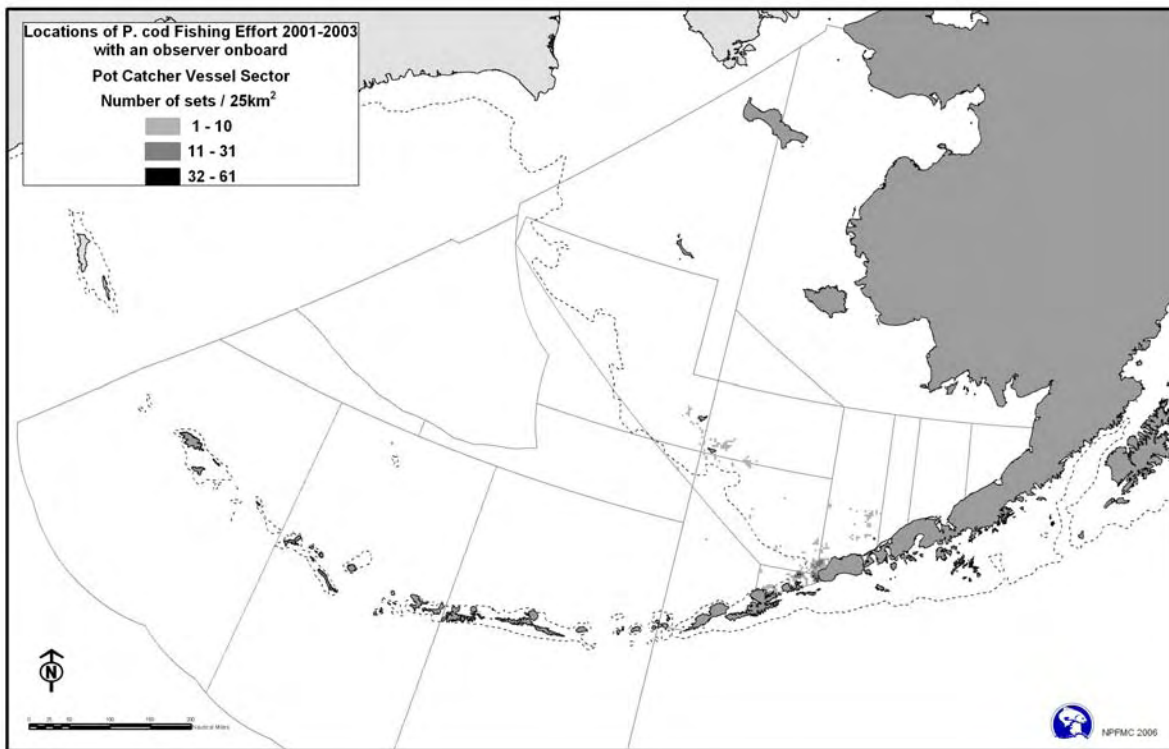


Figure 3-8 Location of pot catcher vessel sector Pacific cod catch, 1995–2000

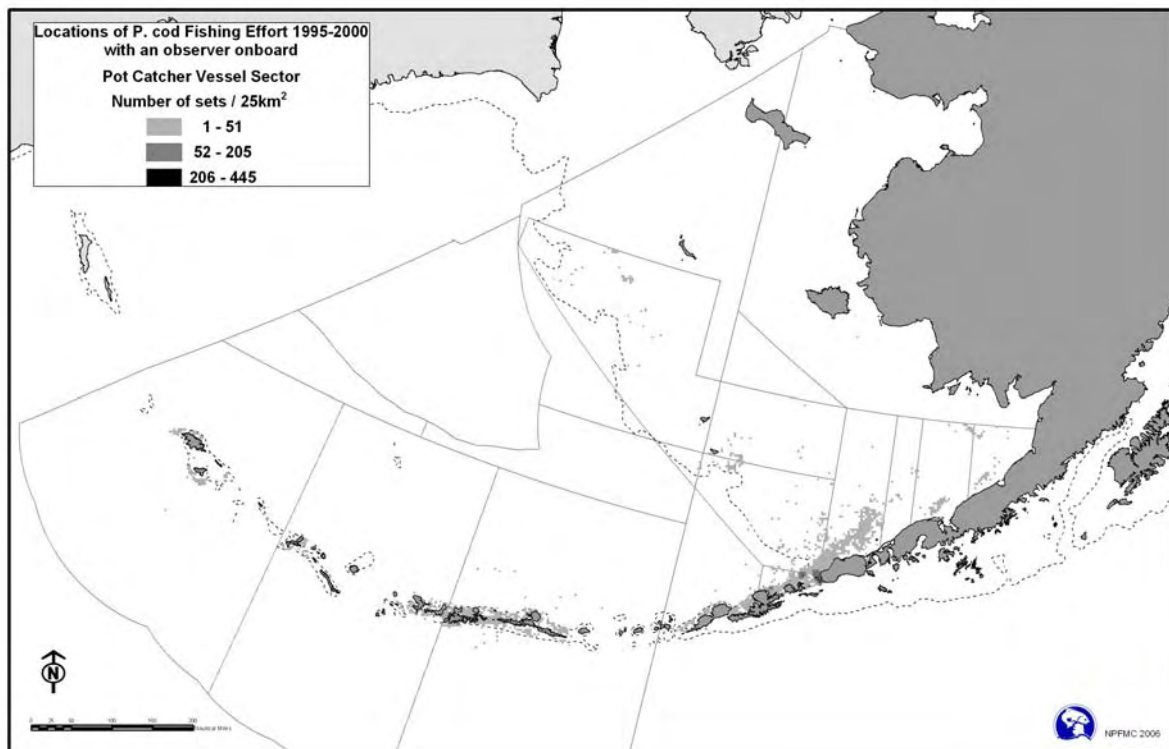


Figure 3-9 Location of trawl catcher processor sector Pacific cod catch, 2001–2003

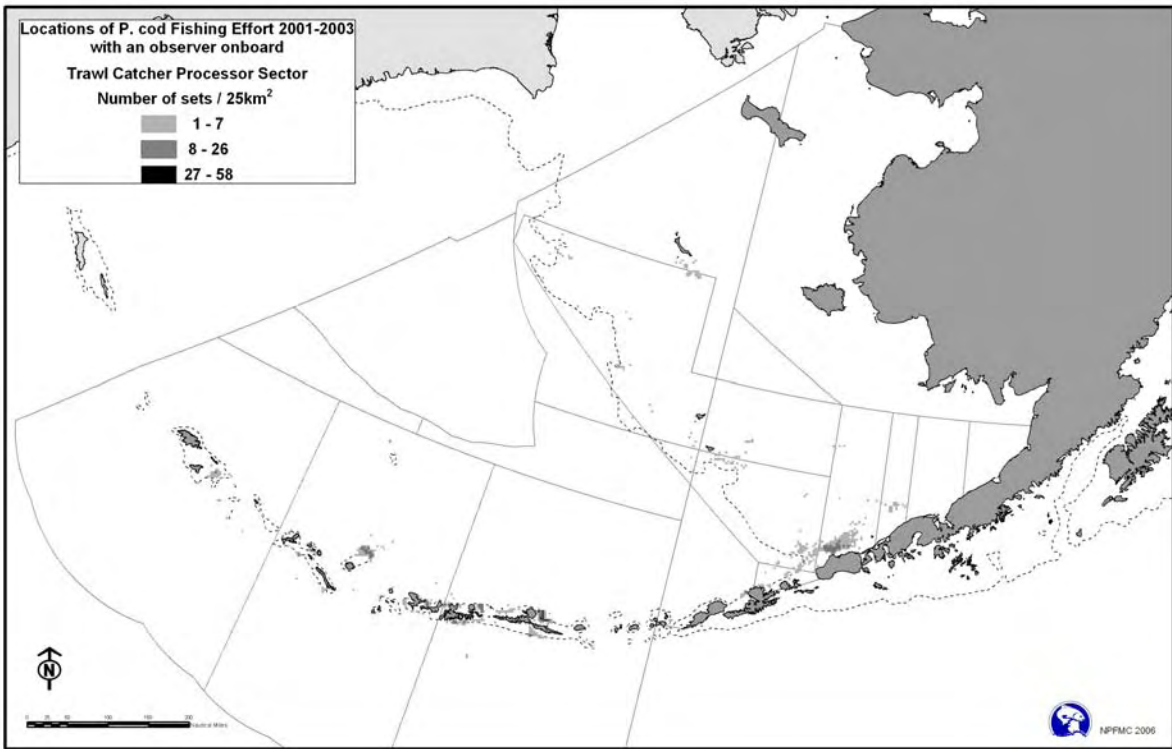


Figure 3-10 Location of trawl catcher processor sector Pacific cod catch, 1995–2000

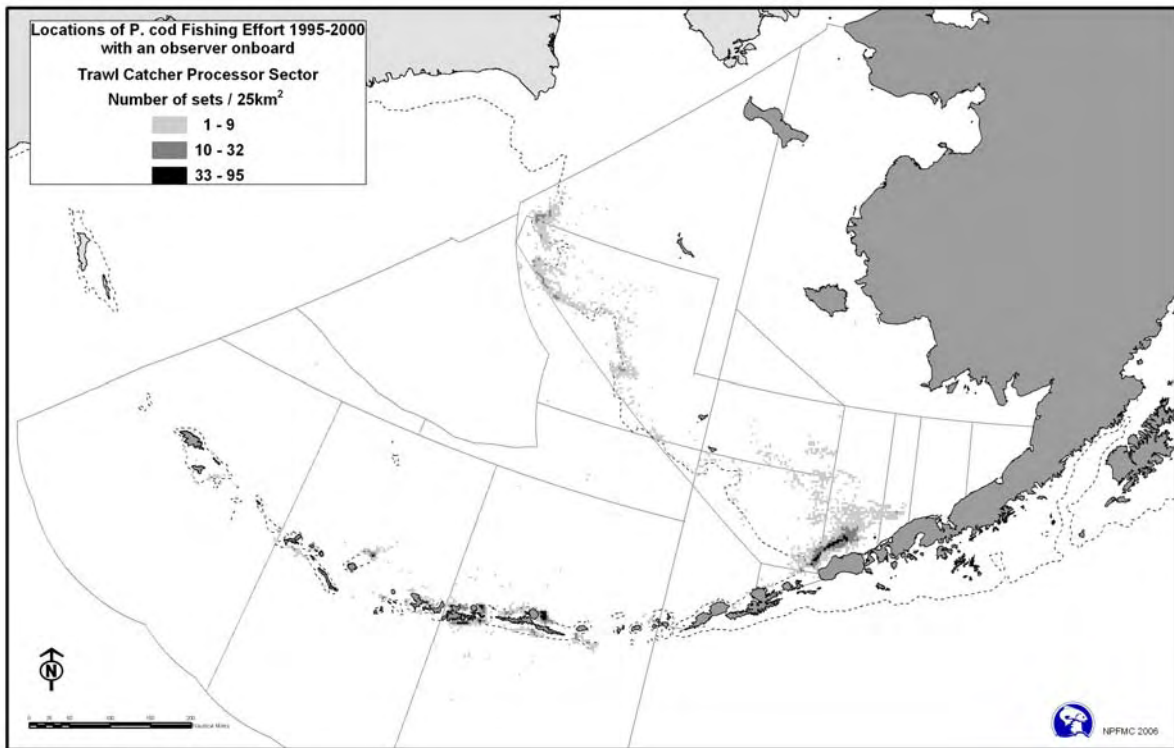


Figure 3-11 Location of trawl catcher vessel sector Pacific cod catch, 2001–2003

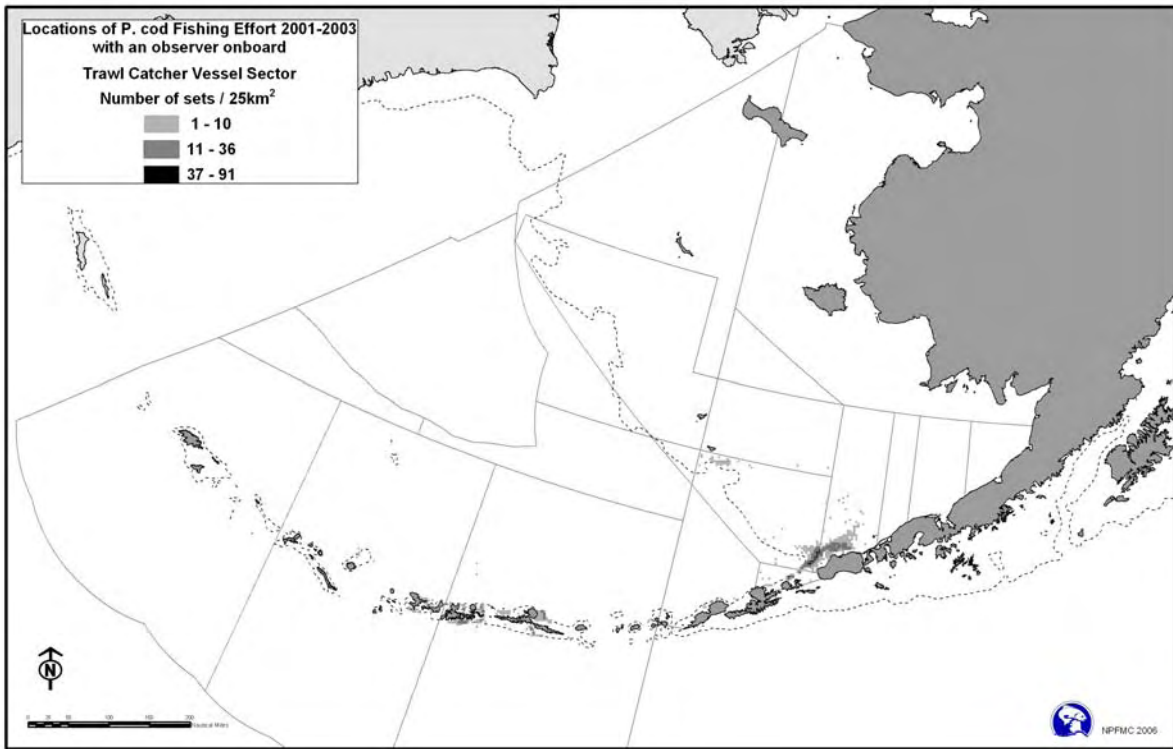
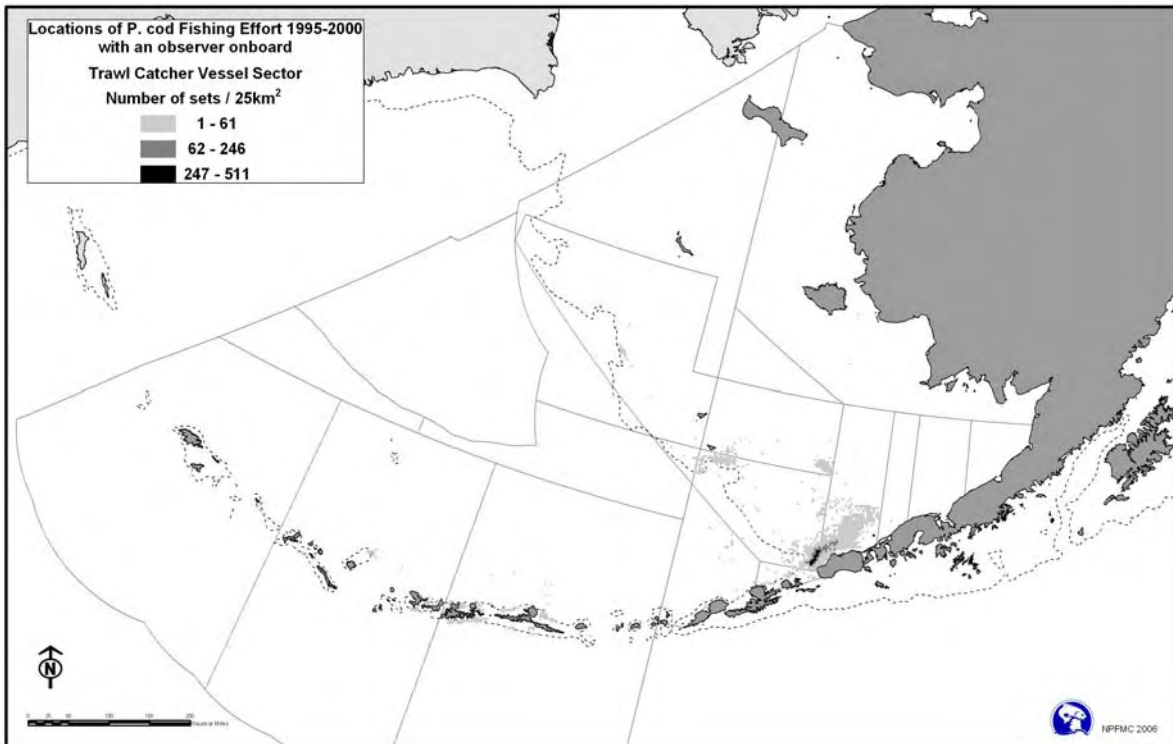


Figure 3-12 Location of trawl catcher vessel sector Pacific cod catch, 1995–2000



3.3.1 History of the Pacific cod sector allocations

Beginning in 1994, **BSAI Amendment 24** allocated the total allowable catch (TAC)²⁶ for non-CDQ BSAI Pacific cod to the various gear sectors as follows:

- 44% fixed gear (hook-and-line and pot)
- 54% trawl gear
- 2% jig gear

These percentages roughly represented the existing harvests of each sector during 1991–1993, with the exception of the jig sector. The two percent jig allocation exceeded the existing historical harvest by that sector and was intended to allow for growth in the jig sector. Amendment 24 also authorized NMFS to divide the fixed gear allocation of Pacific cod into three seasons of four months duration. The intent of Amendment 24 was to provide stability in the trawl, fixed, and jig gear fisheries by establishing designated allocations of the Pacific cod TAC, which were expected to increase the net benefits received from the harvest of Pacific cod. The Council designed this allocation such that it would expire in three years, at the end of 1996.

In 1995, the Council initiated **BSAI Amendment 46**, to extend the allocations authorized by Amendment 24 beyond 1996. Under Amendment 46, the general BSAI Pacific cod allocations were modified as follows:

- 51% fixed gear
- 47% trawl gear
(50% trawl catcher vessels)
(50% trawl catcher processors)
- 2% jig gear

The overall allocations under Amendment 46 were the result of an industry negotiating committee appointed by the Council, which selected percentages that closely represented the current harvest percentages taken by the trawl and fixed gear sectors under the current halibut prohibited species catch (PSC) limits. The 2% jig allocation was also retained as part of this agreement. In addition to the overall split among sectors, Amendment 46 also split the trawl sector portion of the BSAI Pacific cod TAC between trawl catcher processors (50%) and trawl catcher vessels (50%), meaning each sector receives 23.5% of the annual BSAI Pacific cod TAC. The further trawl apportionments were the result of a separate negotiation by representatives of the different trawl fleets. This action also included authorization for NMFS to reallocate any portion of the Pacific cod allocations that were projected to remain unused among the various sectors if necessary. Amendment 46 specified that any unused trawl allocation (catcher processor or catcher vessel) would first be made available to the other trawl sector before it would be reallocated to any other gear type.

The allocations under Amendment 46 have been in place since 1997. While there is no sunset provision or regulatory requirement to review or modify these allocations, the Council’s motion on Amendment 46 included a provision to review the allocations four years after implementation. This review, originally intended at the end of 2000, has not yet occurred.

²⁶Note that unless otherwise specified, the “BSAI Pacific cod TAC” referenced throughout this document means the amount of the TAC that is distributed to various gear sectors less the CDQ reserve (7.5%).

BSAI Pacific cod allocations among the fixed gear sectors

Vessels began fishing in Federal waters off Alaska under the License Limitation Program (LLP) on January 1, 2000. Since the LLP was approved, changes in the fixed gear fleets prompted industry to petition the Council to further allocate cod in the BSAI among the various sectors of the fixed gear fleets. The following problem statement guided the analysis of alternatives for **BSAI Amendment 64**:

The hook-and-line and pot fisheries for Pacific cod in the BSAI are fully utilized. Competition for this resource has increased for a variety of reasons, including increased market value of cod products and a declining acceptable biological catch and total allowable catch.

Longline and pot fishermen who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries need protection from others who have little or limited history and wish to increase their participation in the fishery. This requires prompt action to promote stability in the BSAI fixed gear cod fishery until comprehensive rationalization is completed.

Amendment 64, approved by the Council in October 1999 and implemented September 1, 2000, further apportioned the 51% of the (non-CDQ) BSAI Pacific cod TAC allocated to fixed (hook-and-line and pot) gear as follows:

- 80% hook-and-line catcher processors
- 0.3% hook-and-line catcher vessels
- 18.3% pot vessels (CP and CV)
- 1.4% hook-and-line and pot vessels <60' LOA²⁷

The percentage allocations selected closely represent the harvests in this fishery during 1995–1998, with an additional allocation for catcher vessels <60' LOA in order to allow for growth in the small boat sector. (The percentage allocations did not reflect harvests of any quota that had been reallocated annually to the fixed gear sectors.) In addition to the fixed gear apportionments, Amendment 64 addressed how to reallocate quota that was projected to remain unused by specific sectors. Any unused hook-and-line catcher vessel or <60' vessel allocation would be reallocated to the hook-and-line catcher processor sector, in part because that sector primarily 'funded' the <60' allocation. In addition, any unused jig or trawl allocations would be reallocated 95% to hook-and-line catcher processors and 5% to pot gear. This split reflected the actual harvest of reallocated quota from the trawl and jig sectors harvested by each sector during 1996–1998. The amendment expired December 31, 2003.

At the same time the Council approved Amendment 64, it acknowledged that a further split between the pot sectors was necessary to stabilize the harvests of pot catcher processors and pot catcher vessels in the BSAI Pacific cod fishery. Concern was expressed that the pot sector needed the same stability of direct fleet allocations, such as was done for the hook-and-line fleets. With several years of reduced *C. opilio* guideline harvest levels, the BSAI Pacific cod fishery realized an influx of pot vessels that previously fished primarily crab in the BSAI. The pot catcher processor sector petitioned the Council for a further split between the pot sectors, recognizing that a pot split would enable the pot catcher processor sector to avoid competing with a fluctuating and increasing number of pot catcher vessels moving into the cod fishery, and allow the sector to determine its best time to fish according to market factors. Increased competition for 'A season' Pacific cod was the driving factor in the need for the overall pot split and the

²⁷The hook-and-line and pot CV <60' sectors were allowed to fish off of the general hook-and-line CV allocation and general pot CV allocation when these fisheries were open, respectively. When these fisheries were closed, the <60' sector harvest accrued toward the <60' hook-and-line/pot CV allocation of 1.4%.

split between the pot sectors. However, because the public had not been given specific notice that this action might be taken under Amendment 64, the Council decided to delay action on the pot split and instead include the proposal in a follow-up amendment.

The Council subsequently initiated **Amendment 68** to apportion the pot gear share of the BSAI Pacific cod TAC between the pot catcher processor sector and the pot catcher vessel sector. Amendment 68 proposed to further split the 18.3 percent of the fixed gear Pacific cod TAC allocated to pot gear according to recent catch histories from 1995 to 1999. The Council reviewed the analysis for Amendment 68 in June 2002 and decided to take no action on the amendment at that time, partly due to the potential implications of the Pacific cod endorsement required under BSAI Amendment 67, which was effective January 1, 2003 (see below). The Council also noted the pending expiration of BSAI Amendment 64. Because Amendment 64 was designed to sunset on December 31, 2003, it necessitated approval of a new plan amendment to either continue or modify the fixed gear apportionments beyond 2003. The Council thus decided to defer action on the separate allocations to the pot sectors until they could be considered within the new amendment package that would be necessary to continue the overall fixed gear allocations.

Further changes to the BSAI cod fishery occurred in April 2000 when the Council approved BSAI FMP **Amendment 67**. Amendment 67 requires that fixed gear vessels participating in the BSAI Pacific cod fishery must qualify for a Pacific cod endorsement, which would be part of the participant's LLP license. In April 2000, the Council defined qualification criteria for hook-and-line catcher processors, hook-and-line catcher vessels $\geq 60'$, pot catcher processors, and pot catcher vessels $\geq 60'$. Eligibility for a cod endorsement is based on past participation in the BSAI fixed gear fisheries during specific combinations of the years 1995-1999. Four different endorsements are available, depending on the gear used to harvest cod (hook-and-line or pot) and whether the cod was processed onboard the harvesting vessel (catcher vessel or catcher processor). Amendment 67 exempts catcher vessels less than 60 feet LOA from the requirement to have a cod endorsement to participate in the BSAI fixed gear cod fisheries. Amendment 67 effectively granted exclusive access to longtime participants in the BSAI fixed gear cod fishery, and thus reduced the number of allowable participants.

Amendment 67 was approved by the Secretary on November 14, 2001, and became effective January 1, 2003. Until the NMFS appeal process is complete regarding both LLP licenses and endorsements, including the cod endorsement, the number of $\geq 60'$ vessels that qualify to fish BSAI Pacific cod with non-trawl gear is not final. A review of the current Restricted Access Division (RAM) database indicates that as of December 2005, 114 Pacific cod endorsements were issued for 109 individual $\geq 60'$ non-trawl vessel licenses in the BSAI (6 vessel licenses claim or have multiple cod endorsements).²⁸

Table 3-4 Number of BSAI Pacific cod endorsements issued for the $\geq 60'$ fixed gear sectors

Endorsement	<u>H&L CP</u>	<u>H&L CV</u>	<u>Pot CP</u>	<u>Pot CV</u>	<u>Total*</u>
Interim	5	0	2	4	11
Transferable	39	9	6	49	103
Total	44	9	8	53	114

*Note that because more than one endorsement can be on a single license, the total number of endorsements does not denote the total number of licenses. In sum, there are 11 endorsements issued on 10 interim licenses; and 103 endorsements issued on 99 transferable licenses, for a total of 114 endorsements issued on 109 licenses.

²⁸Vessels that qualified for a Pacific cod endorsement using both hook-and-line and pot gear will receive both endorsements on their license. However, one license cannot hold more than one endorsement for the same gear type (i.e., the same license cannot hold an endorsement for both a hook-and-line CP and a hook-and-line CV.) The vessel receives the 'highest' gear endorsement for which it qualifies.

Non-transferable (interim) licenses are issued in the case that an applicant has made claims that differ from the “NMFS Official LLP Record.” This status may be due to Pacific cod endorsement claims or to claims related to any other license endorsements or designations. Of the 5 interim licenses with hook-and-line CP endorsements, 4 are undergoing appeal at least in part due to Pacific cod endorsement claims, although only two would have no cod endorsement for any gear type if the appeal was lost. Of the 2 interim licenses with a pot CP endorsement, the appeal is based on the pot CP claim, but the licenses already have a hook-and-line CP endorsement. Of the 4 interim licenses with pot CV endorsements, 2 are under appeal in part due to the pot CV cod endorsement. Because six vessels claim or have multiple cod endorsements, there are currently 114 endorsements issued on 109 licenses.²⁹ There are 10 total interim licenses and 99 total transferable licenses.

Table 3-5 Amendment 67 BSAI Pacific cod endorsement criteria for the ≥60’ fixed gear sectors

Required catch history to earn a Pacific cod endorsement under Amendment 67 is defined as follows:	
I.	Hook-and-line catcher processors must have made at least 270 mt of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in any one of the years 1996, 1997, 1998, or 1999.
II.	Hook-and-line catcher vessels ≥60’ must have made at least 7.5 mt of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in any one year 1995, 1996, 1997, 1998, or 1999.
III.	Pot catcher processors must have made at least 300,000 lbs of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in each of any two years 1995, 1996, 1997, or 1998.
IV.	Pot catcher vessels ≥60’ must have made over 100,000 lbs of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in each of any two years 1995, 1996, 1997, 1998, or 1999.
V.	Jig landings of Pacific cod count toward the qualification requirements for pot catcher vessels and hook-and-line catcher vessels.
*Fixed gear vessels <60’ LOA are exempt from the Pacific cod endorsement requirement.	

Note that starting in mid-2000, <60’ fixed gear vessels received a separate allocation of 1.4% of the fixed gear BSAI Pacific cod TAC. The Council did not include <60’ fixed gear vessels in the Pacific cod endorsement requirements, as it wanted to ensure that this small vessel fleet would be large enough to harvest its entire allocation. In considering the relatively small number of participating vessels and the historical effort of the <60’ sector, the Council determined that limiting the <60’ class was both unnecessary and detrimental to the small boat fleet. Therefore, a <60’ non-trawl vessel must only hold a general non-trawl BSAI groundfish LLP license in order to target BSAI Pacific cod with hook-and-line or pot gear in Federal waters. There are currently 116 licenses issued to hook-and-line/pot vessels <60’, although significantly fewer vessels actually participate in the directed BSAI Pacific cod fishery. Detailed information on the number of participants in the both the non-trawl and trawl sectors, as well as the LLP and/or eligibility requirements necessary to participate in each sector, is provided in Section 3.3.4.

Amendment 77 represented the new plan amendment to continue or modify the fixed gear apportionments beyond 2003. Amendment 77 was initiated to respond to concerns that, absent a gear split, there is no mechanism to prevent one sector from increasing its effort in the fishery and eroding

²⁹The 109 licenses are currently designated for 104 vessels (RAM database, 10/18/05). Two hook-and-line catcher processors hold more than one license, and three license holders (one with a hook-and-line CV cod endorsement and two with hook-and-line CP cod endorsements) had not designated a vessel at the time of the writing of this document.

another sector's relative historical share. Amendment 77 proposed to continue the Pacific cod allocations among the fixed gear sectors, with an additional alternative that would create separate allocations for the pot catcher processor and pot catcher vessel sectors.

In June 2003, under Amendment 77, the Council approved continuing the same overall fixed gear allocations under which the (non-CDQ) fixed gear Pacific cod fisheries had been operating since 2000. The apportionment among the hook-and-line catcher processors, hook-and-line catcher vessels, and pot vessels were based closely on 1995–1998 or 1995–1999 harvests by each sector, and the new apportionment between the pot sectors was based on catch history during 1998 – 2001. The catch history on which the allocations were based excluded any quota that was reallocated from another gear sector during the fishing year. The allocation to the <60' sector continued to represent an increase over historical harvests, in order to allow for growth in this small boat, shorebased sector.

The allocations approved under **Amendment 77** and implemented January 1, 2004, are as follows:

- 80% hook-and-line catcher processors
- 0.3% hook-and-line catcher vessels
- 15.0% pot catcher vessels
- 3.3% pot catcher processors
- 1.4% hook-and-line and pot vessels <60' LOA³⁰

BSAI Amendment 77, with the exception of the alternative to split the pot share of the BSAI Pacific cod TAC, did not include any other fundamentally different alternatives than were considered under the original Amendment 64. While the availability of more recent data spurred the inclusion of new options for determining the split among the fixed gear sectors, the basic alternatives remained the same. This amendment did not affect the jig or trawl apportionment of BSAI Pacific cod, nor did it affect the size of the overall BSAI Pacific cod TAC.

Note that all of the recent BSAI Pacific cod allocation amendments also provide direction on how to reallocate quota that is projected to remain unused by a particular sector at the end of the year (see Table 3-2). Since the BSAI Pacific cod allocations have been in effect, NMFS has reallocated quota each year from the trawl and jig sectors to the pot and hook-and-line sectors. Reallocations between gear types (e.g., trawl CP to trawl CV, or hook-and-line CV to hook-and-line CP) have occurred less frequently and in lower amounts. In terms of metric tons, the majority of reallocations have been from the trawl sectors (CVs and CPs) since the gear specific allocations were established in 1994.

With the exception of the jig sector, because any unused *seasonal apportionment* to a particular sector is reallocated to the next seasonal allowance for that sector, reallocations from one gear sector to another occur in the last season. Typically, reallocations from trawl to the fixed gear sectors occur in October and November, and always during the second half of the year (June 10 – Nov. 1). Detail on the historical level of and reason for reallocations is provided in Section 3.3.5.7.

The primary change from the status quo with regard to reallocations under Amendment 77 was to apportion the jig sector's allocation (2% of the BSAI Pacific cod TAC) on a trimester basis (40%–20%–40%) and reallocate any unused jig quota to the <60' vessels using hook-and-line or pot gear on a seasonal basis, as opposed to once at the end of the year. This allows the <60' pot and hook-and-line vessels to receive additional quota during the spring and summer months when it is most advantageous

³⁰This sector can currently fish off of the general hook-and-line CV allocation and general pot CV allocation when these fisheries are open, respectively. When these fisheries are closed, the <60' sector harvest is accrued toward the <60' hook-and-line/pot CV allocation of 1.4%.

for the small boat fleet.³¹ It was also intended to reduce the risk of having to close the fishery intermittently while waiting for a potential reallocation from the jig sector. Previously, both unused jig and trawl quota was reallocated 95% to the hook-and-line catcher processors and 5% to pot sectors. Amendment 77 retained this distribution for reallocating unused *trawl* quota, with an additional split for the pot sectors (0.9% to pot catcher processors; and 4.1% to pot catcher vessels).

In sum, the existing overall allocations to the (non-CDQ) trawl, fixed, and jig gear sectors have been in place for nine years (since 1997), and the further split among the fixed gear sectors has been in place for over five years (since September 2000). The separate allocations between the pot catcher processor and pot catcher vessel sectors have been in place for two years (since 2004). A summary of these past allocation amendments and their primary provisions is provided in Table 3-6.

BSAI Pacific cod allocation to 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. Federal regulations (50 CFR 679.1(e)) state the goal of the program as follows:

The goals and purpose of the CDQ Program are to allocate CDQ to eligible western Alaska communities to provide the means for starting or supporting commercial fisheries business activities that will result in an ongoing, regionally-based, fisheries-related economy.

The original CDQ Program regulations were effective November 18, 1992, and have been amended numerous times since then. In 1996, amendments to the Maguson-Stevens Act institutionalized the program. Originally, the CDQ Program was only allocated an annual pollock reserve. Since 1992, the CDQ Program has expanded several times and now includes allocations of pollock, halibut, sablefish, crab, all of the remaining groundfish species, and prohibited species. The percentage of the CDQ reserve allocated to the CDQ Program for each species is authorized in various statutes and regulations. Currently, the pollock CDQ allocation is 10% under the American Fisheries Act. The percentages of other CDQ reserves are as follows: 10% of crab species (with the exception of Norton Sound red king crab at 7.5%); 20% of fixed gear sablefish; 20%–100% of halibut; and 7.5% of all other groundfish and prohibited species. Thus, the current annual CDQ Program allocation of BSAI Pacific cod is 7.5%.

³¹Note that the hook-and-line Pacific cod vessels do not have a halibut PSC allowance during the period June 10 – August 15, so any <60' fixed gear quota available in the summer months primarily supports a <60' pot fishery.

Table 3-6 Overview of BSAI Pacific cod allocation and endorsement amendments

Amendments	Am. 24	Am. 46	Am. 64	Am. 67	Am. 77
Action	Allocation of BSAI P.cod TAC among trawl gear, fixed gear, and jig gear.	Allocation of BSAI P. cod TAC among trawl gear, fixed gear, and jig gear. Allocation between trawl CP and CV.	Allocation of fixed gear BSAI P.cod TAC (51%) among pot gear, hook-and-line CPs, hook-and-line CVs, and <60' vessels.	LLP Pacific cod endorsement requirements for >60' fixed gear vessels in the directed BSAI P.cod fishery.	Revised allocation of fixed gear P.cod TAC (51%) among pot CPs, pot CVs, hook-and-line CPs, hook-and-line CVs, and <60' vessels.
Allocations	Trawl: 54% Fixed: 44% Jig: 2%	Trawl: 47% Trawl CP (50%) Trawl CV (50%) Fixed: 51% Jig: 2%	Of fixed gear 51%: H&L CPs 80.0% H&L CVs 0.3% pot (CP and CV) 18.3% <60' pot/H&L 1.4%	Endorsement requirement (based on participation and landings criteria) for the following sectors: hook-and-line CP, hook-and-line CV, pot CP and pot CV. Not required for <60' fixed gear vessels.	Of fixed gear 51%: H&L CPs 80.0% H&L CVs 0.3% pot CPs 3.3% pot CVs 15.0% <60' pot/H&L 1.4%
Allocation basis	Approximate harvest during 1991 - 1993, with exception of increased jig allocation	Industry negotiation: based closely on current harvest percentages of each sector under current halibut PSC limits	Based closely on 1995 - 1998 harvests by each sector, with the additional allocation to the <60' vessels.	N/A	Hook-and-line CP, hook-and-line CV, and pot gear split based closely on 1995-1998 harvests. Pot CP and CV split based on 1998-2001 harvests. Additional allocation to <60' vessels.
Other actions	Authorized three seasons for fixed gear sector. <u>Reallocations:</u> 1) Authorized NMFS to reallocate unused P.cod from trawl to fixed gear and vice versa. 2) Reallocation of unused jig allocation to other gear sectors on or about Sept. 1.	Authorized three seasons for fixed gear sectors. <u>Reallocations:</u> 1) Authorized NMFS to reallocate unused P.cod within gear types and then between trawl and fixed gear. 2) Reallocation of unused jig allocation to fixed gear sectors specified for Sept. 15.	Authorized three seasons for fixed gear sectors. <u>Reallocations:</u> 1) Unused hook-and-line CV and <60' vessel allocation will be reallocated to hook-and-line CP sector. 2) Reallocation of unused jig allocation to fixed gear sectors specified for Sept. 15. 3) Unused trawl or jig allocations are reallocated: 95% to hook-and-line CP and 5% to pot sectors.	N/A	Authorized two seasons for fixed gear sectors. <u>Reallocations:</u> 1) Unused hook-and-line CV and <60' vessel allocation will be reallocated to hook-and-line CP sector. 2) Established 3 seasons for jig gear allocation. Any unused portion of a seasonal jig allocation will be reallocated to <60' fixed gear CVs. 3) Unused trawl allocations are reallocated: 95% to hook-and-line CPs; 0.9% to pot CPs; 4.1% to pot CVs. 4) Unused pot CP or CV quota will be reallocated to the other pot sector before it is reallocated to other fixed gear sectors.
Date effective	Feb. 28, 1994	Jan. 1, 1997	Sept. 1, 2000	Jan. 1, 2003	Jan. 1, 2004
Sunset date	Dec. 31, 1996	none	Dec. 31, 2003	none	none

Note: The fixed gear allocations established under Am. 64 and Am. 77 were determined excluding quota reallocated from other gear (trawl or jig) sectors. Including reallocated quota would have reduced the percentage of catch harvested in 1995 - 1999 by the pot sector by about 0.5 percentage points and increased the percentage of catch harvested by the longline catcher processor sector by the same amount.

3.3.2 Aleutian Islands Pacific Cod Fishery in State Waters

At its December 2005 meeting, the Alaska Board of Fisheries (Board) generated a proposal (Board proposal 399) to create a new regulation establishing a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude. To date, the Pacific cod fishery in State waters has been 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. Upon request of the Council, the Board and the Council met jointly to discuss the proposal on February 3 in Anchorage, and the Board took action on this proposal during its February 23–25, 2006 meeting in Ketchikan.

In late February, the Board voted to establish a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude, which would start on or after March 15, and only after the Federal Pacific cod trawl CV A season is closed. The Board is establishing this fishery through an emergency regulation, such that the fishery can begin in March 2006. The primary elements of the fishery include:

1. The guideline harvest level (GHL) for the state waters fishery will be an amount calculated as 3% of the Federal BSAI Pacific cod ABC. The future calculation (the “source” of the GHL) will be the Council’s decision should the BSAI ABC be split into separate AI and BS ABCs in a future TAC specifications process. The State water fishery, however, would remain the equivalent of 3% of the combined BS and AI ABC.
2. The fishery will only be authorized for 2006 and 2007. The fishery may occur only from March 15 through December 31 each year, or until the GHL is taken.
3. Legal fishing gear will be pot, jig, hand troll, non-pelagic trawl, and longline gear. Non-pelagic trawl and longline gear may not be used during May 1 – September 15, unless these vessels are operating in the <60’ vessel size limitation areas near Adak Island. (In Sitkin Sound, near Adak Island, the vessel size limit is in effect year-round for all gear types.)
4. The fishery will start only on or after March 15, and also only after the Federal Pacific cod trawl catcher vessel A season is closed.
5. A maximum of 70% of the GHL may be harvested prior to June 10. Any unharvested GHL during the first season can be rolled into the second season such that not more than 70% of the total annual GHL can be harvested in the first season.
6. During the year, the Commissioner of ADF&G may determine that a portion of the GHL may be left unharvested. The Commissioner will notify NMFS and the Council of that amount so that it may be reallocated to the Federal fisheries that are still open at that time.
7. The fishery requires registration with ADF&G of the type of gear to be used.
8. The daily trip limit is 150,000 lbs of Pacific cod; there is also a limit of up to 300,000 lbs of unprocessed Pacific cod onboard the vessel. A vessel may not have more processed fish onboard than the round weight equivalent of the fish reported on ADF&G fishtickets during the AI state waters Pacific cod fishery. Participants must notify ADF&G daily of the amount harvested and the total amount on board.

9. All Pacific cod harvested must be retained. If a participant harvests an amount in excess of the daily trip limit, that excess amount of product must be forfeited to the State. No penalty for overages will be assigned to a participant who immediately reports the overage.
10. The Commissioner of ADF&G may impose bycatch limitations or retention requirements.

The State regulations authorizing this fishery allow the fishery to begin on or after March 15, 2006, upon closure of the Federal BSAI trawl CV cod A season.³² NMFS closed the directed trawl CV Pacific cod fishery in the BSAI on March 8, 2006, in order to avoid exceeding the A season allocation, thus, the expectation is that the State water AI fishery would begin at noon on March 15. As the 2006 TAC has already been specified and sectors are currently fishing under the existing allocations, NMFS will need to effect an inseason adjustment under Federal regulations (50 CFR 679.25) to re-specify the TAC, accounting for the 3% reduction for the GHL. This will necessitate re-calculating the sector allocations and seasonal apportionments that are currently published in Federal regulations.³³ This modification is expected to occur in mid-March. This action will also necessarily affect the 2006 BSAI Pacific cod CDQ reserve, as that reserve is calculated as 7.5% of the BSAI Pacific cod TAC. Thus, all sectors will realize a proportional reduction of 3% of their current Federal allocations as a result of this action.

Three percent of the 2006 ABC of 194,000 mt represents 5,820 mt (or about 12,830,772 lbs). Because the same gear types are allowed to fish the GHL as are allowed in the Federal fishery, recognizing that trawl and hook-and-line are excluded from the AI State water fishery during May 1 – September 15, it is not clear to what extent each sector will participate in and benefit from the State water fishery in the Aleutians. Note also that the State fishery is limited to 70% of the total GHL in the first half of the year (prior to June 10) and any unharvested quota from the first season is rolled over to the second season (on or after June 10). Using a 2006 GHL of 5,820 mt, this represents 4,074 mt in the first season and 1,746 mt in the second season. This provision mirrors the overall Pacific cod seasonal apportionments in place under the current Steller sea lion mitigation measures

The overall economic effect on the sectors is uncertain absent an analysis. However, it is anticipated that while the intent is to allow additional harvests by the identified sectors in State waters west of 170° W longitude, the overall effect will be a redistribution of cod harvests and associated revenues from vessels of all gear types that fish in Federal waters in the AI or the Bering Sea area and land Pacific cod in ports east of 170° W longitude. Thus, there will likely be a disproportionate negative effect on those sectors that do not desire to fish in State waters in the Aleutian Islands, compared to those sectors that have harvested and want to continue to harvest Pacific cod in the Aleutians and within State waters. In general, the fixed gear and jig gear sectors have reduced the AI share of their total BSAI Pacific cod harvest in recent years, while the trawl sectors have generally increased the AI share of their total BSAI Pacific cod harvest (see Section 3.4.4.3 for details on AI harvest by sector).

The press release announcing the AI State Pacific cod fishery also states that bycatch limits that apply in the parallel fishery will apply in the State waters fishery (ADF&G news release, 3/1/06). Halibut mortality from a State waters groundfish fishery cannot be deducted from a Federal fishery category, thus, the PSC allowances for the Federal Pacific cod fisheries will not be modified as a result of this action. The State could choose to enforce Federal closures that result from reaching PSC limits in State waters, but that decision is at the Commissioner's discretion. Note that both trawl and longline gear are prohibited

³² Amendment 85 includes an option to establish separate BSAI Pacific cod allocations for the non-AFA trawl CV and AFA trawl CV sectors. Staff is uncertain, should the Council choose this option, whether the State water AI Pacific cod fishery would only begin after both Federal BSAI Pacific cod trawl CV sector A seasons are closed.

³³ See Table 5 (2006 and 2007 Gear Shares and Seasonal Allowances of the BSAI Pacific cod TAC) in 71 FR 10870, March 3, 2006.

from participating in the State water AI fishery from May 1 – September 15; these are the only gear sectors that are subject to PSC bycatch allowances in the Federal Pacific cod fishery. Pot and jig gear are exempt from PSC limits due to very low bycatch rates. However, the duration of the State water fishery is uncertain. . Given a March 15 start date, it may take less than a week to harvest the first season GHL of 4,074 mt, and all identified gear types are allowed to participate prior to May 1.

Federal observer coverage is not required under a State water fishery. However, it is assumed that this fishery will operate similarly to the Gulf of Alaska State Pacific cod fishery, in that if the vessel in the State fishery has a Federal Fisheries Permit (FFP), then any time the vessel operates in the State fishery it is subject to observer coverage requirements, and any time an observer is onboard in the State fishery can be counted toward the Federal observer coverage requirements. One presumes that this is based on the premise that any time a vessel has an FFP, it is authorized to fish in the EEZ when the fishery is open. When the Federal GOA Pacific cod fishery closes, generally, the majority of the fleet surrenders the FFP in order to relieve itself of observer coverage requirements. A few vessels, however, sometimes choose to continue to keep their FFP and carry observers in the State water cod fishery, in order to satisfy their observer coverage requirements.

Finally, note that the Board’s action to establish the State water AI Pacific cod fishery was limited to 2006 and 2007. Thus, while the overall effect on the Federal BSAI Pacific cod fishery is that the ABC would be reduced by 3% prior to the TAC and sector allocations (including CDQ) being established, this action may be limited to two years. In that case, the State water AI Pacific cod fishery may not overlap with the action being considered under Amendment 85, depending on the timing of implementation. This amendment package continues to use the 2006 TAC of 194,000 mt for illustrative purposes throughout the analysis.

3.3.3 Description of the harvesting and at-sea processing gear sectors

This section describes the ten harvesting and processing sectors in the non-CDQ BSAI Pacific cod fisheries that are proposed to receive sector allocations under this amendment. Information in this section is based mainly on information provided in the Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement (NMFS, 2004a). Additional detail regarding specific components of the sectors used in this analysis can be found in Sector and Regional Profiles of the North Pacific Groundfish Fisheries—2001 (Northern Economics, Inc. and EDAW, Inc., 2001). Note that the CDQ sector is described separately in Section 3.3.6.

3.3.3.1 Catcher Vessels

Six catcher vessel sectors are described in the following subsections. The type of fishing gear used and vessel length are primarily used to define the sectors, although the AFA trawl catcher vessel sector is also defined by statute. It is important to note that these sectors are not necessarily exclusive—vessels may have made landings with more than one gear and may therefore be counted in more than one sector. The six catcher vessel sectors are as follows:

- AFA trawl catcher vessel
- Non-AFA trawl catcher vessel
- Hook-and-line catcher vessel $\geq 60'$
- Pot catcher vessel $\geq 60'$
- Hook-and-line/pot catcher vessel $< 60'$
- Jig catcher vessel

AFA trawl catcher vessel sector

Description of the Sector. Includes all trawl catcher vessels that are issued an AFA permit making them eligible to participate in the directed BSAI pollock fishery. In 2005, 111 vessels were issued AFA trawl catcher vessel permits.

Participation in Groundfish Fisheries. The majority of these vessels rely almost exclusively on pollock harvested in the Bering Sea. Pollock is 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. 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 Bering Sea is 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.

The AFA trawl CV sector is defined under the AFA, and thus the number of eligible participants has been determined and is fairly constant. These vessels currently operate in a cooperative system established through the AFA for BSAI pollock. The implementing regulations for the AFA established sideboards on the participation by AFA-qualified vessels in the other BSAI groundfish fisheries, including Pacific cod. Of the 111 AFA CVs, 9 are catcher vessels that deliver to shoreside plants and are exempt from the sideboards. Nineteen additional catcher vessels have a mothership endorsement and are exempt from the sideboards after March 1. The harvest of Pacific cod is also managed through an inter-cooperative agreement. This sector has shared a BSAI Pacific cod allocation with the non-AFA trawl catcher vessels sector since 1997.

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’ – 125’ but occasionally vessels <60’ participate in this sector. Vessels in this sector need a trawl LLP (CV operating type) to participate in the Federal fisheries.

Participation in Groundfish Fisheries. The annual cycle of operations of vessels in this sector differs from that of AFA trawl catcher vessels. Differences include the reliance of the non-AFA fleet on the BSAI Pacific cod fishery, 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. This sector has shared a BSAI Pacific cod allocation with the AFA trawl catcher vessel sector since 1997.

Pot catcher vessel sector ≥60’ sector

Description of the Sector. Includes all vessels ≥60’ LOA operating as catcher vessels using pot gear. As of January 1, 2003, pot catcher vessels ≥60’ must have a ‘Pacific cod pot CV’ endorsement on their LLP

license to target BSAI Pacific cod with pot gear. As of December 2005, 55 licensed vessels have this endorsement. Of the 55 licenses, 49 are transferable; the remaining 6 are interim.

Participation in Groundfish Fisheries. The vast majority of vessels in this sector participate primarily in crab and Pacific cod, although some may also participate in the sablefish IFQ fishery. Several of these vessels also have substantial landings with hook-and-line gear. Between 1995 and 2000, participation first declined as *C. opilio* harvests increased, but participation increased sharply starting in 2001 as *C. opilio* levels declined. Pacific cod has been the most important groundfish species in terms of harvest volume, but sablefish accounts for a relatively large share of ex-vessel value. From mid-2000 through 2003, this sector shared a BSAI Pacific cod allocation with the pot catcher processor sector. This sector has had a separate BSAI Pacific cod allocation since 2004, although <60' pot vessels can fish off this allocation when the directed fishery is open.

Hook-and-line catcher vessel ≥60' sector

Description of the Sector. Includes all vessels greater than or equal to 60' LOA operating as a catcher vessel using hook-and-line gear. Most of these vessels fish almost exclusively for sablefish in the IFQ fishery, but also harvest rockfish and Pacific cod. Beginning in 2003, hook-and-line catcher vessels ≥60' must have a 'Pacific cod hook-and-line CV' endorsement on their LLP license to target BSAI Pacific cod with hook-and-line gear. As of December 2005, 9 licensed vessels carry this endorsement. All 9 licenses are fully transferable.

Participation in Groundfish Fisheries. These are medium-sized vessels that target halibut and higher priced groundfish such as sablefish and rockfish, mainly in the eastern and central GOA. The general decline in the number of vessels in this sector since 1994 may be the outcome of the IFQ program for the sablefish and halibut longline fishery. The activities of the sector have generally focused on sablefish and rockfish, although in some years Pacific cod has also been significant. This sector has had a BSAI Pacific cod allocation since mid-2000, although <60' hook-and-line vessels can fish off this allocation when the directed fishery is open.

Hook-and-line/pot catcher vessel <60' sector

Description of the Sector. Includes all catcher vessels that are <60 LOA using pot or hook-and-line gear. Vessels in this sector need a non-trawl LLP (CV operating type) to participate in the Federal fisheries. As of December 2005, 116 non-trawl licenses were issued to <60' CVs with BS and/or AI area endorsements. Six of the 116 licenses are interim.

Participation in Groundfish Fisheries. These vessels focus on salmon, halibut, and higher priced groundfish using a mix of gear types mainly in the eastern and central GOA. Groundfish harvests decline significantly when these vessels switch to harvesting salmon and halibut. The length of these vessels means they can participate in all Alaskan salmon fisheries (to participate in the Bristol Bay salmon drift gillnet fishery vessels must be 32' or less). The significant decline in vessel numbers after 1994 is may be a result of the implementation of the sablefish and halibut longline fishery IFQ program. High-value sablefish has been the most important groundfish species for this sector. Pacific cod has been the second most important species in terms of volume. This sector has had a separate BSAI Pacific cod allocation since mid-2000, although vessels in this sector can fish off the general pot catcher vessel and hook-and-line catcher vessel BSAI Pacific cod allocations by gear type, respectively, when those directed fisheries are open.

Jig catcher vessel sector

Description of the Sector. Includes all catcher vessels using jig gear. Vessels in this sector do not need an LLP in the BSAI if they are <60' LOA and are using no more than five jig machines, one line per machine, and 15 hooks per line. (Note that all vessels <32' LOA operating in the BSAI are not subject to the LLP requirements.)

Participation in Groundfish Fisheries. Vessels using jig gear typically target Pacific cod and rockfish but also catch halibut and sablefish. Groundfish catches are important to the financial health of vessels in this sector, but non-groundfish species such as salmon account for the majority of the total earnings for a large portion of the fleet. From 1995 through 2003, the number of vessels in this sector fluctuated between 10 and 42. The significant decline in vessel numbers after 1994 is assumed to be a result of the implementation of the sablefish and halibut longline fishery IFQ program. Between 1995 and 2003, the volume of groundfish retained by this sector averaged about 200 mt annually. Landing volumes were significantly greater for rockfish and Pacific cod than for other species during the entire 1995-2003 period. This sector has received a BSAI Pacific cod allocation since 1994.

3.3.3.2 Catcher Processors

Four catcher processor sectors are described in the following subsections. While the type of fishing gear used and vessel length are used to define the sectors, each sector is also defined by statute. It is important to note that these sectors are not necessarily exclusive—vessels may have made landings with more than one gear and may therefore be counted in more than one sector. The four catcher processor sectors are as follows:

- AFA trawl catcher processor
- Non-AFA trawl catcher processor
- Pot catcher processor
- Hook-and-line catcher processor

AFA Trawl Catcher Processor Sector

Description of the Sector. Includes 20 vessels listed by name in the AFA as eligible to harvest BSAI pollock in the directed fishery.³⁴ The Consolidated Appropriations Act of 2005 (Section 219(a)(1)) defines eligibility in the AFA trawl catcher processor sector as the owners of each catcher processor listed in paragraphs (1) through (20) of Section 208(e) of the AFA.

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. These vessels also have 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 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. Pollock is the

³⁴One additional trawl CP qualifies under 208(e)(21) of the AFA, and is limited to a small percentage of the AFA CP allocation of pollock, and is not sideboarded in other fisheries. However, only the 20 listed AFA CPs are considered part of this sector for purposes of this action. The additional trawl CP that qualifies under 208(e)(21) would be considered part of the non-AFA trawl CP sector for purposes of this action.

primary species harvested by this sector, but Pacific cod are also targeted by the AFA trawl catcher processors and some have produced surimi from yellowfin sole. This sector is currently subject to annual sideboard limits in the non-pollock BSAI groundfish fisheries, including Pacific cod. This sector has shared a BSAI Pacific cod allocation with the non-AFA trawl catcher processor sector since 1997.

Non-AFA Trawl Catcher Processor Sector

Description of the Sector. The Consolidated Appropriations Act of 2005 (Section 219(a)(1) defines eligibility in the non-AFA trawl catcher processor sector as the owner of each trawl catcher processor that (1) is not an AFA trawl catcher processor; (2) to whom a valid LLP license that is endorsed for BS or AI trawl catcher processor fishing activity has been issued; and (3) that the Secretary determines 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. As of December 2005, it appears that 26 vessels are eligible to participate in this sector.

Participation in Groundfish Fisheries. These are large and medium-sized factory trawlers that primarily produce headed and gutted products from Pacific cod, flatfish, Atka mackerel, and rockfish caught in the BSAI and GOA fisheries. These vessels have not historically processed more than incidental amounts of fillets. Generally, they are limited to headed and gutted products or kirimi, and focus their efforts on flatfish (primarily yellowfin sole and rock sole), Pacific cod, rockfish, and Atka mackerel. These vessels rarely target pollock because headed and gutted pollock sells for less than the cost of production. The number vessels in this sector decreased from 33 in 1995 to 22 in 2003. This sector has shared a BSAI Pacific cod allocation with the AFA trawl catcher processor sector since 1997.

Pot Catcher Processor Sector

Description of the Sector. Includes vessels operating as catcher processors using pot gear. As of January 1, 2003, pot catcher processors must have a 'Pacific cod pot CP' endorsement on their LLP license to target BSAI Pacific cod with pot gear and process it onboard. The Consolidated Appropriations Act of 2005 (Section 219(a)(1) recently defined eligibility in the pot catcher processor sector as the holder of an LLP license that is transferable, or becomes transferable, and that is endorsed for BS or AI catcher processor fishing activity, C/P, Pacific cod, and pot gear. As of December 2005, 8 licensed vessels carried this endorsement. Of the 8 licenses, 6 are transferable and 2 are interim.

Participation in Groundfish Fisheries. These are large and medium-sized vessels that focus on crab fisheries in the Bering Sea and produce headed and gutted products principally from Pacific cod harvested in the BSAI and GOA. Because of the focus on crab, operating patterns are much different than for other catcher processors. The number of vessels in this sector has varied depending on the success of these vessels in the crab fisheries during any given year. In recent years, relatively low crab harvests and historically high prices of Pacific cod have made the cod fisheries more attractive for this sector. Other species processed by this sector are harvested incidentally. This sector shared a BSAI Pacific cod allocation with the pot CV sector starting in September 2000; since 2004, this sector has received its own allocation.

Hook-and-Line Catcher Processor Sector

Description of the Sector. Includes vessels operating as catcher processors using hook-and-line gear. As of January 1, 2003, hook-and-line catcher processors must have a 'Pacific cod hook-and-line CP' endorsement on their LLP license to target BSAI Pacific cod with hook-and-line gear and process it onboard. The Consolidated Appropriations Act of 2005 (Section 219(a)(1) recently defined eligibility in the longline catcher processor sector as the holder of an LLP license that is transferable, or becomes

transferable, and that is endorsed for BS or AI catcher processor fishing activity, C/P, Pacific cod, and hook-and-line gear. As of December 2005, 44 licensed vessels have this endorsement, 39 of which are transferable licenses and 5 are interim.

Participation in Groundfish Fisheries. These vessels, also known as freezer longliners, use hook-and-line gear and focus their effort on BSAI Pacific cod. Sablefish and Greenland turbot are secondary targets. Most hook-and-line catcher processors are limited to headed and gutted products. The vessels in this sector generally begin fishing for Pacific cod on January 1 and continue until the allocation is fully harvested by February, March or April. They start fishing Pacific cod again on August 15, when the halibut bycatch allowance becomes available, through November or December. Most vessels in this sector undergo maintenance and repair in the summer months, although several vessels process and custom freeze salmon during this period. The number of hook-and-line catcher processors has remained relatively stable, averaging about 40 vessels since 1995.

3.3.4 Eligibility Requirements by Sector

This section provides a discussion of the participants and varying level of requirements currently in place to participate in the Federal directed BSAI Pacific cod fisheries. Note that no new eligibility requirements are proposed in this amendment, thus, the following requirements would not be modified by this action.

License Limitation Program Requirements

As stated previously, the LLP Program was implemented in 2000, and all sectors proposed to receive Pacific cod allocations under this amendment are subject to the LLP requirement when fishing BSAI Pacific cod in Federal waters with few exceptions. Those exceptions include: 1) vessels <32' LOA in the BSAI, and 2) jig vessels <60' LOA in the BSAI (using no more than 5 jig machines, one line per machine, and 15 hooks per line). In addition to the general LLP license, all sectors subject to the LLP requirement must also have a BS and/or AI area endorsement and the proper vessel and gear designations in order to fish BSAI Pacific cod with a particular gear and vessel type.³⁵

Thus, in the current trawl Pacific cod fisheries, the only eligibility requirement is having the appropriate LLP license, including a BS and/or AI endorsement and trawl designation. Most jig vessels actively fishing BSAI Pacific cod are <60' LOA, thus, an LLP is not required. In the BSAI fixed gear (hook-and-line and pot) Pacific cod fisheries, however, additional LLP eligibility requirements were developed under Amendment 67. Under Amendment 67, vessels that are ≥60' engaged in directed fishing for BSAI Pacific cod in the Federal fisheries using fixed gear must qualify for a Pacific cod endorsement in addition to their area endorsement, non-trawl endorsement, and general LLP license. It was intended to provide a mechanism that would further limit entry into the fishery by fixed gear vessels that have not participated, or have not participated at a level that would constitute significant dependence on the fishery. The qualifying criteria under Amendment 67 is provided in Section 3.3.1.

Given the fixed gear requirements for the Pacific cod endorsement and the general LLP license, there are a limited number of vessel licenses that are eligible to participate in the Federal BSAI Pacific cod fishery with fixed or trawl gear.

³⁵A vessel's groundfish license is assigned a vessel designation of catcher processor (CP) or catcher vessel (CV), and a gear designation of trawl and/or non-trawl.

AFA Eligibility Requirements

Section 208(e) of the AFA establishes vessel and processor eligibility to harvest and process the BSAI pollock directed fishing allowance designated for each sector under the AFA. Section 208(e) lists the 20 trawl catcher processors that are eligible to participate as trawl catcher processors under the AFA, as well as the criteria used to qualify other catcher processors that are not listed (only one additional vessel qualifies under the criteria). Section 208(a)-(c) establishes the eligibility criteria and list for catcher vessels eligible under the AFA. As of January 2005, the NMFS database indicates that 111 catcher vessels were issued AFA permits.

In addition to determining eligibility for participation in the BSAI pollock fisheries, the implementing regulations for the AFA established sideboards on the participation by AFA-qualified vessels in the non-pollock BSAI groundfish fisheries and GOA groundfish fisheries, including Pacific cod. The 20 listed AFA CPs are currently subject to an annual Pacific cod sideboard limit. The one additional catcher processor that qualifies under 208(e)(21) of the AFA is limited to a small percentage of the AFA CP allocation of pollock, and is not sideboarded in other fisheries.

AFA catcher vessels are also subject to an annual sideboard limit³⁶ of BSAI Pacific cod. However, the Council elected to exempt AFA catcher vessels <125' from the BSAI Pacific cod sideboards if their combined total BSAI pollock landings were less than 5,100 mt and they made 30 or more landings in the directed BSAI Pacific cod fishery from 1995 – 1997. The rationale for these exemptions was that many of the AFA catcher vessels with relatively low pollock catch history have traditionally targeted BSAI Pacific cod during the winter cod fishery. AFA catcher vessels with mothership endorsements are also exempt from the BSAI Pacific cod catcher vessel sideboard directed fishing closures after March 1 of each fishing year (50 CFR 679.64(b)(2)(i)).

There are thus 21 permitted AFA catcher processors and 111 permitted AFA catcher vessels that comprise the AFA trawl CP and AFA trawl CV sectors, respectively. Of the 21 AFA CPs, 20 are currently subject to Pacific cod sideboard limits and considered part of the AFA CP sector for purposes of this action. Of the 111 permitted AFA CVs, 9 inshore vessels are exempt from the cod sideboards and 19 catcher vessels delivering to motherships are exempt after March 1 of each fishing year. Note that under the proposed BSAI Pacific cod allocation amendment, cod sideboards for the AFA CP and AFA CV sectors would be replaced by a direct allocation to each sector.

Eligibility Requirements under the 2005 Consolidated Appropriations Act

Lastly, the Consolidated Appropriations Act of 2005 (P.L. 108-792) (Act) establishes catcher processor sector definitions for participation in the catcher processor sectors of the BSAI non-pollock groundfish fisheries³⁷ and the fishing capacity reduction program authorized by Congress. The following sectors are defined in the Act under Section 219(a): AFA trawl catcher processor, non-AFA trawl catcher processor, hook-and-line catcher processor, and pot catcher processor.

³⁶ The sideboard formula is based on the retained catch of AFA catcher vessels of each sideboard species from 1995 – 1997 (1997 only for BSAI Pacific cod) divided by the available TAC for that species over the same period.

³⁷ The non-pollock groundfish fishery is defined as 'target species of Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole harvested in the BSAI.'

With the exception of the non-AFA catcher processor sector, the Act does not appear to establish new eligibility requirements for participating in the BSAI Pacific cod fishery as part of the catcher processor sectors. The Act defines the AFA trawl catcher processor sector as the owners of each catcher processor listed in 208(e)(1)-(20) of the AFA.³⁸ Note that one additional trawl CP qualifies to participate in the directed BSAI pollock fishery under 208(e)(21) of the AFA. This vessel is limited to a small percentage of the AFA CP allocation of pollock and is not sideboarded in other fisheries. However, under the Consolidated Appropriations Act, only the 20 listed AFA CPs are considered part of the AFA catcher processor sector for continued participation in the BSAI non-pollock groundfish fisheries, which includes Pacific cod. The additional trawl CP that qualifies under 208(e)(21) is thus considered part of the non-AFA trawl CP sector for purposes of this action.

Under the Act, the hook-and-line catcher processor and pot catcher processor sectors are defined as the holders of an LLP license that is (or becomes) transferable, and that is endorsed for the BS and/or AI, CP, Pacific cod, and the respective gear type (hook-and-line gear or pot gear).

The non-AFA trawl catcher processor sector, however, is defined differently than the status quo. The Act (Section 219(7)) specifies that this sector ‘means the owner of each trawl catcher processor:

- (A) that is not an AFA trawl catcher processor;
- (B) to whom a valid LLP license that is endorsed for BS or AI 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 mt of non-pollock groundfish during the period January 1, 1997 through December 31, 2002.’

Thus, a non-AFA trawl catcher processor will have to meet the above criteria in order for the owner of that vessel to participate in that sector in the BSAI non-pollock groundfish fisheries, which includes Pacific cod by definition. Note that this criteria is also included under BSAI Amendment 80, to define the non-AFA trawl catcher processor sector for the purpose of flatfish sector allocations. NOAA GC has issued legal guidance (February 9, 2005) that “the Council and NOAA Fisheries cannot select or impose different, including more stringent, eligibility requirements for entrance to the non-AFA trawl catcher processor subsector.”³⁹

The application of this criteria means that a finite number of vessels will qualify for the non-AFA trawl catcher processor sector. The issue is outlined below:

- There are currently 44 trawl BSAI CP licenses being used on 41 non-AFA trawl CPs (vessels that are not listed in Section 208(e)(1)-(20) of the AFA).

³⁸Note that this definition does not include any vessel that met the requirements in 208(e)(21) to be eligible to harvest the pollock directed fishing allowance allocated to CPs and CVs delivering to CPs. NOAA GC has determined that the vessel that qualifies under 208(e)(21) of the AFA qualifies for the non-AFA trawl catcher processor sector based on the qualifications in the Consolidated Appropriations Act of 2005.

³⁹NOAA GC guidance was requested in December 2004 to clarify whether the Council could adopt more stringent criteria than is provided in the Act. NOAA provided a legal opinion on February 9, 2005, stating that the Council cannot adopt more stringent criteria than is provided in the Act for the purpose of establishing vessels eligible to participate in the non-AFA trawl CP sector.

- **Applying the criteria above qualifies 26 vessels⁴⁰** (on which 29 licenses are currently being used) for participation in the non-AFA trawl CP sector for non-pollock BSAI groundfish (*see the public review draft of BSAI Amendment 80 EA/RIR/IRFA*).
- Thus, there are 15 remaining trawl CP licenses that are not currently being used on eligible non-AFA trawl CPs or on AFA trawl CPs.⁴¹ Of the remaining 15 trawl CP licenses, 9 are being used on AFA catcher vessels and 5 are being used on hook-and-line catcher processors.

The 15 trawl CP licenses noted above could continue to be used on vessels not eligible for the non-AFA trawl CP sector or they could be transferred to eligible non-AFA trawl CPs in the future. Theoretically, holders of these 15 transferable trawl CP licenses that do not meet the criteria to participate in the non-AFA trawl CP sector for the non-pollock BSAI groundfish fisheries could also potentially participate in these fisheries as a trawl CV, or could participate as a trawl CP in fisheries not included in the Act's definition of "non-pollock groundfish fishery" (e.g., arrowtooth flounder, rockfish species).

In sum, the non-AFA trawl CP sector is comprised of 26 eligible vessels under this amendment, as defined by the Act. Table 3-7 summarizes the number of valid LLP or other necessary permits eligible for use on a vessel to harvest BSAI Pacific cod in the directed Federal fishery under each of the defined sectors. Note that an LLP license is not necessary to fish BSAI Pacific cod in the parallel fishery that occurs in State waters (0 – 3 miles from shore). Table 3-8 shows the same number of BS/AI LLPs by sector, and also provides information on whether those LLPs also have a Gulf (Southeast, Central Gulf, or Western Gulf) endorsement and/or are linked to a crab license.

⁴⁰These 26 vessels are non-AFA trawl catcher processors that meet the harvesting criteria in 219(7)(C) of the Act. Thus, these vessels are qualified to participate in the non-AFA catcher processor sector for BSAI non-pollock groundfish fishery at any time they hold a valid LLP license that is endorsed for BS or AI trawl catcher processor fishing activity.

⁴¹Of the 14 licenses not currently being used on eligible non-AFA trawl CPs, only 3 licenses are used on 3 vessels that have 1995 - 1996 BSAI Pacific cod history as trawl CPs. These 3 vessels currently operate as AFA trawl CVs.

Table 3-7 Number of permits issued to participate in the sectors of the Federal BSAI Pacific cod fishery

SECTOR	Permit required and/or eligibility criteria per statute	BS only LLP	AI only LLP	BSAI LLP	Total # of valid LLPs
AFA Trawl CP	AFA CP permit/listed in 208(e)(1)-(20); trawl LLP (CP/BSAI)	1	0	19	20
Non-AFA Trawl CP	trawl LLP (CP/BSAI); not an AFA trawl CP; must have harvested with trawl gear and processed no less than 150 mt of non-pollock groundfish during 1997 through 2002.	5 (1 interim)	1	23 (2 interim)	29 LLPs (on 26 vessels) ¹
AFA Trawl CV	AFA CV permit; trawl LLP (CV/BSAI) ²	60	0	51 (1 interim)	111
Non-AFA Trawl CV	trawl LLP (CV/BSAI)	44 (2 interim)	2	4	50
Hook-and-line CP	non-trawl LLP (BSAI/H&L CP cod endorsement)	2	0	42 (5 interim)	44
Hook-and-line CV >60'	non-trawl LLP (BSAI/H&L CV cod endorsement)	1	1	7	9
Pot CP	non-trawl LLP (BSAI/pot CP cod endorsement)	3	0	5 (2 interim)	8
Pot CV >60'	non-trawl LLP (BSAI/pot CV cod endorsement)	48 (2 interim)	0	5 (2 interim)	53
Hook-and-line/Pot <60'	non-trawl LLP (CV/BSAI)	90 (3 interim)	2	24 (3 interim)	116
Jig CV	LLP is not required for <60' jig CV in the BSAI	N/A	N/A	N/A	N/A

¹Note that 44 BSAI trawl CP licenses exist (that are not associated with AFA vessels), but only 26 vessels (on which 29 LLPs are used) qualify under the eligibility criteria to participate in the non-AFA trawl CP sector for BSAI groundfish authorized in the Consolidated Appropriations Act of 2005. Of the remaining 15 trawl CP licenses currently being used on vessels ineligible for the non-AFA trawl CP sector, 9 are being used on AFA CVs and 5 others have a BSAI hook-and-line CP cod endorsement and are accounted for in the hook-and-line CP sector.

²Note that of the 111 total LLPs held by this sector, there are 102 trawl CV LLPs and 9 trawl CP LLPs (all 9 are transferable; 8 are endorsed for the BSAI and 1 is endorsed for the BS).

Note that a vessel is not limited to participating in one sector if it has the appropriate license and/or permit; thus, the sum of the number of licenses does not represent the number of unique vessels. Note also that the number of LLPs is higher than the number of unique vessels, as one vessel may carry more than one license or a vessel may not yet have been designated for use on a license.

Note that the three non-AFA trawl CVs that qualify under Alternative 2, Component 1, Option 1.1, have BS endorsements only.

Table 3-8 Number of BS/AI LLPs by sector and GOA and crab endorsements

SECTOR	Permit required and/or eligibility criteria per statute	BS/AI LLPs by sector	Number of BSAI LLPs that also have GOA endorsements	Number of BSAI LLPs linked to crab LLP
AFA Trawl CP	AFA CP permit/listed in 208(e)(1)-(20); trawl LLP (CP/BSAI)	20	4	0
Non-AFA Trawl CP ¹	trawl LLP (CP/BSAI); not an AFA trawl CP; must have harvested with trawl gear and processed no less than 150 mt of non-pollock groundfish during 1997 through 2002.	29	26	0
AFA Trawl CV	AFA CV permit; trawl LLP (CV or CP/BSAI) ²	111	102	42
Non-AFA Trawl CV	trawl LLP (CV/BSAI)	50	46	11
Hook-and-line CP	non-trawl LLP (BSAI/H&L CP cod endorsement)	44	32	7
Hook-and-line CV >60'	non-trawl LLP (BSAI/H&L CV cod endorsement)	9	7	3
Pot CP	non-trawl LLP (BSAI/pot CP cod endorsement)	8	4	6
Pot CV >60'	non-trawl LLP (BSAI/pot CV cod endorsement)	53	23	52
Hook-and-line/Pot <60'	non-trawl LLP (CV/BSAI)	116	102	15
Jig CV	LLP is not required for <60' jig CV in the BSAI	N/A	N/A	N/A

¹Note that 44 BSAI trawl CP licenses exist (that are not associated with AFA vessels), but only 26 vessels (on which 29 LLPs are used) qualify under the eligibility criteria to participate in the non-AFA trawl CP sector for BSAI groundfish authorized in the Consolidated Appropriations Act of 2005. Of the remaining 15 trawl CP licenses currently being used on vessels ineligible for the non-AFA trawl CP sector, 9 are being used on AFA CVs and 5 others have a BSAI hook-and-line CP cod endorsement and are accounted for in the hook-and-line CP sector.

²Note that 111 AFA CV permits are issued: 102 vessels carry trawl CV LLPs and 9 vessels carry trawl CP LLPs. Note that a vessel is not limited to participating in one sector if it has the appropriate license and/or permit; thus, the sum of the number of participants does not represent the number of unique vessels. Note also that the number of LLPs may be higher than the number of unique vessels, as one vessel may carry more than one license or a vessel may not yet have been designated for use on a license.

3.3.5 Catch History and Participants in the (non-CDQ) BSAI Pacific Cod Fisheries

The following sections provide retained catch history information for the ten (non-CDQ) sectors that are proposed to receive Pacific cod allocations under this amendment. It is important to note that for this purpose, these sectors are not necessarily exclusive—vessels can be eligible to participate in more than one sector and may have made landings with more than one gear type, and may therefore be counted in more than one sector. It is also important to note that no attempt has been made to distinguish between landings made in the directed Pacific cod fisheries and incidental catch of Pacific cod in other target fisheries. The amendment language requires information on retained BSAI Pacific cod harvest by sector.

3.3.5.1 Retained catch by sector in the BSAI

Baseline information on the BSAI Pacific cod fishery from 1995 – 2003 is presented in Table 3-9. That table shows the retained harvest and number of vessels that participated in the non-CDQ BSAI Pacific cod fishery by sector. All retained catch, as well as catch resulting from reallocated quota, is included. This is the catch history that is used to determine the sector allocations proposed in Alternative 2, Component 2 (see Section 3.4.2.2). Note that the overall allocations among the trawl, fixed, and jig gear sectors were effective starting in 1994 and revised in 1997. A further split of the fixed gear allocations was established in September 2000 and revised in 2004. The pot CP and pot CV sectors did not receive separate allocations until 2004.

Table 3-9 shows that on average during the period 1995 – 2003, the hook-and-line catcher processor sector harvested the majority (about 49%) of the BSAI Pacific cod TAC allocated to the non-CDQ fishery. The AFA trawl catcher vessel sector harvested almost 22%, and the non-AFA trawl catcher vessel sector harvested about 2% during the same time period. The AFA trawl catcher processor sector harvested almost 2%, and the non-AFA trawl catcher processor sector harvested about 13%. The $\geq 60'$ pot catcher vessel and catcher processor sectors harvested almost 9% and over 2%, respectively. The $< 60'$ fixed gear sector, the jig catcher vessel sector, and the hook-and-line catcher vessel sector each harvested less than 1%.

In addition, Table 3-9 shows the unique number of vessels that fished in each sector during this time period. The number of participating jig vessels has ranged from a high of 42 in 1995 to a low of 10 in 1998. Both AFA sectors have remained relatively stable in number (about 12 CPs and 95 CVs on average), as has the hook-and-line catcher processor sector (about 40 vessels on average). The non-AFA trawl catcher processor sector has decreased slightly, from 33 vessels in 1995 to 23 vessels in 2003, and the non-AFA trawl catcher vessel sector has ranged from 9 to 22 vessels. The $\geq 60'$ hook-and-line catcher vessel sector has ranged from 3 to 20 vessels. The pot catcher processor sector has ranged from 3 to 13 vessels. The most substantial fluctuation has been in the $\geq 60'$ pot catcher vessel sector, which has ranged from a high of 110 vessels in 2000 to a low of 55 vessels in 2002. The $< 60'$ fixed gear sector has ranged from a low of 11 vessels in 1998 to a high of 41 vessels in 2001.

Note that the eligibility requirements for the sectors have changed over the time period shown in Table 3-9. Notably, the AFA was passed in 1999, and the License Limitation Program was implemented in 2000. The recent variations in the $\geq 60'$ fixed gear CV sectors are primarily due to the implementation of the BSAI Pacific cod LLP endorsement under Amendment 67 in 2003. Details on the relevant eligibility requirements are provided in Section 3.3.4.

Table 3-9 BSAI Pacific cod annual harvest (retained mt) by sector, 1995 – 2003

SECTOR	1995		1996		1997		1998		1999	
	(mt)	# vessels	(mt)	# vessels	(mt)	# vessels	(mt)	# vessels	(mt)	# vessels
<60 HAL/Pot CVs	900	38	131	16	56	13	38	11	176	18
AFA 9	4,546	6	4,067	6	4,015	7	3,966	7	0	0
AFA Trawl CPs	4,300	14	3,228	12	4,556	11	4,354	13	3,686	11
AFA Trawl CVs	39,919	91	51,269	99	53,264	92	37,579	93	32,946	99
Jig CVs	589	42	247	34	167	17	191	10	204	15
Longline CPs	87,870	43	82,700	39	108,590	37	83,642	38	68,271	38
Longline CVs >60'	19	7	8	7	42	10	2	3	91	20
Non-AFA Trawl CPs	16,045	33	17,877	30	19,584	30	21,860	23	22,087	24
Non-AFA Trawl CVs	3,190	12	3,317	17	3,177	9	1,541	12	1,669	11
Pot CPs	4,406	8	8,275	13	4,913	9	3,052	8	3,223	13
Pot CVs >60'	15,252	106	22,282	95	15,050	77	8,344	70	11,731	89
TOTAL	177,036	400	193,402	368	213,414	312	164,569	288	144,084	338

SECTOR	2000		2001		2002		2003		sum 95-03	sum/total
	(mt)	# vessels	(mt)	# vessels	(mt)	# vessels	(mt)	# vessels	(mt)	%
<60 HAL/Pot CVs	251	38	1,018	41	1,537	30	1,741	25	5,849	0.38%
AFA 9	0	0	0	0	0	0	0	0	16,594	1.07%
AFA Trawl CPs	1,709	8	1,432	8	1,287	11	1,409	10	25,961	1.67%
AFA Trawl CVs	36,099	98	18,691	98	33,786	97	33,562	91	337,114	21.70%
Jig CVs	79	16	102	19	169	18	154	15	1,901	0.12%
Longline CPs	75,181	41	86,436	42	79,269	40	89,580	39	761,539	49.02%
Longline CVs >60'	223	19	1,332	20	170	6	93	6	1,980	0.13%
Non-AFA Trawl CPs	25,828	23	23,628	22	29,757	22	28,157	23	204,824	13.18%
Non-AFA Trawl CVs	2,802	11	3,006	13	5,797	18	7,542	22	32,042	2.06%
Pot CPs	2,491	10	2,991	5	2,059	5	1,530	3	32,939	2.12%
Pot CVs >60'	16,565	110	13,916	69	12,465	55	17,176	70	132,781	8.55%
TOTAL	161,228	374	152,553	337	166,296	302	180,944	304	1,553,525	100.00%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The 'AFA 9' sector refers to the 9 catcher processors listed in Section 209 of the AFA that were made permanently ineligible for fisheries in the U.S EEZ.

Note: In 2003, a very small portion of the retained catch attributed to the pot CV >60' sector was harvested by a pot CP who chose to operate as a CV in this instance. Note, however, that this vessel is designated on two LLPs, one with a pot CP cod endorsement and one with a pot CV cod endorsement. Attributing this catch to the pot CP sector would not have changed the overall percentage shares by sector.

Table 3-10 BSAI Pacific cod annual harvest share by sector (including AFA 9 catch history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	5.0%	3.8%	4.0%	5.1%	2.6%	1.1%	0.9%	0.8%	0.8%	23.9%	2.7%
AFA Trawl CVs	22.5%	26.5%	25.0%	22.8%	22.9%	22.4%	12.3%	20.3%	18.5%	193.2%	21.5%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	49.6%	42.8%	50.9%	50.8%	47.4%	46.6%	56.7%	47.7%	49.5%	441.9%	49.1%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.1%	9.2%	9.2%	13.3%	15.3%	16.0%	15.5%	17.9%	15.6%	121.1%	13.5%
Non-AFA Trawl CVs	1.8%	1.7%	1.5%	0.9%	1.2%	1.7%	2.0%	3.5%	4.2%	18.5%	2.1%
Pot CPs	2.5%	4.3%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	18.7%	2.1%
Pot CVs >60'	8.6%	11.5%	7.1%	5.1%	8.1%	10.3%	9.1%	7.5%	9.5%	76.8%	8.5%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Note that Table 3-10 shows each sector's annual harvest share for each individual year as a percentage of the total retained catch by all sectors. The far right column shows each sector's *average* of the annual harvest share percentages during 1995 – 2003. This differs from the 'sum/total' column shown in Table 3-9, in which each sector's total catch during 1995 – 2003 is divided by all sectors' total catch during that same time period. The sector allocations under consideration in Alternative 2, Component 2 are calculated as shown in Table 3-10, as the sector's average of the annual harvest share during the series of catch history years.

The 'AFA 9' sector refers to the nine vessels whose claims to catch history and any endorsements or permits for eligibility in any U.S. fisheries in the EEZ were extinguished under Section 209 of the AFA. These nine vessels harvested about 16,600 mt, or 1% of the total retained BSAI Pacific cod harvest during 1995 – 2003. Recall that those 9 vessels were removed from the fishery in 1999, thus only harvest from 1995 – 1998 exists. If the 16,600 mt from these nine vessels is *included as part of the AFA trawl catcher processor sector's history as shown in Table 3-10*, the AFA trawl CP sector's average share of the total harvest during this time period is 2.7%. If the 16,600 mt from these nine vessels is *excluded* from the total harvest history altogether, the AFA trawl CP sector's share is reduced by 1%. In sum, each sector's annual harvest share would change as shown in Table 3-11.

Table 3-11 BSAI Pacific cod annual harvest share by sector (excluding AFA 9 history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	2.5%	1.7%	2.2%	2.7%	2.6%	1.1%	0.9%	0.8%	0.8%	15.2%	1.7%
AFA Trawl CVs	23.1%	27.1%	25.4%	23.4%	22.9%	22.4%	12.3%	20.3%	18.5%	195.4%	21.7%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	50.9%	43.7%	51.9%	52.1%	47.4%	46.6%	56.7%	47.7%	49.5%	446.4%	49.6%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.3%	9.4%	9.4%	13.6%	15.3%	16.0%	15.5%	17.9%	15.6%	122.0%	13.6%
Non-AFA Trawl CVs	1.8%	1.8%	1.5%	1.0%	1.2%	1.7%	2.0%	3.5%	4.2%	18.6%	2.1%
Pot CPs	2.6%	4.4%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	19.0%	2.1%
Pot CVs >60'	8.8%	11.8%	7.2%	5.2%	8.1%	10.3%	9.1%	7.5%	9.5%	77.5%	8.6%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Of all of the sectors, the AFA CP sector's harvest share during 1995 – 2003 is most affected by whether the AFA 9 vessels' history is included within the AFA CP sector's history – the resulting difference is 1%. The following sector's average harvest share during 1995 – 2003 is not affected by the inclusion or exclusion of the AFA 9: <60' fixed gear; jig CV; hook-and-line CV ≥60'; non-AFA trawl CV; and pot CP sectors. The remaining sectors are slightly affected. The non-AFA trawl CP sector and pot CV ≥60' sector

shares are each reduced by 0.1% if the AFA 9 history is included. The AFA trawl CV sector share is reduced by 0.2% if the AFA 9 history is included, and the hook-and-line CP sector share is reduced by 0.5%.

3.3.5.2 Harvest by sector in 2004 and 2005

Baseline BSAI Pacific cod harvest information from weekly production reports and fishtickets from 1995 – 2003 is presented in the previous section in Table 3-9. That table shows the retained harvest and number of vessels that participated in the non-CDQ BSAI Pacific cod fishery by sector and each sector’s harvest share during 1995 - 2003. Only retained catch is included and the data are refined on an individual vessel basis and aggregated by sector. Table 3-9 represents the most recent data available for this refined data set and is used to determine the sector allocations proposed in Alternative 2, Component 2.

Although the alternatives and options developed during the past year do not include harvest data beyond 2003, it is important to consider the most recent data available by sector. Table 3-12 below provides total catch by sector, as reported from the NMFS catch accounting database, which utilizes observer data, shoreside processor landings data, and fishtickets. Note that this data is broken out by BS, AI, and BSAI areas, although Pacific cod is currently managed under a BSAI ABC and TAC. Note also that confidential data for the <60’ fixed gear and jig gear sectors are not provided in the table, thus, the totals for each year also do not include those confidential data.

Table 3-12 Pacific cod total catch by sector in the BS, AI, and BSAI areas

2004						
SECTOR	BS (mt)	BS (%)	AI (mt)	AI (%)	BSAI (mt)	% of total BSAI
Hook-and-line CP	93,866	97.0%	2,921	3.0%	96,786	48.9%
Hook-and-line CV	272	100.0%	-	0.0%	272	0.1%
Hook-and-line and Pot CVs < 60'	1,970	*	*	*	1,970*	1.0%*
Hook-and-line and Pot Gear ICA	346	69.8%	150	30.2%	496	0.3%
Jig Gear	231	100.0%	-	0.0%	231	0.1%
Pot CP	3,234	100.0%	-	0.0%	3,234	1.6%
Pot CV	12,364	100.0%	-	0.0%	12,364	6.3%
Trawl CP	29,352	71.0%	11,980	29.0%	41,332	20.9%
Trawl CV	27,576	67.1%	13,517	32.9%	41,093	20.8%
Total*	169,211	85.6%	28,567	14.4%	197,778	100.0%
2005						
SECTOR	BS (mt)	BS (%)	AI (mt)	AI (%)	BSAI (mt)	% of total BSAI
Hook-and-line CP	97,925	97.9%	2,128	2.1%	100,054	52.6%
Hook-and-line CV	235	100.0%	-	0.0%	235	0.1%
Hook-and-line and Pot CVs < 60'	2,234	*	*	*	2,234*	1.2%*
Hook-and-line and Pot Gear ICA	824	86.3%	131	13.7%	955	0.5%
Jig Gear	104	*	*	*	104*	0.1%*
Pot CP	3,339	100.0%	-	0.0%	3,339	1.8%
Pot CV	12,205	100.0%	-	0.0%	12,205	6.4%
Trawl CP	24,187	68.2%	11,281	31.8%	35,467	18.6%
Trawl CV	27,740	77.6%	8,007	22.4%	35,747	18.8%
Total*	168,792	88.7%	21,547	11.3%	190,339	100.0%

Source: NMFS catch accounting database, 2004 - 2005.

*Totals exclude confidential data.

Generally, while the two data sets are not exactly comparable, the data in Table 3-12 indicate that the overall BSAI harvest share by sector is similar to what has occurred during 1995 – 2003 (compare to Table 3-11). The ≥60’ pot CV share of Pacific cod harvest decreased slightly in the past two years compared to 1995 – 2003. Although a small portion of the <60’ fixed gear harvest is confidential and thus not reported in the above table, it is clear that the <60’ fixed gear share of the total

BSAI Pacific cod harvest has increased slightly in the past two years, likely due to additional quota reallocated from the jig sector starting in 2004. Excluding confidential data, the table shows that this sector harvested about 1.0% and 1.2% of the 2004 and 2005 total BSAI Pacific cod harvest. All sectors, with the exception of the <60' fixed gear sector and the combined trawl CP sector, had harvests in 2004 and 2005 that fall within the range of the catch shares during 1995 – 2003. Harvests attributed to the trawl CP sector would be slightly lower if only retained harvest was counted. Thus, while these data are not truly comparable to the retained only harvest data in the previous tables, they provide a general view of the fishery in the two most recent years.

Table 3-12 also breaks out the total harvest by sector for the BS and AI subareas. This data is provided again in Section 3.4.4 under Part II of this analysis. Part II addresses the methodology for splitting each BSAI sector allocation by BS and AI subarea, should the BSAI TAC be split by subarea in a future specifications process. Thus, the data in Table 3-12 are important to consider in determining whether the distribution of harvest by sector in the two subareas has changed in recent years. The overall trend discussed in Part II of the analysis is that the trawl sectors have generally increased the percentage of their Pacific cod harvest in the AI compared to the BS, while the fixed gear sectors have generally decreased their share harvested in the AI. The data provided for 2004 and 2005 follows this trend, as the trawl sectors appear to continue to take more of their total harvest in the AI than they did in 1995 – 1999.

The table above shows that the combined trawl CP sectors harvested about 29% and 32% of their total BSAI Pacific cod harvest in the AI in 2004 and 2005, respectively. This can be roughly compared to about 32% of their total BSAI Pacific cod harvest taken in the AI during 2000 – 2003 (see Part II, Table 3-126). The combined trawl CV sectors harvested about 33% and 22% of their total BSAI Pacific cod harvest in the AI in 2004 and 2005, respectively. This can be roughly compared to about 34% of their total BSAI Pacific cod harvest taken in the AI during 2000 – 2003 (see Part II, Table 3-126).

While the fixed gear sectors have not harvested a significant amount of cod in the AI during any of the years considered, they continue to harvest less of their total cod share in the AI in the most recent years. The hook-and-line CP sector harvested about 3% and 2% of its total cod catch in the AI during 2004 and 2005, respectively. This compares to an estimated 8% in 2000 – 2003. Hook-and-line and pot catcher vessels of any length, as well as jig vessels, harvested little to none of their total BSAI Pacific cod harvest in the AI in 2004 and 2005. This issue will be discussed in more detail in Part II, in Section 3.4.4.

3.3.5.3 Harvest and allocations to the <60' pot and hook-and-line CV sector

Table 3-13 provides BSAI retained Pacific cod harvest data for the <60' hook-and-line CV sector and the <60' pot CV sector. Note that these sectors currently receive a combined allocation and are proposed to continue a combined allocation under all alternatives in this amendment. Table 3-13 shows that on average during the past five years for which data is available (1999 – 2003), the majority (66.8%) of the <60' fixed gear retained BSAI Pacific cod harvest has been taken by pot gear, and the remainder (33.2%) has been taken by hook-and-line gear.

Note that while on average in recent years the <60' fixed gear BSAI Pacific cod harvest has been dominated by vessels using pot gear, there have been a few years (1997, 1999, 2000) in which the <60' BSAI Pacific cod harvest has been dominated (>80%) by vessels using hook-and-line gear. Since the allocation to <60' fixed gear CVs was established in late 2000, the trend has been for the <60' pot CVs to take the majority of the <60' harvest and allocation. During 1999 – 2003, 81 unique <60' hook-and-line CVs and 18 unique <60' pot CVs had retained BSAI Pacific cod harvests. An annual average of 5 <60' pot CVs and 26 <60' hook-and-line CVs had retained cod harvests during this time period.

Note also that over the past five years (1999 – 2003), the top three <60' pot catcher vessels with the highest harvests constituted in excess of about 66% of the total <60' pot CV harvest each year. In the <60' hook-and-line sector, the top three vessel harvests comprised in excess of 70% of the total <60' hook-and-line sector harvest each year. Thus, in both sectors, a few vessels have been dominating the overall catch by sector to date.

Table 3-13 Retained BSAI Pacific cod harvest by <60' fixed gear sector, 1999 – 2003

Year	1999	2000	2001	2002	2003	Total 1999 – 2003 (and ave % by sector)
H&L CV harvest (mt) and % of total <60' fixed gear harvest	Conf.	Conf.	444.8 (43.7%)	205.5 (13.4%)	388.5 (22.3%)	1,944.4 (33.2%)
# unique H&L CVs	14	35	37	23	19	81
Pot CV harvest (mt) and % of total <60' fixed gear harvest	Conf.	Conf.	573.5 (56.3%)	1,331.7 (86.6%)	1,352.2 (77.7%)	3,904.3 (66.8%)
# unique pot CVs	4	3	4	7	6	18
Total <60' fixed gear harvest (mt)	176.1	250.6	1,018.3	1,537.2	1,740.8	5,848.7

Source: ADF&G fishtickets, 1999 – 2003. Conf. = 2000 data obscured due to confidentiality rules. 1999 data obscured to protect revealing confidential data through simple subtraction.

The <60' pot and hook-and-line catcher vessel sector data is not easily separated from the general pot and hook-and-line CV data in the NMFS annual and seasonal catch reports. This is because the <60' pot/hook-and-line CV sector harvest is attributed to the general pot CV and general hook-and-line CV allocations, respectively, when those directed fisheries are open. Table 3-14 provides information on the amount of <60' fixed gear CV sector harvest attributed to the general CV allocations and to its own allocation in 2003 and 2004.

Overall, in both 2003 and 2004, the vast majority of the general pot allocation was harvested by pot CVs greater than 60 feet LOA. This has been the trend since 1995. Recall that the pot allocation was shared by both the pot CV and pot CP sectors in 2003, and that the pot sector received 839 mt in reallocated quota late in the year. In 2004, the pot CV sector had its own allocation, and about 3,439 mt was reallocated from this sector in late November. **In contrast, in both 2003 and 2004, the great**

majority of the general hook-and-line CV allocation was harvested by <60' hook-and-line CVs. This has been the trend since 1995.

Table 3-14 Amount of each fixed gear CV sector's harvest attributed to its allocation, 2003-2004

Sector	Actual harvest (mt) by sector	Total harvest (mt) attributed to the sector's allocation	Allocation (accounts for reallocated quota)	Remaining quota (mt)	Percent of total harvest harvested by <60 CVs
2004					
General Pot CV (≥60')	Conf.	Conf.	11,735	Conf.	Conf.
General HAL (≥60')	Conf.	Conf.	303	Conf.	Conf.
<60' pot/HAL	3,196	2,890	2,961	71	100%
2003					
General Pot CV (≥60')	19,037	19,164	18,661	(503)	<1%
General HAL (≥60')	104	303	292	(11)	66%
<60' pot/HAL	1,746	1,420	1,363	(57)	100%

Source: NMFS catch accounting database, 2003 – 2004. Conf. = data masked for confidentiality reasons.

Note: The <60' pot/hook-and-line sector fishes off the general pot CV and general hook-and-line CV allocations, when those directed fisheries are open. This results in the *actual harvest by sector* being greater than the *total harvest attributed to the sector's allocation*.

As stated previously, since the allocation to <60' fixed gear CVs was established in late 2000, the trend has been for the <60' pot CVs to take the majority of the <60' harvest and allocation. Both gear types, however, increased their overall cod catch substantially starting in 2001, compared to prior years in which no distinct allocation existed for the <60' fleet. The <60' fixed gear sector harvested 19% and 64% of its allocation in 2000 and 2001, respectively. This sector first harvested its entire <60' allocation for in 2002, and has since harvested its entire allocation plus additional quota from the general pot and hook-and-line CV allocations each year. In addition, 2004 was the first year in which jig quota was reallocated to the <60' fixed gear sector at the end of the jig seasons. In 2004, the <60' fixed gear sector received an initial allocation of 1,416 mt and was reallocated 1,545 mt from the jig sector on April 7, for a total allocation of 2,961 mt. In addition to harvesting its entire revised allocation, this sector harvested a portion of the general CV allocations.

The portion of the <60' fixed gear allocation (0.7% of the BSAI Pacific cod ITAC) that is harvested by pot or hook-and-line gear depends somewhat on the length of the overall pot CV and hook-and-line CV Pacific cod fisheries. Closure dates for the <60' fixed gear sector during 2001 – 2005 are provided in Table 3-15. Note that the general pot CV cod fishery has typically closed about a month earlier than the general hook-and-line CV cod fishery. Thus, the <60' hook-and-line CV sector has not always harvested a significant portion of the <60' allocation, because this sector's harvest is attributed to the general hook-and-line CV fishery when it is open. Almost all of the general hook-and-line CV harvest is attributed to <60' vessels.

By contrast, the <60' pot CVs typically start fishing soon after the general pot CV A season closes in February or March, thus, the <60' pot CVs harvest the majority of the <60' allocation between March and June. For example, in 2004, the general pot CV cod fishery A season TAC was harvested by February 13, while the general hook-and-line CV fishery A season closed March 10. Thus, the <60' pot CVs had a month to harvest the <60' allocation before the <60' hook-and-line CVs started fishing off that allocation. The entire <60' initial allocation was taken by April 19. Note also that the <60' hook-and-line CVs must stop fishing on June 10 for lack of a halibut bycatch allowance from June 10 – August 15. So even if quota is available in the summer months for the <60' fleet, it would be taken primarily by pot CVs.

In sum, the <60' fixed gear sector has harvested its entire initial BSAI Pacific cod allocation (excluding reallocated quota) since 2002. In 2002, this sector's Pacific cod fishery did not close until June. Since 2002, the initial <60' allocation has been taken by April. Reallocated jig quota has served to extend the <60' Pacific cod fishery in the BSAI for the past two years (2004–2005).

Note that as of early March 2006, the <60' fixed gear BSAI Pacific cod fishery remained open, but the A seasons for the pot CV $\geq 60'$ and hook-and-line CV $\geq 60'$ sectors closed on February 3 and February 24, respectively.

Table 3-15 Closure summaries for pot and hook-and-line catcher vessels, 2001–2005

Year	<60' fixed gear	Pot CV $\geq 60'$	Hook-and-line CV $\geq 60'$
2005	Closed 4/19, entire <60' initial allocation taken. 1,150 mt of jig quota reallocated to <60' on 4/12, 350 mt more on 5/10, and 500 mt more on 8/5. Pot reopened 8/8 and hook-and-line opened 8/15. 753 mt reallocated from <60' on 11/23.	A season closed 2/13. Reopened 9/1 for B season.	A season closed 3/10. Reopened 8/15 for B season.
2004	No closure. Entire <60' initial allocation taken. 1,545 mt of jig quota reallocated to <60' fixed gear on April 7.	A season closed 2/15. Reopened 9/1 for B season.	A season closed 3/18. Reopened 8/15 for B season. Closed 12/10.
2003	Closed 4/22, entire <60' allocation taken. Pot reopened on 9/1; H&L reopened on 8/15, to fish off general CV allocations. Closed 12/9.	A season closed 2/26. Reopened 9/1 for B season. Closed 12/9.	A season closed 3/28. Reopened 8/15 for B season. Closed 12/9.
2002	Closed 6/11, entire <60' allocation taken. Pot reopened on 9/1; H&L reopened on 8/15, to fish off general CV allocations.	A season closed 3/16. Reopened 9/1 for B season.	A season closed on 6/10 due to end of A season. Reopened 8/15 for B season.
2001	No closure. 64% of allocation taken.	A season closed 3/27. Reopened 9/1 for B season.	A season closed 3/27. Reopened 8/15 for B season. Closed 12/10.

Source: NOAA Status of Groundfish Fisheries by Gear Type, 2001 – 2005.

Note: The $\geq 60'$ pot CV and pot CP sectors shared a BSAI Pacific cod allocation in 2001 – 2003.

3.3.5.4 Participation patterns by sector

In addition to the number of vessels and their aggregate retained catch by sector, information on participation is important to consider. Tables that represent each vessel's participation history by sector during 1995 – 2003 are provided in **Appendix A**. The tables show the number of years out of the nine-year period that vessels had retained BSAI Pacific cod harvests and the number of unique vessels that are represented by that particular participation pattern. The tables also provide the unique number of vessels that participated in *each* year during 1995–2003, both by total number of participating vessels and the number of vessels whose history is associated with an LLP. The tables in Appendix A represent participation patterns by all vessels that retained BSAI Pacific cod, whether that harvest was in Federal or State waters.

Several important issues were being considered by the Council that would affect Pacific cod vessels during 1995–2003. The first was the LLP. Qualifying years for LLP area endorsements were January 1, 1992 through June 17, 1995. The second issue was the BSAI Pacific cod TAC split among the fixed, trawl, and jig gear sectors, which was scheduled to sunset on December 31, 1996. The Council made its final decision on this amendment (Amendment 46) during the June 1996 meeting. The third issue was the BSAI Pacific cod TAC split among the fixed gear sectors, approved by the Council in October 1999.

Finally, the Council made a decision on the Pacific cod endorsement for the $\geq 60'$ fixed gear sectors in April 2000. These actions may have provided incentive for vessels to fish in a manner that they would not have otherwise. However, it is not possible to determine exactly how or whether participation patterns were influenced by these amendments. It is clear that the first and last year for LLP endorsement qualification were years that many vessels fishing in just one year participated. This trend is consistent across the fixed gear sectors. The remainder of this section summarizes the participation tables by sector that are provided in Appendix A.

The **AFA trawl CV** sector exhibited a consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 91 – 99 vessels harvested cod each year during 1995–2003, and only one vessel was not associated with an LLP. Thus, almost 100% of the harvests were made by AFA trawl CVs that have LLPs.

The **non-AFA trawl CV** sector also exhibited a fairly consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 9 – 22 vessels harvested cod each year, and half of the total number of unique vessels that participated during this nine-year period were not associated with an LLP. However, nearly 81% of the cod harvests made during this time period were by non-AFA trawl CVs that have LLPs.

In the **$\geq 60'$ hook-and-line CV** sector, 3 – 19 vessels harvested cod each year, and 32 of the 46 total unique vessels that participated during this nine-year period were associated with an LLP. In addition, about 97% of the cod harvests made during this time period were by $\geq 60'$ hook-and-line CVs that have LLPs.

The **$\geq 60'$ pot CV** sector exhibited a fairly broad range of participants annually during 1995 – 2003, from 54 to 110. Overall, about two-thirds of the total number of unique vessels that participated during this nine-year period were associated with an LLP, and those vessels represent almost 90% of the cod harvests made during this period.

The **$< 60'$ pot/hook-and-line CV** sector had a range of 11 to 41 participants each year during 1995 – 2003. Overall, about one-third of the total number of unique vessels that participated during this nine-year period was associated with an LLP, however, harvests by those LLP vessels represent about 79% of the total retained cod harvest by this sector.

The **jig CV** sector, similar to the $< 60'$ fixed gear sector, had a range of 10 to 42 participants each year during 1995 – 2003. Overall, about 29% of the total number of unique vessels that participated during this nine-year period were associated with an LLP, and harvests by those LLP vessels represent about 42% of the total retained cod harvest by this sector. Note that of all affected sectors, only the jig sector is exempt from the LLP requirement in Federal waters (vessels that do not exceed 60' LOA, and that are using no more than 5 jig machines, one line per machine, and 15 hooks per line are exempt from the LLP requirements in the BSAI.)

The **AFA trawl CP** sector had a range of 8 to 14 vessels that had retained BSAI Pacific cod harvests annually during this time period, all of which were associated with an LLP. Thus, 100% of the harvests made during this time period by the AFA trawl CP sector were made by vessels associated with an LLP. A separate table is provided in Appendix A for the **AFA 9**. Recall that these are the nine trawl CPs that may no longer participate in United States fisheries under the AFA provisions. During the four years considered in which these vessels operated prior to the AFA (1995 – 1998), between 6 and 7 vessels participated each year. Clearly, none of the vessels in the AFA 9 generated an LLP.

The **non-AFA trawl CP** sector also exhibited a fairly consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 22 – 30 vessels harvested cod each year, and 35 of the 41 unique vessels and almost 100% of the retained Pacific cod harvests during this nine-year period were associated with an LLP.

Each year during 1995 – 2003, the **hook-and-line CP** sector had a range of 37 – 43 vessels with retained BSAI Pacific cod harvests. Overall, 59 of the 66 unique vessels that participated during this nine-year period were associated with an LLP, comprising nearly 100% of the retained cod harvested by this sector.

Finally, the **pot CP** sector had a range of 3 – 13 vessels with retained Pacific cod harvests each year during 1995 – 2003. Of the 26 unique pot CPs that had retained cod harvests during this period, 18 were associated with an LLP. Nearly 96% of the retained cod harvests by this sector were made by vessels associated with an LLP.

In general, the CP sectors have a fairly consistent number of vessels with BSAI Pacific cod harvests each year. In addition, nearly 100% of all retained BSAI Pacific cod harvests by CPs during 1995 – 2003 were made by CPs associated with an LLP. The CV sectors are slightly more variable in number of vessels participating, although in the trawl CV sectors and the $\geq 60'$ fixed gear CV sectors, more than 80% of the harvests in each sector were made by CVs that were associated with an LLP. In the AFA trawl CV sector, it was almost 100%.

The small boat sectors ($<60'$ fixed gear CV and jig CV) and $\geq 60'$ pot CV sector exhibited the most variability by year. In the $<60'$ pot/hook-and-line CV sector there were 11 to 41 participants each year during 1995 – 2003, but a total of 152 unique vessels participated overall. About one-third of the total number of unique vessels was associated with an LLP, however, harvests by those LLP vessels represent about 79% of the total retained cod harvest by this sector. Similarly in the jig sector, there were 10 to 42 participants each year during 1995 – 2003, with a total of 112 unique vessels overall. Of the total vessels, about 29% were associated with an LLP, and harvests by those LLP vessels represent about 42% of the total retained cod harvest by this sector. This is not unexpected in the jig sector, as it is exempt from the LLP requirement in Federal waters. Finally, in the $\geq 60'$ pot CV sector, 54 to 110 individual vessels had retained cod harvests annually, with a total of 208 unique vessels overall. About two-thirds of the total number of unique vessels that participated during this nine-year period were associated with an LLP, and those vessels represent almost 90% of the cod harvests made during this period.

3.3.5.5 Distribution of catch within each sector

This section describes the distribution of retained BSAI Pacific cod harvests within each sector, during the most recent five years of data available (1999 – 2003). This section is intended to provide information on the number of vessels that have been harvesting the majority of the sector allocations in the recent past. Table 3-16 shows the number of vessels in each sector that accounted for various percentages (25%, 50%, 75%, 90%, 100%) of the overall retained BSAI Pacific cod harvest for those sectors.

Table 3-16 Number of vessels in each sector that accounted for various percentages of the sector's retained BSAI Pacific cod harvest, 1999 – 2003

Sector	25%	50%	75%	90%	100%
AFA trawl CV	8	19	38	56	107
Non-AFA trawl CV	2	4	9	14	38
≥60' hook-and-line CV	--	--	4	6	37
≥60' pot CV	8	21	42	70	154
<60' fixed gear CV	--	--	8	19	98
Jig CV	--	7	14	28	59
AFA trawl CP	--	--	--	5	14
Non-AFA trawl CP	4	7	13	17	25
Hook-and-line CP	6	13	23	31	49
Pot CP	--	--	4	7	17

Source: Weekly production reports and ADF&G fishtickets, 1999 – 2003.

Note that vessel counts of less than four are not provided due to confidentiality rules. Analysts can provide <4 vessels for the non-AFA trawl CV sector, as the vessels with top 3 harvests have approved release of confidential harvest data for use in this analysis. Confidentiality waivers are on file with NOAA Fisheries.

Catcher Processor Sectors

In the **hook-and-line CP** sector, there are currently an estimated 44 LLPs endorsed for the directed BSAI Pacific cod fishery. This is a result of the endorsement criteria implemented in 2003. During the past five years, 49 unique vessels had retained cod harvests in this sector. Of these 49 vessels, 6 vessels accounted for 25% of the catch, 13 vessels accounted for 50% of the catch, 23 vessels accounted for 75% of the catch, and 31 vessels accounted for just over 90% of the catch.

In the **pot CP** sector, there are currently an estimated 8 LLPs endorsed for the directed BSAI Pacific cod fishery. During the past five years, 17 unique vessels had retained cod harvests in this sector. Of these 17 vessels, 4 vessels accounted for 75% of the catch and 7 vessels accounted for 90% of the catch.

In the trawl CP sectors, there are currently 20 **AFA trawl CPs** permitted in this sector. Only 14 vessels had retained cod harvests during 1999 – 2003. Five of the 14 accounted for 90% of the harvest. There are currently 26 vessels (on which 29 LLPs are held) in the **non-AFA trawl CP** sector. Twenty-five non-AFA trawl CPs had retained cod harvests during 1999 – 2003. More than 50% of the harvest was taken by 7 vessels, 75% taken by 13 vessels, and in excess of 90% taken by 17 vessels.

Catcher Vessel Sectors

In the **≥60' hook-and-line CV** sector, there are 9 LLPs endorsed for the directed BSAI Pacific cod fishery. During the past five years, 37 unique vessels had retained BSAI Pacific cod harvests in this sector. Of these 37 vessels, 4 vessels accounted for 75% of the catch and 6 vessels accounted for just over 90% of the catch.

In the **≥60' pot CV** sector, there are currently 53 LLPs endorsed for the directed BSAI Pacific cod fishery. During the past five years, 154 unique vessels had retained BSAI Pacific cod harvests in this sector. Of these 154 vessels, 8 accounted for 25% of the catch, 21 accounted for 50%, 42 accounted for 75%, and 70 accounted for 90% of the catch.

In the trawl CV sectors, there are currently 111 **AFA trawl CVs** permitted in this sector (102 have CV LLPs and 9 have CP LLPs), and 107 vessels had retained cod harvests during 1999 – 2003. About half of the vessels (56) accounted for 90% of the Pacific cod harvest. In the **non-AFA trawl CV** sector, there are currently an estimated 50 LLPs with BSAI trawl catcher vessel endorsements. Only 38 non-AFA

trawl CVs had retained cod harvests during 1999 – 2003. More than 25% of the harvest was taken by 2 vessels, 50% taken by 4 vessels, 75% taken by 9 vessels, and in excess of 90% taken by 14 vessels.

In the **<60' fixed gear CV** sector, there are currently 116 LLPs that qualify to fish in the BSAI groundfish fisheries with non-trawl gear. During the past five years, 98 unique vessels in this sector had BSAI retained BSAI Pacific cod harvests. Of those 98 vessels, 8 vessels accounted for more than 75% of the harvest and 19 vessels accounted for more than 90% of the harvest.

In the **jig sector**, an LLP is not necessary in the BSAI in Federal waters if the vessel is <60' and limited to no more than 5 jig machines, one line per machine, and 15 hooks per line. During 1999 – 2003, 59 unique vessels participated with jig gear, and only 7 jig vessels were responsible for more than 50% of the BSAI Pacific cod harvest in this sector. Fourteen vessels accounted for 75% of the catch and 28 vessels accounted for 90% of the catch.

Overall, the six catcher vessel sectors have about five times the number of participants as the four catcher processor sectors during this time period. In most cases, a lower percentage of total participants in the sector are responsible for the great majority (90%) of the BSAI Pacific cod harvest in the catcher vessel sectors than in the catcher processor sectors. Thus, while there are significantly more catcher vessels with retained BSAI Pacific cod harvests than catcher processors, the sectors are similar in that a relatively small percentage of vessels is responsible for the majority of the catch.

In sum, about 39% of the participating CVs accounted for over 90% of the retained BSAI Pacific cod catch during 1999 – 2003. The remaining 61% of the vessels accounted for 10% of the harvest. **About 57% of the participating CPs accounted for just over 90% of the retained BSAI Pacific cod catch by catcher processors.** The remaining 43% of the vessels accounted for 10% of the harvest.

3.3.5.6 Seasonal apportionments

The BSAI Pacific cod TAC has been apportioned among the different gear sectors since 1994 (trawl, fixed, and jig gear split), and a series of amendments have modified or continued the allocation system. As stated previously, current Federal regulations at 50 CFR 679.20(a)(7)(i) authorize distinct allocations of the non-CDQ BSAI Pacific cod TAC for the following sectors:

- **51% fixed gear**
(80% hook-and-line catcher processors)
(0.3% hook-and-line catcher vessels)
(3.3% pot catcher processors)
(15.0% pot catcher vessels)
(1.4% hook-and-line/pot vessels <60' LOA)⁴²
- **47% trawl gear**
(50% trawl catcher vessels)
(50% trawl catcher processors)
- **2% jig gear**

All of the allocations to the BSAI Pacific cod gear sectors are seasonally apportioned, with the exception of the <60' catcher vessels using hook-and-line or pot gear (see Table 3-17). The current seasonal apportionments are primarily a result of Steller sea lion protection measures established in 2001.⁴³ Prior to 2001, only the fixed gear sectors were subject to seasonal apportionments. Seasonal allocations to the fixed gear sector were first authorized in 1994 under BSAI Amendment 24, and these were established during the annual specifications process. During 1994 – 2000, the fixed gear sector was subject to three seasonal allocations that ranged from 71%–79% in the A season (January 1 – April 30); 0%–23% in the B season (May 1 – August 31); and 3%–29% in the C season (Sept. 1 – December 31). The fixed gear apportionments were modified under the Steller sea lion measures to the existing seasons.

The 2001 Biological Opinion consulted on a comprehensive management regime, of which temporal dispersion of the fisheries was one part. The overall approach to the temporal dispersion measures in the BSAI Pacific cod fishery was to meet a seasonal target of 70% (Jan. 1 – June 10) in the first season and 30% (June 10 – December 31) in the second season.⁴⁴ To accomplish this objective, the fixed gear sectors ≥60' LOA are allocated 60% in the first season and 40% in the second season. For trawl gear, the first season is allocated 60%, and the second and third seasons are allocated 20% each. Within the overall trawl allocation, the trawl catcher vessel sector is allocated 70% in the first season, 10% in the second season, and 20% in the third season. The trawl catcher processor sector is allocated 50% in the first season, 30% in the second season, and 20% in the third season.

The jig gear sector was also allocated 60% in the first half of the year and 40% in the second half starting in 2002. The overall objective was to limit the amount of total cod harvest that could be taken in the first half of the year, in order to disperse the harvest of cod throughout the year in consideration of foraging sea lions. Under Amendment 77, the jig seasons were modified from the 60%-40% seasonal split to a

⁴²Note that while the <60' fixed gear (hook-and-line and pot) catcher vessels receive a separate allocation of BSAI Pacific cod, these vessels currently fish off the general hook-and-line catcher vessel and pot catcher vessel allocations, respectively by gear type, when those fisheries are open.

⁴³ESA Section 7 Consultation, Biological Opinion and Incidental Take Statement, NMFS Alaska Region. October 2001.

⁴⁴Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

trimester basis (40%-20%-40%), in order to provide for seasonal reallocations to the <60' fixed gear catcher vessel fleet earlier in the year. Amendment 77 was implemented on January 1, 2004.

Table 3-17 outlines the current seasonal apportionments to each gear sector. Note that the CDQ BSAI Pacific cod fishery using hook-and-line gear is subject to the same seasonal apportionments as the non-CDQ fixed gear fishery: 60% (Jan. 1 – June 10) and 40% (June 10 – Dec. 31). Generally, the CDQ Pacific cod fishery begins as the non-CDQ Pacific cod fishery season is ending (see Section 3.3.6).

Table 3-17 Current seasonal apportionments by gear type

Date	Trawl gear (47%)			Fixed gear (51%)			Jig Gear (2%)			
	Season	Percent of trawl allocation	Percent of ITAC	Season	Percent of fixed gear allocation	Percent of ITAC	Date	Season	Percent of jig gear allocation	Percent of ITAC
1-Jan	No directed cod trawl fishing prior to Jan. 20			A	60%	30.6%	1-Jan	A	40%	0.8%
20-Jan	A	60%	28.2%				30-Apr			
1-Apr	B	20%	9.4%				30-Apr	B	20%	0.4%
1-Apr	C	20%	9.4%	B	40%	20.4%	31-Aug	C	40%	0.8%
10-Jun							31-Dec			
10-Jun	No directed cod trawl fishing after Nov. 1									
1-Nov										
31-Dec										
TOTAL		100%	47%		100%	51%			100%	2%

Table 3-18 and Table 3-19 compare the amount of the *initial allocation* by season to each sector with the *total catch* by season, for 2001 – 2002 and 2003 – 2004, respectively. In effect, most of the sectors that show a harvest in excess of 100% of their B and/or C seasons were harvesting reallocated quota from another season or gear sector in addition to their initial seasonal allocation. The data for 2001 – 2002 are from NMFS blend data and the shoreside reporting system, and the data for 2003 – 2004 are from the NMFS catch accounting database.

These tables also combine the pot sectors' allocations (pot CP and CV sectors had separate allocations in 2004) and include the <60' fixed gear sector within the general hook-and-line and pot sectors. This is due in part because the data for all years were not available broken out further and because the data are being used in this section to generally show whether each sector is harvesting each of its seasonal allocations. The <60' fixed gear sector does not have seasonal apportionments.

The tables show that in the past four years (2001 – 2004), the **trawl CV sector** has generally taken its entire A season allocation, and until 2004, had taken in excess of its B season allocation. In 2004, this sector harvested only 54% of its initial B season allocation. The trawl CV sector harvested a range of 14%–45% of its C season allocation over this same time period. Note that the low end is attributed to 2001, in which 40% (as opposed to the current 20%) of the sector's entire allocation was apportioned to the C season. Overall, the trawl CV sector harvested 52% (2001) to 99% (2003) of its entire initial allocation over the four year period.

Similar to the trawl CV sector, the **trawl CP sector** has generally taken its entire A season allocation, with the exception of 2001. The lower harvest overall in 2001 by both trawl sectors is typically attributed to the Stellar sea lion mitigation measures implemented that year, including the apportionment of 40% to the C season. Unlike the CV sector, however, the trawl CP sector has harvested less than half of its B season allocation during the same time period, and in excess of its C season allocation in 2002 – 2004. However, because of the significant amounts of B season quota that are rolled to the C season, the result is that the trawl CP sector harvested a range of 72%–88% of its overall allocation.

The **hook-and-line CP sector** harvested its entire A season allocation during 2001 – 2004, and in excess of its B season allocation each year. The B season harvest, which ranged from 147% to 188% of its initial B season allocation, was due to quota that was reallocated from other gear sectors (trawl, jig, pot) late in the year. Overall, the hook-and-line CP sector harvested about 123% of its overall allocation during this time period due to reallocated quota.

The **hook-and-line CV sector** also harvested its entire A season allocation during 2001 – 2004. The B season harvest is more variable. In 2001 and 2002, the CV sector tripled and doubled its B season harvest compared to its initial B season allocation, due to quota that was reallocated from the trawl and jig sectors. In 2003 and 2004, however, the hook-and-line CV sector harvested 82% and 75% of its B season allocations, respectively. Recall that the hook-and-line CV sector currently receives 0.0015% of the BSAI Pacific cod ITAC; thus, for instance, in 2004, the remaining 25% of this sector's B season allocation represented 31 metric tons. Overall, this sector harvested 90% to 240% of their entire initial allocations. The excess harvest is due to quota that was reallocated from other gear sectors late in the year.

The **pot sectors** are combined in these tables, as they did not have separate allocations until 2004. The data show that the pot sectors harvested their entire A season allocations during 2001 – 2004, and less of their B season allocations. Over the four year period, B season harvest as a percentage of the initial B season allocation ranged from 55% to 90%. Overall, the pot sectors harvested 84% to 115% of their entire initial allocations.

Finally, the **jig sector** allocation was seasonally apportioned starting in 2002 (60% - 40%) and then reapportioned (40% - 20% - 40%) starting in 2004. The jig sector has not ever harvested more than 5% of its A season allocation, and not more than 8% of its entire allocation. The highest jig harvest during this time period was in 2004, in which the jig sector harvested 8% (231 mt) of its allocation.

Table 3-18 Comparison of initial allocation¹ and total catch (mt) by season and sector, 2001–2002

Year	2001				2002			
Season	Initial allocation	Total catch (mt)	Remaining quota	% taken	Initial allocation	Total catch (mt)	Remaining quota	% taken
TRAWL CV								
A season					30,433	30,584	-151	100%
B season	24,520	19,024	5,496	78%	4,348	7,152	-2,804	164%
C season	16,347	2,364	13,983	14%	8,695	3,946	4,749	45%
TOTAL	40,867	21,388	19,479	52%	43,475	41,683	1,792	96%
TRAWL CP								
A season					21,738	21,806	-68	100%
B season	24,520	17,738	6,782	72%	13,043	4,421	8,622	34%
C season	16,347	11,627	4,720	71%	8,695	10,268	-1,573	118%
TOTAL	40,867	29,364	11,503	72%	43,475	36,495	6,980	84%
JIG								
A season	no seasonal apportionmt.				2,220	71	2,149	3%
B season		71	3,407	2%	1,480	94	1,386	6%
C season								
TOTAL	3,478	71	3,407	2%	3,700	166	3,534	4%
HOOK-AND-LINE CP								
A season	42,331	43,902	-1,571	104%	45,048	44,932	116	100%
B season	28,220	52,203	-23,983	185%	30,032	44,366	-14,334	148%
TOTAL	70,551	96,105	-25,554	136%	75,080	89,298	-14,218	119%
HOOK-AND-LINE CV								
A season	159	235	-76	148%	169	175	-6	103%
B season	106	402	-508	379%	113	229	-116	203%
TOTAL	265	637	-372	240%	282	404	-122	143%
POT								
A season	9,683	11,616	-1,933	120%	10,305	11,208	-903	109%
B season	6,455	4,805	1,650	74%	6,870	3,795	3,075	55%
TOTAL	16,139	16,420	-281	102%	17,175	15,004	2,171	87%

Source: NMFS Blend database and fishtickets, 2001 - 2002.

¹The initial allocation is the amount of BSAI Pacific cod that the sector is allocated at the beginning of the year in the annual specifications process. Note that these data do not reflect any reallocations that may occur inseason. Thus, sectors that appear to have exceeded their B or C season allocations received reallocated quota in addition to their initial allocation in most cases.

Note: The <60' hook-and-line and pot CV sectors' harvest is included in the general hook-and-line CV and pot gear harvest.

Note: The hook-and-line gear sector (and jig gear in 2002) seasonal apportionments are: 60% A (Jan. 1 - June 10); 40% B (June 10 - Dec. 31). The pot sector seasonal apportionments are: 60% A (Jan. 1 - June 10); 40% B (Sept. 1 - Dec. 31). In 2001, the trawl sectors seasonal apportionments were: A (Jan. 1 - June 10); B (June 10 - Nov. 1). Starting in 2002, the trawl CV sector apportionments are: 70% A (Jan. 20 - Apr. 1); 10% B (Apr. 1 - June 10); 20% C (June 10 - Nov. 1). The trawl CP sector apportionments are: 50% A (Jan. 20 - Apr. 1); 30% B (Apr. 1 - June 10); 20% C (June 10 - Nov. 1).

Table 3-19 Comparison of initial allocation¹ and total catch (mt) by season and sector, 2003 – 2004

Year	2003				2004			
Season	Initial allocation	Total catch	Remaining quota	% taken	Initial allocation	Total catch	Remaining quota	% taken
TRAWL CV								
A season	31,574	36,050	-4,476	114%	32,791	34,801	-2,010	106%
B season	4,510	5,425	-915	120%	4,684	2,543	2,141	54%
C season	9,021	3,306	5,715	37%	9,369	3,749	5,620	40%
TOTAL	45,105	44,781	324	99%	46,844	41,093	5,751	88%
TRAWL CP								
A season	22,553	20,387	2,166	90%	23,422	22,350	1,072	95%
B season	13,531	3,082	10,450	23%	14,053	6,459	7,594	46%
C season	9,021	10,018	-997	111%	9,369	12,521	-3,152	134%
TOTAL	45,105	33,487	11,620	74%	46,844	41,330	5,514	88%
JIG								
A season	2,303	108	2,195	5%	1,595	60	1,535	4%
B season					797	170	627	21%
C season	1,536	48	1,488	3%	1,595	1	1,594	0%
TOTAL	3,839	156	3,683	4%	3,987	231	2,211	8%
HOOK-AND-LINE CP								
A season	46,747	46,089	658	99%	48,558	49,064	-506	101%
B season	31,164	47,323	-16,159	152%	32,372	47,723	-15,351	147%
TOTAL	77,911	93,412	-15,501	120%	80,930	96,787	-15,856	120%
HOOK-AND-LINE CV								
A season	175	175	0	100%	182	181	1	100%
B season	117	96	21	82%	121	90	31	75%
TOTAL	292	271	21	93%	303	272	32	90%
POT								
A season	10,693	14,125	-3,432	132%	11,108	11,220	-112	101%
B season	7,129	6,448	681	90%	7,405	4,378	3,027	59%
TOTAL	17,822	20,573	-2,751	115%	18,513	15,598	2,915	84%

Source: NMFS catch accounting database, 2003 - 2004.

Note: While the data are aggregated, the pot CP and pot CV sectors had separate allocations in 2004. The pot CP and CV sectors harvested 97% and 81% of their 2004 allocations, respectively.

¹The initial allocation is the amount of BSAI Pacific cod that the sector is allocated at the beginning of the year in the annual specifications process. Note that these data do not reflect any reallocations within the sector that may occur inseason. Thus, sectors that appear to have exceeded their B/C season allocations received reallocated quota in addition to their initial allocation in most Note: The hook-and-line gear sector (and jig gear in 2003) seasonal apportionments are: 60% A (Jan. 1 - June 10); 40% B (June 10 - Dec. 31). The pot sector seasonal apportionments are: 60% A (Jan. 1 - June 10); 40% B (Sept. 1 - Dec. 31). Starting in 2004, the jig gear seasonal apportionments are: 40% A (Jan. 1 - Apr. 30); 20% B (Apr. 30 - Aug. 31); 20% C (Aug. 31 - Dec. 31). Starting in 2002, the trawl CV sector apportionments are: 70% A (Jan. 20 - Apr. 1); 10% B (Apr. 1 - June 10); 20% C (June 10 - Dec. 31). The trawl CP sector apportionments are: 50% A (Jan. 20 - Apr. 1); 30% B (Apr. 1 - June 10); 20% C (June 10 - Dec. 31).

*Note that the <60' fixed gear sector is not subject to seasonal apportionments; thus, catch by that sector is not included in this table.

Table 3-20 Trawl CP seasonal harvest percentages and reallocations, average 2001–2004

Trawl CP allocation = 23.5% of BSAI Pacific cod ITAC							
Seasons	% initial allocation	% harvested of initial allocation	% remaining from initial allocation	% of allocation that rolls to next season/sector	Reallocation scenario	% of ITAC allocated by season	% of ITAC harvested by season
A Jan. 20 - Apr. 1	50%	45.2%	4.8%	4.8%	rolls to B season	11.8%	10.6%
B Apr. 1 - June 10	30%	9.4%	20.6%	25.4%	rolls to C season	7.1%	2.2%
C June 10 - Nov. 1	20%	25.2%	-5.2%	20.2%	reallocated to fixed gear	4.7%	5.9%
Total	100%	79.8%	20.2%	20.2%		23.5%	18.8%

Note: Data to create this table are from Tables 3.14 and 3.15, average 2001–2004 total harvest, NMFS database.

Table 3-21 Trawl CV seasonal harvest percentages and reallocations, average 2001–2004

Trawl CV allocation = 23.5% of BSAI Pacific cod ITAC							
Seasons	% initial allocation	% harvested of initial allocation	% remaining from initial allocation	% of allocation that rolls to next season/sector	Reallocation scenario	% of ITAC allocated by season	% of ITAC harvested by season
A Jan. 20 - Apr. 1	70%	65.3%	4.7%	4.7%	rolls to B season	16.5%	15.3%
B Apr. 1 - June 10	10%	11.6%	-1.6%	3.1%	rolls to C season	2.4%	2.7%
C June 10 - Nov. 1	20%	7.6%	12.4%	15.5%	reallocated to fixed gear	4.7%	1.8%
Total	100%	84.5%	15.5%	15.5%		23.5%	19.9%

Note: Data to create this table are from Tables 3.14 and 3.15, average 2001–2004 total harvest, NMFS database.

Table 3-20 and Table 3-21 summarize Table 3-18 and Table 3-19, and represent the allocation to and harvest by each trawl sector as a percentage of the BSAI Pacific cod ITAC. Table 3-20 shows that on average 2001 – 2004, the **trawl CP sector** was allocated 11.8%, 7.1% and 4.7% of the ITAC during the A, B, and C seasons, respectively, for a total of 23.5% of the ITAC. The trawl CP sector actually harvested 10.6%, 2.2%, and 5.9% of the ITAC during each season, for a total of 18.8% of the ITAC. In effect, approximately 4.7% of the ITAC was reallocated from the trawl CP sector to the fixed gear sectors during this time period. **This table also shows that the trawl CP sector rolled over 20% of its total allocation from its B season to its C season on average during 2001 - 2004.**

Table 3-21 shows that on average 2001 – 2004, the **trawl CV sector** was allocated 16.5%, 2.4% and 4.7% of the ITAC during the A, B, and C seasons, respectively, for a total of 23.5% of the ITAC. The trawl CV sector actually harvested 15.3%, 2.7%, and 1.8% of the ITAC during each season, for a total of 19.9% of the ITAC. In effect, approximately 3.6% of the ITAC was reallocated from the trawl CV sector to the fixed gear sectors during this time period. **This table also shows that the majority of reallocated trawl CV quota was C season quota, as the trawl CV sector harvested its entire B season allocation on average during this time period.**

Finally, the tables below summarize both the trawl and fixed gear seasonal harvests as a percentage of the ITAC. Combined, both trawl sectors are allocated 28.2% of the BSAI Pacific cod ITAC in the A season and 9.4% in both the B and the C seasons (see Table 3-22). However, on average during 2001 – 2004, the trawl sectors combined have harvested 26.0%, 4.9%, and 7.7% of each seasonal allocation, respectively. Thus, while the trawl sectors combined are allocated 47% of the overall BSAI Pacific cod ITAC, they have harvested about 38.6% on average during the four-year period. The quota not harvested by trawl can be attributed to the B and C seasons.

Table 3-23 shows that the fixed gear sectors combined are allocated 30.6% of the ITAC in the first half of the year and 20.4% in the second half, for a total of 51%. On average during 2001 – 2004, the fixed gear sectors combined have harvested 31.3% and 28.4% of each seasonal allocation, respectively. Thus, while the fixed gear sectors combined are allocated 51% of the overall BSAI Pacific cod ITAC, these sectors have harvested about 59.7% on average during the four-year period. The majority of the ‘extra’ quota

harvested by the fixed gear sector is attributed to the jig and trawl sectors in the second half of the year; however, starting in 2004, jig quota that is projected to remain unharvested is reallocated to the <60' fixed gear CV sector toward the end of each jig season. Thus, a small portion of the 'extra' quota harvested by fixed gear is attributed to reallocated jig quota in the first half of the year.

Table 3-22 Percent of BSAI Pacific cod ITAC harvested by trawl gear, average 2001–2004

Date	Seasonal allocations to trawl			Seasonal harvest by trawl (ave. 2001 - 2004)		
	Season	Percent of Allocation	Percent of ITAC allocated to trawl	% of ITAC harvested by trawl CPs	% of ITAC harvested by trawl CVs	% of ITAC harvested by total trawl (CP and CV)
1-Jan	Directed trawl fishing for Pacific cod starts Jan. 20					
20-Jan	A	60%	28.2%	10.6%	15.3%	26.0%
1-Apr	B	20%	9.4%	2.2%	2.7%	4.9%
10-Jun						
10-Jun	C	20%	9.4%	5.9%	1.8%	7.7%
1-Nov	No trawl fishing for Pacific cod after Nov. 1					
31-Dec	No trawl fishing for Pacific cod after Nov. 1					
TOTAL		100%	47%	18.8%	19.9%	38.6%

Source: NMFS Blend data, 2001 – 02. NMFS catch accounting database, 2003 – 04.

Table 3-23 Percent of BSAI Pacific cod ITAC harvested by fixed and jig gear, average 2001–2004

Date	Seasonal allocations to fixed gear			Seasonal harvest by fixed gear (ave. 2001 - 2004)			Seasonal harvest by jig (ave. 2001 - 2004)		TOTAL	
	Season	% of Allocation	Percent of ITAC allocated to fixed gear	% of ITAC harvested by H&L	% of ITAC harvested by pot	% of ITAC harvested by total fixed gear	% of ITAC allocated to jig	% of ITAC harvested by jig	% of ITAC allocated to fixed + jig	% of ITAC harvested by total fixed gear + jig
1-Jan	A	60%	30.6%	24.8%	6.5%	31.3%	0.8%	0.06%	31.8%	31.4%
10-Jun										
10-Jun	B	40%	20.4%	25.8%	2.6%	28.4%	0.8%	0.03%	21.2%	28.4%
31-Dec										
TOTAL		100%	51.0%	50.6%	9.1%	59.7%	2.0%	0.08%	53.0%	59.8%

Source: NMFS Blend data, 2001 – 02. NMFS catch accounting database, 2003 – 04.

3.3.5.7 Reallocations among gear types

With the exception of the jig sector, any unused *seasonal apportionment* to a particular sector is reallocated to the next seasonal allowance for that sector. This is the case for both CDQ and non-CDQ seasonal allocations. Near the end of the year, however, NMFS considers whether one or more (non-CDQ) sectors will not likely be able to use its remaining BSAI cod allocation. Federal regulations outline a system for reallocating quota that is projected to remain unused by a particular (non-CDQ) sector near the end of the year (50 CFR 679.20(a)(7)(i)):

- Reallocations between the trawl gear sectors (e.g., trawl CV to trawl CP) are considered prior to reallocating to another gear type (e.g. trawl to fixed gear)
- Unused pot CP or pot CV quota is reallocated to the other pot sector before it is reallocated to the other fixed gear sectors
- Unused portions of a seasonal jig allocation are reallocated to the <60' fixed gear CV sector
- Unused hook-and-line CV sector and <60' fixed gear sector quota is reallocated to the hook-and-line CP sector
- Unused trawl quota is reallocated 95% to hook-and-line CP sector; 4.1% to pot CV sector; 0.9% to pot CP sector

Since the BSAI Pacific cod allocations have been in effect, NMFS has reallocated quota each year from the trawl sectors and jig sector to the pot and the hook-and-line sectors. In addition, having received a separate allocation in 2000 and subject to new seasonal apportionments due to Steller sea lion measures, a reallocation occurred from the pot sector to the hook-and-line catcher processor sector in 2002 and again in 2004. Reallocations between gear types (e.g., trawl CP to trawl CV, or hook-and-line CV to hook-and-line CP) have occurred less frequently and in lower amounts.

The primary reason reallocations occur from the jig sector is due to insufficient effort in that sector in the BSAI. There are several reasons commonly cited for the trawl reallocations. These include increased difficulty catching cod with trawl gear late in the year when cod are less aggregated (lower catch per unit effort); seasonal apportionments creating a 20% C season for trawl gear under Steller sea lion mitigation measures; closure of the directed trawl fisheries due to the halibut bycatch cap; relatively high annual quotas of alternative trawl fisheries such as pollock (for AFA vessels); and high value alternative trawl fisheries such as yellowfin sole, rock sole, and flathead sole (for non-AFA catcher processors).

Note that the increased difficulty in harvesting cod in the second half of the year, however, is not unique to one sector. All gear sectors have increased difficulty harvesting cod later in the year when cod are less aggregated, and weather is a significant factor for the smaller vessel sectors in the fall season. The hook-and-line sectors (CPs and CVs) are also limited by halibut bycatch in the second half of the year, as these sectors do not have any halibut bycatch allowance from June 10 – August 15. This effectively delays the start of the cod hook-and-line season until August 15, when halibut bycatch becomes available. And as mentioned previously, while the fixed gear cod allocation was seasonally apportioned prior to 2001, these apportionments changed in 2001 with the Steller sea lion mitigation measures, and thus also reduced the amount of cod that the fixed gear sectors could harvest in the first half of the year. Finally, the hook-and-line sector exhibits an increased rate of incidental seabird take in the B season compared to the A season. Thus, the hook-and-line sector would also prefer to harvest its cod quota earlier in the year to decrease incidental take of seabirds.

In terms of metric tons, the majority of reallocations have been from the trawl sectors (CVs and CPs) since the gear specific allocations have been in effect. Because any unused *seasonal apportionment* to a particular sector is reallocated to the next seasonal allowance for that sector, reallocations from one gear sector to another (with the exception of jig) occur in the last season. Typically, reallocations from trawl to the fixed gear sectors occur in October, November, or December, always during the trawl C season (June 10 – Nov. 1).

Table 3-24 BSAI Pacific cod ITAC, catch, and reallocations (1995-2005)

Year & Sector	Initial Allocation	Reallocations	Final Allocation	Catch	Reallocation as % of initial allocation
1995					
Jig gear	5,000	(4,000)	1,000	600	-80%
Hook and Line/Pot	110,000	11,800	121,800	123,186	11%
Trawl gear	135,000	(7,800)	127,200	121,349	-6%
Total	250,000	-	250,000	245,135	
1996					
Jig gear	5,400	(4,400)	1,000	267	-81%
Hook and Line/Pot	118,800	19,400	138,200	127,317	16%
Trawl gear	145,800	(15,000)	130,800	113,089	-10%
Total	270,000	-	270,000	240,673	
1997					
Jig gear	5,400	(5,000)	400	172	-93%
Hook and Line/Pot	137,700	15,000	152,700	146,281	11%
Trawl catcher/processors	63,450	(12,000)	51,450	48,177	-19%
Trawl catcher vessels	63,450	2,000	65,450	63,035	3%
Total	270,000	-	270,000	257,665	
1998					
Jig gear	3,885	(3,500)	385	192	-90%
Hook and Line/Pot	99,067	11,500	110,567	111,751	12%
Trawl catcher/processors	45,649	(3,000)	42,649	41,639	-7%
Trawl catcher vessels	45,649	(5,000)	40,649	39,669	-11%
Total	194,250	-	194,250	193,251	
1999					
Jig gear	3,275	(2,800)	475	169	-85%
Hook and Line/Pot	83,500	11,800	95,300	95,002	14%
Trawl catcher/processors	38,475	(7,000)	31,475	31,111	-18%
Trawl catcher vessels	38,475	(2,000)	36,475	36,079	-5%
Total	163,725	-	163,725	162,361	
2000					
Jig gear	3,571	(3,000)	571	71	-84%
HAL/POT CV < 60	1,268	(38)	1,230		-3%
HAL Catcher/Processors	70,558	11,400	81,958	83,896	16%
HAL Catcher Vessels	272	0	272	901	0%
Pot gear	16,570	600	17,170	18,783	4%
Trawl catcher/processors	41,953	(9,000)	32,953	31,883	-21%
Trawl catcher vessels	41,953	0	41,953	41,593	0%
Total	176,145	(38)	176,107	177,127	

Table 3-24 continued

Year & Sector	Initial Allocation	Reallocations	Final Allocation	Catch	Reallocation as % of initial allocation
2001					
Jig gear	3,478	(3,000)	478	71	-86%
HAL/POT CV < 60	1,235	0	1,235		0%
HAL Catcher/Processors	70,551	25,270	95,821	96,238	36%
HAL Catcher Vessels	265	400	665	637	151%
Pot gear	16,139	1,330	17,469	16,506	8%
Trawl catcher/processors	40,867	(10,000)	30,867	29,398	-24%
Trawl catcher vessels	40,867	(14,000)	26,867	21,354	-34%
Total	173,402	-	173,402	164,204	
2002					
Jig Gear	3,700	(3,400)	300	166	-92%
HAL/POT CV < 60	1,314	0	1,314		0%
HAL Catcher/Processors	75,080	14,840	89,920	89,397	20%
HAL Catcher Vessels	282	200	482	404	71%
Pot Gear	17,175	(3,140)	14,035	15,054	-18%
Trawl catcher/processors	43,475	(6,500)	36,975	36,496	-15%
Trawl catcher vessels	43,475	(2,000)	41,475	41,683	-5%
Total	184,501	-	184,501	183,200	
2003					
Jig Gear	3,839	(3,600)	239	156	-94%
HAL/POT CV < 60	1,363	0	1,363		0%
HAL Catcher/Processors	77,911	15,932	93,843	93,412	20%
HAL Catcher Vessels	292	0	292	274	0%
Pot Gear	17,822	839	18,661	20,573	5%
Trawl catcher/processors	45,105	(11,500)	33,605	33,486	-25%
Trawl catcher vessels	45,105	(1,671)	43,434	44,781	-4%
Total	191,437	-	191,437	192,682	
2004					
Jig Gear	3,987	(3,545)	442	231	-89%
HAL/POT CV < 60	1,416	1,545	2,961		109%
HAL Catcher/Processors	80,930	16,865	97,795	96,786	21%
HAL Catcher Vessels	303	0	303	272	0%
Pot Catcher/Processor	3,338	114	3,452	3,234	3%
Pot Catcher Vessels	15,174	(3,439)	11,735	12,364	-23%
Trawl catcher/processors	46,844	(5,413)	41,431	41,330	-12%
Trawl catcher vessels	46,844	(6,127)	40,717	41,093	-13%
Total	198,836	-	198,836	195,310	
2005					
Jig Gear	3,811	(3,645)	166	117	-96%
HAL/POT CV < 60	1,354	1,247	2,601	2,242	92%
HAL Catcher/Processors	77,344	22,175	99,519	100,004	29%
HAL Catcher Vessels	290	(60)	230	235	-21%
Pot Catcher/Processor	3,190	162	3,352	3,339	5%
Pot Catcher Vessels	14,502	(1,674)	12,828	12,232	-12%
Trawl catcher/processors	44,779	(9,273)	35,506	35,465	-21%
Trawl catcher vessels	44,779	(8,932)	35,847	35,747	-20%
Total	190,049	-	190,049	189,381	

Source: 1995 - 2002 data are from NMFS Blend data. 2003 - 2005 data are from catch accounting database. The 500 mt ICA for fixed gear and the 7.5% CDQ reserve are not included. Note: Catch data provided for the <60' fixed gear sector (2003 - 2004) are lower than actual catch due to the fact that some of this sector's catch is attributed to the general hook-and-line CV and pot CV allocations. In 2000 - 2002, catch for the <60' fixed gear sector is combined with the general fixed gear CV sector harvest data. See Section 3.3.5.3 for detailed information.

Table 3-24 shows the initial allocation, revised allocation, and total catch for each sector that received a separate BSAI Pacific cod allocation in 1995 – 2004. It also shows each sector’s reallocation (either gain or loss) as a percentage of the sector’s initial allocation. Note that the data above were used by NMFS to manage the fishery and reallocate quota during this time period. Neither the incidental catch allowance for the fixed gear sectors (500 mt) nor the 7.5% CDQ reserve of BSAI Pacific cod are included in the data.

Table 3-24 shows the amount of BSAI Pacific cod quota reallocated to the fixed gear sectors during 1995 – 2004, with a couple of noted exceptions in the pot fleet. It also shows the amount of BSAI Pacific cod quota reallocated from the trawl and jig sectors during that same time period (with one noted exception in the trawl CV sector). As stated previously, unused trawl quota is reallocated 95% to hook-and-line CP sector; 4.1% to pot CV sector; 0.9% to pot CP sector. This apportionment was based on the actual harvest of reallocated trawl and jig quota from 1996 – 1998. This was also how unused jig quota was redistributed until 2004. Under Amendment 77, unused portions of a seasonal jig allocation are first considered for reallocation to the <60’ fixed gear CV sector.

Table 3-25 Average BSAI Pacific cod reallocations by sector, 2000–2004

Average 2000 - 2004	Initial Allocation (mt)	Reallocations (mt)	Reallocation as % of initial allocation
Jig	3,715	-3,309	-89%
HAL/POT CV < 60	1,312	309	24%
HAL Catcher/Processors	75,006	16,861	22%
HAL Catcher Vessels	283	120	42%
Pot gear	17,244	-739	-4%
Trawl catcher/processors	43,649	-8,483	-19%
Trawl catcher vessels	43,469	-4,760	-11%
Average of total	184,678	17,291	9%

Table 3-25 shows the average reallocations for 2000 – 2004, using the same data from Table 3-24. The year 2000 was selected as the starting point for the range since 2000 is the first year in which the fixed gear allocation was split among the hook-and-line CP, hook-and-line CV, pot gear, and <60’ fixed gear sectors.

In sum, on average 2000–2004, NMFS has annually reallocated 17,291 mt of BSAI Pacific cod quota among the sectors, which represents about 9% of the total initial allocation. More specifically, NMFS has annually reallocated almost 8,500 mt from the trawl CP sector, almost 4,800 mt from the trawl CV sector, and 3,300 mt from the jig sector. These reallocations have represented an average of 19% of the trawl CP sector’s initial allocation, 11% of the trawl CV sector’s initial allocation, and 89% of the jig sector’s initial allocation. **Reallocations from the trawl sector accounted for 80% of the total trawl and jig rollover amount on average during 2000–2004, and reallocations from the jig sector accounted for 20%.**

Also since 2000, NMFS has reallocated an average of about 16,900 mt to the hook-and-line CP sector and 120 mt to the hook-and-line CV sector each year. This represents an average of 22% and 42% of each sector’s initial allocation, respectively. The pot sector both received additional quota and had quota reallocated from it over this same time period. Note that 2004 was the first year in which the pot sector allocation was split between the pot CP sector and the pot CV sector (under BSAI Amendment 77). In 2004, the pot CP sector received an additional 114 mt of quota; while about 3,400 mt was reallocated from the pot CV sector. Beginning in 2004, unused portions of a seasonal jig allocation were reallocated to the <60’ fixed gear CV sector. Thus, Table 3.20 shows that the <60’ fixed gear sector first received reallocated quota in 2004.

As stated previously, with the exception of the jig sectors, reallocations from one sector to another occur late in the second half of the year. The timing of these reallocations may affect whether a particular sector is still operating on the fishing grounds and thus capable of harvesting any quota that is reallocated from another sector. This factor is taken into account when NMFS inseason managers make reallocations. Table 3-26 shows the frequency and timing of reallocations since 1997.

Table 3-26 Dates of reallocations between gear sectors, 1997–2005

Year	Gear types affected	Date of reallocation
1997	From trawl CP to trawl CV From jig and trawl CP to fixed gear	September 26 October 17
1998	From jig and trawl CP to fixed gear From trawl CP and trawl CV to fixed gear	October 13 November 10
1999	From jig and trawl CP to fixed gear From trawl CP and trawl CV to fixed gear	September 24 December 6
2000	From jig and trawl CP to H&L CP and pot	October 27
2001	From jig, trawl CP and trawl CV to H&L CP, H&L CV, and pot gear	October 4
2002	From jig, trawl CP and trawl CV to H&L CP, H&L CV, and pot gear From trawl CP, trawl CV and pot gear to H&L CP gear	September 27 November 20
2003	From jig, trawl CP, trawl CV, and pot gear to H&L CP and H&L CV gear From jig, trawl CP, and trawl CP to pot and H&L CP gear	October 10 December 1 & December 15
2004	From jig to <60' fixed gear From jig, trawl CP and trawl CV to H&L CP, pot CP, and pot CV gear From pot CV to trawl CP, trawl CV and H&L CP gear	April 7 October 14 November 26
2005	From jig to <60' fixed gear From jig to <60' fixed gear From jig to <60' fixed gear From jig, trawl CP and trawl CV gear to H&L CP, pot CP, and pot CV gear	April 12 May 12 August 5 October 6

Source: NMFS information bulletins, Sustainable Fisheries Division, 1997 – 2005.

Note: The date of reallocation listed is the date the NMFS information bulletin was issued announcing the reallocation. The actual reallocation may have occurred a few days earlier than the date listed.

3.3.5.8 PSC by sector

The prohibited species allowances are currently shared among the BSAI trawl and non-trawl fisheries, according to the guidelines outlined in 50 CFR 679(e). The species included in PSC allocations include halibut, herring, red king crab, *C. opilio* Tanner crab, bairdi Tanner crab, salmon (divided into chinook and non-chinook). The non-chinook salmon harvested in the BSAI trawl fisheries are primarily chum salmon. The Federal regulations provide a sequential process in allocating PSC in the BSAI fisheries. Initially, 7.5 percent of each PSC limit is set aside for the CDQ program as PSQ reserve. The remainder of the PSC limit is allocated to the non-CDQ trawl and non-trawl fisheries operating in the BSAI and are allocated among the non-trawl and trawl fisheries groups through the annual harvest specifications process. The current (2006) annual PSC allowances for the BSAI Pacific cod trawl and non-trawl fisheries are in Table 3.38. The trawl cod limits are as follows: halibut mortality – 1,434 mt; herring – 27 mt; red king crab – 26,563 animals; *C. opilio* – 139,331 animals; Zone 1 bairdi – 183,112 animals; and Zone 2 bairdi – 34,176 animals. The Pacific cod hook-and-line fisheries have a halibut bycatch limit, which is 775 mt of halibut mortality. The pot and jig sectors are exempt from PSC limits.

The halibut PSC limit is set in regulation and is not tied to population assessment for the halibut resource. The limits for the other PSC species (herring, red king crab, bairdi crab, *C. opilio* crab and chinook

salmon) are set to fluctuate as the resource abundance fluctuates. Crab PSC is tied to PSC limitation zones for red king, bairdi and *C. opilio* crab, whereas the PSC limits for the other species are for the entire BSAI. Section 3.4.2.5 shows two area maps for the respective red king crab/bairdi PSC zones and the *C. opilio*. Zones 1 of the red king crab/bairdi PSC zone is comprised of zones 508, 509, 512 and 516. Zone 2 of the red king crab/bairdi PSC zone is comprised of zones 513, 517 and 521 (See Section 3.4.2.5). The *C. opilio* bycatch limitation zone (COBLZ) zone is comprised of management areas 513, 524, 531, 533, and 534 (see Section 3.4.2.5). The various levels of PSC allocation for different levels of resource abundance for red king crab, bairdi crab and *C. opilio* are also shown in this section. The 2006 PSC levels are established as outlined below.

Trawl fishery PSC halibut allocation. The trawl fisheries receive an initial allocation of 3,674 mt. From this total, 7.5 percent is subtracted to accommodate PSC bycatch in the CDQ fisheries, leaving 3,400 mt for all BSAI trawl fisheries. The remaining amount of BSAI halibut PSC is allocated among the different trawl and non-trawl fishery groups through the harvest specifications process. The current allocation to the Pacific cod trawl fishery is 1,434 mt, with the remainder going to other BSAI trawl fisheries.

Non-trawl PSC halibut allocation. The limit for non-trawl fishery allocation is set at 900 mt, less the 7.5 percent CDQ reserve, leaving 833 mt as the PSC halibut allowance for all BSAI hook-and-line fisheries (jig and pot gear are exempt). The current halibut PSC limit for the BSAI hook-and-line cod fishery is 775 mt.

Trawl PSC red king crab allocation. The trawl PSC limit for red king crab varies between 32,000 crab and 197,000 crab, depending upon threshold levels of resource abundance. The specific resource abundance limits and the respective trawl PSC red king crab limits are shown in Section 3.4.2.5. From the initial PSC determination, the 7.5 percent CDQ reserve is removed from the total, and the remaining amount is split among the various fisheries through the annual harvest specifications process. The current PSC limit for zone 1 red king crab is 182,225 crab for all trawl fisheries, with the Pacific cod trawl fisheries being allocated 26,563 crab out of that total.

Trawl PSC bairdi allocation – Zone 1. The trawl PSC limit for zone 1 bairdi crab varies between 0.5 percent of the total abundance minus 20,000 animals at the low end to 980,000 crab at the high end, depending upon threshold levels of resource abundance. The specific resource abundance limits and the respective trawl PSC bairdi zone 1 limits are shown in Section 3.4.2.5. From the initial PSC determination, the 7.5 percent CDQ reserve is removed from the total, and the remaining amount is split among the various fisheries through the annual harvest specifications process. The specific resource abundance limits and the respective trawl PSC zone 1 bairdi crab limits are shown in Section 3.4.2.5. The current PSC limit for zone 1 bairdi crab is 906,500 for all BSAI trawl fisheries, with the Pacific cod trawl fisheries receiving 183,112 of that total.

Trawl PSC bairdi allocation – Zone 2. The trawl PSC limit for zone 2 bairdi crab varies between 1.2 percent of the total abundance minus 30,000 animals at the low end to 2,970,000 crab at the high end, depending upon threshold levels of resource abundance. The specific resource abundance limits and the respective trawl PSC bairdi zone 2 limits are shown in Section 3.4.2.5. From the initial PSC determination, the 7.5 percent CDQ reserve is removed from the total, and the remaining amount is split among the various fisheries through the Council TAC-setting process. The specific resource abundance limits and the respective trawl PSC zone 2 bairdi crab limits are shown in Section 3.4.2.5. The current PSC limit for zone 2 bairdi crab is 2,747,250 for all BSAI trawl fisheries, with the Pacific cod trawl fisheries receiving a relatively small proportion, 324,176 of that total.

Trawl PSC *C. opilio* allocation. The PSC limit for *C. opilio* within the *C. opilio* bycatch limitation zone (COBLZ) zone varies in response to resource abundance levels, as do bairdi and red king crab.

PSC limits for *C. opilio* Tanner crab are also based upon resource abundance as follows:

- a) PSC Limit. The PSC limit will be 0.1133 percent of the total abundance, minus 150,000 *C. opilio* crabs, unless;
- b) Minimum PSC Limit. If 0.1133 percent multiplied by the total abundance is less than 4.5 million, then the minimum PSC limit will be 4.350million animals; or
- c) Maximum PSC Limit. If 0.1133 percent multiplied by the total abundance is greater than 13 million, then the maximum PSC limit will be 12.850million animals.

The current PSC limit for *C. opilio* within the COBLZ zone is 4,494,569 million crab for all BSAI trawl fisheries, with the Pacific cod trawl fisheries receiving a relatively small proportion, 139,331 crab.

PSC Use by Sector

Halibut mortality

Table 3-27 shows halibut PSC use by sector and year. This table shows the pattern of halibut PSC use by all sectors in the directed Pacific cod fishery during 1995 – 2003. During 1995–2003, the annual average halibut mortality in the trawl fishery has been: non-AFA trawl CPs – 458.7 mt; AFA trawl CPs – 20.81 mt; and trawl CVs – 736.51 mt. The annual total for the average halibut PSC harvest for these three sectors totaled 1,216 mt. Note that the halibut PSC allowance for the Pacific cod trawl fishery is typically 1,434 mt.

Table 3-27 also shows the respective halibut mortality for other (non-trawl) gear sectors for the directed Pacific cod fishery. During 1995–2003, the halibut mortality in the hook-and-line CP fishery averaged 684.9 mt per year and the hook-and-line CV averaged 5.9 mt per year, for a total of about 691 mt per year. Note that the halibut PSC limit for the BSAI hook-and-line cod fishery is typically 775 mt. The halibut mortality data for the pot sectors indicate relatively minor amounts; note that the pot (and jig) gear sectors do not have halibut mortality limits.

Table 3-27 BSAI PSC halibut mortality (mt) by sector, 1995-2003

Sector	Year	Annual/Sector Totals	Sector	Year	Annual/Sector Totals
non-AFA Trawl CP	1995	352.05	Pot CP	1995	2.39
	1996	280.24		1996	5.21
	1997	323.21		1997	3.92
	1998	350.61		1998	0.81
	1999	730.53		1999	0.33
	2000	420.77		2000	0.12
	2001	404.63		2001	0.21
	2002	598.27		2002	0.07
	2003	668.33		2003	0.13
	Totals '95-'03	4128.64		Totals '95-'03	13.19
	Sector average/year	458.74		Sector average/year	1.47
AFA Trawl CP	1995	39.32	Pot CV	1995	7.77
	1996	29.19		1996	15.61
	1997	15.03		1997	6.73
	1998	19.59		1998	2.91
	1999	28.08		1999	2.44
	2000	14.82		2000	0.93
	2001	*		2001	1.43
	2002	*		2002	5.19
	2003	*		2003	2.21
	Totals '95-'03	187.29		Totals '95-'03	45.22
	Sector average/year	20.81		Sector average/year	5.02
Trawl CV All	1995	962.14	Hook-and-line CV	1995	12.07
	1996	1,294.56		1996	4.07
	1997	917.43		1997	1.77
	1998	792.99		1998	0.82
	1999	605.45		1999	3.65
	2000	499.75		2000	5.24
	2001	261.92		2001	14.32
	2002	511.88		2002	8.22
	2,003	782.51		2003	2.97
	Totals '95-'03	6,628.63		Totals '95-'03	53.13
	Sector average/year	736.51		Sector average/year	5.90
Hook-and-line CP	1995	779.46	AFA Nine	1995	79.51
	1996	784.18		1996	35.68
	1997	846.14		1997	20.31
	1998	718.37		1998	22.75
	1999	496.29		Totals '95-98	158.25
	2000	706.10		Sector average/year	39.56
	2001	761.85			
	2002	576.47			
	2003	495.07			
	Totals '95-'03	6,163.93			
	Sector average/year	684.88			

Source: NPFMC PSC data files, August 2005.

*Individual data cannot be released due to confidentiality concerns.

Red king crab mortality. Table 3-50 in Section 3.4.2.6 shows the average annual PSC mortality for red king crab by the various Pacific cod fishery sectors from 1995–2003 as follows: non-AFA trawl CPs – 4,730 crab; AFA trawl CPs – 166 crab; and trawl CVs – 1,114 crab. The average annual total of red king crab PSC for these three sectors totaled 6,010 crab.

Bairdi zone 1 crab mortality. Table 3-51 in Section 3.4.2.6 shows the average annual bairdi Zone 1 and Zone 2 PSC mortality by sector for 1995–2002. For zone 1, the PSC data show: non-AFA trawl CPs – 72,391 crab; AFA trawl CPs – 469 crab; and trawl CVs – 59,810 crab. The average annual total of Zone 1 bairdi PSC for these three sectors totaled 132,670 crab.

For zone 2, the PSC data show: non-AFA trawl CPs – 25,546 crab; AFA trawl CPs – 1,685 crab; and trawl CVs – 19,376 crab. The average annual total of Zone 2 bairdi PSC for these three sectors totaled 46,607 crab.

Finally, Table 3-52 in Section 3.4.2.6 shows the BSAI mortality for *C. opilio* by sector for 1995–2002 in the *C. opilio* bycatch limitation zone (COBLZ) zone. The annual average PSC harvest of *C. opilio* crab within the COBLZ zone during 1995 – 2002 is: non-AFA trawl CPs – 34,645 crab; AFA trawl CPs – 189 crab; and trawl CVs – 6,768 crab. The average annual total of *C. opilio* PSC for these three sectors totaled 41,602 crab.

3.3.5.9 AFA CV and AFA CP sector Pacific cod sideboard harvest

Currently, the trawl CP sector BSAI Pacific cod allocation is shared by the AFA trawl CP sector and the non-AFA trawl CP sector. These sectors are described in Section 3.3.3. Section 208(e) of the AFA establishes vessel and processor eligibility to harvest and process the BSAI pollock directed fishing allowance designated for each sector under the AFA. Section 208(e) lists the 20 trawl catcher processors that are eligible to participate as trawl catcher processors under the AFA; these vessels comprise the 'AFA trawl CP' sector.

In addition, the trawl CV BSAI Pacific cod allocation is shared by the AFA trawl CV sector and the non-AFA trawl CV sector, as described in Section 3.3.3. Section 208(a)-(c) of the AFA establishes the eligibility criteria and list for catcher vessels eligible to harvest pollock under the AFA. As of January 2005, the NMFS database indicates that 111 catcher vessels were issued AFA catcher vessel permits.

Although separate BSAI Pacific cod allocations are not currently established for the AFA CP and AFA CV sectors, the implementing regulations for the AFA also established sideboards on the participation by AFA-qualified vessels in the other BSAI (non-pollock) groundfish fisheries, including Pacific cod. The 20 listed AFA CPs are currently subject to an annual BSAI Pacific cod sideboard limit (10,936 mt in 2006).⁴⁵ The one additional catcher processor that qualifies under 208(e)(21) of the AFA is limited to a small percentage of the AFA CP allocation of pollock, and is not sideboarded in other fisheries. Recall that this catcher processor is part of the non-AFA trawl CP sector for purposes of the non-pollock BSAI groundfish fisheries, as defined under the Consolidated Appropriations Act of 2005.

AFA catcher vessels are also subject to an annual sideboard limit (35,341 mt in 2006) for BSAI Pacific cod.⁴⁶ The Council elected to exempt AFA catcher vessels from the Pacific cod sideboards if their annual BSAI pollock landings averaged less than 1,700 mt from 1995 – 1997 and they made 30 or more landings of BSAI Pacific cod during that time period. The rationale for these exemptions was that many of the AFA catcher vessels with relatively low pollock catch history have traditionally targeted BSAI Pacific cod during the winter cod fishery. In addition, AFA CVs with mothership endorsements are exempt from BSAI Pacific cod catcher vessel sideboard directed fishing closures after March 1 of each fishing year. Of the 111 AFA CVs, 9 are exempt from the cod sideboards under the 1,700 mt exemption and 19 have mothership endorsements and are therefore exempt after March 1. The remaining 83 AFA CVs are subject to BSAI Pacific cod sideboard limits.

Note that the cod sideboards operate as harvest limits for the AFA CP and CV sectors; they provide a cap that the AFA sectors must not exceed, but do not guarantee an allocation up to that amount. Currently, the AFA cod fishery is in part managed by the annual inter-cooperative agreement pursuant to a cod allocation agreement adopted by all AFA cooperatives in 2000. In general, this agreement clarifies the exempt AFA CVs and allocates the AFA cod sideboards among the nine cooperatives, which provides the basis for the individual cooperatives to allocate at the individual vessel level. The agreement states that an overharvest of a sideboard limit by any member of a cooperative shall subject that member to a penalty. Thus, while the AFA authority is limited to allocating pollock, the cooperative structure has provided a mechanism by which the AFA vessels can also manage Pacific cod within the AFA CP and CV sectors.

⁴⁵The Pacific cod sideboard (harvest limit) for AFA trawl CPs is equal to the 1997 aggregate retained catch of Pacific cod by AFA CPs listed in paragraphs 208(e)(1) through (20) and 209 of the AFA in non-pollock target fisheries divided by the amount of Pacific cod caught by trawl CPs in 1997 multiplied by the Pacific cod TAC available for harvest by trawl CPs in the year in which the harvest limit will be in effect (50 CFR 679.64 (a)(1)(ii)).

⁴⁶The AFA CV sideboard (harvest limit) for BSAI Pacific cod is equal to the retained catch of BSAI Pacific cod in 1997 by AFA CVs not exempted under paragraph (b)(2)(i)(A) of 50 CFR 679.64 divided by the BSAI Pacific cod TAC available to catcher vessels in 1997; multiplied by the BSAI Pacific cod TAC available to catcher vessels in the year or season in which the harvest limit will be in effect.

Table 3-28 shows the amount of the BSAI Pacific cod sideboards harvested by the AFA CP and AFA CV sectors during 2000 – 2004. The data indicate that neither sector has harvested its entire BSAI Pacific cod sideboard amount since these limits were implemented.

Table 3-28 Harvest of BSAI Pacific cod sideboards (mt) in the AFA sectors, 2000 – 2004

Year	AFA CP			AFA CV		
	Sideboard (mt)	Amt harvested (total mt)	Percent harvested	Sideboard (mt)	Amt harvested (mt)	Percent harvested
2000	11,034	3,313	30%	30,588	25,964	85%
2001	10,748	3,999	37%	31,480	11,477	36%
2002	11,434	3,586	31%	37,429	23,046	62%
2003	10,870	5,396	50%	38,831	29,625	76%
2004	12,080	5,271	44%	40,328	26,863	67%
Avg. 2000–2004	11,233	4,313	38%	35,731	23,395	65%

Source: 2000 – 2002 data are from shoreside electronic logbook, which contains no estimates of at-sea discards. 2003 – 2004 data are from NMFS catch accounting system (includes estimates of at-sea discards). This includes the total BSAI Pacific cod harvest by non-exempt AFA CVs and harvest by AFA CVs delivering to motherships before March 1.

3.3.6 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: www.fakr.noaa.gov/cdq/default.htm, the Alaska Department of Commerce, Community and Economic Development web site: www.dced.state.ak.us/bsc/CDQ/cdqstats.htm, and the Bering Sea Fishermen’s Association’s web site: www.cdqdb.org.

3.3.6.1 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. 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 implemented by Federal regulation, the purpose of the CDQ program is to help western Alaska communities diversify their local economies by investing in commercial fisheries other fisheries-related projects and to provide new opportunities for stable, long-term employment. The original CDQ program regulations went into effect on November 18, 1992, and have since been amended numerous times. In 1996, the Magnuson Stevens Act (Section 305(i)) institutionalized the program.

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 group. 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 the Regional Administrator makes the final decision on allocations to the CDQ groups.

3.3.6.2 CDQ Communities and Groups

The communities in the CDQ program are predominantly populated by Alaska Natives; one of the community eligibility criteria was that a community must be certified by the Secretary of the Interior pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.) to be a Native village. The communities are typically remote, isolated settlements with few natural assets with which to develop and sustain a viable diversified economic base, and are located no more than 50 nm from the BSAI coast of western Alaska. Basic community and social infrastructure is often underdeveloped or lacking, and transportation and energy costs are high. As a result, economic opportunities have been few, unemployment rates have been chronically high, and communities (and the region) have been economically depressed.

While the CDQ communities border very productive fishing grounds in western Alaska, they have historically been unable to exploit this proximity. The full development of the domestic fishing and processing industry in the BSAI 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 their development. The CDQ program serves to ameliorate some of these circumstances by extending an opportunity to eligible communities to directly benefit from the productive harvest and use of these resources.

Currently, 65 communities participate in the CDQ program, based on eligibility criteria listed in both the Magnuson Stevens Act and Federal regulations. 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).

3.3.6.3 CDQ Program Allocations, Harvest, and Value

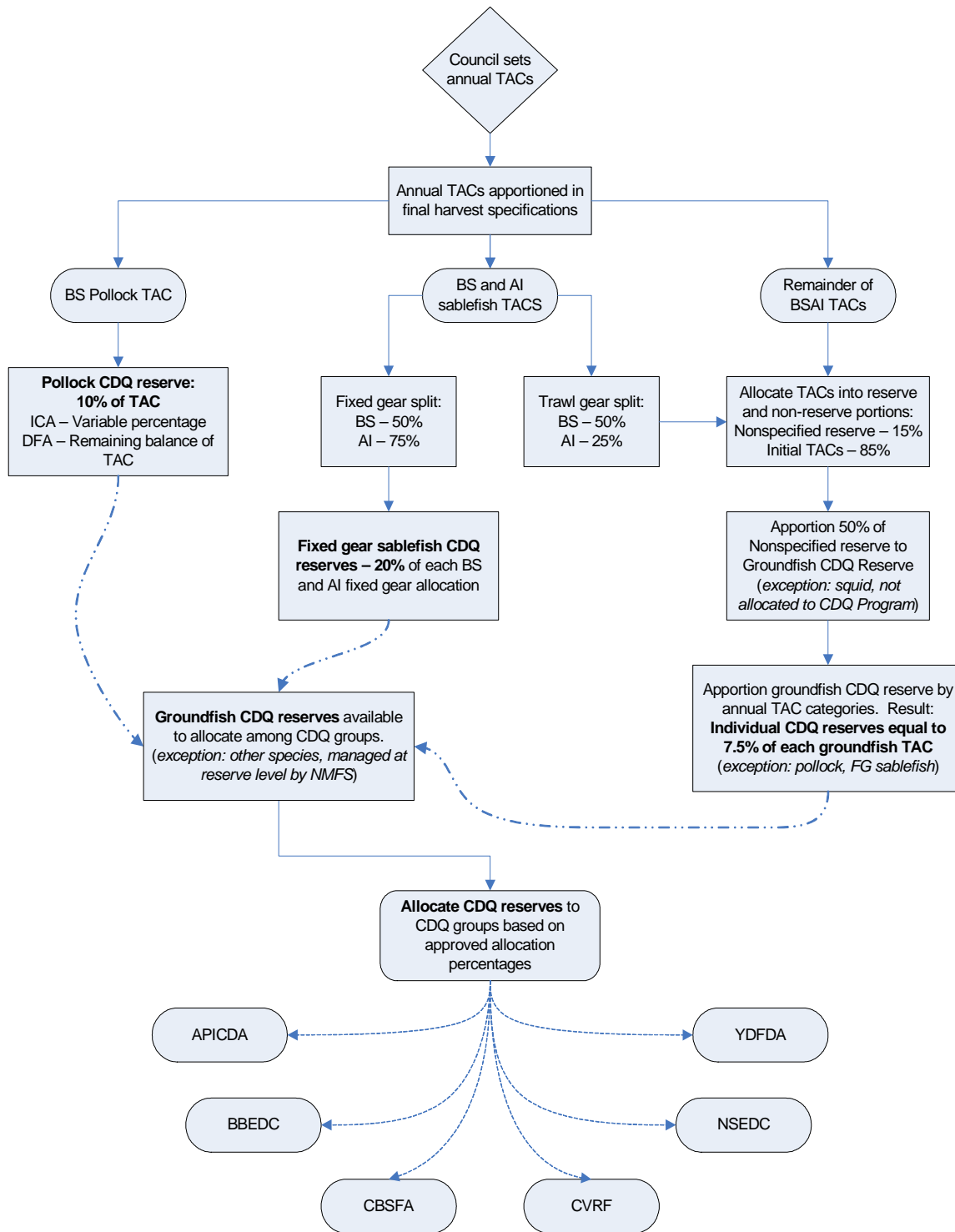
Since 1992, the CDQ Program has expanded several times and now includes allocations of pollock, halibut, sablefish, crab, all of the remaining groundfish species (Pacific cod, Atka mackerel, flatfish, and rockfish), and prohibited species catch (i.e., bycatch allowances for salmon, halibut, and crab). 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 ("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 Groundfish 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).

Establishing the annual groundfish CDQ reserves is an extension of the annual groundfish 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 the annual TAC is split equally between the CDQ Program (7.5%) and a non-specified groundfish reserve (7.5%). The annual 7.5 percent CDQ reserve is then apportioned 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 Bering Sea and Aleutian Islands pollock TACs each contribute 10 percent to CDQ reserves, while the fixed gear sablefish TAC contributes 20 percent to a CDQ reserve. Annual groundfish CDQ and PSQ allocations for 1998 to 2004 are available at the NOAA Fisheries web site cited in the introductory paragraph in Section 3.3.6. Figure 3-13 illustrates the process involved in establishing the annual CDQ reserves. The process establishing PSQ reserves is similar.

CDQ reserves and prohibited species quota (PSQ) are allocated among CDQ groups based on allocation percentages recommended by the State and approved by NMFS. The application for the quota is a group's Community Development Plan (CDP). The percentages allocated to each group can vary by species and are reviewed on a periodic basis with the initiation of a new allocation cycle and submittal of a new CDP for that cycle. Changes to each group's prior allocation can be made based on need as well as the group's overall performance in achieving its plans and objectives. Annual groundfish CDQ allocations for 1998 to 2004 are available at the NMFS Alaska Region web site. Under current regulations, all groundfish (except squid and "other species") and prohibited species caught by vessels fishing for CDQ groups accrue against the CDQ allocations. None of the groundfish or prohibited species caught in the groundfish CDQ fisheries accrue against the non-CDQ apportionment of the TAC or PSC limits, with limited exceptions. The CDQ groups are required to manage their catch to stay within all of their CDQ allocations.

The 2006 CDQ allocations include approximately 188,000 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.

Figure 3-13 Establishment and distribution of groundfish CDQ reserves



3.3.6.4 Revenue Generation and Asset Accumulation

The revenue stream from the lease of CDQ allocations has permitted the development of considerable savings by the CDQ groups. These savings provide important capital for making investments, and asset accumulation by CDQ communities is one measure of the performance of the program. Amassing equity interest in real assets represents a clear community development strategy. Data suggest that CDQ groups, when taken as a whole, have retained almost half of their gross revenues in some form of equity, whether vessel ownership, processing facilities, marketable securities, loan portfolios, and IFQ holdings. Table 3-29 shows historic consolidated revenues, expenses, and increases in net assets for the combined activities of all CDQ groups.

Table 3-29 CDQ Group Revenues, Expenses, and Increase in Net Assets, 1999-2003

Year Ending	1999	2000	2001	2002	2003
Total unrestricted revenues and gains	\$54,062,354	\$58,306,163	\$76,377,278	\$69,362,946	\$86,687,267
Total expenses	\$24,921,406	\$32,781,529	\$36,033,547	\$49,666,315	\$49,515,380
Increase in net assets (adjusted)	\$30,116,694	\$26,049,839	\$41,205,740	\$22,707,501	\$37,925,087

Source: NOAA Fisheries and the State of Alaska Department of Commerce, Community, and Economic Development CDQ Program Office.

Table 3-30 outlines the combined annual balance sheets for the six CDQ groups from 1999 through 2003. The value of CDQ group assets in aggregate increased from about \$13 million in 1992 to over \$262 million in 2003 (the most recent year for which data are available). Liabilities have shown considerable fluctuation. Liability growth since 2000 is due to a large increase in investments that carry an element of debt, particularly investments in the offshore pollock sector.

Table 3-30 CDQ Group Liabilities and Net Assets, 1999-2003

Years Ending	1999	2000	2001	2002	2003
Total current assets	\$46,784,417	\$46,770,141	\$47,279,273	\$89,622,388	\$110,205,408
Total assets	\$111,072,690	\$152,758,789	\$190,280,968	\$227,066,645	\$262,474,892
Total liabilities	\$7,288,182	\$23,947,973	\$19,240,885	\$34,058,020	\$31,541,180
Total net assets	\$103,784,508	\$128,810,816	\$171,040,083	\$193,008,625	\$230,933,712

Source: NOAA Fisheries and the State of Alaska Department of Commerce, Community, and Economic Development CDQ Program Office.

3.3.6.5 CDQ employment and Income

Employment opportunities have been one of the most tangible benefits of the CDQ Program for many western Alaska village residents. The CDQ program has had some success 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 include work aboard harvesting vessels, internships with the partner company or government agencies, work at processing plants, and administrative positions. In recent years, annual CDQ-related jobs have ranged from 1,339 people in 1999 to 2,080 in 2003. The number of jobs does not necessarily equal the number of people employed, as one person can take advantage of several short-term jobs in any given year. CDQ wages in those same years has ranged from \$10.6 million to \$11.9 million.

The importance of CDQ pollock-related employment in terms of number of jobs and wages appears to be declining relative to employment in other fisheries. This trend reflects the expansion of the CDQ program to include other fisheries and the increased investment by CDQ groups in vessels and processing infrastructure for those fisheries. The average wage for a CDQ pollock-related job continues to surpass that of a position in other fisheries, but that differential may also be decreasing. Residents in some regions prefer local employment opportunities, and investments in regional on-shore fisheries projects has led to increased employment opportunities within or near CDQ communities.

3.3.7 Ex-vessel prices and revenues (non-CDQ)

Ex-vessel BSAI Pacific cod prices in the non-CDQ fixed gear sector ranged from \$0.213 (2002) to \$0.303 (2000) per pound round weight during 2000–2004. During this same time period, prices for the trawl sectors ranged from \$0.193 – \$0.291 per pound round weight. Prices paid to pot and hook-and-line vessels were similar; some years pot catcher vessels received slightly more per pound than hook-and-line vessels, and other years hook-and-line vessels were paid a slightly higher price. The 2004 ex-vessel price for fixed gear vessels was \$0.254 per round pound. The 2004 ex-vessel price for trawl-caught cod was \$0.219 per round pound. These ex-vessel prices were developed from gross earnings statements prepared by the Commercial Fisheries Entry Commission and are provided in the 2004 Economic SAFE for the Groundfish Fisheries off Alaska (Hiatt, 2005). Note, however, that public testimony suggests that the 2006 ex-vessel price per round pound of BSAI Pacific cod in the A season is upwards of \$0.40. Ex-vessel prices can be used to project changes in estimated gross ex-vessel revenues resulting from the proposed alternatives.

The estimated ex-vessel value of BSAI Pacific cod by trawl catcher vessels averaged \$16.1 million during 2000–2004, with a low of \$9.9 million (2001) and a high of \$21.9 million (2000). For hook-and-line catcher vessels, the average during 2000–2004 was \$1.1 million, with a low of \$0.4 million (2003) and a high of \$3.0 million (2002). For pot catcher vessels, the average during 2000–2004 was \$8.7 million, with a low of \$5.9 million (2002) and a high of \$12.1 million (2003). The estimated ex-vessel value of BSAI Pacific cod caught by catcher vessels of all gear types averaged about \$26.0 million during this time period.

The estimated ex-vessel value of BSAI Pacific cod by trawl catcher processors averaged \$17.0 million during 2000–2004, with a low of \$14.0 million (2001) and a high of \$20.4 million (2003). For hook-and-line catcher processors, the average during 2000–2004 was \$63.2 million, with a low of \$54.4 million (2002) and a high of \$67.9 million (2003). For pot catcher processors, the average during 2000–2004 was \$1.4 million, with a low of \$1.0 million (2002 and 2003) and a high of \$1.8 million (2004). The estimated ex-vessel value of BSAI Pacific cod caught by catcher processors averaged \$81.6 million during 2000–2004, with a low of \$70.2 million (2002) and a high of \$89.3 million (2003). Overall, the total ex-vessel value of BSAI Pacific cod caught by all gear types averaged \$107.5 million during 2000–2004. Note that ex-vessel value is calculated using the prices provided above, and the value added by at-sea processing is not included in these estimates of ex-vessel value (Hiatt, 2005).

3.3.8 Products produced from Pacific cod

The product mix information for 2000–2004 is provided in Table 3-31. In sum, catcher processors for all gear types produce mostly eastern and western cut headed and gutted (H&G) products and a few ancillary products. Shorebased processors produce fillets, salted and split, and H&G products, along with a wide variety of ancillary products. The following section provides the production and gross value of Pacific cod products in the BSAI by at-sea and shoreside processors for 2000–2004.

3.3.9 First Wholesale Prices and Revenues

The amount paid to the first processors of fish for their product is first wholesale revenue. This analysis provides 2004 production patterns and prices (Table 3-31), and gross value (Table 3-32 for at-sea processors, and Table 3-33 for shoreside processors) of BSAI Pacific cod products. Data from the 2004 COAR reports were used to estimate first wholesale price by product form and at-sea or shoreside processing sector.

The 2004 first wholesale prices are estimated in the 2005 SAFE report as follows: \$1,132 per round mt of retained BSAI Pacific cod for catcher processors and \$959 per round mt of retained BSAI Pacific cod for shoreside processors.⁴⁷

The 2004 average price per pound for cod products is as follows in Table 3-31: \$1.08 per pound for all BSAI Pacific cod products by at-sea processors and \$1.14 per pound for BSAI Pacific cod products from shoreside processors. The 'all products' price estimate is a weighted average, indicating the total first wholesale value of all products taken together and divided by the total net weight of all products. Confidential data are excluded before calculating the totals. Table 3-31 indicates that higher priced products make up a relatively larger fraction of the product mix for shoreside processors than for at-sea processors, and that lower-priced products make up a relatively smaller fraction of the product mix for shoreside processors. In all years, headed and gutted fish make up roughly 90% of all products for at-sea processors, while fillets make up a larger fraction of the product mix for shoreside processors.

Table 3-31 Price per pound of Pacific cod products in the fisheries of the BSAI of Alaska by processing sector, 2000-2004 (dollars)

		2000		2001		2002		2003		2004	
		At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside
Pacific cod	Whole fish	\$.44	\$.43	\$.46	\$.31	\$.27	\$.37	\$.44	\$.52	\$.43	\$.44
	H&G	\$1.17	\$.89	\$1.09	\$.83	\$.96	\$.85	\$1.13	\$.98	\$1.09	\$1.08
	Salted/split	-	-	-	\$1.42	-	-	-	-	-	-
	Fillets	\$2.33	\$2.51	\$1.49	\$1.81	\$1.58	\$2.40	\$2.29	\$2.31	\$2.20	\$1.84
	Other products	\$1.29	\$.65	\$1.39	\$.80	\$1.01	\$.68	\$.89	\$.54	\$1.02	\$.74
	All products	\$1.22	\$1.55	\$1.11	\$1.16	\$.98	\$1.12	\$1.15	\$1.22	\$1.08	\$1.14

Note: Prices based on confidential data have been excluded.

Source: Weekly production reports and Commercial Operators Annual Reports (COAR), NOAA Fisheries.

Table 3-32 Production and gross value of BSAI Pacific cod products by at-sea processors, 2000–2004 (1,000 metric tons product weight and million dollars)

		2000		2001		2002		2003		2004	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pacific cod	Whole fish	.26	\$.3	.24	\$.2	.83	\$.5	1.06	\$1.0	1.21	\$1.1
	Head & gut	57.22	\$148.0	60.83	\$146.3	59.70	\$126.7	62.98	\$156.8	70.92	\$170.2
	Fillets	2.36	\$12.2	1.43	\$4.7	2.35	\$8.2	2.56	\$12.9	.61	\$3.0
	Other products	2.96	\$8.4	3.46	\$10.6	4.54	\$10.1	4.63	\$9.1	3.40	\$7.6
	All products	62.80	\$168.8	65.95	\$161.8	67.42	\$145.6	71.22	\$179.9	76.14	\$182.0

Source: Weekly production report and commercial operators annual report, NOAA Fisheries. These estimates include all production from catch counted against Federal TACs.

⁴⁷Table 27 of the 2005 Economic SAFE report, p. 58.

Table 3-33 Production and gross value of BSAI Pacific cod products by shoreside processors, 2000–2004 (1,000 metric tons product weight and million dollars)

		2000		2001		2002		2003		2004	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Pacific cod	Whole fish	.50	\$.5	.26	\$.2	.39	\$.3	.90	\$1.0	.33	\$.3
	Head & gut	1.09	\$2.2	2.52	\$4.6	5.95	\$11.2	4.95	\$10.7	8.41	\$20.0
	Salted/split	-	-	3.29	\$10.3	-	-	-	-	-	-
	Fillets	5.35	\$29.6	2.59	\$10.3	3.25	\$17.2	5.16	\$26.3	2.27	\$9.2
	Other products	4.27	\$6.1	4.17	\$7.4	5.14	\$7.7	5.60	\$6.7	2.08	\$3.4
	All products	11.22	\$38.4	12.83	\$32.8	14.73	\$36.4	16.62	\$44.7	13.08	\$32.9

Source: Weekly production report and commercial operators annual report, NOAA Fisheries. These estimates include all production from catch counted against Federal TACs.

In addition, Table 3-32 and Table 3-33 provide the production and gross value of Pacific cod products in the BSAI by at-sea and shoreside processors for 2000 – 2004, respectively. In 2004, for example, at-sea processors had a combined product weight of 76,140 mt with an estimated gross value of \$182.0 million (estimate of \$2,390 per mt). Shoreside processors had a combined product weight of 13,080 mt with an estimated gross value of \$32.9 million (estimate of \$2,515 per mt).

For context, all Pacific cod products off Alaska (both GOA and BSAI) generated an estimated \$245.8 million (2002) to \$288.7 million (2003) during 2000 – 2004, with a five year average of \$271.0 million. BSAI Pacific cod products comprised about \$204.6 million or 76% of the total on average. Of the most recent data available, all Pacific cod products off Alaska generated an estimated \$281.7 million in 2004, and \$214.8 million (76%) of the total was attributed to Pacific cod products of the BSAI area.

3.3.10 Percent of Sector Estimated Revenues Attributed to BSAI Pacific Cod

The analysts reviewed data similar to those reviewed for previous cod allocation amendments: (1) harvest levels by vessels in each sector; (2) ex-vessel prices and first wholesale prices by product form; and (3) estimated ex-vessel and first wholesale revenues resulting from that harvest. Chapter 4 also includes data on where harvests are delivered for processing or for first sale (in the case of catcher processors), and the residency of the vessel owner as reported on the CFEC vessel license file. Much of the information cannot be presented in its detailed form due to confidentiality restrictions, but is summarized qualitatively. The information in this section is provided as a broad indicator of the relative importance of the BSAI Pacific cod fishery to vessels in the identified sectors in the recent past.

It is important to note that eligibility to participate in each sector has changed since 1995. The data below include 1999 – 2003, the most recent five years of data available. Eligibility requirements are outlined in Sections 3.3.3 and 3.3.4.

Percent of Ex-vessel Revenue Attributed to BSAI Pacific cod – CV Sectors

The following table provides the relative distribution of total ex-vessel revenues across several fisheries in the CV sectors during 1999 – 2003, in order to compare the percentage of estimated ex-vessel revenues attributed to BSAI Pacific cod and all other fisheries. The data provide a general assessment of the relative dependence on BSAI Pacific cod as a part of total ex-vessel revenues by sector, during 1999 – 2003. The table also provides the number of unique vessels that participated in BSAI Pacific cod, other BSAI groundfish, and Gulf groundfish, by sector, during this period.

Table 3-34 indicates that of the total estimated ex-vessel value for each catcher vessel sector, the percentage attributed to BSAI Pacific cod is as low as 1.6% ($\geq 60'$ hook-and-line CV sector) to as high as

34.7% (non-AFA trawl CV sector). The remaining CV sectors had the following percentages attributed to BSAI Pacific cod: <60 fixed gear sector - 3.7%; AFA trawl CV – 9.9%; jig CV – 12.8%; ≥60’ pot CV – 14.5%.

The majority of ex-vessel revenues in the <60’ fixed gear and ≥60’ hook-and-line CV sectors were from halibut, with slightly lesser amounts from Gulf of Alaska groundfish landings and other (non-Pacific cod) BSAI groundfish. The majority of ex-vessel revenues in the jig sector, while much lower overall, were also attributed about evenly between halibut and Gulf groundfish (34% each), with lesser amounts in salmon (13%). In the ≥60’ pot CV sector, the great majority of revenues were from crab landings (75%), with very small amounts of halibut and Gulf groundfish.

The two trawl CV sectors also exhibit much different trends. The AFA trawl CV sector had by far the highest total ex-vessel revenues of all CV sectors, and about three times greater than the non-AFA trawl CV sector. The non-AFA trawl CV sector had the highest percentage attributed to BSAI Pacific cod (35%), but still had the majority of its revenues attributed to Gulf groundfish (46%) and lesser amounts (<8%) spread across all other fisheries. As far as BSAI groundfish, however, the primary species of importance to this sector is Pacific cod. In the AFA trawl CV sector, 79% of ex-vessel revenues are attributed to other BSAI groundfish (pollock), with about 10% from BSAI Pacific cod, and much lower amounts in other fisheries.

Table 3-34 Estimated ex-vessel value by catcher vessel sector and fishery, 1999 - 2003

Sector	Total estimated ex-vessel value, all species	Percent of sector's total estimated ex-vessel value							Number of unique vessels		
		% BSAI Pcod	% Other BSAI Groundfish	% Gulf Groundfish	% Crab	% Halibut	% Other Species	% Salmon	BSAI Pcod	BSAI other groundfish	Gulf groundfish
<60 hook-andline/pot CV	\$65,540,584	3.7%	10.5%	24.4%	1.1%	57.5%	1.1%	1.6%	92	51	60
AFA trawl CV	\$896,798,816	9.9%	79.0%	6.6%	4.1%	0.3%	0.0%	0.0%	107	107	84
Jig CV	\$5,030,071	12.8%	3.7%	33.6%	1.1%	34.1%	2.2%	12.6%	58	15	39
Hook-and-line CV >60'	\$43,952,854	1.6%	4.4%	27.1%	15.7%	51.2%	0.0%	0.0%	33	23	27
Non-AFA trawl CV	\$34,320,307	34.7%	1.6%	46.4%	4.1%	7.7%	1.7%	3.8%	37	26	30
Pot CV >60'	\$295,309,932	14.5%	0.9%	3.8%	74.7%	5.9%	0.2%	0.0%	148	83	79

Source: ADF&G fishtickets and ex-vessel prices from Economic SAFE report, 1999 – 2003.

Percent of First Wholesale Revenue Attributed to BSAI Pacific cod – CP Sectors

Table 3-35 provides the relative distribution of total first wholesale revenues across three categories of groundfish fisheries in the CP sectors during 1999 – 2003, in order to compare the percentage of estimated first wholesale revenues attributed to BSAI Pacific cod and all other *groundfish* fisheries. Thus, the data provide a general assessment of the relative dependence on BSAI Pacific cod as a part of total first wholesale revenues attributed to *groundfish* by sector, during 1999 – 2003. The table also provides the number of unique vessels that participated in BSAI Pacific cod, other BSAI groundfish, and Gulf groundfish, by sector, during this period. Data indicating the percentage of first wholesale revenues from BSAI Pacific cod compared to all other fisheries (including non-groundfish) are not available at this time.

Table 3-35 indicates that of the total estimated first wholesale value of groundfish products for each catcher processor sector, the percentage attributed to BSAI Pacific cod is lowest in the AFA trawl CP sector (1.7%) and highest in the hook-and-line CP sector (82.3%). The pot CP sector is 63.3% and non-AFA trawl CP sector is 21.2%. The non-AFA trawl CP sector exhibited the highest estimates of total first

wholesale value attributed to groundfish products during this time period, followed by the hook-and-line CP sector, AFA trawl CP sector, and pot CP sector.

Table 3-35 Estimated first wholesale value by catcher processor sector and groundfish fishery, 1999 – 2003

Sector	Total estimated first wholesale value, all species	Percent of total estimated first wholesale value			Number of unique vessels		
		% BSAI Pcod	% Other BSAI Groundfish	% Gulf Groundfish	BSAI Pcod	BSAI other groundfish	Gulf groundfish
AFA Trawl CP	\$586,518,030	1.7%	98.3%	0.0%	14	14	0
Hook-and-line CP	\$590,662,016	82.3%	7.0%	10.7%	45	44	34
Non-AFA trawl CP	\$747,719,860	21.2%	65.2%	13.6%	25	25	23
Pot CP	\$23,298,092	63.3%	0.1%	36.6%	13	6	10

Source: Weekly production reports and first wholesale product prices from Economic SAFE, 1999 – 2003.

The majority of estimated first wholesale revenue from groundfish products in the hook-and-line CP sector is from BSAI Pacific cod (82%), with much lower amounts from Gulf and other BSAI groundfish. There were 45 unique vessels in the hook-and-line CP sector during this time period, with 44 of those vessels also participating in BSAI other groundfish and the majority also participating in Gulf groundfish. About two-thirds of the first wholesale revenue from all groundfish products in the pot CP sector is from BSAI Pacific cod (63%), with the remainder from Gulf groundfish. Of the 13 unique vessels in the pot CP sector during this time period, 10 participated in Gulf groundfish and 6 in other BSAI groundfish.

Overall, the non-AFA trawl CP sector had much higher total first wholesale revenues from groundfish products than the other CP sectors. The non-AFA trawl CP sector had the majority (65%) of its first wholesale revenues from groundfish products attributed to other BSAI groundfish (flatfish), with lesser amounts in BSAI Pacific cod and Gulf groundfish. In the AFA trawl CP sector, almost all (98%) of the estimated first wholesale revenues from groundfish products are attributed to other BSAI groundfish, primarily pollock. The remaining 1.7% was from BSAI Pacific cod, as there was no participation in Gulf groundfish by this fleet.

Note again that data was not available at this time to provide total first wholesale revenue estimates for all fisheries (i.e., including fisheries other than groundfish) for the CP sectors. Table 3-35 above only includes revenues from groundfish products. Note, however, that there is participation in the crab and halibut fisheries by the fixed gear CP sectors. **Table 3-36 is provided below to show the amount of ex-vessel value estimated for these sectors due to halibut and crab landings, as estimates of first wholesale value are not available at this time.** The portion of the revenues generated when the vessel was operating as a CP versus a CV is not known. The estimates provided only indicate the estimated value of the halibut and crab landings if they had been delivered to shoreside processors, based on the landings reported on the fishticket.

The estimated ex-vessel value of crab and halibut landings by the hook-and-line CP sector during 1999 – 2003 is \$11.3 million and \$6.4 million, respectively. The estimated ex-vessel value of crab landings by the pot CP sector during 1999 – 2003 is \$20.6 million (halibut data is confidential). Crab comprises a substantial portion of the estimated revenues to the pot CP fleet, but is not possible to estimate at this time

what portion of the landings reported were processed at sea. The trawl CP sectors did not have crab and halibut landings.

Table 3-36 Estimated ex-vessel value of crab and halibut harvested by the fixed gear CP sectors, 1999 - 2003

Sector	Estimated crab ex-vessel revenue	Pounds Crab	Estimated halibut ex-vessel revenue	Pounds Halibut	Unique vessels crab	Unique vessels halibut
Hook-and-line CP	\$11,321,121	5,839,306	\$6,396,311	2,163,387	6	12
Pot CP	\$20,611,801	12,798,754	conf.	conf.	12	1

Source: ADF&G fishtickets and ex-vessel prices from Economic SAFE report, 1999 - 2003.

3.3.11 Other sources of Pacific cod mortality

Another source of Pacific cod mortality is the bait fishery. Pacific cod is often used as bait by crab fishermen in the BSAI. To obtain bait, members of the crab fleet can either purchase cod from other fishermen or harvest the cod themselves. Many vessel operators opt to harvest their own cod; however, not all of the cod caught for bait is reported to the State or NMFS. Catcher vessels who, during an open crab season, take groundfish in crab pot gear for use as crab bait onboard their vessels (and the bait is neither transferred nor sold) are exempt from Federal reporting requirements.⁴⁸ During 2003 – 2004, a total of 824 mt of Pacific cod was reported as landed for bait and sold. During that same time period, 197 mt of Pacific cod was reported as landed for bait and used onboard the vessel. Almost all of this was reported by shoreside processors, and over half was harvested by pot vessels. Due to incomplete reporting, these amounts do not likely represent the entire amount of Pacific cod that was harvested for crab bait by the fixed gear sector.

Determining the amount of Pacific cod that was harvested for bait, but not reported, is difficult to estimate. Amendment 46 to the BSAI FMP attempted to provide a rough estimate. Two different methodologies were used to make those estimates. The first reviewed incidentally caught cod in the crab fisheries (NPFMC 1996). It was assumed that those fish would be used as bait. Estimates indicated that 8,452 mt and 5,428 mt of Pacific cod were taken during the years 1994 and 1995, respectively. These estimates were made by assuming that the average cod taken incidentally weighed 10 pounds, and the number of fish were multiplied by the assumed average weight.

The second method assumed that 10 pounds of bait cod were used for each pot pull that occurred in the BSAI (NPFMC 1996). During 1993, 2.7 million pot pulls were reported in the BSAI crab fishery. That equates to about 12,000 mt of bait. Fewer pots were pulled in 1996 and 1997 (1.2 and 1.3 million, respectively). Given these estimates of the amount of bait used, it appears that much of the bait harvested by these vessels is not reported.

Tracking the amount of cod harvested for bait has become more important in recent years, as the BSAI Pacific cod ABC and TAC have frequently been set equal to each other. Prior to 1998, the TAC was often set below ABC. The gap that existed between ABC and TAC allowed the bait fishery to proceed with little concern by fisheries managers. In 1998 – 2001, the BSAI Pacific cod ABC and TAC were set equal to each other. In 2002, 2003, and 2004, the TAC was again set lower than the ABC, by about 10%, 7%, and 3%, respectively. In 2005, 2006, and (projected for) 2007, the TAC and ABC were once again set equal to one another. If in future years there remains no buffer between ABC and TAC, accounting for

⁴⁸50 CFR 679.5(a)(iii)(B).

bait may become a higher priority, even though the BSAI Pacific cod ABC is still set substantially below the overfishing level.⁴⁹

In addition, the guidelines for National Standard 1 specify that all fishing mortality must be counted against the OY, including that resulting from bycatch, research fishing, and any other fishing activities. If regulations are implemented requiring bait to be reported, those harvests may well reduce the directed catch of cod by the various gear sectors. It is unknown which sectors would realize a greater negative impact if bait was accounted for more comprehensively in the future.

The amount of cod caught incidentally in the halibut IFQ fishery is also currently unknown. Additional data collection programs would need to be implemented to estimate that incidental catch. Recall that the majority of vessels in that fishery are <60' LOA and currently observers are not required. Therefore, accurate assessments of the incidental catch of Pacific cod in the halibut fishery cannot be made. Incidental catch of cod in the fixed gear groundfish fisheries is relatively low.

Note that all catch statistics used in the Pacific cod stock assessments are provided by NOAA Fisheries, Alaska Region. Pacific cod used as bait in the crab fishery are not included in these statistics. Full retention of Pacific cod taken in the halibut IFQ fishery is required whenever Pacific cod is open to directed fishing and full retention up to the maximum retainable allowance is required whenever Pacific cod is closed to directed fishing. Retained catches of Pacific cod taken in the halibut IFQ fishery are included in the official catch statistics used in the stock assessments, but discarded catches are not (Thompson, 2006).

3.3.12 Overview of the Steller sea lion measures for the BSAI Pacific cod fishery

On November 30, 2000, NMFS issued a biological opinion on the FMPs, which determined that the pollock, Pacific cod, and Atka mackerel fisheries were likely to jeopardize the continued existence of the western population of Steller sea lions and to adversely modify its critical habitat. It contained an RPA, but before it could be implemented, the President signed Public Law 106-554 on December 21, 2000, which contained a one-year timetable to phase in the RPA. This year provided the Council with time to develop alternative protection measures that would avoid jeopardy and adverse modification of critical habitat for Steller sea lions.

On October 19, 2001, NMFS released a biological opinion that concluded that the area and fishery-specific approach in the RPA would not be likely to jeopardize the continuing existence of the Steller sea lion, nor adversely modify its critical habitat. NMFS completed a Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement (SEIS) in November 2001, which includes the agency's and the Council's preferred alternative. This alternative was developed by the Council's RPA Committee and modified by the Council at its September and October 2001 meetings. An emergency rule was implemented in 2002 implementing the protection measures, and that rule was followed by final rulemaking to implement those measures beyond 2002. The approach allows for different types of management measures in the Aleutian Islands, Bering Sea, and Gulf of Alaska. Essential measures include fishery specific closed areas around rookeries and haulouts and season and gear apportionments. These are provided in the EA in Section 2.3.4.

The overall approach to the temporal dispersion measures in the BSAI Pacific cod fishery was a seasonal target of 70% (Jan. 1 – June 10) in the first season and 30% (June 10 – Dec. 31) in the second season.⁵⁰ To accomplish this objective, gear-specific measures were established (see Section 2.3.4). The objective is to limit the amount of total cod harvest that could be taken in the first half of the year, in order to

⁴⁹The BSAI Pacific cod ABC was set at about 78% and 84% of the overfishing level in 2005 and 2006, respectively.

⁵⁰Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

disperse the harvest of cod throughout the year in consideration of foraging sea lions. Section 2.3.4 of this analysis addresses whether the actions proposed in this amendment would be likely to jeopardize the continuing existence of the Steller sea lion, or adversely modify its critical habitat. Refer to the SSL Final SEIS (NMFS 2001b) for details and measures applicable to all fisheries.

One of the concerns noted during development of the Steller sea lion SEIS is that management measures to protect the Steller sea lion may be more restrictive to catcher vessels (that are limited to fishing closer to shore) than to catcher processors. If the Steller sea lion measures shift the location of the cod fishery significantly farther offshore, there was a concern that, due to safety issues, the catcher vessel fleet would either take longer, or not be capable of, harvesting its entire allocation. Changes in fishery management regulations that result in vessels, particularly smaller vessels, operating farther offshore, appear likely to increase the risk of property loss, injury to crew members, and loss of life. Steller sea lion regulations that close, or severely restrict, fishing in nearshore critical habitat to operations targeting cod could compel vessel operators to choose between assuming these increased risks or exiting these fisheries for some or all of the fishing season (NMFS 2001b).

The hook-and-line catcher vessel sector has had a separate allocation from the hook-and-line catcher processor sector since mid-2000. The hook-and-line catcher vessel sector receives about 0.15% of the BSAI Pacific cod ITAC, which typically equates to less than three hundred metric tons of Pacific cod. Since mid-2000, this sector has fully utilized its allocation plus some additional quota reallocated from other gear sectors. Should similar allocations be maintained under this action, there is no evidence to suggest that this sector would be unable to continue to harvest its entire allocation in the future, notwithstanding a considerable increase in the Pacific cod TAC or increasingly restrictive management measures to protect Steller sea lions in the future.

The <60' fixed gear sector, which has also had a separate BSAI Pacific cod allocation since mid-2000, has harvested its entire allocation starting in 2002, including some additional quota from the general hook-and-line and pot CV allocations, as well as the jig sector in 2004 and 2005. The pot CV sector received a separate allocation starting in 2004. Having distinct quotas keeps these sectors from having to compete with the catcher processor sectors, which are comprised of some larger vessels and which can typically operate farther offshore for longer periods of time. While this is true regardless of management restrictions in place for the protection of Steller sea lions, the seasonal and spatial restrictions in the Steller sea lion RPA may tend to exacerbate the difficulties these vessels face in competing for the Pacific cod quota.

In general, however, the majority of the historical cod harvest by all gear types in the BSAI is taken in areas that were not closed by the Steller sea lion measures. Of potentially greater importance than the geographic restrictions may be the seasonal allocations that were relatively new to the jig and trawl sectors, and modified for the hook-and-line and pot sectors.

All gear sectors typically take the majority of their catch in the A season (January 1 – June 10), and prefer to do so as a result of higher CPUEs due to increased aggregation of cod, as well as market and weather conditions. The combined fixed gear sector allocation was seasonally apportioned starting in 1994, and when the fixed gear allocation was split among the hook-and-line CP, hook-and-line CV, and pot sectors in mid-2000, only the hook-and-line CP sector continued to be subject to seasonal apportionments. The fixed gear apportionments varied, but were close to 70%–85% in the first half of the year and 15%–30% in the second half of the year. These seasonal apportionments were modified under the Steller sea lion measures to the existing seasons and the 60% - 40% apportionments, and reinstated for the other fixed gear vessels $\geq 60'$.

For example, during 1995–2000, pot and hook-and-line catcher vessels harvested approximately 84% and 61% of their retained cod catch before June 10, respectively. With the 2001 Steller sea lion protection measures, both sectors were limited to 60% of their allocation during the A season. During 2001 – 2003, the pot and hook-and-line CV sectors harvested approximately 75% and 43% of their retained cod catch prior to June 10, respectively. The pot cod fishery in the BSAI was closed in mid to late March in both 2001 and 2002 upon reaching the A season TAC, and in 2003, the pot cod fishery A season closed in late February. In 2004, the first year in which each pot CV sector received a separate allocation, the pot CV sector A season TAC was reached in mid-February. In 2002 the combined pot sector did not harvest its entire B season allocation, and in 2004, the pot CV sector did not harvest its entire B season allocation.

The percentage of the retained harvest by the fixed gear CP sectors taken in the A season also declined slightly after 2000. During 1995–2000, pot and hook-and-line CPs harvested on average approximately 64% and 53% of their retained cod catch before June 10, respectively. With the 2001 Steller sea lion protection measures, both sectors were limited to 60% of their allocation during the A season. During 2001 – 2003, the pot and hook-and-line CP sectors harvested approximately 46% and 41% of their retained cod catch prior to June 10, respectively.

The 2001 Steller sea lion measures also implemented seasonal apportionments for the trawl sectors to which they were not previously subject. In 2001, two seasons were established for the trawl sectors, as part of the interim emergency rule to protect Stellar sea lions.⁵¹ The subsequent emergency rule in 2002 and final rule in 2003 established the three seasons under which the trawl sectors currently operate.

For example, prior to 2001, absent seasonal apportionments, the AFA trawl CV and non-AFA trawl CV sectors harvested approximately 97% and 95% of their retained cod catch before June 10, respectively. (Note that these sectors share an allocation of 23.5% of the BSAI Pacific cod ITAC.) With the final Steller sea lion protection measures, the trawl sector as a whole is limited to 80% of the trawl cod TAC during the first half of the year. During 2001 – 2003, the AFA and non-AFA trawl CV sectors harvested approximately 92% and 86% of their retained cod catch prior to June 10, respectively.⁵²

The percentage of the retained harvest by the trawl CP sectors taken in the A season also declined slightly after 2000. During 1995–2000, non-AFA and AFA trawl CPs harvested on average approximately 69% and 81% of their retained cod catch before June 10, respectively. During 2001 – 2003, the non-AFA and AFA trawl CP sectors harvested approximately 65% and 76% of their retained cod catch prior to June 10, respectively. The trawl sectors have not harvested their entire BSAI Pacific cod allocations since the overall gear split has been in place (1994), which includes several years prior to the Stellar sea lion protection measures. Further detail on the seasonal apportionments and amount of reallocated quota each year is provided in Section 3.3.5.6.

In sum, while the seasonal allocations for each sector may affect the sectors' ability to harvest their entire allocations, it is uncertain whether current seasonal restrictions affect one sector more severely than another.

⁵¹The 2001 trawl seasons (66 FR 7276, 1/22/01) were as follows: 60% (January 20 – June 10); 40% (June 10 – November 1).

⁵²Note that during these time periods, the AFA trawl CV sector's average annual harvest decreased by about 30% during 2001 – 2003, while the non-AFA trawl CV sector's average annual harvest about doubled in 2001 – 2003, compared to 1995 – 2000.

3.4 Expected Effects of the Alternatives

This amendment package has two parts. Part I addresses the BSAI Pacific cod allocations among the identified sectors, and there are two distinct alternatives under this part:

- ALTERNATIVE 1.** No Action. BSAI Pacific cod allocations for the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as in current regulations.
- ALTERNATIVE 2.** Modify the current BSAI Pacific cod allocations among the jig, trawl, and fixed gear (hook-and-line and pot) sectors according to a set of catch history years or other considerations.

Part II addresses the apportionment of the BSAI Pacific cod sector allocations between the BS and the AI management subareas. There are four distinct alternatives under this part. **In February 2006, the Council identified Alternative 6 as the preliminary preferred alternative under Part II.**

- ALTERNATIVE 3.** No action. A methodology to apportion the BSAI Pacific cod allocations between the BS and AI subareas would not be selected.
- ALTERNATIVE 4.** Sector allocations remain as BSAI (with BS and AI TACs). No allocation to a sector of a specific percentage of a sub-area. Sectors would have a BSAI allocation (in Part I) to fish in either sub-area (BS and AI) if the sub-area is open for directed fishing and TAC is available.
- ALTERNATIVE 5.** BS and AI sector allocations based on equal percentage from BSAI sector allocations. Allocation to a sector of an equal percentage in both sub-areas. The allocation percentage of BSAI TAC a sector receives in Part I would result in that same percentage being applied to both the BS and AI sub-areas so that a sector would have the same percentage in both sub-areas.
- ALTERNATIVE 6. (Preliminary preferred alternative.)** BS and AI sector allocations based on a sector's historic harvest in the AI with remainder of sector's overall BSAI allocation to be caught in the BS. Sector's BSAI allocation is maintained and used in annual calculation.

Because the two parts of the amendment represent two separate, but related issues, there is a no action alternative under both Part I and Part II. **The intent is that the Council would select a preferred alternative under Part I and another preferred alternative under Part II. Any of the alternatives in Part II can be selected in conjunction with either alternative from Part I.** The comprehensive list of alternatives and options under consideration is provided in the following sections.

3.4.1 Part I: BSAI Pacific Cod Sector Allocations

Part I of the amendment addresses the BSAI Pacific cod allocations established for each identified gear sector. A summary of the retained Pacific cod harvests by sector during 1995–2003 is provided in Section 3.3.4, Table 3-9, on page 103. The data from this table will be used for Part I.

Both of the primary alternatives under Part I are comprised of eight components:

Allocation of BSAI Pacific Cod to Sectors

- Component 1: Sectors for which allocations will be established
- Component 2: Sector allocations
- Component 3: Seasonal apportionments
- Component 4: Rollovers between gear sectors
- Component 5: CDQ allocation of Pacific cod

Apportionment of BSAI PSC to Sectors

- Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group
- Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors
- Component 8: Apportionment of cod non-trawl halibut PSC

3.4.2 ALTERNATIVE 1: No Action

3.4.2.1 Component 1: Sectors for which allocations are established

Component 1: Sectors for which allocations are established

BSAI Pacific cod allocations will continue to be established in Federal regulations for the following sectors:

- Trawl CPs
- Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs
- Pot CPs
- Pot CVs
- Hook-and-line and pot CVs <60'
- Jig CVs

The BSAI Pacific cod TAC has been apportioned among the overall gear sectors (trawl gear, all fixed gear, and jig gear) since 1994, and a series of amendments have modified or continued the allocation system. Section 3.3.1 outlines each of the past amendments and its primary provisions, including the basis for the allocations and the hierarchy for reallocating unused quota between and among gear sectors.

The distinct allocations to the fixed gear sectors (hook-and-line catcher processor, hook-and-line catcher vessel, pot, and hook-and-line/pot catcher vessel <60' LOA) were implemented in September 2000. The separate pot catcher processor and pot catcher vessel sector allocations were implemented in January 2004. Thus, the overall sector allocations have been in place for almost twelve years, and the further allocations within the gear sectors were established through subsequent amendments. Under Alternative 1, the sectors for which allocations are established would continue to be those identified above in Component 1.

Under the current structure, the trawl CP sector BSAI Pacific cod allocation is shared by the AFA trawl CP sector and the non-AFA trawl CP sector. These sectors are described in Section 3.3.2. Section 208(e) of the AFA establishes vessel and processor eligibility to harvest and process the BSAI pollock directed fishing allowance designated for each sector under the AFA. Section 208(e) lists the 20 trawl catcher processors that are eligible to participate as trawl catcher processors under the AFA; these vessels comprise the 'AFA trawl CP' sector.

In addition, the trawl CV BSAI Pacific cod allocation is shared by the AFA trawl CV sector and the non-AFA trawl CV sector, as described in Section 3.3.2. Section 208(a)-(c) of the AFA establishes the eligibility criteria and list for catcher vessels eligible to harvest pollock under the AFA. As of January 2005, the NMFS database indicates that 111 catcher vessels were issued AFA catcher vessel permits.

Although separate BSAI Pacific cod allocations are not currently established for the AFA CP and AFA CV sectors, the implementing regulations for the AFA also established sideboards on the participation by AFA-qualified vessels in the other BSAI (non-pollock) groundfish fisheries, including Pacific cod. As mentioned previously, AFA catcher vessels are exempt from the Pacific cod sideboards if their annual BSAI pollock landings averaged less than 1,700 mt from 1995 – 1997 and they made 30 or more landings of BSAI Pacific cod during that time period. In addition, AFA CVs with mothership endorsements are exempt from BSAI Pacific cod catcher vessel sideboard directed fishing closures after March 1 of each fishing year. Of the 111 AFA CVs, 9 are exempt from the cod sideboards under the 1,700 mt exemption and 19 have mothership endorsements and are therefore exempt after March 1. The remaining 83 AFA CVs are subject to BSAI Pacific cod sideboard limits.

The BSAI Pacific cod sideboard amounts and respective harvest of those sideboards by the AFA CP and AFA CV sectors is provided in Table 3-28 of Section 3.3.4.7. The data show that neither sector has harvested its full BSAI Pacific cod sideboard amount since the sideboards were implemented. The AFA CP sector has harvested an average of 38% and the AFA CV sector has harvested an average of 65% during 2000 – 2004.

Note that the cod sideboards operate as harvest limits for the AFA CP and CV sectors; they provide a cap that the AFA sectors must not exceed, but do not guarantee an allocation up to that amount. Currently, the AFA cod fishery is in part managed by the annual inter-cooperative agreement pursuant to a cod allocation agreement adopted by all AFA cooperatives in 2000. In general, this agreement clarifies the exempt AFA CVs and allocates the AFA cod sideboards among the nine cooperatives, which provides the basis for the individual cooperatives to allocate at the individual vessel level. The agreement states that an overharvest of a sideboard limit by any member of a cooperative shall subject that member to a penalty. Thus, while the AFA authority is limited to allocating pollock, the cooperative structure has provided a mechanism by which the AFA vessels can also manage Pacific cod within the AFA CP and CV sectors.

Under Alternative 1, the trawl CP BSAI Pacific cod allocation would continue to be harvested by both non-AFA and AFA catcher processors, and the current sideboards for AFA CPs would remain in place. Similarly, the trawl CV BSAI Pacific cod allocation would continue to be harvested by both non-AFA and AFA catcher vessels, and the sideboards for AFA CVs and the sideboard exemptions for specific CVs would remain in place. While the cod allocation agreement of 2000 and the annual inter-cooperative agreement for AFA cooperatives are not regulated by NMFS, it is assumed that this type of agreement would also remain in place to continue management of the BSAI Pacific cod harvests by AFA vessels.

In addition, under Alternative 1, all sector allocations would continue to be managed by the Regional Administrator through directed fishing closures in non-pollock groundfish fisheries in accordance with the procedures set out in Federal regulation.

3.4.2.2 Component 2: Sector allocations

Component 2: Sector Allocations

BSAI Pacific cod allocations to the jig, trawl, and fixed gear (hook-and-line and pot) sectors would continue as determined under BSAI Amendments 46 and 77:

- **51% fixed gear**
(80% hook-and-line catcher processors)
(0.3% hook-and-line catcher vessels)
(3.3% pot catcher processors)
(15.0% pot catcher vessels)
(1.4% hook-and-line/pot vessels <60' LOA)
- **47% trawl gear**
(50% trawl catcher vessels)
(50% trawl catcher processors)
- **2% jig gear**

The BSAI Pacific cod TAC that is allocated to the above sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Component 2 identifies the BSAI Pacific cod allocations that would continue to exist for each sector under Alternative 1. Currently, Federal regulations at 50 CFR 679.20(a)(7)(i) authorize distinct BSAI Pacific cod allocations for the eight sectors identified in Component 1. There is no expiration date in Federal regulations by which these allocations would expire.

The allocations above are based on varying catch history years, based on the most recent data available at the time of Council action. The overall allocations to the trawl (47%), fixed (51%), and jig (2%) gear sectors are based closely on harvests in the fishery during 1995 – 1998, with the exception of the jig allocation. There has been continued interest in the jig sector allocation, and its ability to support a larger small boat jig fleet in the future. The jig sector is the only sector in which there are no eligibility requirements necessary beyond a Federal fishing permit, and it is referenced as one of the only entry level Federal fisheries available for small boat, local fishermen in the BSAI. The Council made a policy decision in the past (1993 and 1996 under Amendments 24 and 46, respectively) to retain the 2% jig allocation, with the intent that that allocation remain sufficient to allow for new growth.

The allocation of the 51% among the fixed gear sectors is based 1995 – 1998 or 1995 – 1999 retained harvests, and the split between the pot sectors is based on retained catch during 1998 – 2001. These allocations were based on retained catch by sector, excluding any quota that was reallocated from another gear sector.

Like the 2% jig allocation, the allocation (1.4%) to catcher vessels <60' LOA using fixed gear (hook-and-line and pot) was not based on actual catch history. This allocation was intended to allow for growth in the small boat fishery, and was 'funded' primarily through a reduction in the hook-and-line catcher processor allocation. **Note that while the <60' fixed gear sector receives a separate allocation of BSAI**

Pacific cod, these vessels fish off the general hook-and-line CV and pot CV allocations, respectively by gear type, when those fisheries are open. Thus, under Alternative 1, the <60' sector is not limited to 1.4% of the overall fixed gear BSAI Pacific cod ITAC.

Under the current allocations in Component 2, each sector has varied in its ability to harvest its entire Pacific cod allocation. Please reference Table 3-9, on page 103 for a summary of the retained Pacific cod harvests by sector during 1995–2003. Note that while the trawl CP and trawl CV allocations are not currently split between AFA and non-AFA vessels, Table 3-9 includes this breakout, in order to indicate the amount that each sector has harvested of the combined allocation over this time period.

Effects of Component 2

Under Alternative 1, one would expect that the current range of harvests in Table 3-9 and reallocations between sectors (see Table 3-18 and Table 3-19) to continue. In effect, it is expected that the largest share of the BSAI Pacific cod ITAC harvested by any one sector would continue to be retained by the hook-and-line CP sector (average share is 49%–50% during 1995–2003). This is about 8%–9% higher than the sector is currently allocated (80% of 51% = 40.8% of the BSAI Pacific cod ITAC).

It is also expected that the trawl sectors would continue to retain about 39% of the BSAI Pacific cod ITAC, notwithstanding significant changes in the TACs. This is about 8% lower than the trawl sectors are currently allocated (47% of the BSAI Pacific cod ITAC). Under Alternative 1, the AFA and non-AFA CP sectors would continue to have a combined allocation, as described above under Component 1. The BSAI Pacific cod sideboard amounts and respective harvest of those sideboards by the AFA CP and AFA CV sectors is provided in Table 3-28 of Section 3.3.5.9. The data show that neither sector has harvested its full BSAI Pacific cod sideboard amount since the sideboards were implemented. The AFA CP sector has harvested an average of 38% of its sideboard and the AFA CV sector has harvested an average of 65% of its sideboard during 2000 – 2004. Under Alternative 1, it is expected that this general level of harvest would continue.

In addition, upon future implementation of the non-AFA CP cooperatives under Amendment 80, this sector should better be able to utilize their PSC in relation to their target fisheries, which may result in harvesting a greater share of the BSAI Pacific cod allocated to the trawl CP sector than has been harvested in the past. Currently, the trawl CP sector is allocated 23.5% of the BSAI Pacific cod ITAC. Note that Table 3-9, Table 3-10, and Table 3-11 indicate that the non-AFA CP sector has harvested about 13%–14% of the ITAC on average during 1995 – 2003, with the highest shares in the most recent years (1999 – 2003). The AFA CP sector has harvested about 2%–3% of the ITAC on average during 1995 – 2003 (depending on whether the AFA 9 are included), with the lowest shares in the most recent years (2000 – 2003). Together the two trawl CP sectors harvested (retained catch) an average of 15%–16% of the BSAI Pacific cod ITAC, compared to the 23.5% allocated.

Similarly, the trawl CV sector is allocated 23.5% of the BSAI Pacific cod ITAC. Table 3-9, Table 3-10, and Table 3-11 indicate that the non-AFA CV sector has harvested about 2% of the ITAC on average during 1995 – 2003, with the highest shares in the most recent years (2001 – 2003). The AFA CV sector has harvested almost 22% of the ITAC on average during 1995 – 2003, with the lowest shares in the most recent years (2001 – 2003). Together the two trawl CV sectors on average (1995 – 2003) harvested (retained catch) about the 23.5% allocated, although in recent years (2001 – 2003) the trawl CV sectors harvested an average of 20% of the BSAI Pacific cod ITAC. The lower share percentages realized by both the AFA CP and CV sectors after 2000 are typically attributed to the Steller sea lion protection measures

implemented in 2001 (area closures, seasonal allocations creating a 20% allocation in the second half of the year), as well as an increasing pollock TAC.⁵³

It is also expected that the $\geq 60'$ hook-and-line CV sector would continue to harvest about 0.13% of the BSAI Pacific cod TAC, which is about the amount this sector is currently allocated (0.15% of the BSAI Pacific cod ITAC). The $\geq 60'$ hook-and-line CV sector typically harvests its entire allocation and often harvests a small portion of reallocated quota from other gear sectors.

The $\geq 60'$ pot CV sector would likely continue to harvest about 8%–9%, which is only slightly more than is allocated to this sector currently (7.7% of the BSAI Pacific cod TAC). Prior to 2004, the pot CV sector shared an allocation with the pot CP sector. The increasing share of the pot allocation harvested by the pot CV sector spurred the need to establish separate allocations for these sectors. Thus, the pot CV sector increased its share, and the pot CP sector's share decreased, prior to 2004. The pot CP sector has harvested an average of about 2.1% of the BSAI Pacific cod TAC, and it is currently allocated (since 2004) 1.7%. This is due to the fact that the pot split was based on more recent harvest history (1998 – 2001); the years in which the pot CV sector harvested a larger share of the overall pot sector allocation. In 1998, the pot CV sector harvested about 73% of the overall pot allocation, increasing to 79% in 1999, 87% in 2000, 82% in 2001, 86% in 2002, and 92% in 2003. The relative increase in effort is likely due to a severe decline in the opilio guideline harvest level during these years, and thus increased availability of pot CVs during the Pacific cod A season. In the past couple years, however, note that the pot CV sector has not harvested its entire allocation, and a portion of its allocation has been reallocated to the hook-and-line CP sector.

Finally, the $< 60'$ fixed gear sector would also continue to harvest its entire allocation as well as additional quota reallocated from the jig sector. This sector harvested about 0.4% of the BSAI Pacific cod TAC on average during 1995 – 2003, although this average increases to almost 1% in more recent years (2001 – 2003). Increased effort in this sector, especially in 2003 – 2005, is in part due to this sector receiving a separate allocation starting in September 2000. This allows the $< 60'$ sector to harvest cod off of the general pot and hook-and-line sectors' allocations when the directed fisheries are open, but also allows for an exclusive $< 60'$ fixed gear cod fishery later in the A season when most smaller vessels start fishing. This has supported more effort in the $< 60'$ fixed gear sector, most noticeably by pot vessels.

Effort by the $< 60'$ fixed gear sector is detailed in Section 3.3.4.5. The data show that in 2003 and 2004, the majority of the $< 60'$ fixed gear retained harvest came off the $< 60'$ fixed gear allocation, with very little of the $< 60'$ pot sector's harvest coming off the general pot CV allocation ($< 1\%$) and more than half of the $< 60'$ hook-and-line sector's harvest coming off the general hook-and-line CV allocation (66% in 2004). Note, however, that in terms of actual harvest (metric tons), the pot CV allocation (7.7% of the BSAI Pacific cod ITAC) is much greater than the hook-and-line CV allocation (0.15% of the BSAI Pacific cod ITAC). Thus, while the $< 60'$ fixed gear sectors have not taken the majority of their harvest from either general pot or hook-and-line sector allocation, the percentages attributed to the hook-and-line sector are high due to their relatively small overall allocation.

Retained cod harvest by jig vessels is also expected to be maintained at current levels under Alternative 1. The jig sector typically harvests about 0.1% of the BSAI Pacific cod ITAC, or about one to two hundred metric tons per year. In the past several years, the number of participating jig vessels has remained relatively stable at about 15 – 19 vessels, and no significant new effort is anticipated at this time. This

⁵³Since 1999, the BSAI pollock TAC has increased from 992,000 mt to 1.14 mt (2000), 1.4 mt (2001), and 1.49 mt (2002 - 2004).

sector is the only one that is not required to have an LLP to fish in Federal waters, subject to certain gear and size restrictions.⁵⁴

Based on the current level of harvest, it is also expected that ex-vessel revenues and first wholesale revenues would continue near current levels by sector, notwithstanding changes in the TAC (see Section 3.3.7). However, this projection does not take into account any other unforeseen factors that may result in market fluctuations.

Note that reallocations between sectors are also expected to continue under Alternative 1. The level of reallocations by sector since 1995 are provided in Table 3-24 and the overall average (2000 – 2004) by sector is in Table 3-25. The data show that the average amount that has been reallocated among gear sectors during the past five years (2000 – 2004) is 17,290 mt, or about 9.4% of the BSAI Pacific cod ITAC during those years. While NMFS manages the fishery such that reallocations are made in a timely manner and the overall cod TAC is generally fully harvested, the level and frequency of reallocations make it difficult for vessels to both plan the fishing year and maximize their catch per unit effort. Under Alternative 1, these inefficiencies are expected to continue.

Finally, ex-vessel and first wholesale prices and revenues are not expected to change significantly due to this action. Note that 1% of the 2006 Pacific cod ITAC of 179,450 mt equals 1,795 mt (or about 4 million pounds). **Using the 2004 ex-vessel price reported for the fixed gear CV sectors (\$0.254/round pound) from Section 3.3.7, 1% of the BSAI Pacific cod ITAC to the fixed gear CV sectors could be roughly estimated as representing \$1 million in ex-vessel revenues. A 1% change in allocation to the trawl CV sectors (using estimated 2004 ex-vessel price of 0.219/round pound) is roughly estimated as representing \$866,000 in ex-vessel revenues.**⁵⁵

In the processing sectors, the 2004 first wholesale prices are estimated in the 2005 SAFE report as follows: \$1,132 per round mt of retained BSAI Pacific cod for catcher processors and \$959 per round mt of retained BSAI Pacific cod for shoreside processors (see Section 3.3.9). Thus, 1% of the BSAI Pacific cod ITAC could be very roughly estimated as representing \$2 million in first wholesale revenue for the CP sectors, and \$1.7 million in first wholesale revenue for the shoreside processors. Note that these estimates do not take into account price differences between gear types, as the prices ultimately come from product-value reports in the COAR data, which are not broken down by gear type (Hiatt, pers. comm., 1/11/06).

⁵⁴Vessels that do not exceed 60 feet LOA, and that are using jig gear (but no more than 5 jig machines, one line per machine, and 15 hooks per line) are exempt from the LLP requirements in the BSAI.

⁵⁵Note that public testimony in February 2006 reported that the 2006 ex-vessel price for BSAI Pacific cod delivered by both fixed and trawl gear has been upwards of \$0.40 per round pound in the A season. Thus, at \$.40 per round pound, 1% of the BSAI Pacific cod ITAC could be roughly estimated as representing \$1.6 million in ex-vessel revenues to the catcher vessel sectors.

3.4.2.3 Components 3 & 4: Seasonal apportionments and rollovers between sectors

Component 3: Seasonal Apportionments

The seasonal apportionments of each sector's allocation would remain as shown below. Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector.

Trawl CV:	70%	(Jan. 20 – Apr. 1)
	10%	(Apr. 1 – June 10)
	20%	(June 10 – Nov. 1)
Trawl CP:	50%	(Jan. 20 – Apr. 1)
	30%	(Apr. 1 – June 10)
	20%	(June 10 – Nov. 1)
Hook-and-line ≥60':	60%	(Jan. 1 – June 10)
	40%	(June 10 – Dec. 31)
Pot ≥60':	60%	(Jan. 1 – June 10)
	40%	(Sept. 1 – Dec. 31)
Fixed gear <60':	No seasonal apportionments	
Jig gear:	40%	(Jan. 1 – Apr. 30)
	20%	(Apr. 30 – Aug. 31)
	40%	(Aug. 31 – Dec. 31)

Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

- Projected unused trawl sector allocations are considered for reallocation to the other trawl sector before being reallocated to the fixed gear sectors.
- Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV, and 95% to hook-and-line CP.
- Projected unused allocation in the jig sector is considered for reallocation to the <60' fixed gear CV sector on a seasonal basis.
- Projected unused pot sector allocations (CPs and CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- Projected unused allocation in the <60' fixed gear CV sector, both pot sectors (CP and CV), and hook-and-line CV is reallocated to the hook-and-line CP sector.

Component 3 outlines the seasonal apportionments in current Federal regulations at 50 CFR 679.23(e)(5), and Component 4 outlines the hierarchy for reallocating quota that is projected to be unused by a sector at 50 CFR 679.20(a)(7)(ii). Under the no action alternative (Alternative 1), the seasonal apportionments and rollover hierarchy would remain as shown above. Combined with the sector allocations in Component 2, this means that each gear sector would be allocated the same percentage of the ITAC by season that it has been since 2002.

Table 3-37 shows the percentage of the ITAC that is represented by each of the current seasonal apportionments for the non-CDQ fishery, based on the sector's overall allocation. Note that the CDQ BSAI Pacific cod fishery using hook-and-line gear is subject to the same seasonal apportionments as the non-CDQ fishery: 60% (Jan. 1 – June 10) and 40% (June 10 – Dec. 31).

Table 3-37 Current seasonal apportionments by gear sector

Date	Trawl gear (47%)			Fixed gear (51%)			Jig Gear (2%)				TOTAL
	Season	Percent of trawl allocation	Percent of TAC	Season	Percent of fixed gear allocation	Percent of TAC	Date	Season	Percent of jig gear allocation	Percent of TAC	% of ITAC
1-Jan	No directed cod trawl fishing prior to Jan. 20			A	60%	30.6%	1-Jan	A	40%	0.8%	69.4%
20-Jan	A	60%	28.2%				30-Apr				
1-Apr	B	20%	9.4%				30-Apr				
1-Apr	C	20%	9.4%	B	40%	20.4%	31-Aug	C	40%	0.8%	
10-Jun							31-Dec				
10-Jun	No directed cod trawl fishing after Nov. 1			B	40%	20.4%	31-Aug	C	40%	0.8%		30.6%
1-Nov							31-Dec				
31-Dec											
TOTAL		100%	47%		100%	51%			100%	2%	100.0%

The current seasonal apportionments are primarily a result of the 2001 Biological Opinion. The 2001 opinion consulted on a comprehensive management regime, of which temporal dispersion of the fisheries was one part. The overall objective was to limit the amount of total cod harvest that could be taken in the first half of the year, in order to disperse the harvest of cod throughout the year in consideration of foraging sea lions. The temporal dispersion measures in the BSAI Pacific cod fishery were established to meet a seasonal target of 70% (Jan. 1 – June 10) harvest of the TAC in the first season and 30% (June 10 – December 31) in the second season.⁵⁶ To accomplish this objective, the fixed gear sectors $\geq 60'$ LOA are allocated 60% in the first season and 40% in the second season. For trawl gear, the first season is allocated 60%, and the second and third seasons are allocated 20% each. Within the overall trawl allocation, the trawl catcher vessel sector is allocated 70% in the first season, 10% in the second season, and 20% in the third season. The trawl catcher processor sector is allocated 50% in the first season, 30% in the second season, and 20% in the third season.

The jig gear sector was also allocated 60% in the first half of the year and 40% in the second half starting in 2002, as a result of the 2001 Biological Opinion. Under BSAI Amendment 77, the jig seasons were modified to a trimester basis (40% - 20% - 40%) in 2004, in order to provide for seasonal reallocations to the $<60'$ fixed gear catcher vessel fleet earlier in the year.

Component 3 states that unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors, while unused seasonal allowances for the jig sector are considered for reallocation to the $<60'$ fixed gear CV sector at the end of each season. Due to the annual projections of unused quota, a significant amount of the trawl and jig sector allocations are reallocated to the hook-and-line and pot gear sectors near the end of each year. At times, a portion of the pot quota has also been reallocated to the hook-and-line sector. These reallocations take place according to the hierarchy listed in Component 4 above. The average

⁵⁶Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

amount of quota reallocated from the trawl and jig sectors is provided in Table 3-38 and is detailed in Section 3.3.5.6.

Table 3-38 Reallocations (in mt and as a % of the sector's annual allocation) of BSAI Pacific cod from the trawl sectors and jig sector, 2000–2004

Year	Trawl CP		Trawl CV		Jig	
	mt	%	mt	%	mt	%
2000	9,000	21	0	0	3,000	84
2001	10,000	24	14,000	34	3,000	86
2002	6,500	15	2,000	5	3,400	92
2003	11,500	25	1,671	4	3,600	94
2004	5,413	12	6,127	13	3,545	89
Average	8,483	19	4,760	11	3,309	89

Source: NMFS, Sustainable Fisheries, information bulletins 2000 - 2004.

In sum, Table 3-37 outlines the seasonal apportionments by gear type for each BSAI Pacific cod fishery, and Table 3-38 shows the annual reallocations from the trawl and jig gear sectors to the fixed gear sectors since 2000. **Thus, given the annual reallocations, the actual harvest by gear type during each season is different from the seasonal apportionments of the allocations in regulation.** This is not unexpected, as these reallocations have been provided for in regulation and have occurred every year since the original gear splits were established in 1994. The 2001 Biological Opinion considered the complexities of this fishery in which quota is reallocated between seasons and between gear types under specific scenarios.

The following tables provide an example of what actually occurs in the BSAI Pacific cod trawl fisheries, given that quota is seasonally reallocated within the trawl gear sectors and then annually reallocated from the trawl to the fixed gear sectors in the second half of the year, as authorized by current regulations.

In sum, the seasonal percentage of the ITAC harvested by trawl gear decreases substantially in the B and C seasons. Under the regulations, the trawl sectors are effectively allocated 9.4% of the ITAC in the B season and 9.4% in the C season. The breakout between sectors is such that the trawl CP sector is allocated 7.1% of the ITAC in its B season and 4.7% in its C season; and the trawl CV sector is allocated 2.4% of the ITAC in its B season and 4.7% in its C season. However, on average during the last four years (2001 – 04), the trawl CP sector has harvested about 2.2% of the ITAC in its B season and 5.9% in its C season. The trawl CV sector has harvested 2.7% of the ITAC in its B season and 1.8% in its C season. Table 3-39 summarizes the data for both trawl sectors combined. Conversely, the seasonal percentage of the ITAC harvested by fixed gear increases in the second half of the year if the rollover is included (Table 3-40).

The overall temporal distribution of cod harvest between the first and second halves of the year does not exceed 70% in the first half of the year, since reallocations *within* gear sectors roll to the next subsequent season, and reallocations *between* gear sectors only shift quota within the second half of the year (June 10 – Dec. 31). **On average during 2001 – 2004, the temporal distribution of overall cod harvest has been about 62.3% of the ITAC in the first half of the year and 36.1% in the second half (see Tables 3.33 and 3.34).** In years when a portion of the trawl B season quota is rolled over to the trawl C season, the overall distribution of cod harvests between the first and second half of the year shifts to less than 70% harvested in the first half of the year.

Table 3-39 Temporal distribution of cod harvest by trawl sectors, average 2001–2004

Date	Seasonal allocations to trawl			Seasonal harvest by trawl (ave. 2001 - 2004)		
	Season	Percent of Allocation	Percent of ITAC allocated to trawl	% of ITAC harvested by trawl CPs	% of ITAC harvested by trawl CVs	% of ITAC harvested by total trawl (CP and CV)
1-Jan	Directed trawl fishing for Pacific cod starts Jan. 20					
20-Jan 1-Apr	A	60%	28.2%	10.6%	15.3%	26.0%
1-Apr 10-Jun	B	20%	9.4%	2.2%	2.7%	4.9%
10-Jun 1-Nov	C	20%	9.4%	5.9%	1.8%	7.7%
31-Dec	No trawl fishing for Pacific cod after Nov. 1					
TOTAL		100%	47%	18.8%	19.9%	38.6%

Table 3-40 Temporal distribution of cod harvest by fixed and jig gear sectors, average 2001–2004

Date	Seasonal allocations to fixed gear			Seasonal harvest by fixed gear (ave. 2001 - 2004)			Seasonal harvest by jig (ave. 2001 - 2004)		TOTAL	
	Season	% of Allocation	Percent of ITAC allocated to fixed gear	% of ITAC harvested by H&L	% of ITAC harvested by pot	% of ITAC harvested by total fixed gear	% of ITAC allocated to jig	% of ITAC harvested by jig	% of ITAC allocated to fixed + jig	% of ITAC harvested by total fixed gear + jig
1-Jan 10-Jun	A	60%	30.6%	24.8%	6.5%	31.3%	0.8% 0.4%	0.06%	31.8%	31.4%
10-Jun 31-Dec	B	40%	20.4%	25.8%	2.6%	28.4%	0.8%	0.03%	21.2%	28.4%
TOTAL		100%	51.0%	50.6%	9.1%	59.7%	2.0%	0.08%	53.0%	59.8%

Effects of Components 3 and 4

Under Alternative 1, it is expected that rollovers from the trawl sectors to the fixed gear sectors would continue to occur, similar to that provided in Table 3-38 above. The seasonal harvest data indicate that the trawl sectors do not typically harvest their full allocations in the B (April 1 – June 10) or C seasons (June 10 – November 1). Table 3-16 and Table 3-17 in Section 3.3.5.6 show that on average during 2002 – 2004, the trawl CP sector harvested about 34% and 121% of its initial B and C season allocations, respectively. The C season harvest in excess of 100% means the sector also harvested quota that was rolled over from the previous B season. Analysts excluded 2001 in this example because the trawl sector allocations were only apportioned between two seasons in 2001. The trawl CV sector harvested 113% and 41% of its B and C season allocations, respectively, during this same time period. The B season harvest in excess of 100% means the sector also harvested quota that was rolled over from the previous A season.

Thus, while the reallocations from the trawl to the fixed gear sectors occur in the second half of the year by regulation, not all of the reallocated quota always comes from the trawl C season. In past years, some of the quota was originally allocated to the trawl B season, and was subsequently rolled to the trawl C season, before then being reallocated to the fixed gear sectors. Refer to Table 3-18 and Table 3-19 for the trawl CP and trawl CV seasonal harvest on average during 2001 – 2004. For example, on average during this time period, the trawl CP sector harvested almost all of its A season allocation and rolled the majority of its B season allocation to the C season, such that 25.4% of its overall allocation was rolled on average to the C season (which was originally allocated 20%). This creates a revised C season allocation of 45.4% (25.4% + 20%). The trawl sector harvested 25.2% in the C season, leaving a remainder of 20.2% of its allocation to be reallocated to the fixed gear sector.

On average during the same time period, the trawl CV sector harvested nearly all of its A season allocation and all of its B season allocation, rolling only 3.1% of its entire allocation to the C season. Because the trawl CV sector is also allocated 20% of its allocation to the C season, this creates a revised C season of 23.1% (3.1% + 20%). The trawl sector harvested 7.6% in the C season, leaving a remainder of 15.5% of its allocation to be reallocated to the fixed gear sector. Recall that this represents total catch data, as provided by the NMFS Blend data and catch accounting database.

It is theoretically possible for the fixed gear sector to receive reallocated quota from the trawl B and C seasons, due to the fact that a sector's seasonal allocation is rolled to the next season if left unharvested. Each trawl sector receives 20% of its allocation in the second half of the year, spurring the question as to whether the seasonal allocations result in the trawl sector's reallocating more than their 20% C season allocation to the fixed gear sectors. On average during the past several years, not more than 20.2% of the trawl CP sector's original allocation has been reallocated to fixed gear in the second half of the year. Similarly, an average of 15.5% of the trawl CV sector's original allocation has been reallocated to fixed gear in the second half of the year.

The fixed gear sectors have only two seasons. Given the above, the fixed gear sectors harvest in excess of their B season (June 10 – Dec. 31) allocations upon receiving reallocated quota from the trawl and jig sectors. While allocated 20.4% of the ITAC in the B season, the fixed gear sectors combined harvested about 28.4% of the ITAC in the last half of the year during 2001 – 2004. This reallocated quota is almost entirely harvested by the hook-and-line catcher processor sector. According to Federal regulations, the hook-and-line CP sector receives 95% of reallocated trawl quota, and the pot CP and CV sectors receive 0.9% and 4.1%, respectively. The 95% - 5% split between the hook-and-line CP and pot sectors is based on the actual harvest of reallocated quota from trawl and jig sectors harvested by each sector during 1996 – 1998. While jig quota is reallocated to the <60' fixed gear sector, any unused quota from the <60' sector continues to be reallocated to the hook-and-line CP sector under the status quo.

Note that 1% of the 2006 Pacific cod ITAC of 179,450 mt equals 1,795 mt (or about 4 million pounds). Using the 2004 ex-vessel prices for the fixed gear CV sectors (\$0.254/round pound) from Section 3.3.7, 1% of the BSAI Pacific cod ITAC to the fixed gear CV sectors could be roughly estimated as representing \$1 million in ex-vessel revenues. A 1% change in allocation to the trawl CV sectors (using estimated 2004 ex-vessel price of 0.219/round pound) is roughly estimated as representing \$866,000 in ex-vessel revenues.⁵⁷

In the processing sectors, the 2004 first wholesale prices are estimated in the 2005 SAFE report as follows: \$1,132 per round mt of retained BSAI Pacific cod for catcher processors and \$959 per round mt of retained BSAI Pacific cod for shoreside processors (see Section 3.3.9). Thus, 1% of the BSAI Pacific cod ITAC could be very roughly estimated as representing \$2 million in first wholesale revenue for the CP sectors, and \$1.7 million in first wholesale revenue for the shoreside processors. Note that these estimates do not take into account price differences between gear types.

There are no biological or environmental concerns identified related to the current sector allocations and reallocation scheme among gear sectors, as described in Chapter 2. In addition, the current scenario was consulted upon in the 2001 Biological Opinion and found not to cause adverse impacts upon the western population of the Steller sea lion and its habitat.

⁵⁷Note that public testimony in February 2006 reported that the 2006 ex-vessel price for BSAI Pacific cod delivered by both fixed and trawl gear has been upwards of \$0.40 per round pound in the A season. Thus, at \$.40 per round pound, 1% of the BSAI Pacific cod ITAC could be roughly estimated as representing \$1.6 million in ex-vessel revenues to the catcher vessel sectors.

There is some administrative cost to the agency associated with managing the current regime, although it is not easily quantified. NMFS must provide inseason management staff to monitor the harvest by sector and reallocate quota that is projected to remain unused by the end of the year. The determination as to whether quota will likely remain unused, and which sector would be able to harvest unused quota (subject to the hierarchy in regulation), is often complex and difficult. However, this determination is expected to be necessary on an annual basis, regardless of the amount of the annual allocation to each gear sector, should the seasonal allocations remain. For the trawl sector, this is because of the overall difficulty in harvesting BSAI Pacific cod with trawl gear and the limitations that the sector experiences in the second half of the year. In sum, if any quota is allocated to the trawl sectors' C season, at least a portion of that quota is expected to remain unharvested and in need of reallocation. Thus, while the amount of the reallocation varies each year with the TAC and harvest by sector, it is expected that reallocations would continue to occur under the current or a new allocation scheme.

Reallocations from the jig sector to the fixed gear sectors are also expected to be necessary in the future under Alternative 1. This is primarily because of the limited effort in the existing BSAI Pacific cod jig fishery, and the inability of the current fleet to harvest the full 2% allocation. While it is more difficult for the smaller (<60') jig vessels to prosecute the fishery in the winter months, the seasonal apportionment alone does not appear to be the primary factor resulting in unused allocation. Preliminary data indicate that in 2004, the first year that the jig allocation was apportioned among three seasons, the jig sector harvested 4% of its A season (Jan. 1 – April 30) allocation; 21% of its B season (April 30 – August 31) allocation; and <1% of its C season allocation. During 2001 – 2004, the jig sector harvested an average of 4.5% of its total allocation, with about half taken during the first half of the year on average. Note also that during this time period, an average of 17 unique jig vessels participated in the BSAI Pacific cod fishery, harvesting a little over 9 mt of cod per vessel on average. Thus, the current 2% allocation, which represents 3,608 mt in 2006, could theoretically sustain more than 380 jig vessels at the average harvest rate, notwithstanding changes in the BSAI Pacific cod TAC.

3.4.2.4 Component 5: CDQ allocation of BSAI Pacific cod

Component 5: CDQ Allocation of BSAI Pacific Cod

The CDQ Program reserve is 7.5% of the BSAI Pacific cod TAC. The reserve is removed from the TAC prior to the allocation to all other sectors.

Component 5 addresses the 7.5% BSAI Pacific cod reserve that is currently allocated to the CDQ Program at 50 CFR 679.20(b)(1)(iii)(A). The 7.5% cod reserve has been allocated to the CDQ Program since 1998. Background information on the CDQ Program and the historical CDQ Pacific cod harvest is detailed in Section 3.3.6. A summary table of Pacific cod CDQ harvests by all groups combined during 2001 – 2004 is provided in Table 3-41.

Table 3-41 BSAI Pacific cod CDQ reserve (mt), catch, and percent harvested, 2001–2004

CDQ Species	2001			2002			2003			2004			Average 2001-04
	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	Percent harvest
BSAI Pacific cod	14,100	12,527	89%	15,000	14,128	94%	15,563	14,465	93%	16,163	16,009	99%	94%
# Longline CPs	15			17			18			19			17

Source: NOAA Fisheries, 2005. The last row refers to the number of hook-and-line CPs participating in the CDQ fisheries. The hook-and-line CDQ fisheries are primarily CPs targeting Pacific cod.

Pacific cod CDQ has been harvested to date by hook-and-line catcher processors targeting Pacific cod. As shown in the table above, an average of 94% of the Pacific cod CDQ allocation was harvested during 2001 – 2004, and the vast majority (93% on average) is in the cod target fishery. The remaining Pacific cod CDQ is caught incidentally in the CDQ target pollock trawl fishery and flatfish trawl fisheries, with very little attributed to the CDQ pot fisheries.

The royalties from pollock, Pacific cod, Bristol Bay red king crab, and opilio, typically comprise over 95% of the total CDQ royalties. Pacific cod is the second most important species in terms of metric tons, and is typically second or third in importance in terms of royalties (behind pollock and all crab combined). Pacific cod royalties comprised over 6% or \$2.95 million of the total royalties for the CDQ groups combined on average during 2001–2003. During that time period, the average royalty payment to the CDQ groups was \$232 per metric ton of Pacific cod (see Table 3-42).

Table 3-42 CDQ royalties for all groups combined, 2001–2003

Species	2001		2002		2003		Average 2001 - 03	
	Total (\$) all groups	% of total royalties	Total (\$) all groups	% of total royalties	Total (\$) all groups	% of total royalties	Ave. (\$) all groups	Ave. % of total royalties
Pollock	36,721,924	86.28%	39,609,795	85.43%	42,779,382	80.04%	39,703,700	83.92%
Pacific Cod	2,733,315	6.42%	2,743,795	5.92%	3,365,920	6.30%	2,947,677	6.21%
Other Groundfish	311,118	0.73%	297,371	0.64%	366,734	0.69%	325,074	0.69%
Halibut	202,822	0.48%	214,872	0.46%	1,922,821	3.60%	780,172	1.51%
Crab total	2,492,197	5.86%	3,448,377	7.44%	4,612,294	8.63%	3,517,623	7.31%
Other species	97,565	0.23%	52,975	0.11%	401,112	0.75%	183,884	0.36%
Total CDQ royalties	42,558,941	100.00%	46,367,185	100.00%	53,448,263	100.00%	47,458,130	100.00%

Source: NOAA Fisheries, Alaska Region. Compiled from CDQ groups' audited financial statements.

Under Alternative 1, the 7.5% allocated to the CDQ Program would continue. Applying the average royalty rate from the most recent audited financial data available (2001 – 2003) of \$232 per metric ton of BSAI Pacific cod, results in \$3.52 million, \$3.37 million, \$3.19 million, and \$2.42 million in projected royalties to the CDQ groups in 2004, 2005, 2006, and 2007, respectively (Table 3-43). This assumes that the CDQ groups combined continue to harvest an average of 94% of their total BSAI Pacific cod allocation.

Table 3-43 Projected CDQ royalties from BSAI Pacific cod under Alternative 1 (no action)

Year	TAC (mt)	7.5% allocation (mt)	Projected harvest (94%, based on average 2001 – 04)	Ave royalty rate (2001 – 2003)	Projected royalty amt (\$ million)
2004	215,500	16,163	15,193	\$232/mt	\$3.52 m
2005	206,000	15,450	14,523	\$232/mt	\$3.37 m
2006	194,000	14,550	13,677	\$232/mt	\$3.17 m
2007	148,000	11,100	10,434	\$232/mt	\$2.42 m

As stated previously, CDQ allocations of BSAI Pacific cod contributed an average of 6.21% of total royalties during 2001 – 2003. The value of the cod CDQ allocation as a percentage of total CDQ royalties will likely decrease in the near future, as the CDQ Program realized an increase in its crab allocation from 7.5% to 10% under the crab rationalization program implemented in 2005. In addition, under crab rationalization, the CDQ Program is allocated new reserves of Adak red king crab and Eastern Aleutian Islands golden king crab. The CDQ group allocations should be established for EAI golden king crab in 2006. The Adak red king crab fishery has not been opened for several years, due to low stock abundance. Note that an increase (10% or 15%) is also proposed for the target flatfish species, secondary species, and

prohibited species allocations to the CDQ Program under BSAI Amendment 80. These allocations are currently established at 7.5%.

Under Alternative 1, the 7.5% CDQ Pacific cod allocation may provide royalties similar to those projected in Table 3-43. Each of the six CDQ groups have purchased equity interests in hook-and-line catcher processors, to which the Pacific cod CDQ is leased. The continued investment in the BSAI fisheries provides the groups with additional revenue to fund their CDQ projects. While each group's development strategy is different, each group has used CDQ revenues to invest in in-region infrastructure and processing projects in their member communities and other for-profit investments. These include investments in onshore processing of various species and the infrastructure needed for such plants. The quarterly reports and executive summaries of the pending community development plans for each CDQ group (2006 – 2008) are available on the State of Alaska, Department of Commerce, Community, and Economic Development website at: <http://www.commerce.state.ak.us/bsc/CDQ/cdq.htm>.

3.4.2.5 Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

Component 6: Apportionment of trawl halibut and crab PSC to the cod fishery group

The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The trawl halibut PSC is typically 3,400 mt, which is apportioned between Pacific cod; yellowfin sole; rocksole/other flatfish/flathead sole; pollock/Atka mackerel/other. Generally, about 1,400 mt is apportioned to the cod trawl fishery group.

The crab PSC for 2005 and 2006 is 182,225 red king crab in Zone 1; 4,494,569 *C. opilio* in the *C. Opilio* Bycatch Limitation Zone (COBLZ); and 906,500 *C. bairdi* in Zone 1 and 2,747,250 *C. bairdi* in Zone 2. The cod trawl fishery group bycatch allowance (2005 – 06) is 26,563 red king crab; 139,331 *C. opilio*, 183,112 *C. bairdi* in Zone 1; and 324,176 *C. bairdi* in Zone 2.

Currently, there are prohibited species catch (PSC) limits for halibut, herring, red king crab, *C. opilio*, *C. bairdi*, chinook salmon and other salmon (primarily chum salmon) for the trawl fisheries. NOAA Fisheries 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 prohibited species quota (PSQ) reserve to the CDQ Program. The remaining PSC limits are apportioned to fishery categories, gear groups, or seasons to create more refined PSC limits. Component 6 addresses the apportionment of trawl halibut PSC and trawl crab PSC that is apportioned to the trawl cod fishery group through the annual specifications process. Salmon and herring PSC limits are not addressed in this component in either Alternative 1 or 2; this amendment does not propose to change PSC limits for those species.

The amount of PSC by trawl sector is provided in Section 3.3.5.8. Table 3-44 shows the PSC limits for each of these species with the exception of salmon, by gear and fishery for 2005 and 2006. PSC limits for halibut are set forth in 50 CFR 679.21(e)(1)(v). For the BSAI trawl fisheries overall, the halibut mortality limit is 3,400 mt after deducting 7.5 percent for the PSQ reserve allocated to the CDQ program. The 3,400 mt is then apportioned between the different trawl fishery categories (yellowfin sole, rock sole/other flats/flathead sole, Pacific cod, etc.), which is further apportioned by season for some fisheries. Note that the halibut bycatch allowance for the trawl Pacific cod fisheries is not seasonally apportioned. The purpose of the seasonal apportionment in the trawl flatfish fisheries is to maximize the ability of the fleet to harvest the available groundfish TAC and minimize bycatch. Component 6 only addresses the halibut and crab PSC apportioned to the trawl cod fishery group.

Table 3-44 2005 and 2006 Prohibited Species Bycatch Allowances for the BSAI Trawl and Non-Trawl Fisheries

Trawl Fisheries	Prohibited species and zone					
	Halibut mortality (mt) BSAI	Herring (mt) BSAI	Red King Crab (animals) Zone 1 ¹	<i>C. opilio</i> (animals) COBLZ ¹	<i>C. bairdi</i> (animals)	
					Zone 1 ¹	Zone 2 ¹
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 ²	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 ³	.....	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 ⁴	232	192	406	80,903	17,224	27,473
Red King Crab Savings Subarea ⁶	.....	.....	.....	.....	.....	.....
(non-pelagic trawl)	.....	.....	42,495	.....	.....	.....
Total trawl PSC	3,400	2,012	182,225	4,494,569	906,500	2,747,250
Non-trawl Fisheries						
Pacific cod – Total	775					
January 1 – June 10	320					
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 reserve⁵	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

¹ Refer to § 679.2 for definitions of areas.

² “Other flatfish” for PSC monitoring includes all flatfish species, except for halibut (a prohibited species), Greenland turbot, rock sole, yellowfin sole and arrowtooth flounder.

³ Greenland turbot, arrowtooth flounder, and sablefish fishery category.

⁴ Pollock other than pelagic trawl pollock, Atka mackerel, and “other species” fishery category.

⁵ 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.

⁶ 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)).

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 extrapolated to unobserved vessels, a minimum of three different weekly observer reports are required before an average rate is used. NMFS monitors PSC limits for the non-CDQ and CDQ groundfish fisheries using PSC rate estimates. Reaching a PSC limit results in closure of an area (in the case of crab) or a fishery season (in the case of halibut), even if the groundfish TAC remains unharvested.

The halibut PSC limit is set in regulation and is not tied to population assessment for the halibut resource. The limits for the other PSC species (herring, red king crab, bairdi crab, *C. opilio* crab and chinook salmon) are set to fluctuate as the resource abundance fluctuates. Crab PSC is tied to PSC limitation zones for red king, bairdi and *C. opilio* crab whereas the PSC limits for the other species are for the entire BSAI. Figure 3-14 shows the boundaries for the *C. opilio* PSC limitation zone. Figure 3-15 shows the red king crab and bairdi crab zones 1 and 2.

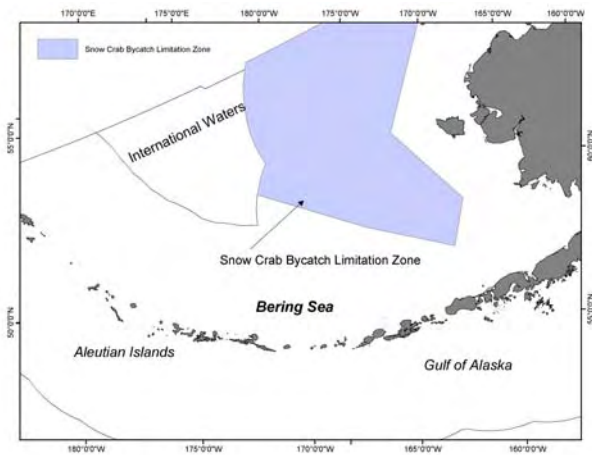


Figure 3-14 *C. opilio* PSC limitation zone

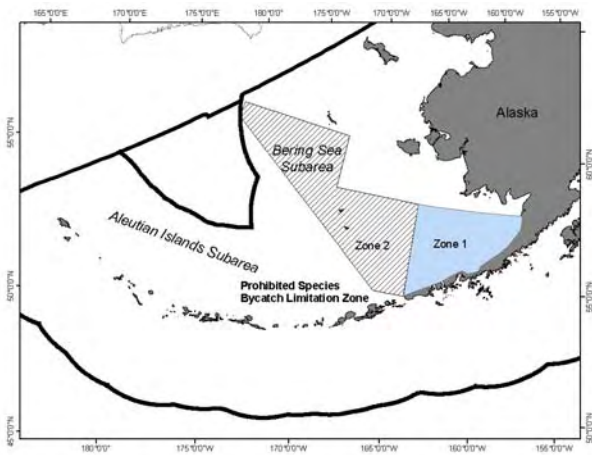


Figure 3-15 Red king and bairdi PSC zones

Note that crab PSC is also allocated by trawl target fishery group. The PSC limit of red king crab is dependent on the abundance of mature female red king crabs and/or the effective spawning biomass, according to criteria set out at 50 CFR 679.21(e)(1)(ii). Zone 1 is closed to directed fishing when red king crab bycatch limits are attained in the specific fisheries.

When the number of mature female red king crab is	The zone 1 PSC limit will be
(A) At or below the threshold of 8.4 million mature crab or the effective spawning biomass is less than or equal to 14.5 million lb (6,577 mt)	32,000 red king crab
(B) Above the threshold of 8.4 million mature crab and the effective spawning biomass is greater than 14.5 but less than 55 million lb (24,948 mt)	97,000 red king crab
(C) Above the threshold of 8.4 million mature crab and the effective spawning biomass is equal to or greater than 55 million lb	197,000 red king crab

PSC limits for *C. bairdi* are established in regulation (50 CFR 679.21(e)(1)(iii)) based on abundance as indicated by the NMFS bottom trawl survey. The zone 1 and zone 2 PSC limits for bairdi crab vary according to the limits shown below. The 2006 PSC limit for the trawl cod fishery for Zone 1 and Zone 2 is 183,112 crab and 324,176 crab, respectively.

When the total abundance of <i>C. bairdi</i> crab is	The Zone 1 PSC limit will be
(1) 150 million animals or less	0.5 percent of the total abundance minus 20,000
(2) Over 150 million to 270 million animals	730,000 animals
(3) Over 270 million to 400 million animals	830,000 animals
(4) Over 400 million animals	980,000 animals
When the total abundance of <i>C. bairdi</i> crabs is ...	The Zone 2 PSC limit will be ...
(1) 175 million animals or less	1.2 percent of the total abundance minus 30,000
(2) Over 175 million to 290 million animals	2,070,000 animals
(3) Over 290 million to 400 million animals	2,520,000 animals
(4) Over 400 million animals	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) is specified annually by NMFS, after consultation with the Council, based on total abundance of *C. opilio* as indicated by the NMFS annual bottom trawl survey (50 CFR 679.21(e)(1)(iv)).

The PSC limit is 0.1133 percent of the total abundance, minus 150,000 *C. opilio* crabs, unless the following apply: (1) if 0.1133 percent multiplied by the total abundance is less than 4.5 million, then the minimum PSC limit will be 4.350 million animals; or (2) if 0.1133 percent multiplied by the total abundance is greater than 13 million, then the maximum PSC limit will be 12.85 million animals. For further details on the management of BSAI PSC, see Chapter 3 of the Groundfish PSEIS (NMFS 2004a). The 2006 PSC allowance for the trawl cod fishery group for *C. opilio* is set at 139,331 crab.

For the BSAI trawl fisheries, the halibut limit is 3,675 mt of halibut mortality. Of this amount, 7.5 percent is specified for the PSQ reserve to the CDQ Program. The remaining amount (3,400 mt) is apportioned among the trawl fishery categories. While the amount can vary annually, for the past several years the BSAI trawl cod fishery has had a halibut PSC limit of 1,434 mt. The trawl cod fisheries are typically closed prior to reaching their halibut and crab PSC limits, with the exception of halibut in 2004⁵⁸. Table 3-45 and Table 3-46 show the halibut and crab mortality and mortality caps in the (non-CDQ) Pacific cod trawl fishery over the past five years. While 2005 data are preliminary, the Pacific cod trawl fisheries were closed August 18 to avoid exceeding the 1,434 mt halibut mortality limit. The sector harvested about 91% of the halibut mortality cap in 2005.

Table 3-45 Halibut mortality in the BSAI Pacific cod trawl fishery, 2000 – 2004

Year	Halibut mortality in BSAI Pacific cod trawl fisheries (mt and % of cap)	Halibut mortality cap in BSAI Pacific cod trawl fisheries (mt)
2004	1,519 (106%)	1,434
2003	1,234 (86%)	1,434
2002	1,128 (79%)	1,434
2001	672 (50%)	1,334
2000	935 (65%)	1,434

Source: BSAI Prohibited Species Reports, 2000 – 2004, NMFS catch accounting.

Table 3-46 Crab mortality (# animals) in the BSAI Pacific cod trawl fishery, 2000 – 2004

Year	Red King Crab Zone 1 (# and % of cap)	Red King Crab Zone 1 limit	C. Opilio (COBLZ) (# and % of cap)	C. Opilio (COBLZ) limit
2004	665 (3%)	26,563	51,627 (41%)	124,736
2003	1,137 (9%)	13,079	59,101 (47%)	124,736
2002	12,735 (109%)	11,664	93,923 (75%)	124,736
2001	1,742 (15%)	11,664	8,330 (2%)	524,736
2000	4,379 (38%)	11,656	50,245 (41%)	123,529
Year	C. Bairdi Zone 1 (# and % of cap)	C. Bairdi Zone 1 limit	C. Bairdi Zone 2 (# and % of cap)	C. Bairdi Zone 2 limit
2004	60,429 (33%)	183,112	135,295 (42%)	324,176
2003	51,872 (28%)	183,112	101,116 (31%)	324,176
2002	144,550 (79%)	183,112	90,236 (28%)	324,176
2001	44,842 (33%)	136,400	25,417 (11%)	225,941
2000	55,379 (36%)	154,856	26,484 (10%)	275,758

Source: BSAI Prohibited Species Reports, 2000 – 2004, NMFS catch accounting.

Note again that this component only addresses halibut and crab PSC allocated to the cod trawl fishery group. However, the CDQ reserve of halibut and crab PSQ is 7.5% of the total halibut and crab mortality established for the non-CDQ fisheries. Thus, limited background information on the CDQ PSQ limits is provided in this section, as this amendment does not propose to change calculation of the PSC limits for the CDQ Program. Under Alternative 1, all PSC limits and calculations would remain the same as in current regulation.

The CDQ PSQ reserve for halibut in 2005 and 2006 is 342 mt. Table 3-47 shows the halibut mortality and halibut PSQ reserve in the CDQ fisheries during 2000 – 2004, as well as the amount of halibut mortality attributed to the CDQ hook-and-line catcher processor sector, which is the CDQ Pacific cod target fishery. It also shows the rate of halibut PSC harvested per metric ton of hook-and-line targeted

⁵⁸In 2004, the halibut mortality in the cod trawl fisheries was about 1,519 mt (1,434 mt limit), while the halibut mortality in the yellowfin sole fisheries was lower than normal (560 mt, with a 886 mt limit). Anecdotal evidence suggests that the Pacific cod were in deeper waters than normal, which elevated halibut mortality in the cod trawl fishery group.

Pacific cod. The data indicate that in the past several years, the CDQ groups' combined have not exceeded their PSQ reserve of halibut.

Table 3-47 Halibut mortality in the CDQ fisheries, 2000 – 2004

Year	Halibut mortality in CDQ fisheries (mt and as % of reserve)	Halibut PSQ reserve (mt)	Halibut mortality (mt) attributed to the hook-and-line CP CDQ fisheries	Halibut PSC rate per mt of CDQ Pacific cod harvested in the hook-and-line CP fisheries
2004	153 (45%)	342	47	.003159
2003	175 (51%)	342	62	.004521
2002	149 (44%)	342	70	.005264
2001	87 (25%)	342	52	.004589
2000	103 (29%)	351	64	.005094

Source: CDQ participation and catch by gear reports, 2000 – 2004, NMFS.

Note that the hook-and-line CP CDQ fishery is primarily the target Pacific cod fishery. The remaining halibut mortality is attributed to the pollock trawl and other trawl CDQ fisheries.

Also in 2005 and 2006, the CDQ crab PSQ reserves are as follows: red king crab is 14,775 animals in Zone 1; *C. opilio* in the COBLZ is 364,424 crab; and the *C. bairdi* limits are 73,500 and 222,750 crab in Zone 1 and 2, respectively. Table 3-48 shows the crab mortality and crab PSQ reserve in the CDQ fisheries during 2000 – 2004. None of the halibut mortality is attributed to the CDQ hook-and-line catcher processor sector, which is the CDQ Pacific cod target fishery. All of the halibut mortality is attributed to the CDQ trawl fisheries. The data indicate that in the past several years, the CDQ groups' combined have harvested very little of their PSQ crab reserves.

Table 3-48 Crab mortality (# animals) in the CDQ fisheries, 2000 – 2004

Year	Red King Crab Zone 1 (# and % of cap)	Red King Crab Zone 1 limit	C. Opilio (COBLZ) (# and % of cap)	C. Opilio (COBLZ) limit
2004	175 (1%)	14,775	29,860 (9%)	326,250
2003	1,883 (26%)	7,275	4,927 (2%)	326,250
2002	431 (6%)	7,275	25,568 (8%)	326,250
2001	0 (0%)	7,275	624 (<1%)	326,250
2000	0 (0%)	7,500	4,338 (1%)	337,500
Year	C. Bairdi Zone 1 (# and % of cap)	C. Bairdi Zone 1 limit	C. Bairdi Zone 2 (# and % of cap)	C. Bairdi Zone 2 limit
2004	1,679 (2%)	73,500	13,483 (6%)	222,750
2003	9,119 (12%)	73,500	2,736 (1%)	222,750
2002	4,074 (6%)	73,500	3,695 (2%)	222,750
2001	690 (1%)	54,750	436 (<1%)	155,250
2000	17 (0%)	63,750	1,593 (1%)	191,250

Source: CDQ participation and catch by gear reports, 2000 – 2004, NMFS.

Effect of Component 6

Under Alternative 1, the halibut and crab PSC apportioned to the cod trawl fishery group would continue to be determined in the annual specifications process and established in Federal regulation (50 CFR 679.21(e)). Accounting for the CDQ PSQ reserve, the trawl halibut PSC is 3,400 mt, which is apportioned between Pacific cod; yellowfin sole; rocksole/other flatfish/flathead sole; pollock/Atka mackerel, other; etc. Generally, about 1,400 mt is apportioned to the cod trawl fishery group. The cod trawl fishery group crab bycatch allowances (2005 – 2006) are 26,563 red king crab; 139,331 *C. opilio*; 183,112 *C. bairdi* in Zone 1; and 324,176 *C. bairdi* in Zone 2. These limits will also continue to be determined in the annual specifications process, according to criteria established at 50 CFR 679.21(e).

Under current BSAI Pacific cod TACs, it generally appears that the trawl cod fishery group has not been limited in recent years by its halibut and crab bycatch allowances. Recall that in 2000 – 2003, the trawl cod fishery did not reach its halibut cap. In 2004, the halibut mortality in the cod trawl fisheries was slightly exceeded (about 1,519 mt with a 1,434 mt limit), while the halibut mortality in the yellowfin sole fisheries was lower than normal (560 mt, with a 886 mt limit). Anecdotal evidence suggests that Pacific cod were in deeper waters than normal, which elevated halibut mortality in the cod trawl fishery group. While 2005 data are preliminary, the Pacific cod trawl fisheries were closed August 18 in 2005 to avoid exceeding the 1,434 mt halibut mortality limit. Note, however, that trawl PSC is currently managed with sufficient flexibility to shift PSC among trawl fishery groups when necessary to fully prosecute an allocation (e.g. shift halibut PSC from the cod trawl fishery group to a flatfish trawl fishery group).

In the CDQ fisheries, the data indicate that the CDQ groups' combined have not exceeded their PSQ reserve of halibut in the past several years. At most, the CDQ groups have used half of their halibut reserve. Similarly, the CDQ groups' combined have harvested very little of their PSQ crab reserves.

Changes occur annually in the fisheries, so it is unlikely one can predict the exact amount of halibut necessary to prosecute the fisheries prior to the season. This is one reason that some flexibility may need to be maintained within inseason management, in order to assess where halibut is needed in the trawl sectors and be able to move halibut between the target fisheries within the specific trawl sectors. In addition, the cod TAC has been declining slightly over the past several years, and expectations are that it may continue to decline slightly in the near future due to reduced, but stable, survey biomass estimates (NMFS, 2005a). However, the limits apportioned to each trawl fishery group can currently be modified in the annual specifications process, should NMFS determine that adjustments are necessary within the trawl fisheries to maximize the ability of the fleet to harvest the available groundfish TACs and minimize bycatch.

Note that regardless of whether Alternative 1 or 2 is selected in Part I, options are currently proposed in BSAI Amendment 80 to apportion separate PSC allowances to the non-AFA trawl CP sector. Component 6 (see below) of that amendment identifies three different options to do so. 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 Amendment 80. Under this option there are three allocation suboptions, based on historical use of PSC for various groups of species. The second option in Component 6 would set the PSC allowance to the non-AFA trawl CP sector at 60 percent, 75 percent, 90 percent, 95 percent, or 100 percent of the PSC allocation calculated using one of the two alternatives in Option 6.1. The third option in this component would allow the Council to select percentages and/or specific amounts of PSC that would be allocated to the non-AFA trawl CP sector. If the Council selects this option, the PSC allowance selected will have to be within the range of alternatives considered in Amendment 80.

Initial Council review of BSAI Amendment 80 occurred in October 2005 and February 2006, and final action is scheduled for April 2006. The Council identified a preferred alternative, with several options remaining, in October. The preferred alternative under this component would base the non-AFA trawl CP sector's PSC on historical use. Should the Council take final action to establish separate PSC allocations to the non-AFA trawl CP sector, including that associated with the trawl Pacific cod fishery, the halibut and crab PSC apportioned to the remaining trawl cod sectors (all trawl except for the non-AFA trawl CP sector) would be reduced by that amount in the future specifications process.

BSAI Amendment 80 – Component 6: PSC allowance for the non-AFA trawl CP sector

Option 6.1	Apportion PSC to Non-AFA Trawl CP Sector:
*Suboption 6.1.1	Allocation based on historical usage of PSC by the non-AFA trawl CP sector, rather than the sector's allocation, with the remainder available to other sectors.
Suboption 6.1.2	Allocation based on the PSC taken in the non-AFA trawl CP 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	<p>Allocation of 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.</p> <p>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.</p> <p>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.</p> <p>Any rollover 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.</p>
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 in 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	<p>The Council can select percentages and/or amounts for PSC allocated to the non-AFA trawl CP sector. Ranges for PSC allocations to the non-AFA trawl CP sector are:</p> <p>Halibut: 68.36% - 77.22%</p> <p>Red king crab: 45.89% - 51.38%</p> <p>C. opilio: 44.45% - 50.50%</p> <p>Zone 1 C. Bairdi: 41.04% - 46.58%</p> <p>Zone 2 C. Bairdi: 25.22% - 28.14%</p>
<p>If Am. 85 is implemented prior to Am. 80, the non-AFA trawl CP sector would receive an allocation of PSC in accordance with Am. 85. Upon implementation of Am. 80, no allocation of PSC will be made to the non-AFA trawl CP sector under Am. 85.</p>	
<p>*Part of the Council's preferred alternative as identified in October 2005 and February 2006.</p>	

3.4.2.6 Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

There is no further apportionment of the cod trawl fishery group halibut and crab PSC to the trawl sectors (trawl CV sector and trawl CP sector).

Component 7 is related to Component 6 above. Component 6 addresses the halibut and crab PSC allowances as a whole to the trawl cod fishery group; Component 7 addresses a further split of the halibut and crab allowances among the various trawl sectors. **Under the no action alternative (Alternative 1), there is no further apportionment of the cod trawl fishery group halibut and crab PSC allowance to the trawl sectors.** Note that under Alternative 1, the only two trawl sectors are the trawl CV sector and the trawl CP sector; thus, these two sectors would continue to share the same halibut and crab PSC for the trawl cod fishery group. Note that while this amendment does not propose a further split of PSC between the trawl sectors, BSAI Amendment 80 proposes a separate apportionment of halibut and crab PSC to the non-AFA trawl CP sector, including that associated with the Pacific cod fishery. This issue is described in Component 6 above. Thus, regardless of the action taken under this amendment, future action under Amendment 80 may establish separate halibut and crab PSC apportionments for the non-AFA trawl CP sector.

The current process of allocating PSC to the various gear sectors in the Pacific cod fishery is presented in the discussion of Component 6. The current annual halibut and crab PSC allowances for the BSAI Pacific cod trawl fishery are provided above in Table 3-44.

Halibut PSC

PSC limits in the BSAI are not seasonally allocated among the Pacific cod trawl A, B and C seasons because most of the harvest occurs from January through April. In most recent years, the trawl cod fishery group has ended with unutilized PSC for halibut. Typically after the end of July, NOAA Fisheries allocates 'left over' halibut PSC from the trawl cod fishery group to other trawl fisheries. At that time of year, the trawl fisheries with remaining TAC are typically the yellowfin sole and flathead sole fisheries. Utilizing halibut PSC 'leftover' from the trawl Pacific cod fishery has allowed managers to keep the fishery for yellowfin sole and/or flathead sole open longer and achieve a higher proportion of the TAC for the respective species than would have been possible without the halibut PSC reallocations.

The history of halibut PSC mortality in the directed BSAI Pacific cod trawl fishery is shown in for the period 1995 through 2003 in Table 3-49. This past history shows the pattern of use by all of the trawl sectors in the BSAI Pacific cod fishery. During 1995–2003, the annual average halibut mortality in the trawl sectors has been: non-AFA trawl CPs – 458.7 mt; AFA trawl CPs – 20.8 mt; and trawl CVs – 736.5 mt. The annual total for the average halibut PSC harvest for these three sectors totals 1,216 mt, considerably lower than the trawl sector limit of 1,434 mt per year. While historical use of PSC is not being used for assigning PSC under the options proposed in this amendment, the historical use provides an important benchmark showing the PSC needs for the fishery.

Due to data limitations, it was not possible to break out the AFA and non-AFA components for the trawl CV sector. Instead, both are reported in the sector category of 'Trawl CV All'. The disaggregated data are only currently available for 2003. For that year, the combined halibut mortality for all trawl CVs was 782.5 metric tons. Of that total, the non-AFA trawl CV sector share was 139.6 mt and the AFA trawl CV

share was 643.0 mt. One year does not provide a long-term benchmark for the respective use levels of PSC halibut between these two sectors, but the data for 2003 provides at least one point of reference.

Table 3-49 BSAI PSC halibut mortality (mt) by trawl sector, 1995–2003

Sector	Year	Annual/Sector Totals	Sector	Year	Annual/Sector Totals
non-AFA Trawl CP	1995	352.05	Trawl CV All	1995	962.14
	1996	280.24		1996	1,294.56
	1997	323.21		1997	917.43
	1998	350.61		1998	792.99
	1999	730.53		1999	605.45
	2000	420.77		2000	499.75
	2001	404.63		2001	261.92
	2002	598.27		2002	511.88
	2003	668.33		2003	782.51
	Totals '95-'03	4128.64		Totals '95-'03	6,628.63
	Sector average/year	458.74		Sector average/year	736.51
AFA Trawl CP	1995	39.32			
	1996	29.19			
	1997	15.03			
	1998	19.59			
	1999	28.08			
	2000	14.82			
	2001	*			
	2002	*			
	2003	*			
	Totals '95-'03	187.29			
	Sector average/year	20.81			

Source: NPFMC PSC data files, August 2005.

*Individual data cannot be released due to confidentiality concerns.

Crab PSC

Table 3-50 shows the PSC mortality for red king crab by the various Pacific cod fishery trawl sectors from 1995–2003. As noted above, the current BSAI PSC limit for red king crab is 26,563, a limit that has not been reached in most years. However, the 2002 trawl CP fishery A season was closed due to PSC catch of red king crab, so it can be a potential issue in the fishery.

During 1995–2002, the annual average PSC harvest of red king crab has been: non-AFA trawl CPs – 4,730 crab; AFA trawl CPs – 166 crab; and trawl CVs – 1,114 crab. The annual total for the average red king crab PSC for these three sectors totals 6,010 crab, considerably below the PSC limit red king crab of 26,563. In 2002, both the trawl CP sector and the trawl CV Pacific cod A seasons were closed by red king crab PSC harvest.

Table 3-50 BSAI PSC red king crab mortality (in # crab) by trawl sector, 1995-2002

Sector	Year	Annual/Sector Totals	Sector	Year	Annual/Sector Totals
non-AFA Trawl CPs	1995	2,303	AFA Trawl CPs	1995	84
	1996	2,772		1996	68
	1997	1,539		1997	0
	1998	1,853		1998	20
	1999	7,200		1999	139
	2000	4,328		2000	59
	2001	2,241		2001	4
	2002	15,600		2002	955
	Totals '95-'02 Sector average/year	37,838 4,730		Totals '95-'02 Sector average/year	1,328 166
Trawl CVs All	1995	1,047	AFA Nine	1995	198
	1996	539		1996	33
	1997	672		1997	0
	1998	1,539		1998	234
	1999	602			
	2000	621			
	2001	197			
	2002	3,699			
	Totals '95-'02 Sector average/year	8,916 1,114		Totals '95-'98 Sector average/year	465 116

Source: NPFMC, PSC data files, August 2005.

Table 3-51 shows the BSAI Zone 1 and Zone 2 PSC harvests by sector for the years 1995 through 2002. During 1995–2002, the annual average PSC harvest of bairdi Tanner crab in Zone 1 has been non-AFA trawl CPs – 72,391 crab; AFA trawl CPs – 469 crab; and trawl CVs – 59,810 crab. The annual total for the average Zone 1 bairdi PSC harvest for these three sectors has totaled 132,670 crab, considerably below the current Zone 1 bairdi PSC limit of 183,112. From 1995–2002, the Pacific cod fishery was closed by zone 1 bairdi PSC only in 1997.

Table 3-51 BSAI Bairdi zone 1 and zone 2 Bairdi mortality, 1995–2002

Sector	BSAI PSC Bairdi Zone 1 Mortality by Trawl Sector (number of crab)		BS BSAI PSC Bairdi Zone 2 Mortality by Trawl Sector (number of crab)	
	Year	Annual/Sector Totals	Year	Annual/Sector Totals
non-AFA Trawl CPs	1995	93,196	1995	13,536
	1996	66,531	1996	6,729
	1997	109,199	1997	52,729
	1998	55,192	1998	13,513
	1999	66,546	1999	24,296
	2000	45,710	2000	16,254
	2001	38,019	2001	19,339
	2002	104,741	2002	57,972
	Totals '95-'02	579,132	Totals '95-'02	204,366
	Sector average/year	72,391	Sector average/year	25,546
AFA Trawl CPs	1995	1,779	1995	3,229
	1996	1,194	1996	299
	1997	0	1997	4,245
	1998	64	1998	1,022
	1999	93	1999	34
	2000	142	2000	1,480
	2001	0	2001	68
	2002	481	2002	3,103
	Totals '95-'02	3,753	Totals '95-'02	13,480
	Sector average/year	469	Sector average/year	1,685
Trawl CVs All	1995	59,810	1995	23,497
	1996	58,697	1996	29,732
	1997	28,222	1997	23,324
	1998	9,950	1998	24,072
	1999	12,510	1999	10,459
	2000	9,527	2000	8,751
	2001	6,823	2001	6,011
	2002	39,328	2002	29,161
	Totals '95-'02	224,868	Totals '95-'02	155,007
	Sector average/year	59,810	Sector average/year	19,376
AFA Nine	1995	19,975	1995	2,753
	1996	1,942	1996	1,675
	1997	49	1997	6,101
	1998	0	1998	26
	Totals '95-'98	21,967	Totals '95-'98	10,555
	Sector average/year	5,492	Sector average/year	2,639

Source: NPFMC, PSC data files, August 2005.

During 1995–2002, the annual average PSC harvest of bairdi crab in Zone 2 has been non-AFA trawl CPs – 25,546 crab; AFA trawl CPs – 1,685 crab; and trawl CVs – 19,376 crab. The annual total for the average Zone 2 bairdi PSC harvest for these three sectors has totaled 46,607 crab, well below the current Zone 2 bairdi PSC limit of 324,176.

In most years, the trawl Pacific cod fishery does not reach the bairdi PSC limits. However, as discussed in Alternative 2, sector allocations of PSC for bairdi will divide the Zone 1 and Zone 2 bairdi limits into smaller amounts. If future resource shifts or future changes in fisheries conditions result in higher bycatch amounts, the bairdi limit could become more important than it has been in the past.

Table 3-52 shows the BASI mortality for *C. opilio* by trawl sector for the years 1995–2002. The current PSC limit for *C. Opilio* is 139,331 crab within *C. opilio* bycatch limitation zone (COBLZ) zone, comprised of management areas 513, 524, 531, 533, and 534 (shown in Figure 3-14). The annual average PSC harvest of *C. opilio* crab within the COBLZ zone during the 1995–2002 period has been: non-AFA trawl CPs – 34,645 crab; AFA trawl CPs – 189 crab; and trawl CVs – 6,768 crab. The annual total for the average PSC harvest for these three sectors has totaled 41,602 crab, well below the current COBLZ PSC limit of 139,331.

Table 3-52 BSAI PSC *C. Opilio* mortality (# of crab) by trawl sector, 1995–2002

Sector	Year	Annual/Sector Totals			
non-AFA Trawl CPs	1995	1,599	AFA Trawl CPs	1995	707
	1996	29,501		1996	46
	1997	66,019		1997	360
	1998	16,194		1998	249
	1999	36,507		1999	0
	2000	53,193		2000	63
	2001	7,804		2001	89
	2002	66,339		2002	0
	Totals '95-'02	277,156		Totals '95-'02	1,514
	Sector average/year	34,645		Sector average/year	189
Trawl CVs All	1995	3,832	AFA Nine	1995	6,928
	1996	12,171		1996	410
	1997	2,681		1997	1,216
	1998	27,622		1998	0
	1999	1,810		Totals '95-'98	8,553
	2000	3,668		Sector average/year	2,138
	2001	1,857			
	2002	499			
	Totals '95-'02	54,141			
	Sector average/year	6,768			

Source: NPFMC, PSC data files, August 2005.

Effect of Component 7

Under Alternative 1, the halibut and crab PSC apportioned to the cod trawl fishery group would continue to be determined in the annual specifications process and established in Federal regulation (50 CFR 679.21(e)). These PSC allowances would not be further divided among the four trawl sectors.

Under current BSAI Pacific cod TAC and halibut and crab PSC allowances, it appears that the trawl cod fishery group is not typically constrained by its halibut and crab bycatch limits. (Note also that reaching a crab bycatch allowance closes the specified location to fishing, but it does not close directed fishing altogether.) Over the past several years, both the trawl CV and CP sector's directed Pacific cod fishery has closed most often due to either reaching the seasonal TAC, because the regulatory season has ended, or in order to avoid exceeding the halibut mortality limit.⁵⁹ Closures due to reaching the halibut mortality limit are not as clear, however, due to the fact that PSC has been managed in the past with sufficient flexibility to shift PSC among trawl fishery groups when necessary to fully prosecute an allocation (e.g. shift of halibut PSC from the cod trawl fishery group to a flatfish trawl fishery group).

During 1995–2003, the annual total for the average halibut PSC harvest for the trawl sectors totaled 1,194 mt, considerably lower than the trawl sector limit of 1,434 mt per year. It appears that under Alternative 1, the trawl sectors would continue to have sufficient halibut PSC to prosecute their BSAI Pacific cod fisheries.

Also during 1995–2002, the annual average PSC harvest of red king crab by the trawl sectors has been 6,010 crab, considerably below the PSC limit red king crab of 26,563. Similarly, the annual total for the average Zone 1 bairdi PSC harvest for the trawl sectors totaled 132,670 crab, well below the current Zone 1 bairdi PSC limit of 183,112 crab. The annual total for the average Zone 2 bairdi PSC harvest for the trawl sectors totaled 46,607 crab, well below the current Zone 2 bairdi PSC limit of 324,176 crab. The annual total for the average PSC harvest for the trawl sectors totaled 41,602 crab, well below the current COBLZ PSC limit of 139,331. In most years, the trawl Pacific cod fishery does not reach the bairdi PSC limits.

Under Alternative 1, in which all trawl sectors continue to share PSC allowances, there is the possibility that one sector will realize higher PSC mortality in a given year, resulting in all trawl sectors closing directed Pacific cod fishing. The data indicate that the cod trawl sectors overall have not been in jeopardy of reaching their crab or halibut mortality caps, but halibut is likely to continue to be the prohibited species at issue for the trawl fisheries in general. If the non-AFA trawl CP sector receives the halibut and crab PSC associated with all of its fisheries based on historical catch under Amendment 80, the halibut PSC allowance remaining for the other three trawl sectors may be relatively small and serve to constrain the trawl cod fishery more so than in the past.

⁵⁹While 2005 data are preliminary, the Pacific cod trawl fishery was closed August 18 to avoid exceeding its halibut mortality limit. In 2004, the cod trawl fisheries slightly exceeded their halibut bycatch allowance, although other trawl fisheries groups were well below their typical halibut mortality. In 2003, the directed Pacific cod trawl fisheries were closed in late September, in order to prevent exceeding the halibut bycatch allowance. In 2002, the directed Pacific cod trawl fisheries were closed October 29 for the same reason; note, however, that the last regulatory season ends November 1. Also in 2002, NMFS closed directed fishing for Pacific cod by trawl vessels in Bycatch Limitation Zone 1 on July 1, in order to prevent exceeding the bycatch allowance of red king crab specified for the trawl Pacific cod fishery in Zone 1.

3.4.2.7 Component 8: Apportionment of cod non-trawl halibut PSC

Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The non-trawl halibut PSC allowance is typically 833 mt, which is apportioned between the Pacific cod and 'other non-trawl' fisheries. Generally, about 775 mt is apportioned to the cod non-trawl fishery group. No further apportionment of the halibut bycatch allowance is made between the hook-and-line CP sector and the hook-and-line CV sector.

Currently, Federal regulations (50 CFR 679.21(e)(2)(i)) establish the halibut PSC limit in the non-trawl groundfish fisheries at 900 mt of halibut mortality. Of this amount, 7.5 percent (67 mt) is allocated as a prohibited species quota reserve to the CDQ Program. During the annual TAC specifications process, NOAA may apportion the remaining halibut PSC limit (833 mt) for non-trawl gear into bycatch allowances for nontrawl fishery categories based on each category's proportional share of the anticipated bycatch mortality of halibut during a fishing year and the need to optimize the amount of total groundfish harvested under the non-trawl halibut PSC limit. The sum of all bycatch allowances made to each non-trawl fishery equal the PSC limit (50 CFR 679.21(e)(4)(i)). The 2005 and 2006 bycatch allowances for the non-trawl fisheries are repeated in Table 3-53. Unlike the trawl fisheries, the non-trawl fisheries do not have herring or crab bycatch allowances.

Table 3-53 2005 and 2006 Prohibited species bycatch allowances for the BSAI non-trawl fisheries

Non-trawl fisheries	Halibut mortality (mt) BSAI
Pacific cod – Total	775
January 1 – June 10	320
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

As noted previously, 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 extrapolated to unobserved vessels, a minimum of three different weekly observer reports are required before an average rate is used. NMFS monitors PSC limits for the non-CDQ and CDQ groundfish fisheries using PSC rate estimates. Reaching a halibut PSC limit results in closure of a fishery season, even if the groundfish TAC remains unharvested.

The BSAI groundfish pot and jig fisheries are exempt from halibut PSC limits, so the only non-trawl cod fishery that is subject to a halibut PSC limit is hook-and-line. For the past five years, the halibut PSC limit for the non-trawl cod fishery has been 775 mt (see Table 3-54). In the past four years (2002 – 2005), the halibut PSC limit for the non-trawl cod fisheries has not been reached, averaging about 66% taken. In 1999–2001, the BSAI non-trawl cod fisheries used about 84%, 106%, and 100% of the halibut bycatch limit, respectively. Note that while the limit in 2000 was slightly exceeded, this was due to a mid-season reapportionment of a portion of the halibut bycatch allowance specified for the BSAI Pacific cod hook-and-line fishery to the other BSAI non-trawl fishery category. The reapportionment was intended to allow

further harvest of other non-trawl fisheries, specifically Greenland turbot, which were constrained by the halibut allowance, without constraining the Pacific cod hook-and-line fishery. A similar mid-season reapportionment occurred in 1999 (from 748 mt to 598 mt for the BSAI non-trawl cod fishery group).

Table 3-54 Halibut mortality in the BSAI Pacific cod hook-and-line fishery, 2000 – 2005

Year	Halibut mortality in BSAI P. cod hook-and-line fisheries (mt and % of cap)	Halibut mortality cap in BSAI P. cod hook-and-line fisheries (mt)
2005	539 (70%)	775
2004	438 (56%)	775
2003	490 (63%)	775
2002	585 (75%)	775
2001	776 (100%)	775
2000	711 (106%)	673
1999	500 (84%)	598

Source: BSAI Prohibited Species Reports, 1999 – 2005, NMFS catch accounting.

Note: The halibut mortality cap in 1999 and 2000 was initially 748 mt. In both years, reallocations were made mid-season to reapportion some of the halibut bycatch mortality allowance specified for the Pacific cod hook-and-line fishery category to the other non-trawl fishery category in BSAI. This action was intended to allow the harvest of species constrained by the other non-trawl halibut bycatch mortality allowance, specifically Greenland turbot, without further restricting the hook-and-line Pacific cod fishery.

Component 8 addresses the apportionment of halibut PSC to the non-trawl cod fishery group through the annual specifications process. Currently, the halibut PSC limit (775 mt) applies to both the hook-and-line catcher processors and catcher vessels in the BSAI Pacific cod fishery. In effect, if a seasonal apportionment of halibut PSC is reached, both hook-and-line sectors would be closed for the remainder of that season. In addition, because there is no halibut PSC apportioned between June 10 and August 15, the BSAI hook-and-line cod fishery essentially cannot operate during the summer. Anecdotal evidence and public testimony indicate that the hook-and-line catcher processor sector generally supports this system, given that halibut bycatch rates increase substantially in the summer months and may risk closing the directed Pacific cod fishery prior to the Pacific cod allocation being fully harvested.

However, the hook-and-line catcher vessel sector, which is also constrained by the lack of halibut PSC apportioned to the summer season, is comprised of smaller vessels with slower catch rates and a relatively small Pacific cod allocation.⁶⁰ Given that the sector is comprised of many vessels <60', the hook-and-line catcher vessel sector may benefit from the ability to fish Pacific cod in the summer months, and thus may benefit from a halibut PSC limit separate from the hook-and-line catcher processor sector. Under Alternative 1, the halibut PSC limit would remain combined for both sectors.

The amount of PSC attributed to the Pacific cod hook-and-line catcher processor and catcher vessel sectors is provided in Section 3.3.5.8. Table 3-55 provides a summary of that data for 1999 – 2003, and calculates the halibut mortality rate per metric ton of retained BSAI Pacific cod for each hook-and-line sector. Note that the hook-and-line CV sector includes catcher vessels of any length. Table 3-55 indicates that the average halibut mortality rate for the hook-and-line CP and CV sectors during 1999 – 2003 was .0077 mt and .0129 mt per metric ton of retained Pacific cod, respectively.

⁶⁰The general hook-and-line CV sector receives an allocation of 0.15% of the BSAI Pacific cod ITAC. The <60' hook-and-line CV sector also receives an allocation equal to 0.7% of the total BSAI Pacific cod ITAC (this allocation is shared with the <60' pot CV sector). By comparison, the hook-and-line CP sector's current allocation is 40.8% of the BSAI Pacific cod ITAC.

Table 3-55 Halibut mortality rates in the BSAI Pacific cod hook-and-line sectors, 1999–2003

Year	H&L CP			H&L CV		
	halibut mortality (mt)	retained BSAI cod (mt)	halibut mortality (mt) per mt retained P. cod	halibut mortality (mt)	retained BSAI cod (mt)	halibut mortality rate per mt P. cod
1999	496	68,271	.0073	3.7	223	.0166
2000	706	75,181	.0094	5.2	443	.0117
2001	762	86,436	.0088	14.3	1,777	.0080
2002	577	79,269	.0076	8.2	375	.0218
2003	487	89,580	.0054	3.0	482	.0062
Average 1999–2003	606	79,747	.0076	6.9	660	.0129

Note that the halibut mortality limit for the BSAI Pacific cod hook-and-line fishery in 1999 and 2000 was reapportioned mid-season to 598 mt and 673 mt, respectively. In 2001 – 2003, it was 775 mt.

Generally, halibut mortality is not a factor in closing the hook-and-line Pacific cod fisheries, thus, the catcher vessel sector has not been closed due to a shared halibut PSC limit for the seasons to which halibut PSC is apportioned. The primary effect on the hook-and-line CV sector is the lack of halibut PSC apportioned to the summer months (June 10 – August 15). Note, however, that the hook-and-line A season allocation of Pacific cod is January 1–June 10, and the B season is June 10 – December 31. Note also that in recent years, the lack of halibut PSC during the summer months has not prevented either the hook-and-line CP or CV sector from harvesting its entire allocation. Thus, while the hook-and-line CV sector may benefit from a separate halibut PSC limit in order to better apportion its anticipated halibut bycatch mortality during the fishing year, it does not appear that the status quo prevents the sector from prosecuting its allocation.

3.4.3 ALTERNATIVE 2: Modify BSAI Pacific Cod Allocations

3.4.3.1 Component 1: Sectors for which allocations will be established

Component 1: Sectors for which allocations will be established

Catch history will be calculated for the following sectors. The Council may choose to establish allocations for combined sectors; however each sector's catch history will be calculated separately.

- AFA Trawl CPs (AFA 20)¹
 - Suboption a: Include catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
 - Suboption b: Exclude catch history of the nine trawl CPs whose claims to catch history have been extinguished by Section 209 of the AFA
- Non-AFA Trawl CPs
- AFA Trawl CVs
- Non-AFA Trawl CVs
- Hook-and-line CPs
- Hook-and-line CVs $\geq 60'$
- Pot CPs
- Pot CVs $\geq 60'$
- Hook-and-line and pot CVs $< 60'$
- Jig CVs

Eligibility criteria for non-AFA trawl catcher vessels to be included in the AFA CV sector for purposes of the Pacific cod allocations:

Option 1.1 The holder of a license that arose from a vessel/history that made a minimum of 100 mt of Pacific cod landings during each of the years 1995 – 1997.

¹Refers to the 20 trawl catcher processors listed in Section 208(e) of the American Fisheries Act (AFA).

Component 1 identifies the sectors for which BSAI Pacific cod allocations will be established. Under Alternative 2, therefore, it is assumed that ten separate sectors could be established for the purposes of the BSAI Pacific cod allocations. While the Council may thus choose to establish a separate allocation for each sector listed, the component explicitly states that the Council is not prohibited from establishing allocations for combined sectors. (Note that Component 2 includes explicit options to establish a combined allocation for the jig CV sector and the $< 60'$ fixed gear CV sector.)

Six of the ten sectors identified in Component 1 are the same sectors that currently receive a BSAI Pacific cod allocation; the only newly established sectors would be the four trawl sectors. As noted previously, the overall trawl sector has had a separate allocation from the non-trawl sectors since 1994, and the trawl CP and trawl CV sectors have had separate allocations since 1997. Alternative 2 proposes to split the current trawl sectors into the following sectors: AFA trawl CP; non-AFA trawl CP; AFA trawl CV; and non-AFA trawl CV.

AFA Sideboards

As stated under Alternative 1, although separate allocations are not currently established for the AFA CP and AFA CV sectors, the implementing regulations for the AFA established sideboards on participation by AFA-qualified vessels in the BSAI Pacific cod fishery. The 20 listed AFA CPs are subject to an annual

BSAI Pacific cod sideboard limit (10,936 mt in 2006).⁶¹ AFA catcher vessels are also subject to an annual sideboard limit (35,341 mt in 2006) for BSAI Pacific cod.⁶² The Council elected to exempt AFA catcher vessels from the Pacific cod sideboards if their annual BSAI pollock landings averaged less than 1,700 mt from 1995 – 1997 and they made 30 or more landings of BSAI Pacific cod during that time period. The rationale for these exemptions was that many of the AFA catcher vessels with relatively low catch histories of BSAI pollock have traditionally targeted Pacific cod rather than pollock during the January through March BSAI Pacific cod fishery. The Council noted that restricting such vessels in the Pacific cod fishery would be inequitable given their disproportionate history of participation in the Pacific cod fishery and because their historic dedication to Pacific cod fishing in the winter months accounts for their lower catch histories of BSAI pollock during the AFA qualifying years.

In addition, AFA CVs with mothership endorsements are exempt from BSAI Pacific cod catcher vessel sideboard directed fishing closures after March 1 of each fishing year. The Council made this recommendation for several reasons. It was noted at the time that in most years, the BSAI Pacific cod fishery was largely concluded by March 1 and fishing is often less productive in terms of catch per unit effort after that date. At the time, only two non-AFA catcher vessels had recent history in BSAI Pacific cod, and the Council believed that some additional vessels might be needed after this date to completely harvest the TAC so that processors would not be faced with a slow trickle of Pacific cod deliveries that were not economically viable to process. The Council thus recommended that AFA catcher vessels with mothership endorsements be allowed to re-enter the BSAI Pacific cod fishery after March 1 because the mothership sector received a relatively smaller pollock quota under the AFA (10% of the BSAI pollock directed fishing allowance) and mothership catcher vessels are more likely to be finished with their pollock operations by that date (65 FR 4529; Jan. 28, 2000).

Of the 111 AFA CVs, 9 are exempt from the cod sideboards under the 1,700 mt exemption and 19 have mothership endorsements and are therefore exempt after March 1. The remaining 83 AFA CVs are subject to BSAI Pacific cod sideboard limits at all times.

Note that the cod sideboards operate as harvest limits for the AFA CP and CV sectors; they provide a cap that the AFA sectors must not exceed, but do not guarantee an allocation up to that amount. Currently, the AFA CPs and the AFA CVs that deliver to CPs operate under an inter-cooperative agreement (“*Cooperative Agreement Between Offshore Pollock Catchers Cooperative and Pollock Conservation Cooperative*”) to facilitate management and accounting between the two cooperatives. Similarly, the AFA CV fishery is in part managed by the annual inter-cooperative agreement pursuant to a cod allocation agreement adopted by all AFA CV cooperatives in 2000. In general, this agreement clarifies the exempt AFA CVs and allocates the AFA cod sideboards among the nine cooperatives, which provides the basis for the individual cooperatives to allocate at the individual vessel level. The agreement states that an overharvest of a sideboard limit by any member of a cooperative shall subject that member to a penalty. Thus, while the AFA authority is limited to pollock, the cooperative structure has provided a mechanism by which the AFA vessels can also manage Pacific cod within the AFA CP and CV sectors.

⁶¹The Pacific cod sideboard (harvest limit) for AFA trawl CPs is equal to the 1997 aggregate retained catch of Pacific cod by AFA CPs listed in paragraphs 208(e)(1) through (20) and 209 of the AFA in non-pollock target fisheries divided by the amount of Pacific cod caught by trawl CPs in 1997 multiplied by the Pacific cod TAC available for harvest by trawl CPs in the year in which the harvest limit will be in effect (50 CFR 679.64 (a)(1)(ii)).

⁶²The AFA CV sideboard (harvest limit) for BSAI Pacific cod is equal to the retained catch of BSAI Pacific cod in 1997 by AFA CVs not exempted under paragraph (b)(2)(i)(A) of 50 CFR 679.64 divided by the BSAI Pacific cod TAC available to catcher vessels in 1997; multiplied by the BSAI Pacific cod TAC available to catcher vessels in the year or season in which the harvest limit will be in effect.

Under Alternative 2, the AFA CP and AFA CV BSAI Pacific cod sideboards would be replaced by a direct allocation to each sector. While the cod allocation agreement of 2000 and the annual inter-cooperative agreement for AFA CV cooperatives are not Federally regulated, it is assumed that these agreements would need to be revisited by the industry in order to continue management of the BSAI Pacific cod harvests by AFA catcher vessels in light of this proposed change. Currently, because the BSAI Pacific cod harvests of exempt vessels (and the non-AFA catcher vessels) are not constrained by the cod sideboard, the allocations made under the cod allocation agreement are net of the amounts reserved for such vessels (Cod Allocation Agreement, 2000). In addition, the term of the cod allocation agreement is stated as taking effect January 1, 2001, and terminating on the earlier of:

- i. expiration or modification of the AFA pollock allocations among the inshore, mothership, and catcher processor sectors; or
- ii. termination of either of the mothership catcher vessel or “1700 mt” cod sideboard exemptions; or
- iii. rationalization of the BS Pacific cod trawl catcher vessel fishery, whether through legislation or NMFS regulations.

Given the above, should a direct allocation of BSAI Pacific cod be established for the AFA CV sector and replace the current sideboard, the current cod allocation agreement would terminate. Thus, should a direct allocation be established for the AFA CV sector under Alternative 2, one important component of any future cod agreement may be how the AFA CV sector cod allocation would be managed between AFA CVs that were previously subject to the cod sideboards and AFA CVs that were previously exempt. As stated previously, 9 AFA CVs are exempt from the cod sideboards under the 1,700 mt exemption and 19 have mothership endorsements and are therefore exempt after March 1. The remaining 83 AFA CVs are currently subject to BSAI Pacific cod sideboard limits. This issue does not exist for the AFA CP sector, as all AFA CPs are subject to the AFA CP BSAI Pacific cod sideboard.

Concern has been expressed by members of the AFA CV sector that replacing the cod sideboard with a direct cod allocation to the AFA CV sector would significantly disrupt the current internal cooperative management system. There are several potential actions that could be taken in light of the proposed action, including creation of a sideboard for previously non-exempt AFA CVs within the AFA CV allocation that would protect the harvest share of the previously exempt AFA CVs. The basis for the new sideboard could continue to be 1997 cod history, or could be determined on some other basis among the cooperatives. A second option may be to create separate Pacific cod allocations for the AFA CV non-exempt sector and the AFA CV exempt sector under this amendment package. In effect, this would create an additional sector split than is currently proposed under Alternative 2, Component 1. A third possibility is to continue a combined trawl CV allocation to the AFA CV and non-AFA CV sectors, mirroring the status quo for these particular sectors. In effect, while the amount of the allocation to the trawl CV sector could change under this amendment, the structure of the combined allocation and the sideboards could remain the same.

Of these three options, creating a new sideboard within the new AFA CV allocation would not require Federal regulation to be implemented. The AFA CV sector and their associated cooperatives could negotiate this harvest limit (sideboard) among themselves and establish a new cod allocation agreement that would continue the internal management system currently in operation. The risk of this option is the ability of one group to delay a final cod agreement and create instability for the sector as a whole in the meantime. The likelihood of this occurring is unknown. According to the current inter-cooperative manager, a key factor in the Cod Allocation Agreement of 2000 was that each catcher vessel cooperative had to reach consensus before signing off on the agreement. At the inter-cooperative level, each cooperative designates one (or two) delegates that participate in the inter-cooperative meetings. These delegates develop a ‘preferred alternative,’ which is then reviewed by each individual cooperative for rejection or approval. If any cooperative rejects the preferred alternative, the process continues, with

revisions or subsequent alternatives developed by the inter-cooperative delegates and reviewed by the individual cooperatives, until consensus is reached. While the internal bylaws vary among the cooperatives, in the case of allocation issues, it appears that the cooperatives function by member consensus, providing for a lengthy negotiation process (J. Gruver, pers. comm., 9/12/05).

One should note, however, that both sides would have incentives to form an agreement, in order to allocate cod at the cooperative level. The benefits of managing cod through a cooperative agreement are likely much greater than the alternative of NMFS managing the fishery at the aggregate AFA CV allocation level. The benefits are similar to those associated with cooperative management for any fishery: cooperatives can manage the cod allocations more narrowly, continuing the fishery until it is very close to reaching the allocation; vessels would be able to fish slower and more efficiently under a cooperative agreement, since it would not be necessary to ‘race’ for cod within the sector; and associated bycatch in the cod fishery may be reduced. These benefits may represent sufficient incentive to the AFA CV sector to negotiate a new inter-cooperative cod agreement should a distinct AFA CV allocation be established.

Should the Council want to create separate Pacific cod allocations for the ‘exempt’ and ‘non-exempt’ subsectors of the AFA CV sector, it would need to explicitly add this option to the current amendment package, including the catch history basis for the allocations. Under this type of option, it would be necessary to determine the subsector in which the CVs delivering to motherships would be included. The catch history of these vessels is currently included in the existing sideboard cap for AFA CVs, yet these vessels are exempt from that sideboard after March 1. If separate allocations were made to the ‘exempt’ AFA CV and ‘non-exempt’ AFA CV sectors, it is assumed that the catch history associated with the catcher vessels delivering to motherships would be attributed to the subsector of which they are a part.

Finally, should the Council prefer to continue a Pacific cod allocation to the trawl CV sector overall and maintain the current sideboards, that option is currently provided under Alternative 2, Component 1. The primary disadvantage of this potential action is that the AFA CV sector would not have a direct allocation, and thus the potential would continue for the entire trawl CV allocation to be reached prior to the AFA (non-exempt) CV sector reaching its Pacific cod sideboard limit. Note that the non-exempt AFA CVs have not harvested their entire cod sideboard since the AFA was implemented, thus, it may appear that neither sector would be substantially affected by maintaining the combined allocation to the trawl CV sector. However, public testimony may provide additional insight as to the desire and need for separate AFA CV and non-AFA CV allocations.

Table 3-56 provides the amount of Pacific cod harvested by the AFA CP fleet and the AFA CV fleet compared to their annual sideboard amounts (also see Section 1.1.1.1). Generally, vessels fishing with trawl gear prefer participating in the cod fishery in the winter and early spring, as opposed to the second half of the year. This is primarily because catch rates decline and bycatch of non-target species and PSC increases in the second half of the year. Thus, transfers of BSAI Pacific cod sideboard amounts are common between cooperatives during the late winter and spring fishery, in order to allow participating member vessels to harvest cod during the January – April (A season) timeframe and allow other vessels to finish pollock.

Table 3-56 Harvest of BSAI Pacific cod sideboards (mt) in the AFA sectors, 2000–2004

Year	AFA CP			AFA CV		
	Sideboard (mt)	Amt harvested (total mt)	Percent harvested	Sideboard (mt)	Amt harvested (mt)	Percent harvested
2000	11,034	3,313	30%	30,588	25,964	85%
2001	10,748	3,999	37%	31,480	11,477	36%
2002	11,434	3,586	31%	37,429	23,046	62%
2003	10,870	5,396	50%	38,831	29,625	76%
2004	12,080	5,271	44%	40,328	26,863	67%
Ave 2000–04	11,233	4,313	38%	35,731	23,395	65%

Source: 2000 – 2002 data are from shoreside electronic logbook, which contains no estimates of at-sea discards. 2003 – 2004 data are from NMFS catch accounting system (includes estimates of at-sea discards). This includes the total BSAI P.cod harvest by non-exempt AFA CVs and harvest by AFA CVs delivering to motherships before March 1.

Suboption A and B

Component 1 provides two suboptions to include or exclude catch history from the ‘AFA-9’, the nine catcher processors listed in Section 209 of the AFA who were made permanently ineligible for fishery endorsements. Section 209 also extinguishes all claims associated with such vessels that could qualify the owners of the vessels for any limited access system permit:

SEC. 209. LIST OF INELIGIBLE VESSELS.

Effective December 31, 1998, the following vessels shall be permanently ineligible for fishery endorsements, and any claims (including relating to catch history) associated with such vessels that could qualify any owners of such vessels for any present or future limited access system permit in any fishery within the exclusive economic zone of the United States (including a vessel moratorium permit or license limitation program permit in fisheries under the authority of the North Pacific Council) are hereby extinguished:

- (1) AMERICAN EMPRESS (United States official number 942347);*
- (2) PACIFIC SCOUT (United States official number 934772);*
- (3) PACIFIC EXPLORER (United States official number 942592);*
- (4) PACIFIC NAVIGATOR (United States official number 592204);*
- (5) VICTORIA ANN (United States official number 592207);*
- (6) ELIZABETH ANN (United States official number 534721);*
- (7) CHRISTINA ANN (United States official number 653045);*
- (8) REBECCA ANN (United States official number 592205); and*
- (9) BROWNS POINT (United States official number 587440).*

NOAA GC guidance was requested in February 2004 regarding whether the 20 catcher processors listed in Section 208(e) of the AFA could claim the non-pollock fishing history of the nine catcher processors removed from the fishery. This issue was originally raised relative to BSAI Amendment 80. **NOAA GC’s response (dated June 4, 2004) clarified that in making sector allocations, the Council may consider the combined non-pollock fishing history of the twenty vessels listed in Section 208(e) and the nine vessels listed in Section 209, but the allocations based upon the AFA-9 history may not be made to the owners of those vessels and any allocation must comply with the overall caps set forth under Section 211(b) (sideboards in non-pollock fisheries).** NOAA GC confirmed this opinion in February 2005.⁶³

⁶³Letter from Lisa Lindeman, Alaska Regional Counsel, NMFS to Chris Oliver, North Pacific Fishery Management Council. February 9, 2005.

Therefore, while the Council is not required to consider the non-pollock catch history of the AFA-9, the Council has the latitude to consider that catch history as long as it does not convey an allocation to the owners of those vessels. The decision on whether to include or exclude the BSAI Pacific cod history of the AFA-9 is an option under Component 1.

The ‘AFA 9’ vessels harvested about 16,600 mt, or 1% of the total retained BSAI Pacific cod harvest during the years on which the allocations could be based under this amendment (1995–2003). Recall that those 9 vessels were removed from the fishery in 1999, thus only harvest from 1995–1998 exists (see Table 3-57).

Table 3-57 AFA 9 retained catch (mt) in the BSAI Pacific cod fishery, 1995–1998

Year	Harvest (mt)	# unique vessels
1995	4,546	6
1996	4,067	6
1997	4,015	7
1998	3,966	7
Total	16,594	8

Source: WPR reports, 1995–1998.

If the 16,600 mt from these nine vessels is *included* as part of the AFA catcher processor sector’s history, this sector’s average share of the total harvest during this time period is 2.7% (Table 3-58). If the 16,600 mt from these nine vessels is *excluded* from the total harvest history altogether, each sector’s annual harvest share would change as shown in Table 3-59. In particular, the AFA CP sector’s average share of the total harvest during this time period decreases to 1.7%.

Table 3-58 BSAI Pacific cod annual harvest share by sector (including AFA 9 catch history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	5.0%	3.8%	4.0%	5.1%	2.6%	1.1%	0.9%	0.8%	0.8%	23.9%	2.7%
AFA Trawl CVs	22.5%	26.5%	25.0%	22.8%	22.9%	22.4%	12.3%	20.3%	18.5%	193.2%	21.5%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	49.6%	42.8%	50.9%	50.8%	47.4%	46.6%	56.7%	47.7%	49.5%	441.9%	49.1%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.1%	9.2%	9.2%	13.3%	15.3%	16.0%	15.5%	17.9%	15.6%	121.1%	13.5%
Non-AFA Trawl CVs	1.8%	1.7%	1.5%	0.9%	1.2%	1.7%	2.0%	3.5%	4.2%	18.5%	2.1%
Pot CPs	2.5%	4.3%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	18.7%	2.1%
Pot CVs >60'	8.6%	11.5%	7.1%	5.1%	8.1%	10.3%	9.1%	7.5%	9.5%	76.8%	8.5%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Table 3-59 BSAI Pacific cod annual harvest share by sector (excluding AFA 9 catch history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	2.5%	1.7%	2.2%	2.7%	2.6%	1.1%	0.9%	0.8%	0.8%	15.2%	1.7%
AFA Trawl CVs	23.1%	27.1%	25.4%	23.4%	22.9%	22.4%	12.3%	20.3%	18.5%	195.4%	21.7%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	50.9%	43.7%	51.9%	52.1%	47.4%	46.6%	56.7%	47.7%	49.5%	446.4%	49.6%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.3%	9.4%	9.4%	13.6%	15.3%	16.0%	15.5%	17.9%	15.6%	122.0%	13.6%
Non-AFA Trawl CVs	1.8%	1.8%	1.5%	1.0%	1.2%	1.7%	2.0%	3.5%	4.2%	18.6%	2.1%
Pot CPs	2.6%	4.4%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	19.0%	2.1%
Pot CVs >60'	8.8%	11.8%	7.2%	5.2%	8.1%	10.3%	9.1%	7.5%	9.5%	77.5%	8.6%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Note that the current AFA CP BSAI sideboard caps, including that for Pacific cod, were calculated using the harvest history from both the 20 eligible AFA CPs listed in Section 208(e) and the 9 vessels that were retired under Section 209 of the AFA. Section 211 of the AFA addresses the non-pollock fishing history of these vessels and provides the limits to the AFA catcher processors, as follows:

(b) Catcher/Processor Restrictions.—

(2) Bering Sea Fishing. The catcher/processors eligible under paragraphs (1) through (20) of section 208(e) are hereby prohibited from, in the aggregate—

(A) exceeding the percentage of the harvest available in the offshore component of any Bering Sea and Aleutian Islands groundfish fishery (other than the pollock fishery) that is equivalent to the total harvest by such catcher/processors and the catcher/processors listed in Section 209 in the fishery in 1995, 1996, and 1997 relative to the total amount available to be harvested by the offshore component in the fishery in 1995, 1996, and 1997;

Thus, the amount of BSAI Pacific cod that the AFA CP sector is currently allowed to harvest includes the Pacific cod catch history of the AFA-9. While this provision does not mandate that a direct allocation to the AFA CP sector include the harvest history of the AFA-9, it provides the current upper bound for the sector to date. Note that the legislative history associated with Section 209 is such that the purpose of Section 209 was to transfer a portion of the offshore pollock sector's harvest allocation to the onshore pollock sector, via the "purchase of nine pollock catcher processor vessels and their pollock fishing history."⁶⁴ In brief, in exchange for retiring the 9 vessels, and transferring the pollock catch history associated with them to the inshore sector, the owners of these vessels were paid \$90 million. The transaction did not include the purchase of the non-pollock catch history of the 9 vessels.

Representatives of the AFA CP sector have also stated that it was understood at the time that the AFA negotiations took place that the 20 AFA CPs would continue to be able to harvest non-pollock groundfish based on the non-pollock catch history of the 20 AFA CPs and the AFA-9. The AFA transferred 15% of the BSAI pollock TAC from the offshore sector to the inshore sector. As mentioned above, vessels representing 10% of the pollock TAC (the AFA-9) were bought out of the fishery through payment to the owners of those vessels. The owners of the remaining eligible AFA CPs received no buyout funds and no compensation for the remaining 5% of the pollock TAC that was transferred to the inshore sector. The only concession made to the 20 AFA CPs in exchange for relinquishing that 5% of the pollock TAC was

⁶⁴144 Cong. Record S12802 (daily edition 10/21/98). Statements by Senator Gordon.

the right to form a harvesting cooperative and the right to continue harvesting non-pollock groundfish in the BSAI up to the catch history of the 20 vessels plus the 9 vessels as per Section 211(b) of the AFA.⁶⁵

In sum, it is a policy choice for the Council as to whether to include the BSAI Pacific cod catch history from the nine vessels who were retired from the fishery. The effect of including this catch history in the AFA CP sector's catch history is that the AFA CP sector's share of the retained harvest history during 1995 – 2003 is increased from 1.7% to 2.7%. By comparison, the <60' fixed gear CV, jig CV, hook-and-line CV, non-AFA trawl CV, and pot CP sectors are unaffected. The remaining sectors are affected by 0.1%–0.5%. The effect on each sector's allocation of including the AFA-9 cod catch history is detailed under each of the options for establishing allocations in Component 2.

Lastly, note that the AFA trawl CP sector as defined under Alternative 2, Component 1 does not include the one catcher processor that harvests BSAI pollock under Section 208(e)(21) but is not listed in the AFA. This vessel is included in the non-AFA CP sector, as defined by the Consolidated Appropriations Act of 2005, and as determined by NOAA GC.⁶⁶

Option 1.1

Eligibility criteria for non-AFA trawl catcher vessels to be included in the AFA CV sector for purposes of the Pacific cod allocations:

Option 1.1	The holder of a license that arose from a vessel/history that made a minimum of 100 mt of Pacific cod landings during each of the years 1995 – 1997.
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This option would establish a threshold by which a non-AFA trawl CV could qualify to be in the AFA trawl CV sector for purposes of the BSAI Pacific cod allocations. This means that the history of a qualifying non-AFA trawl CV would be attributed to the AFA trawl CV sector's history for the purpose of determining the AFA trawl CV sector's allocation, and the qualifying non-AFA vessels would fish off that allocation.

Three vessels appear to qualify under the criteria in Option 1.1. Table 3-60 provides estimates of the total number of vessels participating in the non-AFA CV sector and that sector's aggregate harvest during 1995 – 2003. It also shows the amount of annual cod harvest that can be attributed to the three non-AFA catcher vessels that meet the criteria under Option 1.1, as well as the percentage of the sector's total harvest that is represented by those vessels each year. While Federal confidentiality rules prohibit the public use of data aggregated for less than four vessels, the three vessels that qualify under this option have approved release of harvest data for use in this analysis. Confidentiality waivers are on file with the Council and NOAA Fisheries, Alaska Region.

The three qualifying non-AFA CVs harvested an average of 54.7% of the entire non-AFA CV sector harvest of BSAI Pacific cod during 1995 – 2003. Two of these vessels fished every year over the nine year period, and one vessel fished in eight of the nine years. In 1995 – 1999 in particular, these three vessels represented about 70% of the sector's harvest on average. The LLPs associated with all three of these vessels have a BS area endorsement only.

Table 3-60 shows the potential impact on the non-AFA trawl CV sector and the AFA trawl CV sector in terms of the cod allocations established under this amendment. If Option 1.1 is selected, a substantial amount of the non-AFA trawl CV sector's harvest could be attributed to the AFA CV sector for purposes of the BSAI Pacific cod sector allocations. The resulting difference in the trawl CV sectors' allocations

⁶⁵Letter from Paul MacGregor, Mundt MacGregor L.L.P, to Lisa Lindeman, Alaska Regional Counsel, NMFS. April 23, 2004.

⁶⁶Letter from Lisa Lindeman, Alaska Regional Counsel, NMFS to Chris Oliver, NPFMC. September 8, 2005.

depends on the years selected to determine allocations under Component 2. The following section provides tables showing the potential allocations resulting from Option 1.1 in combination with the options in Component 2. Note that this option only affects the non-AFA trawl CV sector and the AFA trawl CV sector allocations.

Table 3-60 Retained harvest (mt) of non-AFA trawl catcher vessels that qualify under Option 1.1, 1995–2003

Non-AFA CV sector	1995	1996	1997	1998	1999
# Non AFA CVs total	12	17	9	12	11
Non AFA CV sector harvest (total mt)	3,190	3,317	3,177	1,541	1,669
Number of qualifying vessels that fished	3	3	3	2	3
Vessel 1 harvest (mt)	976.5	973.8	798.7	567.6	594.1
Vessel 2 harvest (mt)	1,016.0	702.2	958.5	0.0	490.0
Vessel 3 harvest (mt)	664.2	605.9	490.8	76.8	308.3
Qualifying vessels total harvest	2,656.8	2,281.9	2,248.1	644.4	1392.3
% of total non AFA CV sector harvest	83.3%	68.8%	70.8%	41.8%	83.4%
Non-AFA CV sector	2000	2001	2002	2003	total 1995 - 2003
# Non AFA CVs total	11	13	18	22	51
Non AFA CV sector harvest (total mt)	2,802	3,007	5,797	7,542	32,042
Number of qualifying vessels that fished	3	3	3	3	3
Vessel 1 harvest (mt)	661.5	968.9	1126.2	1417.0	8084.4
Vessel 2 harvest (mt)	574.9	538.8	435.4	720.7	5436.6
Vessel 3 harvest (mt)	438.7	259.0	485.6	592.7	3922.0
Qualifying vessels total harvest	1675.1	1766.8	2047.3	2730.4	17443.0
% of total non AFA CV sector harvest	59.8%	58.8%	35.3%	36.2%	54.4%

Note: Federal confidentiality rules prohibit the public use of data for <4 vessels. However, the three qualifying vessels listed above approved release of confidential harvest data for use in this analysis. Confidentiality waivers are on file with NOAA Fisheries.
Source: ADF&G fishtickets, 1995 - 2003.

Option 1.1 was proposed for analysis in public testimony by a representative of the three vessels that would qualify. These three vessels range in length from 75’ to 88’, and have been participating in the BSAI Pacific cod fishery since the 1970s, 1980s, and 1991. The vessels’ representative has asserted several times in public testimony to the Council that the BSAI Pacific cod sideboards established by the Council are not sufficient to mitigate the adverse effects caused by the increased number of AFA vessels fishing in the opening weeks of the Pacific cod fishery in the eastern Bering Sea. While the sideboards limit the AFA CV sector to their traditional harvest levels (based on 1997), these vessel owners have testified that their traditional fishing grounds are being pre-empted by the addition of larger AFA CVs that have been freed up to fish Pacific cod earlier in the year due to the AFA cooperative system.⁶⁷ Vessels that were fishing pollock at the start of the season (Jan. 20) until the end of February or early March, are now available to fish Pacific cod in the first several weeks of the season.

The vessels’ representative has testified that if the trawl CV allocation is split into separate non-AFA trawl CV and AFA trawl CV allocations, these three vessels, with significant history in the BSAI Pacific cod fishery, would rather be part of the AFA trawl CV sector for purposes of the cod allocations. This is likely due to the relative certainty associated with the number of vessels eligible to participate in the Pacific cod fishery in the AFA trawl CV sector, compared to the uncertainty associated with the number of vessels that could participate in any one year in the non-AFA trawl CV sector. Recall that while only 14 non-AFA trawl catcher vessels have retained Pacific cod harvests on average during 1995 – 2003, 50

⁶⁷Letter from Russell Pritchett to Jim Balsiger, Alaska Regional Administrator, NMFS, January 19, 2005.

LLPs have the appropriate endorsements for the holder to participate in the BSAI Pacific cod fishery with a (non-AFA) trawl catcher vessel. Only two of these LLPs are interim status.

Finally, note that Option 1.1 states that the holder of the LLP that arose from a vessel/history that met the minimum cod landings requirement would qualify under this criteria, as opposed to the vessel. This qualifies the holder of that LLP regardless of whether that LLP was earned on the vessel on which it is currently being used, or whether it was purchased by the current license holder.

3.4.3.2 Component 2: Sector allocations

For each of the years under consideration, each sector's annual harvest share will be calculated for that individual year as a percentage of the total retained legal catch by all sectors. For each of the sets of catch history years analyzed, each sector's harvest percentage will be calculated as the sector's average of the annual harvest share. For purposes of determining catch history, a sector's 'catch' means all retained legal catch (including rollovers) from both the Federal fishery and parallel fishery in the BSAI (less CDQ). This includes retained legal catch from both LLP and non-LLP vessels.

One set of years will be selected for all sectors. There is a suboption under each set of years to drop one year. Each sector would drop its worst year (smallest annual harvest share percentage for that sector). This results in an aggregate percentage greater than 100% for a set of years for all sectors combined; thus, the result would be scaled back to 100%.

In all options and suboptions, the <60' fixed gear CV sector will only fish from the direct allocation to that sector.

The BSAI Pacific cod TAC that is allocated to the sectors is TAC less the CDQ Program reserve. In addition, the annual incidental catch allowance (ICA) for fixed gear is deducted off the top from the aggregate amount of the BSAI Pacific cod TAC allocated to the fixed gear sectors combined. Pacific cod harvested incidentally in the non-Pacific cod directed BSAI fixed gear fisheries is attributed to the ICA. The ICA is determined annually by the NMFS Regional Administrator in the annual specifications process and has typically been 500 mt.

Option 2.1: 1995 – 2002

Option 2.2: 1997 – 2000

Option 2.3: 1997 – 2003

Option 2.4: 1998 – 2002

Option 2.5: 1999 – 2003

Option 2.6: 2000 – 2003

Suboption 1 (applies to Options 1 – 6): Drop one year.

Option 2.7: The Council can select percentages for cod allocated to each sector that fall within the range of percentages analyzed.

Option 2.8: Allocations (whether combined or separate) to the <60' fixed gear CV sector and jig sector shall collectively not exceed:

Suboption 1: Actual catch history percentage for jig and <60' fixed gear CVs combined (from set of years selected for all sectors under Op. 2.1 – 2.7)

Suboption 2: 2.71 % (represents 2% jig allocation plus 0.71% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 3: 3% (represents 2% jig allocation plus 1% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

Suboption 4: 4% (represents 2% jig allocation plus 2% <60' fixed gear CV allocation of non-CDQ BSAI Pacific cod TAC)

This section provides calculations of the sector allocations resulting from the options and suboptions in Component 2 and Option 1.1 in Component 1. Note that Component 2 includes twelve specific options (including the drop year provision) for determining the sector allocations to the various gear sectors identified under Component 1. In addition, Option 2.7 explicitly states that the Council can select any combination of cod allocations as long as the allocations are within the range analyzed.

There are also two suboptions (Suboptions a and b) provided in Component 1 under the AFA trawl CP sector that would allow the Council to choose whether or not to include the catch history of the nine trawl catcher processors (AFA 9) whose claims to catch history were extinguished by Section 209 of the AFA.⁶⁸ Because the AFA 9 vessels left the fishery in 1999, Suboptions a and b are only relevant to the options that include catch history prior to 1999 (Options 2.1 – 2.4). Note that, as directed under Component 2, the allocations are based on retained legal catch from both LLP and non-LLP vessels. Each sector's harvest percentage was calculated as the sector's average of the annual harvest share, as shown in Table 3-61 and Table 3-62. These percentages were used to determine each sector's allocation under the series of years in Options 2.1 – 2.6.

Table 3-61 BSAI Pacific cod annual harvest share by sector (excluding AFA 9 catch history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	2.5%	1.7%	2.2%	2.7%	2.6%	1.1%	0.9%	0.8%	0.8%	15.2%	1.7%
AFA Trawl CVs	23.1%	27.1%	25.4%	23.4%	22.9%	22.4%	12.3%	20.3%	18.5%	195.4%	21.7%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	50.9%	43.7%	51.9%	52.1%	47.4%	46.6%	56.7%	47.7%	49.5%	446.4%	49.6%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.3%	9.4%	9.4%	13.6%	15.3%	16.0%	15.5%	17.9%	15.6%	122.0%	13.6%
Non-AFA Trawl CVs	1.8%	1.8%	1.5%	1.0%	1.2%	1.7%	2.0%	3.5%	4.2%	18.6%	2.1%
Pot CPs	2.6%	4.4%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	19.0%	2.1%
Pot CVs >60'	8.8%	11.8%	7.2%	5.2%	8.1%	10.3%	9.1%	7.5%	9.5%	77.5%	8.6%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Table 3-62 BSAI Pacific cod annual harvest share by sector (including AFA 9 catch history), 1995–2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
<60 HAL/Pot CVs	0.5%	0.1%	0.0%	0.0%	0.1%	0.2%	0.7%	0.9%	1.0%	3.5%	0.4%
AFA Trawl CPs	5.0%	3.8%	4.0%	5.1%	2.6%	1.1%	0.9%	0.8%	0.8%	23.9%	2.7%
AFA Trawl CVs	22.5%	26.5%	25.0%	22.8%	22.9%	22.4%	12.3%	20.3%	18.5%	193.2%	21.5%
Jig CVs	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	1.1%	0.1%
Longline CPs	49.6%	42.8%	50.9%	50.8%	47.4%	46.6%	56.7%	47.7%	49.5%	441.9%	49.1%
Longline CVs >60'	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.9%	0.1%	0.1%	1.3%	0.1%
Non-AFA Trawl CPs	9.1%	9.2%	9.2%	13.3%	15.3%	16.0%	15.5%	17.9%	15.6%	121.1%	13.5%
Non-AFA Trawl CVs	1.8%	1.7%	1.5%	0.9%	1.2%	1.7%	2.0%	3.5%	4.2%	18.5%	2.1%
Pot CPs	2.5%	4.3%	2.3%	1.9%	2.2%	1.5%	2.0%	1.2%	0.8%	18.7%	2.1%
Pot CVs >60'	8.6%	11.5%	7.1%	5.1%	8.1%	10.3%	9.1%	7.5%	9.5%	76.8%	8.5%
Total	1	1	1	1	1	1	1	1	1	9	100.0%

Source: Harvest data are retained catch from WPR reports and ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Table 3-63 shows the twenty allocation options resulting from Options 2.1 – 2.6 under Component 2 and Suboptions a and b from Component 1. Note that this table also reflects the allocations under Component 2, Option 2.8, Suboption 1, as it reflects allocations based on actual catch history for the <60' fixed gear and jig CV sectors. The 2006 BSAI Pacific cod TAC (less CDQ) is 179,450 mt; thus, 1% of the BSAI Pacific cod TAC equates to 1,795 mt in 2006.

⁶⁸NOAA GC provided a legal opinion (June 4, 2004) that states that the Council may consider the combined non-pollock fishing history of the 20 catcher processor vessels listed in section 208(e) of the AFA and the 9 vessels listed in Section 209 in determining non-pollock groundfish sector allocations, except that the allocations based upon the non-pollock history of the Section 209 vessels may not be made to the owners of those vessels and any allocations must comply with the overall caps set forth under Section 211(b) (sideboards in non-pollock fisheries). NOAA GC reaffirmed this opinion in a subsequent letter to the Council (February 9, 2005).

Table 3-63 BSAI Pacific cod sector allocations under Component 2, Options 2.1 – 2.6, and Suboption 1

OPTION	2.1 excluding AFA 9	2.1 including AFA 9	2.1 drop year excluding AFA 9	2.1 drop year including AFA 9	2.2 excluding AFA 9	2.2 including AFA 9	2.2 drop year excluding AFA 9	2.2 drop year including AFA 9	2.3 excluding AFA 9	2.3 including AFA 9
Years	1995 - 02	1995 - 02	1995 - 02	1995 - 02	1997 - 00	1997 - 00	1997 - 00	1997 - 00	1997 - 03	1997 - 03
<60 HAL/Pot CVs	0.3%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.4%	0.4%
AFA Trawl CPs	1.8%	2.9%	1.9%	3.1%	2.1%	3.2%	2.4%	3.7%	1.6%	2.2%
AFA Trawl CVs	22.1%	21.8%	22.7%	22.3%	23.5%	23.3%	22.9%	22.6%	20.7%	20.6%
Jig CVs	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Longline CPs	49.6%	49.1%	48.6%	48.0%	49.5%	48.9%	48.4%	47.6%	50.3%	49.9%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Non-AFA Trawl CPs	13.3%	13.2%	13.4%	13.2%	13.6%	13.5%	14.4%	14.3%	14.8%	14.7%
Non-AFA Trawl CVs	1.8%	1.8%	1.9%	1.8%	1.3%	1.3%	1.4%	1.4%	2.1%	2.1%
Pot CPs	2.3%	2.2%	2.3%	2.3%	2.0%	2.0%	2.1%	2.0%	1.7%	1.7%
Pot CVs >60'	8.5%	8.4%	8.6%	8.5%	7.7%	7.6%	8.2%	8.1%	8.1%	8.1%
TOTAL	100%	100%	100%	100%	100.0%	100.0%	100.0%	100%	100%	100%
OPTION	2.3 drop year excluding AFA 9	2.3 drop year including AFA 9	2.4 excluding AFA 9	2.4 including AFA 9	2.4 drop year excluding AFA 9	2.4 drop year including AFA 9	2.5	2.5 drop year	2.6	2.6 drop year
Years	1997 - 03	1997 - 03	1998 - 02	1998 - 02	1998 - 02	1998 - 02	1999 - 03	1999 - 03	2000 - 03	2000 - 03
<60 HAL/Pot CVs	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.6%	0.7%	0.7%	0.8%
AFA Trawl CPs	1.6%	2.3%	1.6%	2.1%	1.7%	2.3%	1.2%	1.3%	0.9%	0.9%
AFA Trawl CVs	21.3%	21.1%	20.2%	20.1%	21.2%	21.1%	19.3%	20.3%	18.4%	19.5%
Jig CVs	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Longline CPs	48.9%	48.5%	50.1%	49.8%	48.6%	48.3%	49.6%	48.5%	50.1%	48.9%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.4%
Non-AFA Trawl CPs	15.1%	15.0%	15.7%	15.6%	15.4%	15.4%	16.1%	15.6%	16.2%	15.7%
Non-AFA Trawl CVs	2.3%	2.2%	1.9%	1.9%	2.0%	2.0%	2.5%	2.7%	2.8%	3.1%
Pot CPs	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.6%	1.7%	1.4%	1.5%
Pot CVs >60'	8.3%	8.3%	8.0%	8.0%	8.4%	8.3%	8.9%	8.9%	9.1%	9.2%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003. Percentage allocations were derived from each sector's average annual harvest share over the series of years identified under each option. The 'drop year' percentages are adjusted equally to result in an annual sum of 100%.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The AFA-9 only have catch history through 1998, thus whether to include their catch history to determine the AFA trawl CP sector allocation is only a decision point under Options 2.1 - 2.4.

Note that the allocations provided in the table above only reflect the allocation options based on actual retained catch by sector. Note also that all of the allocation options under Alternative 2 create allocations for each sector that are percentages of the BSAI Pacific cod ITAC. Each sector thus has a range of potential allocations under Options 2. 1- 2.6, 2.8, and Suboption 1 (drop year provision). **The range for each sector is provided in Table 3-64 below.**

Table 3-64 Range of potential BSAI Pacific cod allocations by sector using catch history (Component 2, Options 2.1–2.6, and Suboption 1)

Sectors	Range of potential BSAI Pacific cod sector allocations under 2.1 - 2.6 and Suboption 1	Current allocation ¹ (% of BSAI Pacific cod ITAC)
<60 HAL/Pot CVs	.1% - .8%	0.7%
AFA Trawl CPs	0.9% - 3.7%	23.5% (trawl CP)
Non-AFA Trawl CPs	13.2% - 16.2%	
Jig CVs	0.1%	2.0%
Longline CPs	47.6% - 50.3%	40.8%
Longline CVs >60'	0.1% - 0.4%	0.2%
AFA Trawl CVs	18.4% - 23.5%	23.5% (trawl CV)
Non-AFA Trawl CVs	1.3% - 3.1%	
Pot CPs	1.4% - 2.3%	1.7%
Pot CVs >60'	7.6% - 9.2%	7.7%

Note: The <60' hook-and-line and pot CV sector currently has a direct allocation of 0.714% of the BSAI Pacific cod TAC. However, this sector can currently fish off the general hook-and-line CV and pot CV allocations when those directed fisheries are open, respectively by gear type.

¹The percentage indicates the initial allocation the sector receives at the beginning of the year. It does not reflect any quota that is reallocated inseason among gear sectors.

In sum, the <60' fixed gear sector could potentially receive either less or more than it currently receives of the BSAI Pacific cod ITAC under Options 2.1 – 2.6 and 2.8 under Alternative 2. The <60' fixed gear sector is currently allocated 1.4% of the 51% of the BSAI Pacific cod ITAC that is allocated overall to fixed gear, which represents 0.71% of the overall BSAI Pacific cod ITAC. Based upon the options in Table 3-63, the <60' fixed gear sector could receive an allocation in the range of 0.1%–0.8%. Note, however, that the <60' fixed gear sector harvest is currently attributed to the general hook-and-line and pot CV sector allocations, respectively by gear type, when those directed fisheries are open. None of the options under Alternative 2 would allow that scenario, instead, the <60' fixed gear sector would only fish off its distinct allocation as would all other sectors.

Section 0 details the catch of the <60' fixed gear sector in the past few years, specifically 2003 and 2004. While much of the data is confidential, it is clear that the majority of the <60' fixed gear sector's retained Pacific cod harvest is attributed to this sector's own allocation, and not that of the general pot CV or hook-and-line CV allocations. In 2003 and 2004 for example, the percentages of the <60' fixed gear sector's cod harvest that came off the general CV allocations were 19% and 10%, respectively. Note that 2004 was the first year in which unused jig quota was reallocated to the <60' fixed gear sector on a seasonal basis, thus providing this sector with additional quota (at a level about equal to its initial allocation) earlier in the year. As this continues, it is expected that the amount of quota attributed to the general CV allocations would remain relatively limited, as the <60' fixed gear sector can start fishing later in the A season upon its own sector allocation, with the expectation of jig rollovers early in the spring. Thus, under almost all of the options that reflect actual catch history, the <60' fixed gear sector would be initially allocated less than it is currently allowed to harvest under the status quo. However, it is reasonable to assume that jig reallocations would continue; thus, the <60' fixed gear sector is not likely to be limited to its initial allocation. Given the harvest data and comparing the timing of the general pot CV and hook-and-line CV fisheries with the seasonal jig allocations, the jig reallocations are much more beneficial to the <60' fixed gear sector than is the ability to fish off the general fixed gear allocations

when those fisheries are open. The benefit of fishing off the general fixed gear allocations to the <60' fixed gear sector will continue to lessen should the A season Pacific cod fishery get increasingly shorter.

The **trawl CP sectors** combined could receive a range of 15.1%–18% under the various options based on catch history in Table 3-63. This is about 5.5%–8.4% less than the sectors' current combined allocation of 23.5% of the BSAI Pacific cod ITAC. Note that the Council could choose to create separate allocations to each trawl CP sector, or maintain a combined allocation. In general, the options that employ more recent years of participation result in an increase in the non-AFA trawl CP sector's allocation. In most cases, the drop year provision increases the allocation to both trawl CP sectors, with the exception of Option 2.5 and 2.6 for the non-AFA trawl CP sector. This is because a drop year provision generally benefits those sectors that had less consistent harvest over the series of years, and disadvantages the sectors that had consistent harvest across all years. Note that the most significant factor among all of the options for the AFA trawl CP sector is whether or not the harvest history of the AFA 9 is included. This only affects Options 2.1 – 2.4.

The effects of separate AFA trawl CP and non-AFA trawl CP sector BSAI Pacific cod allocations are outlined in the previous component in Section 3.4.3.1. This section also addresses the effects of establishing separate AFA trawl CV and non-AFA trawl CV BSAI Pacific cod allocations.

The **trawl CV sectors** combined could receive a range of 21.2%–24.8% under the various options based on catch history in Table 3-63. This ranges from about 2.3% less to 1.3% more than the sectors' current combined allocation of 23.5% of the BSAI Pacific cod ITAC. Note that the Council could choose to create separate allocations to each trawl CV sector, or maintain a combined allocation. In general, the options that employ more recent years of participation result in an increase in the non-AFA trawl CV sector's allocation, and the options that employ earlier years benefit the AFA trawl CV sector.

In most, but not all cases, the drop year provision increases the allocation to both trawl CV sectors. This is most noticeable in the options that include harvest from 2001 for the AFA trawl CV sector, as it is the lowest harvest year under consideration for this sector (refer to Table 3-10). The drop year provision has the greatest effect on the non-AFA trawl CV sector in the options that include harvest from 1998. Note that whether the AFA 9 are included is not a considerable factor in the options for the non-AFA trawl CV sector, and is slightly more important in the options for the AFA trawl CV sector.

Likely the most important effect of the options on the trawl CV allocations is the size of the resulting allocation to the non-AFA trawl CV sector. This issue is emphasized in Section 0 in the discussion of inseason management. The non-AFA trawl CV sector is the only trawl sector whose eligibility is not fixed in a manner that lends itself to cooperative management, thus, it is assumed that NMFS will need to continue to manage this fishery through Federal Register notice. It is assumed that the other three trawl sectors will manage their own Pacific cod allocations as they manage their other target fisheries (pollock and flatfish) under a cooperative system.

The concern with the non-AFA trawl CV sector allocation is that it be sufficiently large enough for NMFS to open a directed fishery and manage the allocation effectively. This sector's cod fishery would likely continue to be managed as it is currently, such that NMFS would establish a DFA and ICA if necessary. NMFS would close the directed fishery once the DFA is caught, reserving the remainder of the allocation for incidental catch in other groundfish fisheries. In practice, however, it is not likely that an ICA would need to be created for this sector, since this sector does not have any other BSAI target fishery at this time. If it became a concern at some point in the future and an ICA was necessary in order to ensure the allocation was not exceeded, the fishery would have to be managed relatively conservatively. Table 3-63 indicates that the non-AFA trawl CV sector would receive an allocation in the range of 1.3%–3.1% of the BSAI Pacific cod TAC under the options using catch history in Alternative 2. This is likely a

large enough allocation for NMFS to manage inseason, understanding that it largely depends on the number of vessels participating in a given year and whether they can work effectively with inseason management to ensure the limit is not exceeded.

The **hook-and-line CP sector** could receive an allocation in the range of 47.6%–50.3% of the BSAI Pacific cod ITAC under the various options in Table 3-63. This ranges from 6.8%–9.5% more than the sectors' current allocation of 40.8% of the BSAI Pacific cod ITAC. The increase to this sector's allocation compared to the status quo is due to the reallocated quota that this sector typically harvests near the end of the year. Recall from previous discussion and Table 3-25 that reallocated quota on average during the past five years (2000 – 2004) has been about 9.4% of the BSAI Pacific cod ITAC.

In general, the hook-and-line CP sector's share of the retained BSAI Pacific cod catch has been relatively consistent, thus, the drop year provision has the greatest negative effect on this sector's allocation under the proposed options. In addition, including the AFA 9 harvest generally reduces the allocation to this sector by about 0.5%, thus, the options that both include the AFA 9 and apply the drop year provision result in the lower allocations to the hook-and-line CP sector.

The **≥60' hook-and-line CV sector** could receive an allocation in the range of 0.1%–0.4% of the BSAI Pacific cod ITAC under the various options in Table 3-63. This ranges from 0.2% less to 0.1% more than the sectors' current allocation of 0.3% of the BSAI Pacific cod ITAC. In general, this sector's share of the retained BSAI Pacific cod catch has been relatively small and consistent, thus, the drop year provision only affects (increases) this sector's allocation under Options 2.4–2.6. Whether the AFA 9 are included does not affect this sector's allocation, due to the relatively small share.

The **pot CP sector** could receive an allocation in the range of 1.4%–2.3% of the BSAI Pacific cod ITAC under the various options in Table 3-63. This ranges from 0.3% less to 0.6% more than the sectors' current allocation of 1.7% of the BSAI Pacific cod ITAC. In general, this sector's share of the retained BSAI Pacific cod catch has decreased in recent years compared to 1995 – 1997 (see the discussion under Alternative 1, Component 2). Recall that the pot CP sector's portion of the pot allocation is based on catch history from 1998 – 2001, thus, options that include harvest during 1995 – 1997 generally increase this sector's allocation relative to the status quo. Whether the AFA 9 are included minimally affects this sector's allocation, due to the relatively small share. The drop year provision either has no effect or slightly increases (by 0.1%) the pot CP sector allocation.

The **≥60' pot CV sector** could receive an allocation in the range of 7.6%–9.2% of the BSAI Pacific cod ITAC under the various options in Table 3-63. This ranges from no change to about 1.5% more than the sectors' current allocation of 7.6% of the BSAI Pacific cod ITAC. This sector's share of the retained BSAI Pacific cod catch has been less consistent than the other fixed gear sectors, ranging from a low of 5.2% in 1998 to a high of 10.3% in 2000. Recall that the pot CV sector's portion of the pot allocation is based on catch history from 1998 – 2001, even though the combined pot allocation of 18.3% is based on 1995 – 1998 or 1999. Whether the AFA 9 are included minimally affects this sector's allocation, reducing the allocation by a maximum of 0.1% under all options. The drop year provision either has no effect or slightly increases (a maximum of 0.5%) the pot CV sector allocation.

Finally, the **jig sector** would receive an allocation of 0.1% under all of the options based on catch history in Table 3-63. This is 1.9% lower than this sector's current allocation of 2.0% of the BSAI Pacific cod ITAC. Note that Option 2.8 proposes several suboptions which maintain the current 2.0% jig allocation. The effects of Option 2.8 are discussed later in this section.

Option 1.1

In addition, recall that Option 1.1 under Component 1 would qualify three non-AFA catcher vessels for inclusion in the AFA CV sector for purposes of the BSAI Pacific cod allocations. The harvest of these three vessels by year is provided in the previous section in Table 3-60. Over the period 1995 – 2003, these three vessels accounted for 54.4% of the retained Pacific cod harvest of the non-AFA CV sector.

Incorporating Option 1.1 changes the annual harvest share percentage for the AFA trawl CV and non-AFA trawl CV sectors, as shown in Table 3-65. **In sum, the average share of the retained catch by all sectors attributed to the AFA trawl CV sector during 1995 – 2003 increases by 1.1% under Option 1.1.** The AFA trawl CV sector’s average share during 1995–2003 increases from 21.7% (excluding AFA 9) or 21.5% (including AFA 9) to 22.8% or 22.6%, respectively. **Likewise, the average share of the retained catch by all sectors attributed to the non-AFA trawl CV sector during 1995 – 2003 decreases by 1.1% under Option 1.1.** The non-AFA trawl CV sector’s average share during 1995 – 2003 decreases from 2.1% to 0.9% (these percentages do not change whether the AFA 9 are excluded or included.). Using the 2006 (non-CDQ) Pacific cod TAC, 1.1% represents about 1,974 mt.

Table 3-65 BSAI Pacific cod annual harvest share by AFA trawl CV and non-AFA trawl CV sector under Component 1, Option 1.1, 1995 – 2003

SECTOR	1995	1996	1997	1998	1999	2000	2001	2002	2003	sum 95 - 03	average
Excluding AFA 9 history											
AFA Trawl CVs	24.7%	28.3%	26.5%	23.8%	23.8%	23.4%	13.4%	21.5%	20.1%	205.6%	22.8%
Non-AFA Trawl CVs	0.3%	0.5%	0.4%	0.6%	0.2%	0.7%	0.8%	2.3%	2.7%	8.5%	0.9%
Including AFA 9 history											
AFA Trawl CVs	24.0%	27.7%	26.0%	23.2%	23.8%	23.4%	13.4%	21.5%	20.1%	203.3%	22.6%
Non-AFA Trawl CVs	0.3%	0.5%	0.4%	0.5%	0.2%	0.7%	0.8%	2.3%	2.7%	8.4%	0.9%

Source: Harvest data are retained catch from ADF&G fishtickets, 1995 - 2003. Each sector's annual harvest share was calculated for the individual year as a percentage of the total retained legal catch by all sectors.

Incorporating Option 1.1 thus results in an additional twenty potential options for the AFA trawl CV sector and non-AFA trawl CV sector allocations; these options are provided in Table 3-66. Note that resulting allocations to the other sectors have not changed.

Table 3-66 BSAI Pacific cod sector allocations under Component 2, Options 2.1–2.6, Suboption 1 and Component 1, Option 1.1

OPTION	2.1 excluding AFA 9	2.1 including AFA 9	2.1 drop year excluding AFA 9	2.1 drop year including AFA 9	2.2 excluding AFA 9	2.2 including AFA 9	2.2 drop year excluding AFA 9	2.2 drop year including AFA 9	2.3 excluding AFA 9	2.3 including AFA 9
Years	1995 - 02	1995 - 02	1995 - 02	1995 - 02	1997 - 00	1997 - 00	1997 - 00	1997 - 00	1997 - 03	1997 - 03
<60 HAL/Pot CVs	0.3%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.4%	0.4%
AFA Trawl CPs	1.8%	2.9%	1.9%	3.1%	2.1%	3.2%	2.4%	3.7%	1.6%	2.2%
AFA Trawl CVs	23.2%	22.9%	23.7%	23.3%	24.4%	24.1%	23.7%	23.4%	21.8%	21.6%
Jig CVs	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Longline CPs	49.6%	49.1%	48.6%	48.0%	49.5%	48.9%	48.4%	47.6%	50.3%	49.9%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Non-AFA Trawl CPs	13.3%	13.2%	13.4%	13.2%	13.6%	13.5%	14.4%	14.3%	14.8%	14.7%
Non-AFA Trawl CVs	0.7%	0.7%	0.8%	0.8%	0.5%	0.5%	0.5%	0.5%	1.1%	1.1%
Pot CPs	2.3%	2.2%	2.3%	2.3%	2.0%	2.0%	2.1%	2.0%	1.7%	1.7%
Pot CVs >60'	8.5%	8.4%	8.6%	8.5%	7.7%	7.6%	8.2%	8.1%	8.1%	8.1%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OPTION	2.3 drop year excluding AFA 9	2.3 drop year including AFA 9	2.4 excluding AFA 9	2.4 including AFA 9	2.4 drop year excluding AFA 9	2.4 drop year including AFA 9	2.5	2.5 drop year	2.6	2.6 drop year
Years	1997 - 03	1997 - 03	1998 - 02	1998 - 02	1998 - 02	1998 - 02	1999 - 03	1999 - 03	2000 - 03	2000 - 03
<60 HAL/Pot CVs	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.6%	0.7%	0.7%	0.8%
AFA Trawl CPs	1.6%	2.3%	1.6%	2.1%	1.7%	2.3%	1.2%	1.3%	0.9%	0.9%
AFA Trawl CVs	22.3%	22.1%	21.2%	21.1%	22.1%	21.9%	20.5%	21.4%	19.6%	20.7%
Jig CVs	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Longline CPs	48.9%	48.5%	50.1%	49.8%	48.6%	48.3%	49.6%	48.5%	50.1%	48.9%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.4%
Non-AFA Trawl CPs	15.1%	15.0%	15.7%	15.6%	15.4%	15.4%	16.1%	15.6%	16.2%	15.7%
Non-AFA Trawl CVs	1.2%	1.2%	0.9%	0.9%	1.0%	1.0%	1.3%	1.5%	1.6%	1.8%
Pot CPs	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.6%	1.7%	1.4%	1.5%
Pot CVs >60'	8.3%	8.3%	8.0%	8.0%	8.4%	8.3%	8.9%	8.9%	9.1%	9.2%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003. Percentage allocations were derived from each sector's average annual harvest share over the series of years identified under each option. The 'drop year' percentages are adjusted equally to result in an annual sum of 100%.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The AFA-9 only have catch history through 1998, thus whether to include their catch history to determine the AFA trawl CP sector allocation is only a decision point under Options 2.1 - 2.4.

Finally, note that all of the tables thus far in this section are based on each sector's harvest history as specified under Component 2, Options 2.1 – 2.6, and Suboption 1. The table above also shows the effect of Component 1, Option 1.1. However, Option 2.8 is also proposed under Component 2, to establish (combined or separate) allocations to the <60' fixed gear and jig gear sectors that are not based on catch history. Option 2.8 is not mutually exclusive of Options 2.1 – 2.7.

Option 2.8, Suboption 1, which would provide an allocation based on actual catch history, is already encompassed in Options 2.1 – 2.6 and is not discussed further. Suboptions 2, 3, and 4 would establish allocations to the <60' fixed gear and jig sectors of 2.71%, 3%, or 4%, respectively. Note that the Council could select either separate allocations for the <60' fixed gear sector and jig gear sector, or combined allocations.

Table 3-67, Table 3-68, and Table 3-69 show the twenty allocation options resulting from each of Suboptions 2 – 4. These amounts were taken off the top of the overall non-CDQ allocation, as each sector allocation under Alternative 2 is a percentage of the overall BSAI Pacific cod ITAC. Thus, these

allocations were determined by eliminating the harvest shares calculated for the <60' fixed gear and jig gear allocations in the previous tables and setting their allocations as described under each suboption. Then the harvest shares for all other sectors were summed and scaled up to 100%. Those share percentages were then applied to 97.3%, 97%, and 96% of the non-CDQ TAC. For example, under Option 2.1 (excluding AFA 9), the hook-and-line CP sector share is 49.8% (adjusted). The allocation under Option 2.8, Suboption 2 is thus 49.8% x 97.3% ITAC = 48.5% of the BSAI Pacific cod ITAC.

Table 3-67 Effect of 2.71% small boat allocation on the BSAI Pacific cod sector allocations (Component 2, Options 2.1–2.6, Suboption 1, and Component 2, Option 2.8, Suboption 2)

OPTION	2.1 excluding AFA 9	2.1 including AFA 9	2.1 drop year excluding AFA 9	2.1 drop year including AFA 9	2.2 excluding AFA 9	2.2 including AFA 9	2.2 drop year excluding AFA 9	2.2 drop year including AFA 9	2.3 excluding AFA 9	2.3 including AFA 9
Years	1995 - 02	1995 - 02	1995 - 02	1995 - 02	1997 - 00	1997 - 00	1997 - 00	1997 - 00	1997 - 03	1997 - 03
<60 HAL/Pot CVs	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
AFA Trawl CPs	1.8%	2.8%	1.8%	3.0%	2.1%	3.1%	2.3%	3.6%	1.5%	2.1%
AFA Trawl CVs	21.6%	21.3%	22.2%	21.8%	22.9%	22.7%	22.3%	22.0%	20.3%	20.1%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	48.5%	47.9%	47.5%	47.0%	48.2%	47.7%	47.2%	46.4%	49.1%	48.8%
Longline CVs >60'	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Non-AFA Trawl CPs	13.0%	12.9%	13.1%	13.0%	13.2%	13.1%	14.0%	13.9%	14.4%	14.4%
Non-AFA Trawl CVs	1.8%	1.7%	1.8%	1.8%	1.3%	1.3%	1.4%	1.4%	2.1%	2.1%
Pot CPs	2.2%	2.2%	2.3%	2.2%	2.0%	1.9%	2.0%	2.0%	1.7%	1.7%
Pot CVs >60'	8.3%	8.2%	8.5%	8.4%	7.5%	7.4%	8.0%	7.9%	7.9%	7.9%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
OPTION	2.3 drop year excluding AFA 9	2.3 drop year including AFA 9	2.4 excluding AFA 9	2.4 including AFA 9	2.4 drop year excluding AFA 9	2.4 drop year including AFA 9	2.5	2.5 drop year	2.6	2.6 drop year
Years	1997 - 03	1997 - 03	1998 - 02	1998 - 02	1998 - 02	1998 - 02	1999 - 03	1999 - 03	2000 - 03	2000 - 03
<60 HAL/Pot CVs	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
AFA Trawl CPs	1.6%	2.3%	1.6%	2.0%	1.7%	2.2%	1.2%	1.3%	0.9%	0.9%
AFA Trawl CVs	20.8%	20.7%	19.8%	19.7%	20.8%	20.6%	18.9%	19.9%	18.0%	19.1%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	47.8%	47.5%	49.0%	48.7%	47.5%	47.2%	48.5%	47.5%	49.1%	48.0%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%
Non-AFA Trawl CPs	14.7%	14.7%	15.3%	15.3%	15.1%	15.1%	15.7%	15.3%	15.9%	15.4%
Non-AFA Trawl CVs	2.2%	2.2%	1.8%	1.8%	1.9%	1.9%	2.5%	2.7%	2.8%	3.0%
Pot CPs	1.8%	1.7%	1.7%	1.7%	1.8%	1.8%	1.5%	1.6%	1.4%	1.5%
Pot CVs >60'	8.1%	8.1%	7.9%	7.8%	8.2%	8.2%	8.7%	8.7%	8.9%	9.0%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003. Allocations to the <60' fixed gear and jig CV sectors were set at 0.7% and 2%, respectively, according to Component 2, Option 2.8, Suboption 3. Percentage allocations for every other sector were derived from each sector's average annual harvest share over the series of years identified under each option, adjusted to 100% of the harvest. Those percentages were then multiplied by 97.29% (total TAC remaining less the <60' fixed gear and jig CV sector allocations) to determine the allocation percentages shown.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The AFA-9 only have catch history through 1998, thus whether to include their catch history to determine the AFA trawl CP sector allocation is only a decision point under Options 2.1 - 2.4.

Table 3-68 Effect of 3% small boat allocation on the BSAI Pacific cod sector allocations (Component 2, Options 2.1–2.6, Suboption 1, and Component 2, Option 2.8, Suboption 3)

OPTION	2.1 excluding AFA 9	2.1 including AFA 9	2.1 drop year excluding AFA 9	2.1 drop year including AFA 9	2.2 excluding AFA 9	2.2 including AFA 9	2.2 drop year excluding AFA 9	2.2 drop year including AFA 9	2.3 excluding AFA 9	2.3 including AFA 9
Years	1995 - 02	1995 - 02	1995 - 02	1995 - 02	1997 - 00	1997 - 00	1997 - 00	1997 - 00	1997 - 03	1997 - 03
<60 HAL/Pot CVs	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AFA Trawl CPs	1.8%	2.8%	1.8%	3.0%	2.1%	3.1%	2.3%	3.6%	1.5%	2.1%
AFA Trawl CVs	21.5%	21.3%	22.1%	21.7%	22.9%	22.6%	22.3%	21.9%	20.2%	20.1%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	48.3%	47.8%	47.4%	46.8%	48.1%	47.5%	47.0%	46.3%	49.0%	48.7%
Longline CVs >60'	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Non-AFA Trawl CPs	13.0%	12.8%	13.0%	12.9%	13.2%	13.1%	14.0%	13.9%	14.4%	14.3%
Non-AFA Trawl CVs	1.8%	1.7%	1.8%	1.8%	1.3%	1.3%	1.4%	1.4%	2.1%	2.1%
Pot CPs	2.2%	2.2%	2.3%	2.2%	2.0%	1.9%	2.0%	2.0%	1.7%	1.7%
Pot CVs >60'	8.3%	8.2%	8.4%	8.3%	7.5%	7.4%	8.0%	7.9%	7.9%	7.9%
TOTAL	100%	100%	100%	100%	100.0%	100.0%	100.0%	100%	100%	100%
OPTION	2.3 drop year excluding AFA 9	2.3 drop year including AFA 9	2.4 excluding AFA 9	2.4 including AFA 9	2.4 drop year excluding AFA 9	2.4 drop year including AFA 9	2.5	2.5 drop year	2.6	2.6 drop year
Years	1997 - 03	1997 - 03	1998 - 02	1998 - 02	1998 - 02	1998 - 02	1999 - 03	1999 - 03	2000 - 03	2000 - 03
<60 HAL/Pot CVs	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
AFA Trawl CPs	1.6%	2.3%	1.6%	2.0%	1.7%	2.2%	1.2%	1.3%	0.9%	0.9%
AFA Trawl CVs	20.8%	20.6%	19.7%	19.6%	20.7%	20.5%	18.8%	19.8%	18.0%	19.1%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	47.7%	47.3%	48.8%	48.6%	47.4%	47.1%	48.4%	47.4%	49.0%	47.9%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%
Non-AFA Trawl CPs	14.7%	14.6%	15.3%	15.2%	15.1%	15.0%	15.7%	15.3%	15.9%	15.4%
Non-AFA Trawl CVs	2.2%	2.2%	1.8%	1.8%	1.9%	1.9%	2.4%	2.7%	2.8%	3.0%
Pot CPs	1.8%	1.7%	1.7%	1.7%	1.8%	1.8%	1.5%	1.6%	1.4%	1.5%
Pot CVs >60'	8.1%	8.1%	7.8%	7.8%	8.1%	8.1%	8.7%	8.7%	8.9%	9.0%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003. Allocations to the <60' fixed gear and jig CV sectors were set at 1% and 2%, respectively, according to Component 2, Option 2.8, Suboption 3. Percentage allocations for every other sector were derived from each sector's average annual harvest share over the series of years identified under each option, adjusted to 100% of the harvest. Those percentages were then multiplied by 97% (total TAC remaining less the <60' fixed gear and jig CV sector allocations) to determine the allocation percentages shown.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The AFA-9 only have catch history through 1998, thus whether to include their catch history to determine the AFA trawl CP sector allocation is only a decision point under Options 2.1 - 2.4.

Table 3-69 Effect of 4% small boat allocation on the BSAI Pacific cod sector allocations (effect of Component 2, Options 2.1–2.6, Suboption 1, and Component 2, Option 2.8, Suboption 4)

OPTION	2.1 excluding AFA 9	2.1 including AFA 9	2.1 drop year excluding AFA 9	2.1 drop year including AFA 9	2.2 excluding AFA 9	2.2 including AFA 9	2.2 drop year excluding AFA 9	2.2 drop year including AFA 9	2.3 excluding AFA 9	2.3 including AFA 9
Years	1995 - 02	1995 - 02	1995 - 02	1995 - 02	1997 - 00	1997 - 00	1997 - 00	1997 - 00	1997 - 03	1997 - 03
<60 HAL/Pot CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AFA Trawl CPs	1.7%	2.8%	1.8%	3.0%	2.0%	3.1%	2.3%	3.6%	1.5%	2.1%
AFA Trawl CVs	21.3%	21.0%	21.9%	21.5%	22.6%	22.4%	22.1%	21.7%	20.0%	19.9%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	47.8%	47.3%	46.9%	46.3%	47.6%	47.1%	46.5%	45.8%	48.5%	48.2%
Longline CVs >60'	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Non-AFA Trawl CPs	12.8%	12.7%	12.9%	12.8%	13.1%	12.9%	13.8%	13.7%	14.2%	14.2%
Non-AFA Trawl CVs	1.7%	1.7%	1.8%	1.8%	1.3%	1.3%	1.4%	1.3%	2.1%	2.1%
Pot CPs	2.2%	2.2%	2.2%	2.2%	1.9%	1.9%	2.0%	2.0%	1.7%	1.7%
Pot CVs >60'	8.2%	8.1%	8.3%	8.2%	7.4%	7.3%	7.9%	7.8%	7.8%	7.8%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
OPTION	2.3 drop year excluding AFA 9	2.3 drop year including AFA 9	2.4 excluding AFA 9	2.4 including AFA 9	2.4 drop year excluding AFA 9	2.4 drop year including AFA 9	2.5	2.5 drop year	2.6	2.6 drop year
Years	1997 - 03	1997 - 03	1998 - 02	1998 - 02	1998 - 02	1998 - 02	1999 - 03	1999 - 03	2000 - 03	2000 - 03
<60 HAL/Pot CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
AFA Trawl CPs	1.6%	2.2%	1.6%	2.0%	1.7%	2.2%	1.2%	1.2%	0.9%	0.9%
AFA Trawl CVs	20.6%	20.4%	19.5%	19.4%	20.5%	20.3%	18.6%	19.6%	17.8%	18.9%
Jig CVs	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Longline CPs	47.2%	46.8%	48.3%	48.1%	46.9%	46.6%	47.9%	46.9%	48.5%	47.4%
Longline CVs >60'	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%
Non-AFA Trawl CPs	14.5%	14.5%	15.1%	15.1%	14.9%	14.9%	15.5%	15.1%	15.7%	15.2%
Non-AFA Trawl CVs	2.2%	2.2%	1.8%	1.8%	1.9%	1.9%	2.4%	2.6%	2.7%	3.0%
Pot CPs	1.7%	1.7%	1.7%	1.7%	1.8%	1.7%	1.5%	1.6%	1.4%	1.5%
Pot CVs >60'	8.0%	8.0%	7.8%	7.7%	8.1%	8.1%	8.6%	8.6%	8.8%	8.9%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Harvest data are from WPR reports and ADF&G fishtickets, 1995 - 2003. Allocations to the <60' fixed gear and jig CV sectors were set at 2% each, according to Component 2, Option 2.8, Suboption 4. Percentage allocations for every other sector were derived from each sector's average annual harvest share over the series of years identified under each option, adjusted to 100% of the harvest. Those percentages were then multiplied by 96% (total TAC remaining less the <60' fixed gear and jig CV sector allocations) to determine the allocation percentages shown.

Note: In every year, some percentage of the harvest cannot be assigned to a given catcher vessel sector due to missing fishtickets from mothership deliveries. This harvest was not attributed to any sector in this table and is excluded from the annual total. The percent of harvest that cannot be assigned varies by year and ranges from 0.03% - 2.0%. Pacific cod harvested with hand troll gear and harvest from the 3 surimi-fillet non-AFA CPs was not included.

Note: The AFA-9 only have catch history through 1998, thus whether to include their catch history to determine the AFA trawl CP sector allocation is only a decision point under Options 2.1 - 2.4.

Table 3-67, Table 3-68, and Table 3-69 show that the suboptions under Option 2.8 result in an allocation to the <60' hook-and-line/pot CV sector and jig sector that is larger than those sectors' actual catch history. Note that the resulting reductions in the allocations to the other sectors are proportional to their shares under each option. For example, Table 3-63 indicates that the <60' fixed gear CV sector and jig sector would receive a 0.4% allocation using catch history under Option 2.1 (excluding AFA 9). Thus, if the <60' fixed gear CV sector and jig sector allocation is set at 4.0% under Option 2.1 and Option 2.8 (see Table 3-69), each of the other sectors will receive a proportional reduction in their allocations of 4.0%–0.4% = 3.6%.

Note also that Option 1.1 from Component 1 is not applied in Table 3-67, Table 3-68, and Table 3-69. Applying Option 1.1 affects the allocations to the AFA CV sector and the non-AFA CV sector. If Option 1.1 was selected and applied in combination with the suboptions under Option 2.8, the effect would be a reduction in the non-AFA trawl CV sector's allocation in the range of 42%–62% of its allocation (if

Option 1.1 was not applied), and an increase in the AFA trawl CV sector's allocation of 3%–6% of its allocation (if Option 1.1 was not applied). This is the same range of potential changes in comparing Table 3-63 and Table 3-65.

Table 3-70 summarizes the range of potential BSAI Pacific cod sector allocations identified in all of the tables under Component 2, as well as the current allocations to each sector. This table provides the low-end and high-end allocation percentages that are possible for each sector under the all of the options in Component 2. Note that the Council has the ability to select a specific option shown in the above tables, or it can choose percentage allocations that fall within the range provided.

Table 3-70 Range of proposed BSAI Pacific cod allocations (as % of BSAI Pacific cod ITAC) by sector under Components 1 and 2, compared to historical catch and status quo allocations

Sectors	Range of potential sector allocations resulting from Components 1 & 2	Current allocation	Difference between proposed and status quo allocations	Annual share of retained cod harvests, average 1995–2003
<60' hook-and-line/pot CV	0.1% – 2%	0.7%	-0.6% to 1.3%	0.4%
AFA trawl CP	0.9% – 3.7%	23.5% (AFA CP sector is subject to sideboard of 6.1%)	-2.4% to -5.2%	1.7%
Non-AFA trawl CP	12.7% – 16.2%		n/a	13.6%
Jig CV	0.1% – 2%	2%	-1.9% to 0%	0.1%
Hook-and-line CP	45.8% – 50.3%	40.8%	5% to 9.5%	49.6%
Hook-and-line CV ≥60'	0.1% – 0.4%	0.2%	0% to 0.3%	0.1%
AFA trawl CV	17.8% – 24.4%	23.5% (non-exempt AFA CV sector is subject to sideboard of 20.2%)	-2.4% to 4.2%	21.7%
Non-AFA trawl CV	0.5% – 3.1%		n/a	2.1%
Pot CP	1.4% – 2.3%	1.7%	-0.3% to 0.6%	2.1%
Pot CV ≥60'	7.3% – 9.2%	7.7%	-0.4% to 1.5%	8.6%

Note: The <60' fixed gear sector is currently allocated 0.71% of the BSAI Pacific cod ITAC. However, this sector can currently fish off the general hook-and-line CV and pot CV Pacific cod allocations when those directed fisheries are open, respectively, by gear type. The proposed amendment would allow the <60' fixed gear sector to only fish off its direct allocation.

Note: The last column denoting annual average harvest share excludes harvests by the AFA 9. If the AFA 9 are included, the average share of the AFA trawl CP sector increases to 2.7%. The non-AFA trawl CP and ≥60' pot CV sectors' shares are each reduced by 0.1%. The AFA trawl CV sector share is reduced by 0.2% and the hook-and-line CP sector share is reduced by 0.5%.

Note that the AFA trawl CP and non-AFA trawl CP sectors do not currently have separate allocations. Instead, the AFA trawl CP sector has a limit (sideboard) equal to 25.8% of the Pacific cod ITAC available to the trawl CP sectors. This sideboard equates to $25.8\% \times 23.5\% = 6.1\%$ of the BSAI Pacific cod ITAC. The non-exempt AFA trawl CV sector has a limit (sideboard) equal to 86.1% of the Pacific cod ITAC available to the trawl CV sectors. This equates to $86.1\% \times 23.5\% = 20.2\%$ of the BSAI Pacific cod ITAC. While not an allocation to either of the AFA trawl sectors, the sideboards are provided in Table 3-70 for comparison purposes. The non-AFA trawl sectors are currently allowed to harvest up to the 23.5% of the BSAI Pacific cod TAC allocated to the respective trawl (CP and CV) sectors.

In sum, the allocations to the hook-and-line sectors would increase under Alternative 2 compared to status quo (Alternative 1). The allocations to the trawl sectors would generally decrease under Alternative 2 compared to the status quo, with the exception of the AFA trawl CV sector when Component 1, Option

1.1 is applied. The allocations to the pot sectors could increase or decrease under the proposed options. The allocations to the <60' fixed gear and jig gear sectors would decrease under any of the options based on catch history in Alternative 2 compared to the status quo. However, Alternative 2, Option 2.8 would make no changes to the jig sector allocation and would either maintain or increase the distinct allocation to the <60' fixed gear sector compared to Alternative 1.

NMFS's ability to manage the resulting allocations in Component 2 is discussed in Section 3.5. The following sections outline the impacts of Component 3 (seasonal apportionments) and Component 4 (rollovers) when combined with the allocations proposed under Component 2.

3.4.3.3 Component 3: Seasonal Apportionments

Unused seasonal allowances for the trawl, pot, and hook-and-line sectors may be reapportioned to the subsequent seasonal allocation for the respective sectors. Unused seasonal allowances for the jig sector are considered for reallocation to the <60' fixed gear CV sector. Options 3.1, 3.2, and 3.3 are mutually exclusive.

Option 3.1 Status quo. Allocations determined under this amendment would be apportioned seasonally among the gear sectors as in current regulation (see Alternative 1).

Option 3.2 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A and B seasons for trawl gear and the A season for fixed gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the C season for trawl gear. Provide that any increase in the overall fixed gear allocation resulting from the options would be applied only in the B season for fixed gear.

Option 3.3 Upon determination of the new overall allocations to the trawl and fixed gear sectors, maintain the current percentage of the ITAC allocated to the A season for trawl gear. Provide that any reduction in the overall trawl allocation resulting from the options would be applied only in the B and C seasons for trawl gear:

Suboption 1: Reduction applied proportionately to B and C seasons

Suboption 2: Reduction applied equally to B and C seasons

Suboption 3: Provide that any reduction in the overall trawl allocation resulting from the options would first be applied in the C season and then in the B season. Any increase in the allocation to fixed gear would be applied in the A season. Any reduction in the trawl allocation in the B or C seasons will be made proportionately between the AFA CP, non-AFA CP, and AFA CV, non-AFA CV sectors based on their new allocation percentages. In the event that this revision in allocations and apportionments exceeds the 70/30 Steller sea lion seasonal apportionment, the hook-and-line CP sector's A season allocation will be adjusted as necessary by shifting A season allocation to the B season.

Option 3.4 Apportion the BSAI Pacific cod jig allocation on a trimester basis as follows:
 60% (Jan. 1 – April 30)
 20% (April 30 – August 31)
 20% (August 31 – December 31)

Option 3.1

Component 3 addresses seasonal apportionments of each sector's allocation. **Option 3.1** would mirror the seasonal apportionments in current Federal regulations at 50 CFR 679.23(e)(5). A description of the current seasonal apportionments is provided under Alternative 1, in Section 3.4.2.3. Under Option 3.1, the sector allocations would be determined under Component 2, and the current seasonal apportionments would be applied to those new allocations.

Note that the current seasonal apportionments are primarily a result of the 2001 Biological Opinion. The opinion consulted on a comprehensive management regime, of which temporal dispersion of the fisheries was one part. The temporal dispersion measures in the BSAI Pacific cod fishery were established to meet a seasonal target of 70% (Jan. 1 – June 10) harvest of the TAC in the first season and 30% (June 10 – December 31) in the second season.⁶⁹ To accomplish this objective, the fixed gear sectors $\geq 60'$ LOA are allocated 60% in the first season and 40% in the second season. For trawl gear, the first season is allocated 60%, and the second and third seasons are allocated 20% each. Within the overall trawl allocation, the trawl CV sector is allocated 70%, 10%, and 20% in each of three consecutive seasons. The trawl CP sector is allocated 50%, 30%, and 20% in each of three consecutive seasons.

The jig gear sector was also allocated 60% in the first half of the year and 40% in the second half starting in 2002, as a result of the 2001 Biological Opinion. Under BSAI Amendment 77, the jig seasons were modified to a trimester basis (40% - 20% - 40%) in 2004, in order to provide for seasonal reallocations to the $<60'$ fixed gear catcher vessel fleet earlier in the year. See Table 3-71 and Table 3-72 for the current seasonal apportionments for the trawl CP, trawl CV, fixed, and jig gear sectors.

Table 3-71 Current seasonal apportionments for trawl CP and trawl CV sectors

Date	TRAWL CP			TRAWL CV			TOTAL TRAWL		
	% of ITAC	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of allocation	Total Trawl % of ITAC	
	23.5%			23.5%				47%	
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)								
20-Jan		A	50%	11.8%		70%	16.5%	60%	28.2%
1-Apr		B	30%	7.1%		10%	2.4%	20%	9.4%
10-Jun		C	20%	4.7%		20%	4.7%	20%	9.4%
10-Jun	(no cod target allowed with trawl gear after 11/1)								
1-Nov									
31-Dec									
TOTAL			100%	23.5%		100%	23.5%	100%	47.0%

⁶⁹Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

Table 3-72 Current seasonal apportionments for fixed and jig gear sectors, and total for all sectors

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	51%				2%				53%	100%
1-Jan 20-Jan 1-Apr 1-Apr 10-Jun		A	60%	30.6%		A	40%	0.8%	31.8%	69.4%
						B	20%	0.4%		
10-Jun 1-Nov 31-Dec		B	40%	20.4%		C	40%	0.8%	21.2%	30.6%
TOTAL	100%				100%				53%	100%

Under any of the options in Alternative 2, Component 2, the trawl sector’s overall allocation would be reduced, as the quota that is currently reallocated near the end of the fishing year will instead be part of the fixed gear sector’s overall initial allocation. This action is thus expected to reduce the amount of quota that is projected to remain unused by the trawl sector and reallocated on an annual basis. This is in part the purpose of this amendment, in order to reflect actual use by sector.

Under Alternative 1, the trawl sectors overall receive an allocation of 47% of the BSAI Pacific cod TAC. Under Alternative 2, the trawl sectors overall could receive an allocation in the range of 37%–42%. Table 3-73 provides an example below, should the overall trawl allocation be reduced (by the maximum of 10%) to 37%⁷⁰ under Option 2.6 and Option 2.8, Suboption 4. Note that under this option, the trawl CP sectors have a combined allocation of 16.6% and the trawl CV sectors have a combined allocation of 20.5%. Note also that while this is the lowest possible allocation to all trawl sectors combined, it is also the lowest possible allocation proposed for the trawl CV sectors combined. However, the lowest possible allocation proposed for the combined trawl CP sectors is 14.5%. Under this same option, the fixed gear allocation would be increased (by 10%) to 61% and the jig gear allocation would remain at 2%. **This example provides the maximum change possible to each overall gear type under the options in Component 2.**

Under **Option 3.1**, the result is that any possible reduction in the trawl allocation would be distributed proportionally among each of its three seasons. Likewise, any potential increase to the fixed gear allocation would be distributed proportionally between its A and B seasons. The intent is for the seasonal allocations between the trawl CP and trawl CV sectors to continue (which combined, represent a 60% - 20% - 20% split).

⁷⁰The minimum allocation the overall trawl sectors could receive is 37.1% under Option 2.6 and Option 2.8, Suboption 4. The maximum allocation the fixed gear sectors could receive is 61.6% under Option 2.6.

Table 3-73 Example of maximum effect of Component 2 and Component 3, Option 3.1, moving 10% of ITAC from trawl to fixed gear

Date	TRAWL CP			TRAWL CV			TOTAL TRAWL		
	% of ITAC	Trawl CP Season % of Allocation	Trawl CP Season % of ITAC	% of ITAC	Trawl CV Season % of Allocation	Trawl CV Season % of ITAC	Total Trawl % of allocation	Total Trawl % of ITAC	
	16.6%			20.5%				37%	
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)								
20-Jan		A	50%	8.3%		70%	14.4%	60%	22.7%
1-Apr									
1-Apr		B	30%	5.0%		10%	2.1%	20%	7.0%
10-Jun									
10-Jun		C	20%	3.3%		20%	4.1%	20%	7.4%
1-Nov									
31-Dec	(no cod target allowed with trawl gear after 11/1)								
TOTAL			100%	16.6%		100%	20.5%	100%	37%

Table 3-73 continued

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	61%				2%				63%	100%
1-Jan										
20-Jan		A	60%	36.6%		A	40%	0.8%	37.8%	67.4%
1-Apr										
1-Apr						B	20%	0.4%		
10-Jun										
10-Jun		B	40%	24.4%		C	40%	0.8%	25.2%	32.6%
1-Nov										
31-Dec										
TOTAL			100%	61%			100%	2.0%	63%	100%

Table 3-73 shows how the seasonal allocations would be established under current regulations, such that the current 60/20/20 split would be applied to the new allocation to the trawl sector and the current 60/40 split would be applied to the new allocation to the fixed gear sector. *For example, 60% of the 10% allocation increase to the fixed gear sector is apportioned to the A season, and 40% of the 10% increase is apportioned to the B season. While the seasonal percentage of the gear allocations do not change, the seasonal percentage of the ITAC taken by each sector necessarily changes, as does the overall percent of the ITAC harvested in the first and second halves of the year.* The overall percent of the ITAC harvested in the first half of the year is reduced to about 67.4% and the second half of the year is increased to 32.6%. Compare this to the status quo in Table 3-71 and Table 3-72.

Option 3.2

It was noted at the April 2005 Council meeting, however, that the purpose of the proposed amendment is to revise the allocations such that they reflect actual historical use, and that the quota that comprises the adjustment in allocations is quota that is harvested only in the second half of the year. In addition, it is not likely that the reasons the trawl sector does not currently harvest its entire C season allocation will change substantially in the near future, which increases the likelihood of continued

reallocations, albeit of a lower amount. These discussions spurred consideration of the following concept represented in Options 3.2 and 3.3.

Option 3.2 would calculate the seasonal apportionments to the trawl and hook-and-line sectors differently from Option 3.1. Given that the reallocations from the trawl sector have historically occurred only in the trawl sector's C season (after June 10), Option 3.2 was included to revise the allocations such that they would maintain the overall seasonal catch distribution between the trawl and fixed gear sectors that is currently occurring. The purpose is to consider an option to revise the allocations that would mirror historical use, given that the quota that comprises the adjustment in allocations is quota that is 'rolled over' from the trawl to the fixed gear sector in the second half of the year.

In effect, in combination with Component 2, Option 3.2 would:

- revise the current overall allocation to the trawl sector (from 47% of the BSAI Pacific cod ITAC to X) and fixed gear sector (from 51% of the BSAI Pacific cod ITAC to Y) (*10% is maximum change in overall allocations under Component 2*)
- maintain the current allocations in the A/B seasons for trawl gear (47%) and the A season for fixed gear (51%)
- provide that any reduction in the overall trawl allocation resulting from the proposed amendment would be applied only in the C season for trawl gear (June 10 – November 1)
- provide that any increase in the fixed gear allocation resulting from the proposed amendment would be applied only in the B season for fixed gear (June 10 – December 31)

Option 3.2 necessarily changes the seasonal apportionments by gear type that are currently in regulation for the trawl and fixed gear sectors, but would maintain the overall seasonal apportionment for all gear types of about 70% in the A season and 30% in the B season. It also mirrors what is currently occurring in the fisheries given the annual reallocations, in effect, it maintains the percent of the ITAC that each sector harvests in the first half of the year.

Refer back to Table 3-22 and Table 3-23 to see what has actually occurred in the BSAI Pacific cod fishery on average during 2001 – 2004, given that quota is annually reallocated from the trawl to fixed gear sectors in the second half of the year, as authorized by current regulations. In sum, the seasonal percentage of the ITAC actually harvested by trawl gear decreases substantially in the B and C seasons, compared to the percentage of the ITAC that the trawl sector is allocated during those seasons. Likewise, the seasonal percentage of the ITAC actually harvested by fixed gear increases substantially in its B season, compared to the percentage of the ITAC that the fixed gear sector is allocated during that season. This is not unexpected, as these reallocations have been provided for in regulation and have occurred every year since the original gear splits were established in 1994.

Table 3-22 and Table 3-23 show that the overall temporal distribution of cod harvest between the first and second halves of the year does not exceed 70% in the first half of the year, since reallocations *within* gear sectors roll to the next subsequent season, and reallocations *between* gear sectors only shift quota within the second half of the year (June 10 – Dec. 31). **On average during 2001 – 2004, the temporal distribution of overall cod harvest has actually been about 62.3% in the first half of the year and 36.1% in the second half.** In years when a portion of the trawl B season quota is rolled over to the trawl C season, the overall distribution of cod harvests between the first and second half of the year shifts to less than 70% harvested in the first half of the year.

Table 3-74 shows the effect of Component 3, Option 3.2, using the maximum change in allocation between the trawl and fixed gear sectors possible under Component 2 (10%). Because the trawl CV

and CP sectors currently have different seasonal apportionments and will receive different potential allocations under Component 2, the effect on each sector varies and is shown separately.

Table 3-74 Example of maximum effect of Component 2 and Component 3, Option 3.2, moving 10% of ITAC from trawl to fixed gear

Date	TRAWL CP			TRAWL CV			TOTAL	
	% of ITAC	Season	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of ITAC
	16.6%				20.5%			37%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	70.8%	11.8%		80.2%	16.5%	28.2%
1-Apr		B	42.5%	7.1%		11.5%	2.4%	9.4%
10-Jun		C	-13.3%	-2.2%		8.3%	1.7%	-0.5%
1-Nov	(no cod target allowed with trawl gear after 11/1)							
31-Dec								
TOTAL			100%	16.6%		100%	20.5%	37%

Table 3-74 continued

Date	FIXED			JIG			Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC		
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season			Seasonal % of Allocation	Seasonal % of ITAC
	61%							63%	100%	
1-Jan										
20-Jan		A	50%	30.6%		A	40%	0.8%	31.8%	69.4%
1-Apr		B				B	20%	0.4%		
10-Jun										
10-Jun		B	50%	30.4%		C	40%	0.8%	31.2%	30.7%
1-Nov										
31-Dec										
TOTAL			100%	61%		100%	2.0%	63%	100%	

Note that under the maximum allocation change considered between the trawl and fixed gear sectors (10%), Option 3.2 would increase the amount of the BSAI Pacific cod ITAC harvested in the first half of the year compared to Option 3.1 (from 67.4% to 69.4%) but would not exceed the 70% seasonal target that was established under the 2001 Steller sea lion mitigation measures. Instead, Option 3.2 mirrors what is allowed under current regulations in terms of harvest in the first and second halves of the year. The great majority of the trawl sectors' harvest would necessarily be allocated to and harvested in the A and B seasons. By contrast, the fixed gear sectors would harvest half of their allocation in the A season and half in the B season.

Note also that under the maximum change between the overall trawl and fixed gear allocations (10%), applying Option 3.2 results in a negative allocation to the trawl CP sectors in the C season. Upon determination of a preferred alternative and allocations for each sector, the seasonal apportionments can be determined to ensure that no negative allocations are established. **If Component 3, Option 3.2 is**

preferred, the combined trawl CP allocation would need to be at least 18.8% in order to avoid establishing a negative allocation in the C season. With an allocation of 18.8% to the trawl CP sector, the trawl CP sector would be apportioned 11.8% of the ITAC in the A season, 7.1% in the B season, and 0% in the C season. Note, however, that there are not currently any options that would meet this threshold. Under the current options proposed in Component 2, the highest (combined) allocation to the trawl CP sectors is 18.0%.⁷¹

In sum, Option 3.2:

- *would* change the seasonal apportionment of the trawl sector's overall allocation from the current 60% - 20% - 20% in regulation, and *would* change the seasonal apportionment of the fixed gear sector's overall allocation from the current 60% - 40% in regulation.
- *would not* change the percentage (or mt) of the ITAC harvested by *each gear sector* in the first half of the year.
- *would* change the percentage of the ITAC (or mt) harvested by *each gear sector* in the second half of the year.
- *would not* change the distribution of harvest of the TAC overall by both gear types between the first half of the year and the second half of the year such that the 70% allocation to the first half of the year would be exceeded.
- *would* create a negative C season apportionment for the trawl CP sectors (combined) under the proposed range of allocations

Option 3.3, Suboption 1

Option 3.3 modifies the concept proposed under Option 3.2 to maintain only the A season harvest for the trawl sector (Jan. 20 – April 1). Any reduction in the overall trawl allocation resulting from the options in Component 2 would be applied only in the B and C seasons for trawl gear. Any increase in the overall fixed gear allocation resulting from Component 2 would be applied in both the A and B seasons for fixed gear. There are also three suboptions proposed regarding how the reduction to the trawl sectors would be applied. These are addressed in the following sections.

In effect, in combination with Component 2, Option 3.3 would:

- revise the current overall allocation to the trawl sector (from 47% of the BSAI Pacific cod ITAC to X) and fixed gear sector (from 51% of the BSAI Pacific cod ITAC to Y) (*10% is maximum change in overall allocations under Component 2*)
- maintain the current allocations in the A season for trawl gear (47%)
- provide that any reduction in the overall trawl allocation resulting from the proposed amendment would be applied only in the B and C seasons for trawl gear (April 1 – November 1)

The following tables show the effect of Component 3, Option 3.3, again using the maximum change in allocation between the trawl and fixed gear sectors possible under Component 2 (10%). **Table 3-75 represents Suboption 1, in which the reduction to the trawl sector's allocation is applied proportionately to the B and C trawl seasons.** The trawl CP sector allocation is currently seasonally apportioned 50% - 30% - 20% in the A, B, and C seasons respectively. Thus, the trawl CP sector is currently allocated 60% of its total B and C season allocation in the B season and 40% in the C season. Suboption 1 apports the revised allocation to the B and C season by the same percentages.

⁷¹This is under Component 2, Option 2.2, including the AFA 9 and the drop year provision.

Likewise, the trawl CV sector allocation is currently apportioned 70% - 10% - 20% in the A, B, and C seasons, respectively. Thus, the trawl CV sector is currently allocated 33% of its total B and C season allocation in the B season and 67% in the C season. Thus, Option 3.3, Suboption 1 apports the revised allocation to the B and C season by the same percentages.

Table 3-75 Example of maximum effect of Component 2 and Component 3, Option 3.3, Suboption 1 moving 10% of ITAC from trawl to fixed gear

Date	TRAWL CP				TRAWL CV			TOTAL
	% of ITAC	Season	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of ITAC
	16.6%				20.5%			37%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	70.8%	11.8%		80.2%	16.5%	28.2%
1-Apr		B	17.5%	2.9%		6.6%	1.4%	4.3%
10-Jun		C	11.7%	1.9%		13.2%	2.7%	4.6%
10-Jun	(no cod target allowed with trawl gear after 11/1)							
1-Nov								
31-Dec								
TOTAL			100%	16.6%		100%	20.5%	37%

Table 3-75 continued

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	61%				2%				63%	100%
1-Jan						A	40%	0.8%	37.8%	70.3%
20-Jan		A	60%	36.6%		B	20%	0.4%		
1-Apr		B	40%	24.4%		C	40%	0.8%	25.2%	29.8%
10-Jun										
1-Nov										
31-Dec										
TOTAL			100%	61%			100%	2.0%	63%	100%

Note that under the **maximum** allocation change considered between the trawl and fixed gear sectors (10%), Option 3.3, Suboption 1 would increase the amount of the allowable harvest of the BSAI Pacific cod ITAC in the first half of the year compared to what is allowable under status quo or Option 3.2 (from 69.4% to 70.3%) or compared to what is allowable under Option 3.1 (from 67.4% to 70.3%). **Option 3.3, Suboption 1 appears to very slightly exceed the 70% seasonal target that was established under the 2001 Steller sea lion mitigation measures, when combined with the maximum allocation change proposed between trawl and fixed gear under Component 2. Note, however, that this is not the case for every allocation option proposed under Component 2.** For example, any of the allocation options shown in Table 3-63 (allocations based on catch history only) combined with Option 3.3, Suboption 1, would not exceed the 70% threshold. In addition, if small boat allocations are fixed under Option 2.8,

only those allocations combined with Option 2.6 (with one exception)⁷² would result in exceeding the 70% threshold (see Table 3-69).

Note, also, that any quota that is reallocated from the trawl B season to the trawl C season would continue to shift the harvest distribution such that less than 70% of the ITAC is harvested in the first half of the year and more than 30% is harvested in the second half of the year. See Table 3-18 and Table 3-19 in Section 3.3.5.6 for the average 2001 – 2004 trawl reallocation amounts by season. Trawl rollovers from the B to the C season occur frequently in the trawl CP sectors, averaging about 6% of the BSAI Pacific cod ITAC during 2001 – 2004.

Option 3.3, Suboption 2

Table 3-76 represents Option 3.3, Suboption 2, in which the reduction to the trawl sector's allocation is applied equally to the B and C trawl seasons. In effect, Suboption 2 does not reflect the current B/C split for either of the trawl sectors. Neither Suboption 1 nor Suboption 2 affects the seasonal allocation apportionment to the fixed gear sectors or jig sector; only the trawl sectors are affected. Under Suboption 1, the trawl CP sectors would be allocated more of the ITAC in the B season than the C season, and the trawl CV sectors would be allocated more of the ITAC in the C season than the B season, as is done currently. Under Suboption 2, the trawl CP sector would receive equal apportionments in the B and C season; as would the trawl CV sector.

Note that under the **maximum** allocation change considered between the trawl and fixed gear sectors (10%), Option 3.3, Suboption 2 would increase the amount of the allowable harvest of the BSAI Pacific cod ITAC in the first half of the year compared to what is allowable under status quo or Option 3.2 (from 69.4% to 70.4%) or compared to what is allowable under Option 3.1 (from 67.4% to 70.4%). **Option 3.3, Suboption 2 appears to very slightly exceed the 70% seasonal target that was established under the 2001 Steller sea lion mitigation measures when combined with almost every allocation scenario proposed under Component 2. The only allocation scenario under Component 2 that does not result in exceeding the 70% threshold when combined with Option 3.3, Suboption 2, is Option 2.2 (including AFA 9 and the drop year provision.)**

⁷²Component 2, Option 2.5 combined with Option 2.8, Suboption 4, and in combination with Component 3, Option 3.3, Suboption 1, would also result in exceeding the 70% threshold.

Table 3-76 Example of maximum effect of Component 2 and Component 3, Option 3.3, Suboption 2 moving 10% of ITAC from trawl to fixed gear

Date	TRAWL CP				TRAWL CV			TOTAL
	% of ITAC	Season	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of ITAC
	16.6%				20.5%			37%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	70.8%	11.8%		80.2%	16.5%	28.2%
1-Apr		B	14.6%	2.4%		9.9%	2.0%	4.5%
1-Apr		C	14.6%	2.4%		9.9%	2.0%	4.5%
10-Jun								
1-Nov								
31-Dec	(no cod target allowed with trawl gear after 11/1)							
TOTAL			100%	16.6%		100%	20.5%	37%

Table 3-76 continued

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	61%				2%				63%	100%
1-Jan						A	40%	0.8%	37.7%	70.4%
20-Jan		A	60%	36.5%		B	20%	0.4%		
1-Apr									25.2%	29.6%
1-Apr		B	40%	24.4%		C	40%	0.8%		
10-Jun										
1-Nov										
31-Dec										
TOTAL			100%	61%			100%	2.0%	63%	100%

As discussed previously, however, any quota that is reallocated from the trawl B season to the trawl C season would continue to shift the harvest distribution such that less than 70% of the ITAC is harvested in the first half of the year and more than 30% is harvested in the second half of the year. This scenario is a common occurrence for the trawl CP sectors. On average the trawl CP sectors have harvested 2.2% of the BSAI Pacific cod ITAC during their B season; note that under Option 3.3, Suboption 2, and the lowest overall trawl sector allocation proposed under Component 2, the trawl CP sectors are allocated 2.4% of the ITAC in the B season. However, while the example uses the lowest allocation to the overall trawl sectors (37%) proposed in Component 2, there are allocations proposed to the combined *trawl CP* sectors that are lower than the 16.6% used in the example. (Note that 20.5% is the lowest allocation proposed for the *trawl CV* sector.) Upon selection of a preferred alternative, the effects of the selected trawl CP and trawl CV allocations and the seasonal apportionments can be determined.

Option 3.3, Suboption 3

The following tables represent Option 3.3, Suboption 3, in which the percentage of the ITAC allocated to the trawl sectors' A season is the same as the status quo allocation (60% x 23.5% of the ITAC), and the reduction to the trawl sector's allocation is first applied in the C season. Any increase in the allocation to fixed gear is applied in the A season. In the event that the final revised allocations and apportionments exceed the 70/30 split in place under the Steller sea lion mitigation measures, the hook-and-line CP sector's A season allocation is adjusted as necessary by shifting A season quota to its B season.

The three primary differences under Suboption 3 are: 1) the entire reduction to the trawl sectors' overall BSAI allocation is taken entirely from the C season if possible; 2) the increase in the fixed gear sectors' overall BSAI allocation is attributed to the A season, and 3) direction is provided on how to reduce the amount of the overall ITAC harvested in the A season should it become necessary. In the latter case, a portion of the hook-and-line CP sector's A season allocation would be shifted to its B season, to the extent necessary to meet the 70/30 overall split. It is assumed that the remaining fixed gear sectors would receive any increase in their allocation in the A season.

Table 3-77 below shows the result of the first step in Option 3.3, Suboption 3, under the **maximum** allocation change considered between the trawl and fixed gear sectors (10%), **without having adjusted the hook-and-line sector's A season allocation to meet the 70% - 30% target.**

Table 3-77 Example of first step of implementation of Component 2 and Option 3.3, Suboption 3, showing 10% of ITAC moved from trawl gear to fixed gear

Date	TRAWL CP			TRAWL CV			TOTAL	
	% of ITAC	Season	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of ITAC
	16.6%				20.5%			37%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	70.8%	11.8%		80.2%	16.5%	28.2%
1-Apr								
1-Apr		B	29.2%	4.9%		19.8%	4.1%	8.9%
10-Jun								
10-Jun		C	0.0%	0.0%		0.0%	0.0%	0.0%
1-Nov								
31-Dec	(no cod target allowed with trawl gear after 11/1)							
TOTAL			100%	16.6%		100%	20.5%	37%

Table 3-77 continued.

Date	FIXED			JIG			Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC		
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season			Seasonal % of Allocation	Seasonal % of ITAC
	61%							63%	100%	
1-Jan										
20-Jan		A	67%	40.6%		A	40%	0.8%	41.8%	78.9%
1-Apr										
1-Apr						B	20%	0.4%		
10-Jun										
10-Jun		B	33%	20.4%		C	40%	0.8%	21.2%	21.2%
1-Nov										
31-Dec										
TOTAL			100%	61%		100%	2.0%	63%	100%	

Table 3-77 shows that if the trawl sectors' combined percentage of the ITAC in the A season is maintained at the existing percentage of 28.2%, and the entire reduction to the trawl sectors' BSAI allocations is taken from the C season, the trawl sector B season allocation is only slightly less than status quo (compare status quo of 9.4% of the ITAC to 8.9% under this suboption). It also shows that if the increase in overall allocation to the fixed gear sector is attributed to the A season (i.e., adding 10% of the ITAC to the fixed gear A season), the amount of the total BSAI Pacific cod ITAC that could be taken in the first half of the year increases to **78.9%**. In effect, because Suboption 3 takes the entire *reduction* to the trawl sector allocation *only* from the C season, and because any *increase* in the fixed gear allocation is applied to the A season, the total percentage of the ITAC that can be taken in the first half of the year well exceeds the 70% limit. It represents about 9.5% more ITAC in the first half of the year than is allowed under status quo (from 69.4% to 78.9%). Recall that both Suboptions 1 and 2 split the trawl reduction between both the B and C seasons.

Table 3-78 below shows the result of the second step in Option 3.3, Suboption 3, meaning the adjustment is applied to the hook-and-line sector's A season allocation to meet the 70% - 30% target. Suboption 3 directs that the total amount of the ITAC taken in the first half of the year should be limited to 70%, and that the reduction necessary to meet that limit is taken from the hook-and-line CP sector A season allocation. Thus, the result under this example is that 8.9% (78.9% - 70% = 8.9%) of the ITAC is shifted from the hook-and-line CP sector A season to its B season.

Table 3-78 Example of second step of implementation of Component 2 and Option 3.3, Suboption 3, showing 10% of ITAC moved from trawl gear

Date	TRAWL CP				TRAWL CV			TOTAL
	% of ITAC	Season	Trawl CP	Trawl CP	% of ITAC	Trawl CV	Trawl CV	Total Trawl % of ITAC
			Seasonal % of Allocation	Seasonal % of ITAC		Seasonal % of Allocation	Seasonal % of ITAC	
	16.6%				20.5%			37%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	70.8%	11.8%		80.2%	16.5%	28.2%
1-Apr		B	29.2%	4.9%		19.8%	4.1%	8.9%
10-Jun		C	0.0%	0.0%		0.0%	0.0%	0.0%
1-Nov	(no cod target allowed with trawl gear after 11/1)							
31-Dec								
TOTAL			100%	16.6%		100%	20.5%	37%

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal	Seasonal	Percent of ITAC	Season	Seasonal	Seasonal		
			% of Allocation	% of ITAC			% of Allocation	% of ITAC		
	61%				2%				63%	100%
1-Jan		A	52%	31.7%		A	40%	0.8%	32.9%	70.0%
20-Jan		B	20%	0.4%		B	20%	0.4%		
1-Apr						C	40%	0.8%	30.1%	30.1%
10-Jun		B	48%	29.3%						
1-Nov										
31-Dec										
TOTAL			100%	61%			100%	2.0%	63%	100%

Note: Under this allocation example, the hook-and-line CP sector receives 48.5% of the total BSAI Pacific cod ITAC. In order to reduce the overall ITAC taken in the first half of the year from 78.9% to 70%, 8.9% of the ITAC is subtracted from the hook-and-line CP A season allocation. This results a hook-and-line CP sector allocation of 23.6% (A) + 24.9% (B) = 48.5% of the BSAI Pacific cod ITAC.

In effect, all other fixed gear sectors that receive an increase in their overall BSAI allocation would realize that increase in the A season, however, the hook-and-line CP sector would receive a reduction in the amount of the ITAC they could take in the A season. Regardless of the increase in total allocation to this sector, in this example, from 40.8% to 48.5%, the hook-and-line CP sector would be allocated 0.9 percentage points less of the ITAC in the A season than under status quo. For example:

Table 3-79 Percent of BSAI Pacific cod ITAC allocated to the hook-and-line CP sector by season, status quo compared to example under Option 3.3, Suboption 3

Hook-and-line CP sector	Option 3.3, Suboption 3 (% of BSAI ITAC)	Status quo (% of BSAI ITAC)
A season	23.6%	24.5%
B season	24.9%	16.3%
Total allocation	48.5%	40.8%

Note: The above uses an example of the allocation scenario from Table 3-78. This results in a new allocation to the hook-and-line CP sector of 48.5% of the BSAI Pacific cod ITAC.

In addition, because the reduction to the overall ITAC in the first half of the year comes off the hook-and-line CP sector allocation, the result is that the seasonal percentages of each fixed gear sectors' allocation are varied. Table 3-80 below shows the result of the example for the fixed gear sectors from Table 3-75. If the fixed gear sector overall needs to meet an apportionment of 52% of their total allocation in the A season and 48% in the B season under that example allocation scenario, and this is accomplished by reducing only the hook-and-line CP sector's A season allocation, the hook-and-line CP sector allocation is apportioned 48.6% - 51.4% between the A and B seasons, and all other fixed gear sector allocations are apportioned 64.8% - 35.2%. This is because the allocations to the other fixed gear sectors are relatively small, and under Suboption 3, any increase in their allocations is applied only to the A season.

Table 3-80 Example of seasonal apportionments to the hook-and-line CP sector and all other >60' fixed gear sectors under Option 3.3, Suboption 3

Season	H&L CP		all other fixed gear		All fixed gear	
	% ITAC	% allocation	% ITAC	% allocation	% ITAC	% allocation
A	23.6%	48.6%	8.1%	64.8%	31.7%	52.0%
B	24.9%	51.4%	4.4%	35.2%	29.3%	48.0%
total	48.5%	100.0%	12.5%	100.0%	61.0%	100.0%

Note: This table uses an example of a new allocation to the hook-and-line CP sector of 48.5% of the BSAI Pacific cod ITAC and a new allocation to the remaining fixed gear sectors of 12.5% of the BSAI Pacific cod ITAC.

By contrast, if all other fixed gear sectors except for the hook-and-line CP sector maintained a 60% - 40% allocation apportionment under Option 3.3, Suboption 3, the hook-and-line CP sector would only need to modify their seasonal apportionment to about 50% - 50%. This means that the hook-and-line CP sector would receive about the same percentage of the ITAC in the A season that they currently do under status quo. See Table 3-81 below.

Table 3-81 Example of seasonal apportionments to the hook-and-line CP sector and all other >60' fixed gear sectors under modified Option 3.3, Suboption 3

Season	H&L CP		all other fixed gear		All fixed gear	
	% ITAC	% allocation	% ITAC	% allocation	% ITAC	% allocation
A	24.2%	49.9%	7.5%	60.0%	31.7%	52.0%
B	24.3%	50.1%	5.0%	40.0%	29.3%	48.0%
total	48.5%	100.0%	12.5%	100.0%	61.0%	100.0%

Note: This table uses an example of a new allocation to the hook-and-line CP sector of 48.5% of the BSAI Pacific cod ITAC and a new allocation to the remaining fixed gear sectors of 12.5% of the BSAI Pacific cod ITAC.

The primary difference under Suboption 3, compared to Suboptions 1 and 2 under Option 3.3, is that the reduction in the trawl sectors' allocations are taken wholly from the trawl C season (second half of the year), as opposed to being split between the trawl B and C seasons (which encompasses the first and second halves of the year). Because of the level of change in the sectors' allocations, and the provision to stay within the current overall 70% - 30% split, the hook-and-line CP sector does not appear to receive the intended benefit of an increase in the A season.

Recall that the previous tables provide an example of one allocation scenario; the maximum shift in allocation from the overall trawl sector to the overall fixed gear sector. **However, there are a multitude of other allocation options proposed in this amendment package, some of which will have a greater effect on the hook-and-line CP sector's A season under Suboption 3.** For example, while the Council may select an allocation for each individual sector that falls within the allocation range determined by the proposed options, the specific options under Component 2 result in a maximum possible allocation to the combined trawl sectors of 42%. Thus, consider the example of the following BSAI Pacific cod allocations: 42% - trawl gear; 56% fixed gear; 2% jig gear. Under Suboption 3, the resulting seasonal allocations from this allocation scenario are shown in Table 3-82.

Table 3-82 Example of first step of implementation of Component 2 and Option 3.3, Suboption 3, showing 5% of ITAC moved from trawl gear to fixed gear

Date	TRAWL CP				TRAWL CV			TOTAL
	% of ITAC	Season	Trawl CP Seasonal % of Allocation	Trawl CP Seasonal % of ITAC	% of ITAC	Trawl CV Seasonal % of Allocation	Trawl CV Seasonal % of ITAC	Total Trawl % of ITAC
	18.0%				24.0%			42%
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	65.3%	11.8%		68.5%	16.5%	28.2%
1-Apr								
1-Apr		B	34.7%	6.3%		31.5%	7.6%	13.8%
10-Jun								
10-Jun		C	0.0%	0.0%		0.0%	0.0%	0.0%
1-Nov								
31-Dec	(no cod target allowed with trawl gear after 11/1)							
TOTAL			100%	18.0%		100%	24.0%	42%

Table 3-82 continued.

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	56%				2%				58%	100%
1-Jan						A	40%	0.8%	36.8%	78.8%
20-Jan										
1-Apr		A	64%	35.6%						
1-Apr						B	20%	0.4%		
10-Jun										
10-Jun						C	40%	0.8%	21.2%	21.2%
1-Nov		B	36%	20.4%						
31-Dec										
TOTAL			100%	56%			100%	2.0%	58%	100%

Table 3-83 Example of second step of implementation of Component 2 and Option 3.3, Suboption 3, showing 5% of ITAC moved from trawl gear

Date	FIXED				JIG				Total Fixed & Jig % of ITAC	Total trawl, fixed and jig % of ITAC
	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC	Percent of ITAC	Season	Seasonal % of Allocation	Seasonal % of ITAC		
	56%				2%				58%	100%
1-Jan						A	40%	0.8%	28.0%	70.0%
20-Jan		A	48%	26.8%						
1-Apr						B	20%	0.4%		
1-Apr									30.0%	30.0%
10-Jun		B	52%	29.2%		C	40%	0.8%		
1-Nov										
31-Dec										
TOTAL			100%	56%			100%	2.0%	58%	100%

Note: Under this allocation example, the hook-and-line CP sector receives 47.6% of the total BSAI Pacific cod ITAC. In order to reduce the overall ITAC taken in the first half of the year from 78.8% to 70%, 8.8% of the ITAC is subtracted from the hook-and-line CP sector A season allocation. This results in an allocation apportionment for the hook-and-line CP sector of 46% (A) and 54% (B). The remaining fixed gear sectors would have their entire allocation in the A season.

Under this maximum allocation to the trawl sectors, and applying the increase to the fixed gear sectors' A season, the resulting overall BSAI Pacific cod ITAC apportioned to the first half of the year is 78.8%, only slightly less than the previous example (78.9%). Table 3-83 shows the second step of implementation, adjusting to the 70% limit by reducing the hook-and-line CP sector's A season allocation by the overage of 8.8% (78.8% - 70.0% = 8.8%). In this example, however, the hook-and-line CP sector receives 47.6% of the total BSAI ITAC. **In order to achieve the 70% threshold, the effect is that the hook-and-line CP sector would be allocated 21.7% of the BSAI Pacific cod ITAC in the A season and 25.9% in the B season.** And while the overall fixed gear seasonal allocation apportionment changes to 48% (A) and 52% (B), the hook-and-line sector's seasonal apportionment would be 46% (A) and 54% (B), under this allocation example. The effect of this example compared to status quo is thus:

Season	H&L CP		all other fixed gear		All fixed gear	
	% ITAC	% allocation	% ITAC	% allocation	% ITAC	% allocation
A	21.7%	45.5%	5.1%	61.1%	26.8%	47.9%
B	25.9%	54.5%	3.3%	38.9%	29.2%	52.1%
total	47.6%	100.0%	8.4%	100.0%	56.0%	100.0%

Finally, all gear sectors have been combined in the above examples for Option 3.1 – Option 3.3, to simplify the illustration. However, it is important to provide at least one example of the resulting seasonal allocations to each separate trawl sector, since the trawl sectors do not currently have separate allocations between the AFA and non-AFA sectors and the current seasonal apportionments differ between the CP and CV trawl sectors.

The example illustrated below is under Option 3.3, Suboption 3, since this suboption provides that *any reduction in trawl allocations will be made proportionately between the AFA CP, non-AFA CP, and AFA CV, non-AFA CV sectors based on their new allocation percentages.* Recall that Suboption 3 first requires that the current percentage of the ITAC allocated to the A season for trawl gear is maintained as status quo. Because the status quo does not currently have separate AFA and non-AFA trawl sector allocations, staff assumes that the same methodology italicized above is to be used to determine how much of the 'status quo' A season allocation is to be attributed to each AFA and non-AFA trawl sector. **This is a necessary step under any of the options or suboptions that maintain the current**

percentage of the ITAC allocated to the trawl sectors (Option 3.2 and Option 3.3, Suboptions 3.1 – 3.3), should the Council select a preferred alternative that establishes separate allocations for the AFA and non-AFA trawl CP and CV sectors. An example for both the trawl CV sectors and trawl CP sectors is provided below.

Table 3-84 below illustrates this concept for the trawl CP sectors, using the same allocation example as provided previously in Table 3-78, whereby the trawl CP sectors combined receive 16.6% of the BSAI Pacific cod ITAC. **Under this option,⁷³ the non-AFA trawl CP sector allocation is 15.7% and the AFA trawl CP sector allocation is 0.9% of the BSAI Pacific cod ITAC.** As provided for in Option 3.3, Suboption 3, the percent of the overall BSAI Pacific cod ITAC allocated to the trawl CP sectors' A season is maintained at 11.8%. That represents status quo (50% x 23.5% of the ITAC). The A season ITAC is then allocated proportionately to the non-AFA trawl CP and AFA trawl CP sectors, based on the sectors' new allocations. The non-AFA trawl CP sector receives 94.6% of the total trawl CP allocation under this allocation scenario, thus, 94.6% of the status quo A season ITAC is allocated to this sector. The AFA trawl CP sector receives 5.4% of the total trawl CP sector allocation under this allocation scenario, thus, 5.4% of the status quo A season ITAC is allocated to this sector. Each trawl CP sector's B season allocation is simply their A season allocation subtracted from their total BSAI allocation.

Table 3-84 Example of effect of options in Component 2 and Option 3.3, Suboption 3, on the trawl CP sectors

Date	TRAWL CP						Trawl CP Seasonal % of ITAC	Trawl CP Seasonal % of Allocation
	% ITAC for total trawl CP	Season	non-AFA CP % ITAC	non-AFA CP % allocation	AFA CP % ITAC	AFA CP % allocation		
	16.6%		15.70%		0.90%			
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	11.1%	70.8%	0.6%	70.8%	11.8%	70.8%
1-Apr		B	4.6%	29.2%	0.3%	29.2%	4.8%	29.2%
10-Jun		C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10-Jun	(no cod target allowed with trawl gear after 11/1)							
1-Nov								
31-Dec	(no cod target allowed with trawl gear after 11/1)							
TOTAL			15.7%	100.0%	0.9%	100.0%	16.6%	100.0%

The same approach is used to illustrate the trawl CV sectors in Table 3-85 below. Under this option, the trawl CV sectors combined receive 20.5% of the BSAI Pacific cod ITAC. **The non-AFA trawl CV sector allocation is 2.7% and the AFA trawl CV sector allocation is 17.8% of the BSAI Pacific cod ITAC.** As provided for in Option 3.3, Suboption 3, the percent of the overall BSAI Pacific cod ITAC allocated to the trawl CV sectors' A season is maintained at 16.5%. That represents status quo (70% x 23.5% of the ITAC). The A season ITAC is then allocated proportionately to the non-AFA trawl CV and AFA trawl CV sectors, based on the sectors' new allocations. The non-AFA trawl CV sector receives 13.2% of the total trawl CV allocation under this allocation scenario, thus, 13.2% of the status quo A season ITAC is allocated to this sector. The AFA trawl CV sector receives 86.8% of the total trawl CV sector allocation under this allocation scenario, thus, 86.8% of the status quo A season ITAC is allocated to this sector. Each trawl CV sector's B season allocation is simply their A season allocation subtracted from their total BSAI allocation.

⁷³These are the resulting allocations from Component 2, Option 2.6 and Option 2.8, Suboption 4.

Table 3-85 Example of effect of options in Component 2 and Option 3.3, Suboption 3, on the trawl CV sectors

Date	TRAWL CV							
	% ITAC for total trawl CV	Season	non-AFA CV % ITAC	non-AFA CV % allocation	AFA CV % ITAC	AFA CV % allocation	Trawl CV Seasonal % of ITAC	Trawl CV Seasonal % of Allocation
	20.5%		2.70%		17.80%			
1-Jan	(no fishing allowed with trawl gear 1/1-1/20)							
20-Jan		A	2.2%	80.2%	14.3%	80.2%	16.5%	80.2%
1-Apr		B	0.5%	19.8%	3.5%	19.8%	4.1%	19.8%
10-Jun		C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1-Nov								
31-Dec	(no cod target allowed with trawl gear after 11/1)							
TOTAL			2.7%	100.0%	17.8%	100.0%	20.5%	100.0%

Summary of effects of Component 3, Options 3.1 – 3.3

Table 3-73 through Table 3-85 show the effect of Options 3.1 – 3.3 under Alternative 2, Component 3. **Option 3.1** would apply the current seasonal apportionments of the allocations to each sector to the new sector allocations selected under Component 2. In effect, this would mean that the overall trawl sector allocation reduction determined under Component 2 (5%–10%), would be applied proportionately among the A, B, and C trawl seasons. Any increase to the fixed gear sectors’ allocations would also be applied proportionately between the A and B seasons.

Under **Option 3.2**, the reduction in the trawl sector’s overall allocation would only be applied to the C trawl season, and the percentage of the BSAI Pacific cod ITAC harvested by trawl gear in the A and B seasons would remain the same as the status quo. This means that, if the trawl sector allocation was reduced by 10% overall, the trawl CP sector would continue to be allowed to harvest up to 11.8% of the ITAC in the A season, 7.1% in the B season, and -2.2% in the C season, depending on the allocation option selected in Component 2. The trawl CV sector would continue to be allowed to harvest up to 16.5% of the ITAC in the A season, 2.4% in the B season, and 1.7% in the C season, depending on the allocation option selected in Component 2.

Note that under the maximum reduction, the trawl CP sector has a negative allocation in the C season. If Component 3, Option 3.2 is preferred, the combined trawl CP allocation would need to be at least 18.8% in order to avoid establishing a negative allocation in the C season. With an allocation of 18.8% to the trawl CP sector, the trawl CP sector would be apportioned 11.8% of the ITAC in the A season, 7.1% in the B season, and 0% in the C season. However, there are no options proposed in the amendment that would meet this threshold. Under the current options in Component 2, the highest (combined) allocation to the trawl CP sectors is 18.0%.⁷⁴

Under **Option 3.3, Suboptions 1 and 2**, the reduction in the trawl sector’s overall allocation would be applied to both the B and C trawl seasons, and the percentage of the BSAI Pacific cod ITAC harvested by trawl gear in the A season would remain the same as the status quo. Under **Option 3.3, Suboption 1**, this means that if the trawl sector allocation was reduced by a maximum of 10% overall, the trawl CP sector

⁷⁴This is the resulting allocation under Component 2, Option 2.2, including the AFA 9 and the drop year provision.

would continue to be allowed to harvest up to 11.8% of the ITAC in the A season, 2.9% in the B season, and 1.9% in the C season. Under this same example, the trawl CV sector would continue to be allowed to harvest up to 16.5% of the ITAC in the A season, 1.4% in the B season, and 2.7% in the C season, depending on the allocation option selected in Component 2.

Under **Option 3.3, Suboption 1**, there is the potential that the apportionments would result in very slightly exceeding the 70% overall limit in the first half of the year established under the Steller sea lion mitigation measures. **Note, however, that this is not the case when this suboption is combined with most of the allocation options under Component 2.** For example, any of the allocation options based on catch history only (see Table 3-63) combined with this option, would not exceed the 70% threshold. In addition, if small boat allocations are fixed under Option 2.8, only those allocations combined with Option 2.6 would result in exceeding the 70% threshold.⁷⁵

Under the example used in **Option 3.3, Suboption 2**, the trawl CP sector would continue to be allowed to harvest up to 11.8% of the ITAC in the A season, and 2.4% in each of the B and C seasons, depending on the allocation option selected in Component 2. The trawl CV sector would continue to be allowed to harvest up to 16.5% of the ITAC in the A season, and 2.0% in each of the B and C seasons, depending on the allocation option selected in Component 2. The fixed gear sector would be apportioned 36.6% of the ITAC in the first half of the year and 24.4% in the second half of the year.

Under **Option 3.3, Suboption 2**, there is also the potential that the apportionments would result in slightly exceeding the 70% overall limit in the first half of the year established under the Steller sea lion mitigation measures. **This is the case when this suboption is combined with most of the allocation options under Component 2.** For example, the only allocation option that does not result in exceeding the 70% threshold is Option 2.2 (including the AFA 9 and the drop year provision).

Option 3.3, Suboption 3 differs from the previous suboptions in that the entire reduction to the trawl sectors' allocations is applied to the C season, and the percentage of the BSAI Pacific cod ITAC harvested by trawl gear in the A season would remain the same as the status quo. In addition, any increase in the fixed gear sectors' allocations is applied to the A season. If the result exceeds the overall 70% limit in the first half of the year, the hook-and-line CP sector's A season quota is shifted to the B season to the extent necessary.

While Suboption 3 is stated such that the 70% threshold is not exceeded, the primary effect of the option is to reduce the amount of the ITAC that the hook-and-line CP sector may harvest in the A season. **This is a result of a combination of factors, primarily:** 1) the reduction in the trawl sectors' allocations are taken wholly from the trawl C season (second half of the year), as opposed to being split between the trawl B and C seasons as proposed in the other suboptions; 2) the trawl sectors' current percentage of the ITAC allocated to its A season is maintained at status quo; and 3) the 'leveling' to meet the 70% limit is achieved by reducing only the hook-and-line CP sector A season allocation.

The intent under Suboption 3 may be better achieved by applying the provision that states: "In the event that this revision in allocations and apportionments exceeds the 70/30 Steller sea lion seasonal apportionment, the hook-and-line CP sector's A season allocation will be adjusted as necessary by shifting A season allocation to the B season," to either Suboption 1 or Suboption 2 under Option 3.3. In effect, the trawl sectors would maintain their current A season percentage of the ITAC and receive a portion of their overall allocation reduction in both the B and C seasons; the fixed gear sectors would

⁷⁵There is one exception to this statement: Option 2.5 combined with Option 2.8, Suboption 4, combined with Option 3.3, Suboption 1 would also result in exceeding the 70% threshold.

receive an increase in the amount of the ITAC they could harvest in the A season, and the 70% threshold would be maintained, albeit at a lesser cost to the hook-and-line CP sector.

Finally, there are two general issues surrounding the options under Component 3, combined with the options under Components 1 and 2. The first issue is related to inseason management of the seasonal apportionments to the trawl sectors. Component 1 proposes to create four distinct trawl sectors and Component 2 proposes separate allocations to each of those trawl sectors that are smaller than the overall trawl allocation in the past. The creation of small, more distinct sector allocations, combined with the options under Component 3 to seasonally apportion those allocations, result in much smaller seasonal apportionments to additional trawl sectors than currently exist under the status quo.

For example, under the option discussed previously in which the overall trawl allocation is reduced to 37%,⁷⁶ the non-AFA trawl CV sector would receive an allocation of 2.7% of the BSAI Pacific cod ITAC. This is one of the highest allocations proposed to this sector under this amendment. Apportioning this allocation among three seasons, regardless of the seasons, results in very small allocations by season. For instance, under Option 3.2, 8.3% of the non-AFA trawl CV sector's allocation would be apportioned to the C season. This equates to 0.22% (8.3% x 2.7%) of the BSAI Pacific cod ITAC or about 400 mt using the 2006 BSAI Pacific cod ITAC of 179,450 mt. NMFS inseason managers will likely have increased difficulty monitoring these smaller trawl allocations.

If NMFS manages the Pacific cod allocations to the trawl sectors, as opposed to the sectors managing the allocations internally through a cooperative system, they will likely be managed much more conservatively in order to avoid exceeding a seasonal allocation or sector allocation. Sectors that have cooperative management systems in place would benefit from this ability to manage the allocations internally, as it is likely they would be able to manage the fisheries closer to a particular harvest limit, as opposed to closing fisheries early to avoid exceeding an allocation. Note that all of the trawl sectors, except for the non-AFA trawl CV sector, have or are proposed to have cooperative systems in place prior to approval of this amendment package. Thus, the issues of inseason management are more applicable to the non-AFA trawl CV sector than any other sector. See Section 3.5 for additional details on the issues related to inseason management of the sector allocations. These issues are compounded when the sector allocations are seasonally apportioned into smaller limits, and all trawl sector allocations will need to be closely managed (whether by cooperatives or by NMFS) in order to avoid exceeding the seasonal allocations, especially in the B and C seasons. Another option is to maintain the current combined trawl CP allocation and combined trawl CV allocation, and refrain from establishing four separate Pacific cod allocations to each of the four trawl sectors.

NMFS will not likely be able to provide feedback as to the feasibility of managing the proposed trawl sector allocations until the preferred alternative is selected. It is possible that in some cases, especially for the non-AFA trawl CV sector's B and C season allocations, inseason management would be more likely to have a short, one or two-day opening and then close the directed fishery for that particular sector. Recall that this is only an issue of concern for the trawl sectors. None of the allocations or seasonal apportionments proposed for the fixed or jig gear sectors in this amendment pose an inseason management concern, due in part to: 1) the size of the seasonal allocations; 2) the number of eligible vessels that may fish the sector's allocation; and/or 3) the relatively slow rate of the fishery, in the case of the <60' fixed gear and jig vessels.

The second issue is related to whether Options 3.2 or 3.3 would trigger a formal re-consultation on Steller sea lions. This question is spurred by the fact that the current seasonal apportionments determined for the trawl (60/20/20) and fixed gear (60/40) Pacific cod fisheries are mitigation measures as a result of

⁷⁶Option 2.6 (2000 – 2003) and Option 2.8, Suboption 4 (2% jig allocation and 2% <60' fixed gear allocation).

the 2001 Biological Opinion, and the concept proposed would necessarily change those gear specific seasonal apportionments. (Note that any method to maintain the current seasonal *harvest* by gear sector for a particular season in the context of modifying the overall allocations to each sector would necessarily change the gear specific seasonal apportionments.)

As mentioned previously, the overall approach in the Biological Opinion is to have temporal dispersion in the Pacific cod fishery with a seasonal target for BSAI Pacific cod of 70% (Jan. 1 – June 10) in the first season and 30% (June 10 – December 31) in the second season.⁷⁷ This seasonal split is currently achieved by establishing a 60% - 40% split in the fixed gear fishery (with the exception of fixed gear vessels <60' which have no seasonal apportionment) and 80% - 20% in the trawl fishery.⁷⁸ Among other factors, the Biological Opinion considered the current percentage of the BSAI Pacific cod ITAC that is allocated to each gear sector, the reallocations that were likely to continue to occur from the trawl to the fixed gear sector, and the seasonal harvest of each sector. The overall objective of the temporal dispersion is to limit the amount of the total Pacific cod harvest that could occur in the first half of the year. Thus, it is necessary to understand whether changes to the seasonal apportionment within the trawl and fixed gear sectors' allocations (60/40 for fixed; 60/20/20 for trawl) fall within the bounds of the 2001 consultation on Steller sea lions if the overall limitation on the amount of cod harvested by each gear type (and combined) in the first season is maintained.

On May 4, 2005, Council staff met with NMFS Protected Resources staff and provided them with a review of the concept represented in Options 3.2 and 3.3 and the question above.⁷⁹ A letter was subsequently sent from the Council to NMFS, Alaska Region, requesting a preliminary review of ESA issues related to the proposed concept. The agency's response was provided to the Council at its June 2005 Council meeting, and is attached as **Appendix B**.

In sum, Option 3.3, Suboptions 1 and 2, would very slightly increase the percentage of the BSAI Pacific cod ITAC currently allowed to be harvested in the first half of the year. Suboptions 1 and 2 would allow 70.3% and 70.4% of the BSAI Pacific cod ITAC to be harvested in the first half of the year, respectively, under the smallest trawl allocation proposed in Component 2. Option 3.3, Suboption 3 provides direction on how to reduce the overall percentage allocated to the first half of the year to meet the 70% threshold. This type of provision could also be added at final action to Option 3.3, Suboptions 1 and 2, if desired by the Council.

NMFS will delay a determination as to whether the effect of the options would trigger a formal re-consultation until a preferred alternative is selected. There is no guarantee that simply meeting the 70% threshold established for the first half of the year will satisfy the requirements of the current biological opinion. Regardless, the maximum effect on the current 70% - 30% temporal distribution of the BSAI Pacific cod fishery would modify the distribution to 70.4% - 29.6%. Note that this is the maximum effect of all of the allocations under consideration in Component 2. Note also that any trawl quota that is rolled from the A or B season to the subsequent C season will shift additional quota from the first half of the year to the second half of the year.

⁷⁷Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

⁷⁸Which is achieved by 60% (A); 20% (B); and (20%) C seasons for trawl gear overall, and a 70% (A); 10% (B); 20% (C) split for trawl CVs and 50% (A); 30% (B); and 20% (C) for trawl CPs.

⁷⁹Nicole Kimball (Council staff) provided Kaja Brix and Shane Capron (NMFS, Protected Resources Division) with a draft discussion paper outlining the concept proposed in the April 2005 Council motion. Council and NMFS staff met on May 4, 2005, to review the paper and discuss any preliminary issues of concern related to the ESA.

Option 3.4

Option 3.4 is related only to the seasonal apportionments for the jig gear sector, and can be selected in combination with any of Options 3.1 – 3.3. Option 3.4 proposes to revise the jig gear seasons to a 60% - 20% - 20% trimester basis and continue to reallocate any unused jig quota to catcher vessels <60' using hook-and-line or pot gear at the end of each jig season. The jig seasons would change from:

40%	(Jan. 1 – Apr 30)	to:	60%	(Jan. 1 – Apr 30)
20%	(Apr 30 – Aug 31)		20%	(Apr 30 – Aug 31)
40%	(Aug 31 – Dec 31)		20%	(Aug 31 – Dec 31)

The jig fishery has received 2% of the (non-CDQ) BSAI Pacific cod TAC annually since 1994 under Amendments 24 and 46.⁸⁰ While the fixed and trawl gear fleets were allocated close to their average catch in the original allocations, Amendments 24 and 46 were designed to allow for a substantial increase in the share of the Pacific cod catch taken with jig gear, in order to allow for future growth in the sector. This fishery is considered a small boat, entry-level fishery, exempt from the LLP license requirements.⁸¹ Under this amendment, Alternative 2, Component 2, Options 2.1 – 2.6 would allocate the jig sector its actual harvest during the series of years selected, which is about 0.1% of the BSAI Pacific cod TAC under all options. Under Option 2.7, the Council can select a percentage to each sector, including the jig sector, that falls within the range of allocations analyzed. Under Option 2.8, Suboptions 2, 3, or 4, the jig fishery would continue to receive 2% of the BSAI Pacific cod TAC. Thus, the range of jig sector allocations proposed in this amendment is 0.1% to 2% of the (non-CDQ) BSAI Pacific cod TAC.

The jig fishery for BSAI Pacific cod was seasonally apportioned starting in 2002 under the Steller sea lion rule and the authority under the BSAI FMP. The seasonal apportionment was intended to temporally disperse the cod fishery as a measure to protect cod as a food source for Steller sea lions. The jig fishery was apportioned 60% of the cod quota in the A season (Jan. 1 – June 10) and 40% in the B season (June 10 – Dec. 31) (50 CFR 679.20(a)(7)(iii)), and any unused portion of the first seasonal allowance was reapportioned to the next seasonal allowance.

The jig gear seasons were revised in 2004 from a 60% - 40% split to the existing trimester basis (40% - 20% - 40%) under Amendment 77. In addition, under Amendment 77, any unused jig quota is reallocated to catcher vessels <60' using hook-and-line or pot gear at the end of each jig season. The intent of this change was to provide an opportunity for the <60' fixed gear sector to fish additional quota during the spring and summer months. This is the optimal fishing time for the fleet, due both to better weather and because cod are better aggregated.

Thus, not only did the direction of the reallocation change under Amendment 77, but the first seasonal jig allowance is no longer rolled over to subsequent jig seasons. Because the seasonal apportionment is part of the Steller sea lion rule, NMFS Protected Resources staff reviewed the options under consideration in Amendment 77 and determined that none of the options were cause for formal re-consultation under the ESA. NMFS indicated that the proposed options were likely in the realm of what has previously been considered for the jig fishery, meaning that the changes proposed were not significant enough to suspect that any adverse impacts are likely beyond those previously considered in the FMP Biological Opinion and the 2001 Biological Opinion (NPFMC 2003).

⁸⁰BSAI Amendment 24 originally established the 2% allocation to the BSAI Pacific cod jig fishery in 1994. This amendment was approved for the years 1994 - 1996. Upon expiration, BSAI Amendment 46 continued the 2% cod allocation to vessels using jig gear. Amendment 46 does not have a sunset provision attached. Regulations are located at 50 CFR 679.20(a)(7)(i)(A).

⁸¹Vessels that do not exceed 32' LOA in the BSAI, and vessels that do not exceed 60' LOA and that are using jig gear (no more than 5 jig machines, one line per machine, and 15 hooks per line) are exempt from the LLP requirements in the BSAI.

Option 3.4 proposes to revise the jig gear seasons to a 60% - 20% - 20% trimester basis and continue to reallocate any unused jig quota to catcher vessels <60' using hook-and-line or pot gear at the end of each jig season. In effect, 20% of the jig allocation that is currently allocated to the C season (August 31 – Dec. 31) would instead be allocated to the A season (Jan. 1 – Apr. 30), and potentially subject to reallocation if unused. Twenty percent of the current jig allocation represents 0.4% of the BSAI Pacific cod ITAC (718 mt using the 2006 ITAC).

Refer to Sections 3.3.2 and 3.3.4 for general background information on the BSAI Pacific cod jig fishery in recent years. **This sector harvested an average of 5% of its entire Pacific cod allocation in 1995–2003 (see Table 3-86), and no more than 12% in any one year since 1995.** Thus, the vast majority of the jig quota was reallocated to the hook-and-line catcher processor sector in the fall of each year, prior to 2004. **On average during 1995–2003, reallocations from the jig sector represented about 3% of the hook-and-line catcher processor sector’s revised allocation and 1% of the pot sector’s revised allocation.**

Table 3-86 Allocation, catch, and number of vessels participating in the BSAI Pacific cod fishery using jig gear, 1995 – 2003

Year	Allocation (mt)	Reallocated quota (mt)	Catch (mt)	% of allocation harvested	# vessels
1995	5,000	- 4,000	589	12%	42
1996	5,400	- 4,400	247	5%	34
1997	5,400	- 5,000	167	3%	17
1998	3,885	- 3,500	191	5%	10
1999	3,275	- 2,800	204	6%	15
2000	3,571	- 3,000	79	2%	16
2001	3,478	- 3,000	102	3%	19
2002	3,700	- 3,400	169	5%	18
2003	3,893	- 3,600	154	4%	15
Total 1995–2003	37,602	- 32,700	1,902	5%	
Ave 1995–2003	4,178	- 3,633	211	5%	21

Upon implementation of Amendment 77, 2004 was the first year that the <60' fixed gear sector was authorized to receive unused jig quota. In both 2004 and 2005, preliminary data indicate the jig sector harvested about 6% and 3% of its original allocation,⁸² respectively, thus, the majority of the jig allocation was reallocated to other gear sectors (refer to Table 3-23). **Since the implementation of Amendment 77 in 2004, about half of the unused jig quota has been reallocated to the <60' fixed gear sector, and the other half has been reallocated to the ≥60' fixed gear sectors.**

Specifically, in 2004, the <60' fixed gear sector received a little less than half (44%) of the jig reallocations, the hook-and-line CP sector received about 54%, and the pot sectors received less than 3%. Similarly, in 2005, the <60' fixed gear sector received about 55% of the unused jig quota, the hook-and-line CP sector received about 42%, and the pot sectors received about 2%. On average during 2004 – 2005, reallocations from the jig sector represented about 56% of the <60' fixed gear sector’s total revised allocation. During that same time period, reallocations from the jig sector represented about 1.8% of the hook-and-line CP sector’s total allocation and 0.6% of the pot sector’s total allocation.

Should the jig seasons be modified such that additional jig quota is reallocated to the <60' sector earlier in the year, it potentially represents a shift in the distribution of additional cod quota from the hook-and-line catcher processor, and potentially the pot sectors, to the <60' hook-and-line and pot catcher vessel sector.

⁸²NMFS Catch accounting system, 2004 and 2005. 2005 data are only through December 10, 2005.

Thus, the estimated maximum amount of quota that may be redistributed under Option 3.4 is a 20% of the jig allocation, which represents 0.4% of the BSAI Pacific cod ITAC (718 mt using the 2006 ITAC) under Alternative 1 (status quo) or Alternative 2, Option 2.8. If the jig sector's allocation was modified to 0.1% of the BSAI Pacific cod ITAC to reflect actual catch history under Alternative 2, Options 2.1 – 2.7, 20% of the jig allocation would be 0.02% of the BSAI Pacific cod ITAC (36 mt under the 2006 ITAC).

The intent of Option 3.4 is to provide additional Pacific cod quota to the <60' catcher vessel sector earlier in the year, through the existing rollovers from the jig sector. As discussed previously in Section 0, the <60' fixed gear sector harvested 19% and 64% of its allocation in 2000 and 2001, respectively. This sector first harvested its entire <60' allocation in 2002, and has since harvested its entire allocation plus additional quota from the general pot and hook-and-line CV allocations each year. In addition, 2004 was the first year in which jig quota was reallocated to the <60' fixed gear sector at the end of the jig seasons. In 2004, the <60' fixed gear sector received an initial allocation of 1,416 mt and was reallocated 1,545 mt from the jig sector on April 7, for a total allocation of 2,961 mt. Preliminary data show the sector harvested its entire revised allocation, as well as a portion of the general CV allocations, for a total of 3,196 mt. Public testimony has suggested that this fleet could harvest additional cod if quota was available earlier in the year.⁸³

No definitive conclusions can be drawn regarding whether the <60' sector will be capable of harvesting all reallocated jig quota in the future. However, because the <60' sector is not subject to seasonal apportionments, any reallocated quota can be fished throughout the year (although the <60' hook-and-line sector is subject to halibut bycatch caps, with no halibut bycatch allowance from June 10 – August 15). If the <60' fixed gear sector does not harvest the additional quota by the fall, it would likely be reallocated to the ≥60' fixed gear sectors.

Over time, it seems likely that the presence of significant amounts of unharvested Pacific cod, allocated to the <60' vessel class (in combination with that sector's exemptions from LLP, cod endorsement requirements, etc.) may induce capital investment, including new entrants, in this sector. Growth in the <60' sector may be consistent with the Council's intent, given its expressed desire to provide for an "entry level" cod fishery. However, as the size and capacity of the <60' sector increases, pressure to reallocate additional shares of the Pacific cod TAC, at the expense of other user groups, is possible. As of January 2006, 116 BSAI LLPs are designated for use on <60' fixed gear catcher vessels; six of these are interim licenses. Note that on average, only twenty-six <60' fixed gear vessels had retained BSAI Pacific cod landings during 1995 – 2003.

In evaluating Option 3.4 to reapportion the BSAI Pacific cod jig seasons, it is also important to consider the temporal distribution of the jig and <60' fixed gear harvest. The average percent harvest by sector and trimester in 2002–2004 are provided below in Table 3-87. Note also that the jig allocation was apportioned into two seasons in 2002 and 2003, and by trimester since 2004. The <60' fixed gear sector has no seasonal apportionments.

⁸³In 2005, NMFS reports that the <60' fixed gear sector harvested 2,201 mt of BSAI Pacific cod by November 5, 2005. This sector's initial allocation was 1,354 mt. It received 2,000 mt of jig quota during April, May, and August for a revised allocation of 3,354 mt.

Table 3-87 Percent of each sector's BSAI Pacific cod harvest by trimester, average 2002–2004

Trimester	<60' hook-and-line CV	<60' pot CV	Jig gear
Jan. 1 - Apr. 30	70	60	14
Apr. 30 - Aug. 31	26	37	86
Aug. 31 - Dec. 31	4	3	1
Total	100	100	100

Source: ADF&G fishtickets, 2002 – 2004. It is necessary to provide aggregate data for confidentiality purposes. However, the fixed gear sectors' percentage harvest was substantially higher in the A season in 2003 and 2004 than 2002.

Table 3-87 shows that in the past three years for which data is available, the jig fishery has harvested the majority of its allocation (86%) in the spring and summer months (May – August), with very little harvest occurring in the first and last trimester. Thus, if an additional 20% of the jig allocation from the last trimester is moved to the first trimester, it would not likely disrupt the current jig fishery. This is primarily because the jig fishery only harvested an average of 5% of its allocation in the past ten years, and because almost all of the harvest occurred prior to the last trimester. Industry representatives have asserted in the past that the jig fishery can operate year-round, making it preferable to have some cod available each trimester, even though the majority of the harvest is in the second trimester. **Given the above, the impact of Option 3.4 on the BSAI Pacific cod jig sector appears modest if not negligible at this time.**

If the intent of Option 3.4 is to provide additional quota to the <60' fixed gear sector earlier in the year such that this sector can harvest more Pacific cod, the temporal variations in the <60' fixed gear sector are also necessary to consider. Table 3.67 shows that while the <60' fixed gear sector does not have seasonal apportionments, both the <60' hook-and-line and pot sectors have harvested the majority of their BSAI Pacific cod catch in the first trimester. A lower percentage of harvest is taken in the second trimester, and very little is harvested in the third trimester. The data in Table 3-87 is aggregated over 2002 – 2004 for confidentiality purposes; however, both the <60' pot and hook-and-line sectors' percentage harvest was substantially higher in the A season in 2003 and 2004 than in 2002.

Also note that the <60' fixed gear BSAI Pacific cod fishery has started earlier in recent years. While starting dates are extremely dependent on weather, the <60' fixed gear sectors have consistently harvested the great majority of their total BSAI Pacific cod harvest prior to September. In addition, it is preferable to participants to receive reallocations in a manner that allows the fleet to continue fishing, without starting and stopping intermittently. The earlier the reallocation, the more time for participants to plan their fishing year.

Refer to Table 3-72 for the current seasonal apportionments by gear sector. The current regulations allow for a 69.4%–30.6% distribution of the BSAI Pacific cod ITAC between the first and second halves of the year. Table 3-88 provides an example of the potential shift in distribution of the cod allocations between the first and second halves of the year under Option 3.4 and no other changes to the allocations or seasonal apportionments. Note, however, that it is uncertain whether the shift would occur to this extent, as quota can continue to be rolled from the first half of the year to the second half if the other sector's seasonal apportionments are unused.

Table 3-88 Effect of Option 3.4 and current allocations

Date	Trawl gear (47%)			Fixed gear (51%)			Jig Gear (2%)				TOTAL						
	Season	Percent of trawl allocation	Percent of TAC	Season	Percent of fixed gear allocation	Percent of TAC	Date	Season	Percent of jig gear allocation	Percent of TAC	% of ITAC						
1-Jan	No directed cod trawl fishing prior to Jan. 20			A	60%	30.6%	1-Jan	A	60%	1.2%	69.8%						
20-Jan	A	60%	28.2%				30-Apr										
1-Apr	B	20%	9.4%				30-Apr										
1-Apr				31-Aug	B	20%	0.4%										
10-Jun	C	20%	9.4%	B	40%	20.4%	31-Aug	C	20%	0.4%		30.2%					
1-Nov	No directed cod trawl fishing after Nov. 1						31-Dec										
31-Dec																	
TOTAL	100%			47%			100%			51%		100%		2%		100.0%	

Finally, it is necessary to consider whether the proposed change to the jig sector seasonal apportionments, combined with changes to the allocations selected in Component 2 and seasonal apportionments in Component 3, Options 3.1–3.3, would result in significant changes to the distribution of BSAI Pacific cod harvest between the first and second halves of the year. As discussed previously, the fishery is currently distributed such that up to 70% of the cod harvest is allowed in the first half of the year, and 30% in the second half. Depending on the options selected by the Council in Components 2 and 3, there is the potential that the allocations and seasons would be modified for each sector such that overall, up to 70.4% of the cod harvest would be allowed in the first half of the year, and 29.6% in the second half.

In sum, the proposed change to the jig sector seasonal apportionments under Option 3.4 would potentially redistribute 20% of the jig allocation, which represents 0.4% of the BSAI Pacific cod ITAC, to the first half of the year. The effect of Options 3.1–3.3 are shown in Table 3-73 to Table 3-83. To understand the effects of Option 3.4 on Options 3.1–3.3, 0.4% would be added to the amount of the Pacific cod ITAC that could be harvested in the first half of the year, and 0.4% less in the second half of the year.

It appears that Option 3.4 would likely benefit the <60' fixed gear fleet, due to the larger potential reallocation of cod in the first trimester. Notwithstanding a considerable increase in effort in the BSAI Pacific cod jig fishery, the jig sector would be minimally affected, if at all. As stated previously, the cod harvest by the hook-and-line CP sector and pot sectors, however, could be reduced by a maximum of 20% of the jig allocation, which represents 0.4% of the BSAI Pacific cod ITAC (718 mt using the 2006 ITAC).

Depending on the options selected by the Council in both Components 2 and 3, there is the potential that the allocations and seasons would be modified for each sector such that overall, up to **70.4%** of the BSAI Pacific cod ITAC would be allocated in the first half of the year, and 29.6% in the second half. This scenario is possible under Component 2, Option 2.6, Option 2.8, Suboption 4, and Component 3, Option 3.3, Suboption 2. Including Option 3.4 under this scenario would increase the percentage of the BSAI Pacific cod ITAC allocated in the first half of the year to **70.8%**. While all possible combinations under Alternative 2 can be determined using the data and tables provided in this analysis, note that only the maximum possible change is provided in the tables. Upon selection of a preferred alternative, NMFS Protected Resources staff will informally consult on this issue.

3.4.3.4 Component 4: Rollovers between gear sectors

Inseason management would retain flexibility to determine how to reallocate projected unused sector allocations (rollovers), taking into consideration the hierarchy in the options below. NMFS takes into account the intent of the rollover hierarchy and the likelihood of a sector's capability to harvest reallocated quota.

Option 4.1 Modified status quo. The suite of provisions below comprises Option 4.1.

- 4.1.1 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).
- 4.1.2 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.
 - Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.
- 4.1.3 Projected unused allocation in the jig sector is considered for reallocation to the $<60'$ fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the $<60'$ fixed gear CV sector on September 1.
- 4.1.4 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.
- 4.1.5 Projected unused allocations in the $<60'$ fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Option 4.2 Projected unused allocations to any sector delivering inshore must be considered for reallocation to other inshore sectors before being considered for reallocation to any offshore sector. The suite of provisions below comprises Option 4.2.

4.2.1 Projected unused allocation in the jig sector is considered for reallocation to the <60' fixed gear CV sector on a seasonal basis. The third trimester jig rollover should be available to the <60' fixed gear CV sector on September 1.

4.2.2 Any unused allocation from any inshore sector will first be considered for reallocation to the jig sector and/or <60' fixed gear CV sector; then to the hook-and-line CV $\geq 60'$ or pot CV $\geq 60'$ sector; then to the trawl CV sectors. Any CV allocation that is not likely to be harvested through this hierarchy will be reallocated as per components 4.2.3 – 4.2.6 below.

4.2.3 Projected unused trawl sector allocations are considered for reallocation to other trawl sectors (AFA CP; non-AFA CP; AFA CV; non-AFA CV) before being reallocated to the fixed gear sectors (hook-and-line CP; hook-and-line CV $\geq 60'$; pot CP; pot CV $\geq 60'$).

4.2.4 Reallocation of TAC from the trawl sectors to fixed gear sectors will be 0.9% to pot CP, 4.1% to pot CV $\geq 60'$, and 95% to hook-and-line CP.

Suboption 1: Reallocation of TAC from the trawl sectors to the fixed gear sectors will be proportional to the new fixed gear allocations.

4.2.5 Projected unused pot sector allocations (CPs and $\geq 60'$ CVs) are considered for reallocation to the other pot sector before being reallocated to the hook-and-line CP sector.

4.2.6 Projected unused allocations in the <60' fixed gear CV sector, both pot sectors (CP and $\geq 60'$ CV), and hook-and-line CV $\geq 60'$ are reallocated to the hook-and-line CP sector.

Option 4.1 – Modified status quo

Option 4.1 under Alternative 2, Component 4, is comprised of the suite of provisions in 4.1.1–4.1.5. These provisions are intended as a hierarchy from which to manage quota that is projected to remain unused by a particular gear sector. Note that, with the exception of the jig sector, any unused quota by a sector at the end of a *season* is rolled over to that sector's next subsequent season. Reallocated quota between gear sectors is only applicable to quota that is projected to remain unused by the end of the fishing year.

Option 4.1 mirrors the status quo with three exceptions. These are:

- Addition of the four trawl sector allocations in 4.1.1 as opposed to the existing two trawl sector allocations (trawl CP and trawl CV)
- Suboption 1 under 4.1.2: Reallocated quota from the trawl sectors to the fixed gear sectors would be proportional to the new fixed gear allocations
- Second sentence in 4.1.3: The third trimester jig rollover should be available to the <60' fixed gear CV sector on September 1.

The current seasonal apportionments are outlined in Section 3.3.5.6 and the effects of continuing the status quo are addressed under Alternative 1 (Section 3.4.2). Thus, this section will focus on the effects of the differences in Alternative 2, Option 4.1 compared to the status quo.

First, **provision 4.1.1** includes the additional trawl sectors that may be established under Alternative 2, Component 1. This provision clarifies that if a trawl sector is projected to have unused BSAI Pacific cod quota in its last season, that quota will be considered by NMFS inseason managers for reallocation first to the other trawl sectors, prior to being reallocated to another gear sector. This is consistent with the current regulations, the only difference is that provision 4.1.1 makes it explicit that there may be additional trawl sectors to consider depending on the decision under Component 1 (Component 1 establishes the sectors that will receive a distinct BSAI Pacific cod allocation). If all four trawl sectors receive cod allocations under Alternative 2, provision 4.1.1 under Option 4.1 applies as stated. In effect, if it is projected that the AFA CV sector would not use all of its cod allocation by the end of the year, NMFS could reallocate unused quota to the non-AFA CV sector, and vice versa. Likewise, if it is projected that the AFA CP sector would not use all of its cod allocation by the end of the year, NMFS could reallocate unused quota to the non-AFA CP sector, and vice versa.

Alternatively, if only two or three trawl sectors are established under Alternative 2, Component 1, provision 4.1.1 would be modified to list only the trawl sectors that receive a separate allocation under the amendment. Since 1995, there has been only one year (1997) in which a trawl sector (trawl CV) received quota reallocated from another sector (trawl CP) (see Table 3-10). Thus, while this provision may be necessary to have addressed in regulation, it is not very likely that this scenario will occur under either alternative.

Second, 4.1.2 provides a suboption that varies from the status quo. Suboption 1 states that reallocated quota from the trawl sectors to the fixed gear sectors would be proportional to the new fixed gear allocations. The ‘new’ fixed gear allocation is interpreted to mean the allocations as established under Alternative 2, Component 2 of this amendment. Section 3.4.2.3 describes the current rollover hierarchy of unused trawl quota among the fixed gear sectors: 95% to the hook-and-line CP sector; 0.9% to the pot CP sector; 4.1% to the general pot CV sector. This split is based on the actual harvest of reallocated quota from the trawl and jig sectors harvested by each fixed gear sector during 1996–1998.

Suboption 1 under 4.1.2 would modify the split to the three sectors described above to be the same as the new fixed gear allocations determined in Component 2. The allocation options proposed in Component 2 are based on actual harvest history from varying series of years during 1995 – 2003. Suboption 1 would therefore mirror the allocation split among the hook-and-line CP, pot CP and $\geq 60'$ pot CV sectors. Table 3-89 provides the range of allocations that each of the three sectors could receive in Component 2. The allocation percentages in Table 3.69 are shown as: (1) a percentage of the BSAI Pacific cod ITAC and (2) a percentage of the total allocation to the three sectors combined. Based on this data, Suboption 1 could result in the following percentage splits shown in the right-hand columns of Table 3-89, depending on the option selected under Component 2.

Note that the three fixed gear sectors affected by Suboption 1 could potentially receive allocations under Component 2 that, if combined, represented approximately 56%–61% of the BSAI Pacific cod ITAC. Thus, the percentages in the right-hand columns of Table 3.69 show each of the three sector’s share of the total of 56%–61%. Note that the ranges provided in the table reflect the fact that there are several variations of possible allocations under each of Component 2, Options 2.1–2.8, depending on whether the following options are also selected under Component 1: 1) Suboption a or b; and/or 2) Option 1.1. However, application of these options does not change the allocations to the three fixed gear sectors at issue. Note also that Option 2.7 means the Council can choose allocations for each sector that fall within the range analyzed., thus, no specific allocation percentages are associated with Option 2.7 at this time.

Table 3-89 Potential distribution of reallocated trawl quota among the hook-and-line CP and pot sectors under Option 4.1 (provision 4.1.2, Suboption 1) compared to status quo

Allocation options	H&L CP % of ITAC	Pot CP % of ITAC	≥60 Pot CV % of ITAC	H&L CP % of trawl reallocations	Pot CP % of trawl reallocations	≥60 Pot CV % of trawl reallocations
Status quo	40.8%	1.7%	7.7%	95%	0.9%	4.1%
Option 2.1	48.0 – 49.6%	2.2 – 2.3%	8.4 – 8.6%	81.6 – 82.2%	3.7 – 3.9%	14.1 – 14.5%
Option 2.2	47.6 – 49.5%	2.0 – 2.1%	7.6 – 8.2%	82.4 – 83.6%	3.4 – 3.5%	13.0 – 14.1%
Option 2.3	48.5 – 50.3%	1.7 – 1.8%	8.1 – 8.3%	82.8 – 83.6%	2.9 – 3.0%	13.5 – 14.1%
Option 2.4	48.3 – 50.1%	1.8%	8.0 – 8.3%	82.6 – 83.6%	3.0 – 3.1%	13.4 – 14.3%
Option 2.5	48.5 – 49.6%	1.6 – 1.7%	8.9%	82.1 – 82.6%	2.6 – 2.8%	14.8 – 15.1%
Option 2.6	48.9 – 50.1%	1.4 – 1.5%	9.1 – 9.2%	82.1 – 82.7%	2.3 – 2.5%	15.0 – 15.4%
Option 2.7	--	--	--	--	--	--
Option 2.8	45.8 – 49.1%	1.4 – 2.3%	7.3 – 9.0%	81.6 – 83.6%	2.3 – 3.9%	13.0 – 15.4%

Note: The ranges reflect that there are several variations of possible allocations under each of Component 2, Options 2.1–2.8, depending on whether the following options are selected under Component 1: (1) Suboption a or b; and/or (2) Option 1.1. However, application of these options does not change the allocations to the three fixed gear sectors above. Note also that Option 2.7 means the Council can choose allocations for each sector that fall within the range analyzed., thus, no specific allocation percentages are associated with Option 2.7 at this time.

The effect of Suboption 1 under 4.1.2, under any of the allocation options in Component 2, is that the hook-and-line CP sector will receive 81.6%–83.6% of the trawl reallocations, which represents a reduction of 11.4%–13.4% from the status quo (95%). The pot CP sector would receive 2.3%–3.9% of the trawl reallocations, which represents an increase of 1.4%–3.0% from the status quo (0.9%). The ≥60' pot CV sector would receive 13.0%–15.4% of trawl reallocations, representing an increase of 8.9%–11.3% from the status quo (4.1%), respectively.

The relative reduction in the hook-and-line CP sector's share of the trawl reallocations under Option 4.1 compared to the status quo is due to the fact that the status quo is based on this sector's share of the *actual harvest of trawl reallocations during 1996 – 1998*, and Option 4.1 is based on this sector's share of the *overall BSAI Pacific cod ITAC* among these three fixed gear sectors during a series of years from 1995 – 2003.

Note that in the past four years (2001 – 2004), the hook-and-line CP sector has been allocated about 97% of reallocated trawl quota on average, and harvested nearly all of that quota. Overall, the hook-and-line CP sector has been allocated about 95% of reallocated quota from all other gear sectors on average during that same time period, and harvested about 92% of the total reallocated quota (see Table 3-90). In 2004, the percentage harvested is lower than the average (86%) because half of the jig reallocation was reallocated to the <60' fixed gear sector under Amendment 77.

In recent years, the pot sector has both received reallocated quota and had quota reallocated from it. On average over the past four years, the pot sector has contributed about 8% of the reallocated quota. In 2004, the first year in which the pot CP and pot CV sectors received separate BSAI Pacific cod allocations, the pot CP sector harvested nearly (97%) its entire initial allocation (and received 114 mt in reallocated quota). The pot CV sector harvested about 81% of its initial allocation and had 3,439 mt reallocated from it to the hook-and-line CP sector.

Thus, regardless of the distribution under Suboption 1, this suboption may continue to result in a very similar allocation of reallocated trawl quota to the hook-and-line CP sector that it has realized in the past several years, as NMFS will consider both the hierarchy provided and the likelihood of a sector's capability to harvest reallocated quota. Under the status quo allocations, the pot sectors, specifically the pot CV sector, do not currently appear capable of harvesting a substantial amount of

reallocated quota late in the year. In some years, the pot sectors have had quota reallocated from them, and thus clearly have not been capable of harvesting the 5% of trawl reallocations that they could potentially receive under current regulations. The potential for the pot sectors to harvest additional reallocated quota under Component 4, Option 4.1, Suboption 1, will also depend on the allocation it receives under Component 2. If its allocation is significantly lower than the status quo, the pot sectors may be capable of harvesting more reallocated quota than in previous years; however, the ability of a sector to harvest reallocated quota late in the year is likely more dependent on whether the sector is still on the fishing grounds late in November and December.

Table 3-90 Reallocations harvested by hook-and-line CP and pot sectors, 2001–2004

Year	Total annual reallocated quota	H&L CP initial allocation	H&L CP catch	H&L CP catch attributed to reallocations	% of total reallocated quota harvested by H&L CP	Pot initial allocation	Pot catch	Pot catch attributed to reallocations	% of total reallocated quota harvested by pot
2004	18,524	80,930	96,786	15,856	85.6%	18,512	15,598	-3,325	-17.9%
2003	16,771	77,911	93,412	15,501	92.4%	17,822	20,573	839	5.0%
2002	15,040	75,080	89,397	14,317	95.2%	17,175	15,054	-3,140	-20.9%
2001	27,000	70,551	96,238	25,687	95.1%	16,139	16,506	367	1.4%
Ave 2001 - 04	19,334	76,118	93,958	17,840	92.1%	17,412	16,933	-1,315	-8.1%

Source: Data are from NMFS Blend (2001 - 2002) and the NMFS catch accounting database (2003 - 2004), thus it includes all catch that was attributed to a sector's allocation by NMFS.

Note: The data show that the pot sector had quota reallocated from it (to the hook-and-line CP sector) in 2002 and 2004. In 2002, the pot allocation was combined (CP and CV). In 2004, the pot CP and CV allocations were separate for the first time. In 2004, the reallocated pot quota was only from the pot CV sector. Note also that in 2002, the pot catch exceeded the pot initial allocation and the amount reallocated to the pot sector, thus, only the amount reallocated to the pot sector was counted as 'pot catch attributed to reallocations.'

Note again that the hierarchy in both options under Component 4 is intended only for consideration by NMFS inseason managers. NMFS managers would take into account the intent of the rollover hierarchy, and the likelihood of a sector's capability to harvest reallocated quota prior to making the reallocation. It is important that inseason managers retain this flexibility to determine how to reallocate projected unused sector allocations, in order to avoid intermittent starting and stopping of the fishery and to reduce the risk of foregone harvest.

Finally, **provision 4.1.3** in Option 4.1 states that the third trimester jig rollover should be made available to the <60' fixed gear CV sector on September 1. Note that both the existing jig seasons (Alternative 2, Component 3, Option 3.1) and the modified jig seasons proposed under Alternative 2, Component 3, Option 3.4, are comprised of three trimester seasons, the last of which starts on August 31 and ends December 31. The difference between the two options is that the existing system under Option 3.1 apportions 40% of the total jig allocation to the third trimester, and Option 3.4 would reduce that apportionment to 20%. If the jig allocation remains at 2% of the BSAI Pacific cod ITAC, these apportionments represent .8% and .4% of the BSAI Pacific cod ITAC, respectively.

Provision 4.1.3 in Option 4.1 would thus require NMFS to make the third season jig rollover available to the <60' fixed gear sector on Sept. 1. As shown in Table 3-23 in Section 0, unused jig quota from the last trimester is typically reallocated in late September to mid-October. In 2003, unused jig quota was reallocated as late as December, although that is not the norm. The intent of provision 4.1.3 under Option 4.1 is to provide the last rollover from the jig sector as early as possible in the last trimester, such that the <60' fixed gear sector would still be on the fishing grounds. The later in the year, the less likely the <60' fixed gear sector would be able to continue fishing due to weather. Thus, the unused jig quota from the last trimester is typically reallocated to the hook-and-line CP sector.

In effect, provision 4.1.3 would require NMFS to reallocate quota that is *projected to remain unused* by the jig sector in the third trimester the day after the third jig season starts. Recall that NMFS has the discretion to decide what portion of the seasonal apportionment would be left unharvested by the jig sector at that point in time, thus, this provision does not mean that all of the jig allocation that is unharvested by September 1 must be reallocated to the <60' fixed gear sector. This provision only requires that NMFS consider whether there will be any unused allocation by the jig sector, and if so, make that amount available to the <60' fixed gear sector by September 1. If NMFS is uncertain of the level of effort that may participate in the jig fishery in the last trimester, NMFS may be more conservative as to how much jig quota would be made available on September 1. If NMFS is confident that very little additional effort will be entering the jig fishery in the last trimester, it may be less conservative in its reallocation.

As stated previously, the jig sector has harvested about 5% of its total allocation (2% of the BSAI Pacific cod ITAC) on average during 1995–2003. In addition, Table 3-87 in the previous section indicates that in the past several years, the jig sector has harvested about 1% of its annual Pacific cod catch in the last trimester.⁸⁴ Thus, it is reasonable to assume that the majority of the jig apportionment in the last trimester would continue to be made available for reallocation in the future. Under provision 4.1.3, the majority of the jig apportionment from the last trimester would likely be made available to the <60' fixed gear sector by September 1. The portion that is not made available but that is left unused later in the third trimester would likely be reallocated to the hook-and-line CP sector.

If Option 3.4 is selected under Alternative 2, Component 3 to change the seasonal apportionments of the jig allocation, this provision could reallocate a maximum of 20% of the jig allocation, or 0.4% of the BSAI Pacific cod ITAC (718 mt using the 2006 ITAC), by September 1 to the <60' fixed gear sector. Alternatively, if Option 3.4 is not selected under Alternative 2, Component 3 and the jig apportionments remain the same as status quo, this provision could reallocate a maximum of 40% of the jig allocation, or 0.8% of the BSAI Pacific cod ITAC (1,436 mt using the 2006 ITAC) to the <60' fixed gear sector by September 1. Note that the <60' fixed gear sector would benefit from Option 3.4 under Component 3, as well as provision 4.1.3 under Component 4, Option 4.1. **The primary effect of provision 4.1.3 is the potential redistribution of unused jig quota from the hook-and-line CP sector to the <60' fixed gear sector. The maximum potential amount of unused jig quota that could be available in the third trimester is determined by Component 3, and ranges from 0.4% to 0.8% of the BSAI Pacific cod ITAC.**

Option 4.2 – Revised reallocation scheme

Option 4.2 under Alternative 2, Component 4, is comprised of the suite of provisions in 4.2.1 – 4.2.6. These provisions are intended as a hierarchy from which to manage quota that is projected to remain unused by a particular gear sector. Note that, like Option 4.1, with the exception of the jig sector, any unused quota by a sector at the end of a *season* is rolled over to that sector's next subsequent season. Reallocated quota between gear sectors is only applicable to quota that is projected to remain unused by the end of the fishing year. **The primary difference in Option 4.2 is that projected unused allocations to any sector delivering inshore must be considered for reallocation to other inshore sectors before being considered for reallocation to any offshore sector.**

Option 4.2 is structured such that after each inshore sector is given consideration for a reallocation from another inshore sector, the remaining hierarchy mirrors the provisions in Option 4.1. Thus, Option 4.2 includes the changes from the status quo related to the addition of the four trawl sector allocations;

⁸⁴One percent of (5% harvest x 2% allocation) = .00001 of the BSAI Pacific cod ITAC being harvested by jig gear in the last trimester. Using the 2005 ITAC, this represents about 1.9 mt of BSAI Pacific cod.

reallocating quota from the trawl sectors to the fixed gear sectors proportional to the new fixed gear allocations; and the timing of the third trimester jig reallocation to the <60' fixed gear sector. Please reference the previous discussion under Option 4.1 for analysis of these provisions.

The primary difference in Option 4.2 from both the status quo and Option 4.1, is that NMFS would be required to consider reallocating within the inshore sectors before reallocating from the inshore to the offshore sectors. It is difficult to predict whether reallocations within the inshore sectors would actually occur, given the dynamics of the fishery each year. Note, however, that with the exception of the jig sector, this reallocation scheme is still only applicable to the last season for each sector. Thus, at that point in the year, NMFS has some knowledge as to which sectors are still fishing and plan to remain fishing for the rest of the year.

The inshore sectors at issue are the <60' fixed gear sector, $\geq 60'$ pot CV sector, $\geq 60'$ hook-and-line sector, non-AFA trawl CV sector, and AFA trawl CV sector. Reallocations from these inshore sectors typically occur in October or November, and less frequently in December. First, one must consider whether any of the inshore sectors would be expected to have unused quota toward the end of the year.

It is uncertain whether the <60' fixed gear sector would have unused quota. This sector has typically harvested its entire allocation in addition to quota from the general pot and hook-and-line CV sector allocations. Under Alternative 2, this sector would be limited to harvesting its own allocation plus any quota that was reallocated from the jig sector. It is uncertain at this point whether this sector would harvest all of this quota or whether unused quota would need to be reallocated in the future. It is also unlikely that this provision would benefit the <60' fixed gear sector, as these vessels do not typically stay on the fishing grounds late in the year due to weather. In addition, with current participation levels, the reallocations from the jig sector may keep this sector fishing into the fall.

As for the $\geq 60'$ hook-and-line CV sector, it has harvested its entire allocation in the past ten years, and thus, barring any significant increases in the BSAI Pacific cod TAC, it is not likely that this sector would have unused quota. It is uncertain, however, whether this sector would benefit from additional quota that was reallocated from another inshore sector.

The $\geq 60'$ pot CV sector has only had a separate allocation since 2004. In 2004, a portion (about 23%) of the pot CV sector allocation was reallocated to other gear sectors, since it appeared as if this sector would not be able to harvest its entire Pacific cod allocation by the end of the year. In 2005, however, the pot sector harvested almost all of its allocation.⁸⁵ The pot CV sector has not had a separate allocation for a sufficient amount of time to indicate whether it is capable of harvesting its entire allocation at the current TAC levels. It is thus also uncertain whether this sector could potentially benefit from additional quota that would be reallocated from another inshore sector.

Finally, the non-AFA trawl CV sector and the AFA trawl CV sectors are proposed to receive separate allocations under Alternative 2. The overall trawl CV sector has reallocated quota in almost every year since the gear splits were established in 1994 (see Table 3-10). In addition, the AFA CV sector is currently subject to sideboards in the BSAI Pacific cod fishery, and has harvested an average of 65% of its sideboard (2000 – 2004) since it was established. While it is uncertain whether either of these sectors would harvest its entire allocation, historical data indicate that these sectors combined have not harvested their entire allocation of BSAI Pacific cod for various reasons. Thus, of the inshore sectors, the trawl sectors are the most likely to have unused quota that may be reallocated in the last season to other inshore sectors. While the average annual amount of reallocated quota (1997 – 2004) from the trawl CV sector

⁸⁵NMFS Catch accounting system indicates that the pot CV sector harvested 95% of its initial allocation. Note that the data are only through December 10.

has been about 3,600 mt, it is not likely that this level of reallocation would continue under the revised and separate trawl CV allocations proposed under Alternative 2. It is anticipated that the amount of reallocated quota would be reduced under Alternative 2, Component 2, as the allocations are revised to reflect actual use by sector (including reallocations).

In sum, the effect of Option 4.2 cannot be easily quantified, due to annual changes in the fishery and the variability in each sector's ability to harvest its entire allocation each year. The minimum effect would be the same as Option 4.1, in the case that NMFS determines toward the end of the year that no other inshore sector is likely capable of fishing reallocated quota and/or no inshore sector is projected to leave quota unused. A reasonable outcome may be, however, that the trawl CV sector(s) are projected to leave a portion of their allocation unused, which is then reallocated to the $\geq 60'$ pot CV or $\geq 60'$ hook-and-line CV sectors, prior to being considered for reallocation to the other trawl sectors, and prior to being considered for reallocation to the hook-and-line CP and pot CP sectors. The amount of this potential reallocation is unknown, but likely less than the historical amount of reallocated quota from the trawl CV sector, which is about 11% of the trawl CV sector's initial allocation on average during 2000 – 2004 or nearly 3% of the BSAI Pacific cod ITAC.

Note that both Options 4.1 and 4.2 have an effect on NMFS inseason management, as harvest by sector will need to be monitored and quota reallocated in a timely manner to avoid foregone catch. Under Option 4.1, the primary additional monitoring responsibility for NMFS inseason managers is the addition of two new trawl sectors (from two to four sectors total). This option represents an additional monitoring task, as it requires opening and closing two additional sectors and monitoring smaller quotas on a near real-time basis. Each additional sector and reallocation among sectors represents additional staff resources and administrative efforts. Note that the additional new trawl sectors, however, is more accurately a result of Component 1, and the decision to potentially establish separate BSAI Pacific cod allocations to the four identified trawl sectors. Otherwise, Option 4.1 does not pose any additional monitoring tasks than exist under the status quo.

Option 4.2 results in the same additional monitoring of the four trawl sectors as described above in Option 4.1. In addition, Option 4.2 requires that NMFS inseason managers assess two exclusive strategies for reallocating unused BSAI Pacific cod quota among sectors. While this may not ultimately result in additional notices being prepared to implement reallocations, it would require NMFS to consider several more possible reallocations prior to the final notice of reallocation. As long as NMFS retains flexibility to determine how to reallocate projected unused sector allocations, this option may not represent substantial additional staff time. This is primarily because NMFS would continue to take into account the intent of the rollover hierarchies and the likelihood of a sector's capability to harvest reallocated quota.

3.4.3.5 Component 5: CDQ Allocation of BSAI Pacific cod

The CDQ Program reserve for BSAI Pacific cod shall be removed from the TAC prior to the allocation to all other sectors at percentage amounts equal to one of the following options:

- | | |
|-------------------|-------------------|
| Option 5.1 | 7.5% (status quo) |
| Option 5.2 | 10% |
| Option 5.3 | 15% |

Component 5 contains three options for establishing the CDQ reserve of BSAI Pacific cod, two of which propose to increase the CDQ reserve from 7.5% to 10% or 15%. General background information on the CDQ Program, including the purpose of the program and combined revenue generation and assets held by the CDQ groups, is provided in Section 3.3.6.

Note that a CDQ allocation increase to 10% or 15% is also included in the current BSAI Amendment 80 (Component 2) for each primary target flatfish species and incidental species. In addition, Amendment 80 includes a component for adjusting the PSC allocations to the CDQ Program to be proportional to the target CDQ flatfish allocations. One issue thus associated with Component 5 under this amendment package is whether non-target CDQ species and PSC species harvested incidentally in the CDQ target Pacific cod fishery would also need to be addressed. This is discussed in the following sections.

3.4.3.5.1 Historic CDQ harvest of BSAI Pacific cod

While the initial allocations to the CDQ Program were pollock, halibut and sablefish, as well as all other groundfish and crab species were included in the multi-species program. Pacific cod was included as part of the multi-species program, with the first allocations established for the 1998 – 2000 cycle.

The most common component of any CDQ group and industry partnership is the royalty payment derived from leasing the CDQ quota. While the pollock fishery is the most valuable in terms of overall amount and revenue stream, Pacific cod, Bristol Bay red king crab, opilio, and halibut are of the most important CDQ target species. The royalties from pollock, Pacific cod, Bristol Bay red king crab, and opilio, typically comprise over 95% of the total CDQ royalties. Pacific cod is the second most important species in terms of metric tons, and is typically the second or third most important in terms of royalties (behind pollock and all crab combined). Pacific cod royalties comprised over 6% or \$2.95 million of the total royalties for the CDQ groups combined on average during 2001–2003. During that time period, the average royalty payment to the CDQ groups was \$232 per metric ton of Pacific cod (see Table 3-91). Historical groundfish CDQ and PSQ catch is detailed in Table 3-92 and Table 3-93. Further detail on the 2001 – 2004 CDQ catch of BSAI Pacific cod is portrayed in Table 3-94.

Table 3-91 CDQ royalties for all groups combined, 2001, 2002, & 2003

Species	2001		2002		2003		Average 2001 - 03	
	Total (\$) all groups	% of total royalties	Total (\$) all groups	% of total royalties	Total (\$) all groups	% of total royalties	Ave. (\$) all groups	Ave. % of total royalties
Pollock	36,721,924	86.28%	39,609,795	85.43%	42,779,382	80.04%	39,703,700	83.92%
Pacific Cod	2,733,315	6.42%	2,743,795	5.92%	3,365,920	6.30%	2,947,677	6.21%
Other Groundfish	311,118	0.73%	297,371	0.64%	366,734	0.69%	325,074	0.69%
Halibut	202,822	0.48%	214,872	0.46%	1,922,821	3.60%	780,172	1.51%
Crab total	2,492,197	5.86%	3,448,377	7.44%	4,612,294	8.63%	3,517,623	7.31%
Other species	97,565	0.23%	52,975	0.11%	401,112	0.75%	183,884	0.36%
Total CDQ royalties	42,558,941	100.00%	46,367,185	100.00%	53,448,263	100.00%	47,458,130	100.00%

Source: NOAA Fisheries, Alaska Region. Compiled from CDQ groups' audited financial statements.

Table 3-92 Groundfish CDQ harvests (mt), 1999–2004

CDQ species	1999	2000	2001	2002	2003	2004
BS Pollock	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	12,495	13,527	12,363	14,128	14,465	16,009
BS FG Sablefish	18	66	40	150	66	143
AI FG Sablefish	103	120	87	129	103	14
BS Sablefish	14	6	4	27	6	21
AI Sablefish	3	1	0	6	7	0
WAI Atka Mackerel	601	1,788	1,991	1,341	1,203	1,476
CAI Atka Mackerel	822	1,807	2,467	1,591	2,129	2,248
EAI/BS Atka Mackerel	1,166	1,192	519	320	696	771
Yellowfin Sole	1,968	219	182	1,972	5,564	6,321
Rock Sole	575	401	221	553	641	892
BS Greenland Turbot	196	244	26	53	48	31
AI Greenland Turbot	37	65	35	46	33	29
Arrowtooth Flounder	787	286	139	302	437	432
Flathead Sole	724	439	223	464	392	545
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
WAI Pacific Ocean Perch	317	372	318	355	404	336
CAI Pacific Ocean Perch	129	216	152	155	185	170
EAI Pacific Ocean Perch	159	167	162	167	249	165
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 (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 (BSAI)	n/a	n/a	n/a	n/a	n/a	3
AI Shortraker/Rougheye	28	35	17	14	25	n/a
BS Other Rockfish	6	6	2	2	4	4
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

Source: NOAA Fisheries, 2005.

Table 3-93 Groundfish PSQ harvests, 1999–2004

PSQ species	1999	2000	2001	2002	2003	2004
Zone 1 Red King Crab	172	0	0	431	1,883	175
Zone 1 Bairdi Tanner Crab	2,998	17	690	4,074	9,119	1,679
Zone 2 Bairdi Tanner Crab	18,531	1,593	436	3,695	2,736	13,483
Opilio Tanner Crab	53,199	4,338	624	25,568	4,927	29,860
Pacific Halibut	217	103	86	149	175	153
Chinook Salmon	584	430	2,507	2,093	2,565	2,966
Non-Chinook Salmon	243	1	2,427	1,993	5,292	960
Pollock ICA (mt)		606	746	967	1286	1424
Total Chinook	1662	749	2,561.000	2103	2713	3010
Total Non-Chinook	909	1706	3,286.000	3604	8402	10424

Source: NOAA Fisheries, 2005. Crab and salmon harvests are in number of animal, halibut is in pounds.

Table 3-94 BSAI Pacific cod CDQ reserve (mt), catch, and percent harvested, 2001–2004

CDQ Species	2001			2002			2003			2004			Average 2001-04
	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	CDQ Reserve	Catch	Percent harvest	Percent harvest
BSAI Pacific cod	14,100	12,527	89%	15,000	14,128	94%	15,563	14,465	93%	16,163	16,009	99%	94%
# Hook-and-line CPs	15			17			18			19			17

Source: NOAA Fisheries, 2005. The last row refers to the number of hook-and-line CPs participating in the CDQ fisheries. The hook-and-line CDQ fisheries are primarily CPs targeting Pacific cod.

The amount of the CDQ Pacific cod reserve, catch, and percent harvested is shown above in Table 3-94. The hook-and-line CDQ fisheries are primarily hook-and-line catcher processors targeting Pacific cod. During the period 2001–2004, for example, the NMFS CDQ catch reports indicate that vessels fishing CDQ harvested about 94% of the total BSAI Pacific cod CDQ allocation and 93% of the total cod catch was harvested with hook-and-line gear, which is primarily the directed Pacific cod fishery. Some of the most common species harvested incidentally to CDQ Pacific cod are halibut, arrowtooth flounder, shorttrakter rockfish, roughey rockfish, Bering Sea other rockfish, and the ‘other species’ category (sharks, skates, sculpins, octopus).

The CDQ BSAI Pacific cod fishery using hook-and-line gear is subject to the same seasonal apportionments as the non-CDQ hook-and-line fishery: 60% (Jan. 1 – June 10) and 40% (June 10 – Dec. 31). Any quota not used in the first season is rolled over to the second season. Generally, the CDQ Pacific cod fishery begins as the non-CDQ Pacific cod fishery season is finishing. The CDQ cod fishery also occurs during the summer when the non-CDQ hook-and-line sector is not fishing cod due to lack of a halibut bycatch allowance (June 10 – Aug. 15). Thus, the majority of CDQ cod is harvested at different times than the non-CDQ cod in the BSAI. Figure 3-16 and Figure 3-17 compare the temporal distribution of Pacific cod catch by hook-and-line catcher processors fishing CDQ with those fishing in the limited access fishery (non-CDQ) in 2003 and 2004.

Figure 3-16 2004 temporal distribution of CDQ and non-CDQ BSAI Pacific cod harvest by hook-and-line CP sector

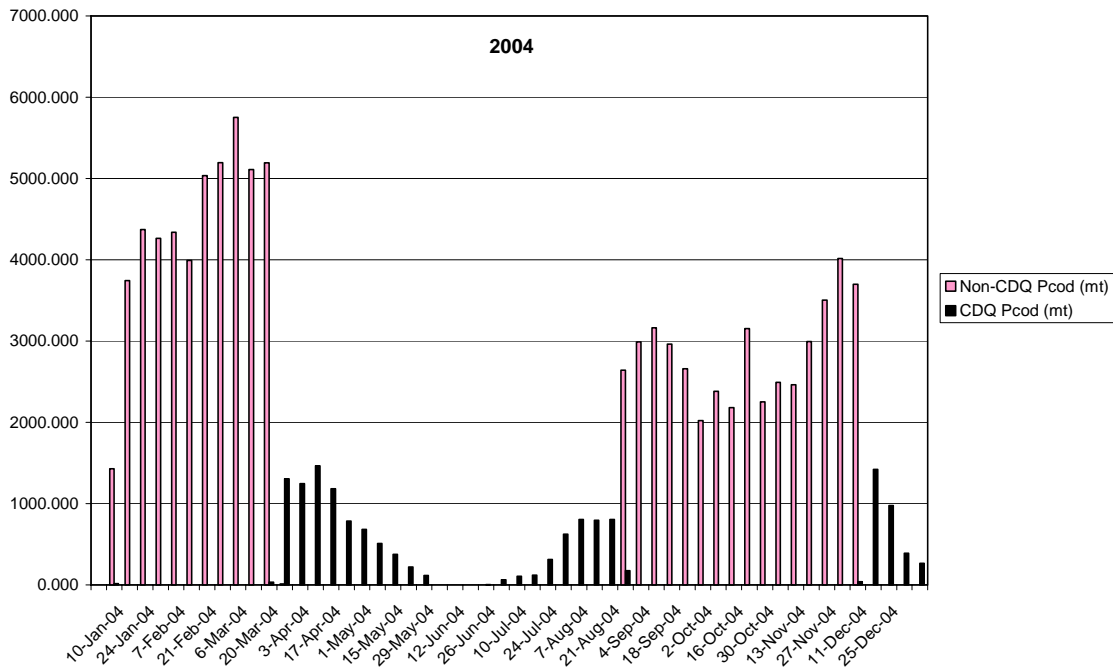
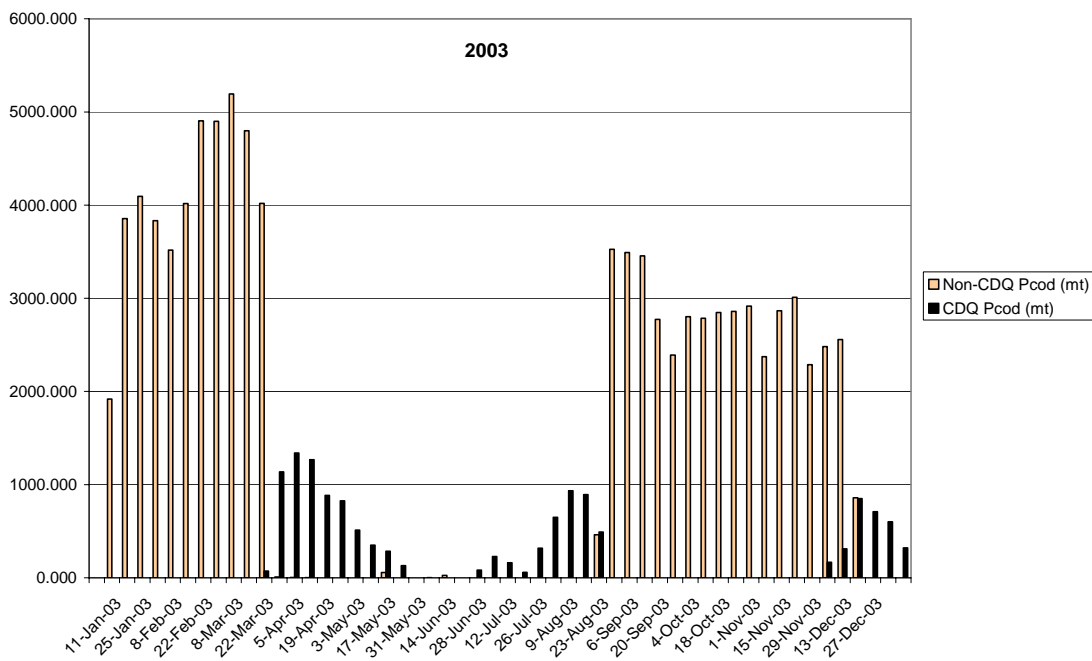


Figure 3-17 2003 temporal distribution of CDQ and non-CDQ BSAI Pacific cod harvest by hook-and-line CP sector



3.4.3.5.2 CDQ group investment in BSAI Pacific cod vessels

The CDQ groups have become more established in the fishing industry by investing in the Bering Sea fishing fleet. Each of the CDQ groups has made several equity acquisitions, and all six CDQ groups have acquired ownership interests in hook-and-line catcher processors used to harvest Pacific cod. As mentioned previously, virtually all of the Pacific cod CDQ is fished by hook-and-line catcher processors, although several of the groups have ownership interest in other vessels that fish Pacific cod in the non-CDQ fisheries. Table 3-95 provides a summary of the groups' ownership interests in vessels that may fish Pacific cod, with the understanding that it is the hook-and-line catcher processor sector that have harvested the Pacific cod CDQ reserve to date.

Table 3-95 CDQ group ownership interest in vessels that participate in the (CDQ and non-CDQ) BSAI Pacific cod fisheries

Vessel	% ownership	Company/Partner	Description
APICDA			
Bering Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Ocean Prowler	20%	Prowler Fisheries	Longline CP; 155' LOA
Barbara J	50%	Trident Seafoods	Combo (pot/longline) CV; 124' LOA
Golden Dawn	25%	Trident & Aleutian Spray	AFA Trawl CV; 149' LOA
Farwest Leader	25%	Trident & Aleutian Spray	Pot CV; 121' LOA
BBEDC			
Bristol Leader LLC	50%	Alaskan Leader	Longline CP; 167' LOA
Bering Leader LLC	50%	Alaskan Leader	Longline CP; under construction
Cascade Mariner LLC	40%	Kevin Kaldestad	Pot CV; 120' LOA
Bristol Mariner LLC	45%	Kevin Kaldestad	Pot CV; 125' LOA
Nordic Mariner LLC	45%	Kevin Kaldestad	Pot CV; 124' LOA
Northern Mariner LLC	45%	Kevin Kaldestad	Pot CV; 124' LOA
Arctic Wind	50%	Dona Martita LLC/ Nina Fisheries	AFA trawl CV; 124'
CBSFA			
Deep Pacific	2.89%	Pacific Longline Co.	Longline CP; 130' LOA
Lilli Ann	2.89%	Pacific Longline Co.	Longline CP; 141' LOA
North Cape	2.89%	Pacific Longline Co.	Longline CP; 124' LOA
Starlite	75%		AFA trawl CV; 124' LOA
Starward	75%		AFA trawl CV; 124' LOA
Fierce Allegiance	30%		AFA trawl CV; 166' LOA
CVRF			
Deep Pacific	35%	Pacific Longline Co.	Longline CP; 130' LOA
Lilli Ann	35%	Pacific Longline Co.	Longline CP; 141' LOA
North Cape	35%	Pacific Longline Co.	Longline CP; 124' LOA
Ocean Prowler	20%	Prowler Fisheries	Longline CP; 155' LOA
Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Bering Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Katie Ann	45%	American Seafoods	AFA Trawl CP; 296' LOA
Silver Spray	50%	Silver Spray Seafoods	Pot CP; 124' LOA

Vessel	% ownership	Company/Partner	Description
NSEDC			
Norton Sound	51.78%	Glacier Fish Co.	Longline CP; 136' LOA
Glacier Bay	50%	Glacier Fish Co.	Longline CP; 178' LOA
YDFDA			
Baranof	41%	Romanzof Fishing Co.	Combo (pot/longline) CP; 180' LOA
Courageous	100%	N/A	Combo (pot/longline) CP; 180' LOA

Source: CDQ groups, as of October 2005. Vessel length data are from the NMFS LLP database, August 2005. Note that BSAI Pacific cod CDQ is targeted entirely by hook-and-line catcher processors; however, some groups have invested in other vessels that fish in the non-CDQ BSAI Pacific cod fishery.

3.4.3.5.3 Incidental catch in the target CDQ Pacific cod fishery

As stated previously, the most common species harvested incidentally to CDQ Pacific cod are halibut, arrowtooth flounder, shortraker rockfish, roughey rockfish, Bering Sea other rockfish, and the 'other species' category (sharks, skates, sculpins, octopus). The CDQ groups receive separate PSQ allocations of halibut, as well as individual group allocations of arrowtooth flounder and Bering Sea other rockfish.

The other species category is managed on the CDQ Program (reserve) level, thus no individual group allocations are made. Shortraker, roughey, and northern rockfish have also been managed at the reserve level during the 2003-2005 allocation cycle under an administrative determination made in the last allocation process and will continue to be managed on the reserve level in 2006. Generally, harvest of non-target species that are managed on the reserve level in the CDQ fisheries does not prevent the CDQ groups from fully harvesting their target species allocations. CDQ groups are subject to having these species categories placed on prohibited species status or other management measures if they catch in excess of their annual CDQ reserve.

Note also that the Council approved an amendment in December 2005 to only allocate *target species* CDQ reserves among individual CDQ groups, and to manage CDQ *non-target species* on the reserve level (not allocated to individual CDQ groups). CDQ target species allocations would continue to be managed as hard caps and unallocated CDQ reserves would be managed as soft caps. As part of this action, the Council adopted a list of CDQ target and non-target species that would be provided in Federal regulation. This recommendation by the Council is likely to be implemented starting in 2007.

All of the species caught incidentally to Pacific cod, with the exception of arrowtooth flounder, would be identified as non-target species and managed at the reserve level upon approval of this regulatory amendment by the Secretary of Commerce. Note that while arrowtooth flounder would be identified on the target species list and continue to be allocated to the individual groups, it remains primarily an incidentally caught species to date. Arrowtooth flounder was placed on the target species list with the understanding that developing markets may warrant it becoming a target species in the near future. Given that the target and non-target species lists are going to be in Federal regulation, the CDQ groups recommended identifying it as a target species so that in the future, the groups would not need to wait for the lengthy rulemaking process in order to have it again allocated on the individual CDQ group level.

3.4.3.5.4 Effects of Options 5.1–5.3

Effects on the CDQ Pacific cod fishery

Component 5 has two options to increase the Pacific cod allocations made to the CDQ Program. This includes Option 5.2, to increase Pacific cod CDQ allocations to 10 percent, and Option 5.3, to increase

Pacific cod CDQ allocations to 15 percent. Option 5.1 would retain the current 7.5 percent allocation to the program. An example of the projected increase in CDQ Pacific cod allocations is shown in Table 3-96, using the 2006 and 2007 (projected) BSAI Pacific cod TACs as a basis for calculations.

Table 3-96 Projected 2006 and 2007 CDQ Pacific cod allocations under Options 5.1 – 5.3

Species	TAC	Option 5.1: 7.5% allocation	Option 5.2: 10% allocation	Option 5.3: 15% allocation
BSAI Pacific cod	(2006) 194,000 mt	14,550 mt	19,400 mt	29,100 mt
	(2007) 148,000 mt (projected)	11,100 mt	14,800 mt	22,200 mt

Source: 70 FR 74739, December 16, 2005.

Given the historic CDQ harvest rates for Pacific cod, increasing the percentage amounts allocated to the CDQ program will likely increase the amount of Pacific cod that CDQ groups would catch. As stated previously, the hook-and-line CDQ fisheries are primarily hook-and-line catcher processors targeting Pacific cod. During the period 2001–2004, the NMFS CDQ catch reports indicate that vessels fishing CDQ harvested about 94% of the total BSAI Pacific cod CDQ allocation and 93% of the total cod catch was harvested with hook-and-line gear, which is primarily the directed Pacific cod fishery. In this target fishery in particular, past performance is likely a reliable indicator of future fishing practices.

In addition, it appears that the Pacific cod TAC will decline in the next several years, from 194,000 mt in 2006 to 148,000 mt projected for 2007. This represents nearly a 24% reduction in the BSAI Pacific cod TAC from 2006, and about 28% from the 2005 TAC. Increasing the CDQ Pacific cod allocation does not guarantee that the CDQ Program would receive greater amounts of Pacific cod in the future. If the TAC decreases substantially, the CDQ Program may be allocated an increased percentage, but still be allocated relatively less quota than is available at current TAC levels.

Thus, with a declining TAC, it is very likely that the CDQ groups could potentially harvest a 10% or 15% allocation, as proposed under Options 5.2 and 5.3, respectively. There is little concern that an increase in the BSAI Pacific cod CDQ reserve would result in foregone Pacific cod catch. In addition, it is the same hook-and-line CPs that fish the non-CDQ BSAI Pacific cod fishery that partner with the CDQ groups to prosecute the BSAI Pacific cod CDQ fishery. Thus, whether these vessels are operating in the CDQ or non-CDQ BSAI Pacific cod fishery, past performance indicates that they are capable of harvesting Pacific cod at the levels under consideration in this amendment.

Effects on incidentally caught species in the CDQ Pacific cod fishery

Future performance in the CDQ fisheries for primary target species, including Pacific cod, may also be affected by the change in the management of non-target species in the CDQ Program as described previously. The Council approved this change in December 2005 and, upon approval by the Secretary of Commerce, it is expected to be implemented starting in 2007. This management change is intended to make it easier for the CDQ groups to prosecute their target fisheries, as non-target species will not be allocated to the individual groups and subject to hard caps, but instead be managed at the reserve level under soft caps.

Table 3-97 compares the associated incidental catch and PSC rates per metric ton of Pacific cod harvested in the 2004 CDQ fisheries to the total catch of these species in the CDQ fisheries to determine if an increase in the Pacific cod CDQ allocation might result in the program as a whole exceeding any incidental catch species or halibut PSC limits. This exercise provides only a rough approximation of the potential of this issue, as it must assume that the other target fisheries and their incidental catch needs remain the same.

Table 3-97 Projected incidental catch needs in the CDQ Pacific cod fishery based on 2005 catch rates

Non-target or PSQ species	halibut	other species ¹	arrowtooth	shortraker rockfish ¹	rougheye rockfish	BS 'other' rockfish
Amt (mt) of incidental species harvested in hook-and-line fisheries in 2005	49.7	2,172.6	178.7	5.3	2.0	1.2
Ratio of incidental species to cod in 2005 ²	0.003624	0.158414	0.013030	0.000386	0.000146	0.000087
Amt (mt) of incidental species allocated to CDQ program in 2005 (7.5%)	342	2,175.0	900	45	17	35
Amt (mt) of total incidental species harvested in 2005 ³	127.0	2,473.2	576.2	8.7	3.6	4.6
Estimates (mt) of total incidental species needed if CDQ cod allocation is 10% (calculated using 2005 ratios above and 2006 TAC)	142.7	3,158.7	632.6	10.4	4.2	5.0
Estimates (mt) of total incidental species needed if CDQ cod allocation is 15% (calculated using 2005 ratios above and the 2006 TAC)	175.4	4,587.8	750.1	13.9	5.5	5.8

Source: CDQ Participation and Catch by Gear, NMFS 2005.

¹Note that the 'other species' category, rougheye rockfish, and shortraker rockfish are not allocated among the CDQ groups, but are managed on the CDQ Program (reserve) level. Managing on the reserve level has been determined appropriate for some non-target species that have a significant buffer between TAC and ABC. CDQ groups are subject to having these species categories placed on prohibited species status or other management measures if they catch in excess of their annual CDQ reserve.

²All ratios and estimates of incidental catch are based on incidental and PSC catch rates in the 2005 CDQ fisheries. Note that the projections estimated in this table assume that the incidental catch needs in other target fisheries remain constant.

³This is the total CDQ harvest of these non-target species (whether in the directed Pacific cod fishery or some other target fishery).

Table 3-97 uses the projected allocation in Table 3-96 under a 10% and 15% CDQ Pacific cod allocation (using the 2006 TAC), multiplied by a 93% catch rate in the hook-and-line cod target fishery, and the ratio of incidental species to Pacific cod harvest in 2005 to estimate the incidental catch needs for the CDQ Pacific cod fishery if the Pacific cod allocations were increased. The only non-target species group allocation that is projected to be exceeded is the 'other species' category. As stated previously, however, this particular species category is already managed differently than most other categories, due to concerns that this category could constrain the CDQ groups' Pacific cod fisheries.

While the 2005 CDQ allocation of other species was 2,175 mt, the total actual harvest of other species (in Pacific cod and all other fisheries) was 2,473 mt. If the CDQ Program allocation of Pacific cod was increased to 10%, the projected additional amount of 'other species' necessary to prosecute the Pacific cod fishery would be 686 mt, resulting in a projected total of 3,159 mt of 'other species' necessary to harvest all of the target CDQ fisheries. Similarly, if the CDQ Program allocation of Pacific cod was increased to 15%, the projected additional amount of 'other species' necessary to prosecute the Pacific cod fishery would be 2,115 mt, resulting in a total of 4,588 mt necessary to harvest all target CDQ fisheries. Using these rough estimates, the 'other species' category appears to be the only non-target species allocation that may be reached or exceeded if the CDQ cod allocations were increased. However, since the 'other species' CDQ reserve is managed on an aggregate basis with general fisheries management measures, catching the entire annual 'other species' CDQ reserve would not necessarily constrain the CDQ Pacific cod fishery. This is not necessarily true for other incidental catch categories.

Other (non-cod) target CDQ fisheries rely on these same non-target species, so changes in those allocations or fisheries will likely also affect overall incidental catch needs.

Note also that BSAI Amendment 80, which is scheduled for Council final action in February 2006, includes two options for increasing the primary flatfish allocations to the CDQ Program (Atka mackerel, flathead sole, Pacific Ocean perch, rock sole, yellowfin sole) as well as five suboptions for retaining or increasing CDQ allocations of the incidental catch species associated with the flatfish target species. The options proposed in Amendment 80 are provided below.

Options for increasing CDQ flatfish and incidental species allocations under BSAI Am. 80

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%

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 CP sector during 1998-2003.
- Suboption 2.5 The Council can select percentages for each of the incidental catch species allocated to the CDQ Program.

*Represents Council's preliminary preferred alternative.

The incidental catch species associated with the Amendment 80 flatfish target species historically include all BSAI TAC categories. Reference the public review draft EA/RIR/IRFA for BSAI Amendment 80 for details on this issue. That analysis illustrates that some amount of every 2004 BSAI TAC category was caught in the directed CDQ fisheries for the flatfish target species in 2004. Incidental catch in the 2001–2003 CDQ fisheries for flatfish target species exhibit a similar pattern to the 2004 and 2005 CDQ fisheries. Some amount of every, or almost every, annual TAC category in place was caught in the target flatfish CDQ fisheries, with limited exceptions. In general, since the directed fisheries for the primary flatfish species considered under Amendment 80 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 primary decision point for the Council under Amendment 80 is to determine the incidental catch species to include in the suboptions associated with increased CDQ flatfish species allocations.

In sum, the 'other species' category appears to be the only non-target species allocation that may be reached or exceeded if the CDQ Pacific cod allocations are increased; however, since the 'other species' CDQ reserve is managed on an aggregate basis with general fisheries management measures, catching the entire annual 'other species' CDQ reserve would not necessarily constrain the CDQ Pacific cod fishery.

In addition, BSAI Amendment 80 proposes to increase all other CDQ allocations of non-target species incidental to the CDQ target flatfish species. Because these include the same species that are incidentally caught in the BSAI Pacific cod fisheries, there does not appear to be a need to *further* increase the non-target species CDQ allocations (e.g., halibut, arrowtooth flounder, shortraker rockfish, roughey rockfish, Bering Sea other rockfish, and ‘other species’) that are caught incidentally in the Pacific cod fisheries. **In sum, current CDQ allocations of non-target species harvested incidentally in the target CDQ Pacific cod fishery appear sufficient to support an increase in the CDQ Pacific cod allocation. Further, these non-target species CDQ allocations are currently being considered for an increase under BSAI Amendment 80. Final action on Amendment 80 is scheduled for April 2006.**

Finally, the suboptions in Amendment 80 to increase percentage amounts of incidental catch species to the CDQ Program are 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 Program⁸⁶ and the “other species” category is allocated to the CDQ Program at the reserve level (not the individual group level). 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.

The Council’s recent action (December 2005) will result in managing the CDQ non-target species similarly to the non-CDQ fisheries. Given Council action on this amendment, the issue of a corresponding increase in the CDQ non-target species caught incidental to both Pacific cod (under this amendment) and the target flatfish species (under Amendment 80) is less relevant. Under the amendment approved by the Council in December 2005, incidental catch species will be managed with soft caps, meaning once the annual CDQ Program allocation for a given incidental catch species is reached, CDQ fishery participants may continue fishing for their target species, although with additional management restrictions proscribed by NOAA Fisheries during the course of the fishing year.

Direct benefits to the CDQ Program

Increasing CDQ allocations for BSAI Pacific cod could directly benefit the CDQ groups by increasing the amount of BSAI Pacific cod catch and the resulting royalties associated with that catch. Note that on average during 2001–2003, Pacific cod royalties comprised over 6% or \$2.95 million of the total royalties for the CDQ groups combined. During that time period, the average royalty payment to the CDQ groups was \$232 per metric ton of Pacific cod. As discussed previously, using the 2006 TAC, Option 5.2 and Option 5.3 represent increases of 4,850 mt and 14,550 mt to the CDQ Pacific cod reserve, respectively. Using the average royalty rates from the most recent time period available (2001 – 2003), one could estimate that the projected *increase* in royalty payments to the CDQ groups combined would be \$1.13 million and \$3.38 million under Options 5.2 and 5.3, respectively.

Although increasing the allocation amount of BSAI Pacific cod to the CDQ Program could benefit CDQ groups via increased royalties and other associated employment 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 Pacific cod. CDQ groups would have to update their community development plans to reflect any

⁸⁶In 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.

increased allocations that they might receive, as well as any changes to business plans or CDQ projects. As a whole, however, it is expected that the potential benefits to the CDQ groups associated with an increase in the Pacific cod reserve under either Option 5.2 or 5.3 would outweigh the potential costs discussed above. Increased allocations could provide CDQ groups with both direct monetary benefits and other indirect benefits.

Effects on non-CDQ sectors

Options 5.2 and 5.3 would increase the CDQ BSAI Pacific cod allocations. Selection of either option would correspondingly decrease the amount of the BSAI Pacific cod TAC allocated to the non-CDQ sectors by either 2.5 percent (Option 5.2) or 7.5 percent (Option 5.3), effectively reducing revenues to the non-CDQ sectors. The non-CDQ sectors include the ten sectors under consideration in this amendment package under Alternative 2, Component 1. As the CDQ reserve is taken off the top of the BSAI Pacific cod TAC, each sector's resulting allocation under Component 2 would be reduced proportionally, either by 2.5% or 7.5%, depending on the option selected under Component 5. Recall that the non-CDQ Pacific cod TAC has historically been fully utilized.

Note also that the vessels that have historically harvested CDQ BSAI Pacific cod are a subset of the hook-and-line CP sector. 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 the CDQ groups in the form of royalties. Thus, while all non-CDQ sectors would be affected proportional to their sector allocations resulting from Component 2, the hook-and-line CP sector would not be affected to such a relative extent. Thus, in contrast to other non-CDQ sectors that would realize a reduction in the relative amount of their cod allocation, the hook-and-line CP sector would continue to contract with the CDQ groups to harvest the CDQ Pacific cod allocation under any of Options 5.1 – 5.3. Table 3-95 in the previous section outlines CDQ group ownership interest in vessels that participate in the (CDQ and non-CDQ) BSAI Pacific cod fisheries.

Estimates of the impacts various allocation alternatives would have on the profitability of the companies that own vessels in the non-CDQ Pacific cod fisheries cannot be generated, as information on the vessels' cost structure is necessary to develop those estimates and this information is not available. It is only clear that revenues from these firms would be reduced under Options 5.2 and 5.3, as a direct result of a reduced (non-CDQ) BSAI Pacific cod ITAC. A general estimate of the relative reduction to each sector can be made by multiplying the proposed allocations to each sector under Component 2 by the reduction proposed under Option 5.2 (2.5%) or Option 5.3 (7.5%). The resulting percentage can be multiplied by the BSAI Pacific cod ITAC for a given year, and then multiplied by a sector's estimated ex-vessel or first wholesale price, in order to generate an estimate of the reduction in ex-vessel or first wholesale revenues by sector.

For example, if the pot CV sector received an allocation of 8.0% of the BSAI Pacific cod ITAC under this amendment, and the ITAC was reduced by 2.5% under Option 5.2, the pot CV sector's allocation would be reduced by 0.2 percentage points to 7.8%. Multiplying 0.2% by the 2006 ITAC of 179,450 mt equals 358.9 mt (791,231 pounds). If the pot sector's ex-vessel price is \$0.25/pound (round cod), then the increase in the CDQ allocation to 10% represents an estimated loss of approximately \$198,000 to the pot CV sector overall. These are gross estimates, and thus, not used in this analysis to compare the benefits and costs for each sector. Note only that the increase in the BSAI Pacific cod CDQ reserve represents a redistribution of Pacific cod among the existing sectors.

Management Costs

An increase in the CDQ Pacific cod reserve from 7.5% to 10% or 15% is not expected to affect management costs to NOAA Fisheries. Increases to CDQ Program percentage amounts have been implemented in the past without significant increases in the time or resources that NOAA Fisheries, Alaska Region must devote to CDQ Program administration. 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 in catch reporting and monitoring software to reflect the revised allocations. Similarly, if percentage amounts were increased as proposed under Options 5.2 or 5.3, Alaska Region staff would have to contribute additional resources to several aspects of program management, including: working with the State and CDQ groups to ensure that the CDQ groups' community development plans are updated to reflect increased Pacific cod allocations and changes to harvesting or business plans; and modifying CDQ catch monitoring software and the CDQ catch reporting system.

3.4.3.6 Component 6: Apportionment of trawl halibut and crab PSC to trawl cod fishery group

Component 6 addresses the apportionment of trawl halibut PSC and trawl crab PSC that is apportioned to the entire trawl cod fishery group through the annual specifications process. There are no options currently proposed under this action that would modify this process from the status quo. **This amendment does not propose to change the PSC allowances to the overall cod trawl fishery group, it only addresses splitting the crab and halibut PSC allowances between the trawl sectors (see Component 7).** Thus, for a description of the current process and PSC apportionments, see Section 3.4.2.5 and Table 3-44 under Alternative 1.

Currently, there are PSC limits for halibut, herring, red king crab, *C. opilio*, *C. bairdi*, chinook salmon and other salmon (primarily chum salmon) for the trawl fisheries. NOAA Fisheries 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 prohibited species quota reserve to the CDQ Program. The remaining PSC limits are apportioned to fishery categories, gear groups, or seasons to create more refined PSC limits. Salmon and herring PSC limits are not addressed in this component in either Alternative 1 or 2; yet this amendment does not propose to change PSC limits for any PSC species to the trawl cod fishery group.

The total amount of trawl halibut and crab PSC for the non-CDQ fisheries is determined in the annual specifications process and can vary annually. The trawl halibut PSC is typically 3,400 mt, which is apportioned between Pacific cod; yellowfin sole; rocksole/other flatfish/flathead sole; pollock/Atka mackerel/other. Generally, about 1,400 mt is apportioned to the cod trawl fishery group. In 2006, the halibut PSC limit for the cod trawl fishery group is 1,434 mt.

The crab PSC limit for 2006 is 182,225 red king crab in Zone 1; 4,494,569 *C. opilio* in the *C. Opilio* Bycatch Limitation Zone (COBLZ); and 906,500 *C. bairdi* in Zone 1 and 2,747,250 *C. bairdi* in Zone 2. The 2006 cod trawl fishery group PSC allowance is 26,563 red king crab; 139,331 *C. opilio*, 183,112 *C. bairdi* in Zone 1; and 324,176 *C. bairdi* in Zone 2.

Note that while this action does not propose to change the PSC allowances to the overall trawl cod fishery group, these amounts will likely change under proposed BSAI Amendment 80. Amendment 80 identifies three options for apportioning PSC to the non-AFA trawl CP sector; this PSC is based on use in all of the sector's fisheries, including Pacific cod. Thus, while the total amount of halibut or crab PSC apportioned to the trawl cod fishery group is not proposed to be changed under Amendment 85, any estimate of the effect of splitting the trawl cod fishery PSC among the trawl sectors in Component 7 requires an

assumption concerning the overall allocation of halibut PSC to the entire Pacific cod trawl fishery. Thus, while in recent years, approximately 1,400 metric tons of halibut PSC has been allocated to the Pacific cod trawl fishery, this will likely change with the implementation of Amendment 80.

A separate discussion paper is being developed to help understand the interaction of the Amendment 85 allocation with the Amendment 80 allocations, including the proposed range of PSC allocations to the non-AFA trawl CP sector and the amount of PSC remaining for all other trawl sectors.

Amendment 85 assumes that the Amendment 80 PSC allocations will take priority for the non-AFA trawl CP sector when implemented, thus, the halibut PSC under Amendment 80 to this one sector would be taken from the total trawl halibut PSC allowance (3,400 metric tons). **Since the Amendment 80 PSC allocation is intended to support all catch (including Pacific cod) by the non-AFA trawl CP sector, no additional halibut PSC would be allocated to that sector under Amendment 85.**⁸⁷ Allocations of halibut PSC would be made to the other three trawl sectors for the Pacific cod trawl fishery under Amendment 85. These allocations would be calculated as a percentage of the halibut PSC allocation to the trawl Pacific cod fishery. Thus, the annual specification process outcome should clearly provide that the halibut and crab PSC allocation to the Pacific cod trawl fishery group would be divided among the remaining trawl sectors (e.g., AFA CV; AFA CP, non-AFA trawl CV), with no allocation to the non-AFA trawl catcher processor sector.

Under the above assumption, for example, the halibut PSC allocated to the Pacific cod trawl fishery group should be adjusted downward from 1,434 metric tons, since the non-AFA trawl CP sector would not use that PSC allocation. This adjustment would be made in the annual specifications process. Estimates of the magnitude of the reduction (to the 1,434 mt) range from 325 mt to 607 mt.⁸⁸ Thus, while Amendment 85 does not provide options to modify the 1,434 mt allocated to the trawl cod halibut group, the public should understand that this number will likely be lower in the future at such time that the non-AFA trawl CP sector's cod apportionment is removed under Amendment 80, leaving the remainder of the 1,434 mt for apportioning among the three other trawl sectors as determined under Amendment 85.

3.4.3.7 Component 7: Apportionment of the cod trawl fishery group halibut and crab PSC to trawl sectors

Option 7.1	The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the cod allocation percentages determined for each sector under Component 2.
Option 7.2	The annual PSC allocation to the trawl Pacific cod fishery will be apportioned to the cod trawl sectors based on the sector's directed cod fishery harvests during the qualifying period under Component 2.

This section presents a discussion of the effects of the apportionment of PSC to the various trawl sectors under Alternative 2, Options 7.1 and 7.2.

⁸⁷This is the assumption regardless of the timing of implementation of the two amendments. If Am. 80 is implemented either simultaneously with or before Am. 85, it will be clear how much PSC is allocated to this sector under Am. 80 and the remainder will be allocated among the three remaining trawl groups under Am. 85. If Amendment 85 is implemented before Amendment 80, it could apportion the halibut and crab trawl PSC allowances among all four trawl sectors according to Options 7.1 and 7.2 in Component 7, until such time that Amendment 80 is effective.

⁸⁸This range represents the amount proposed to be allocated to the non-AFA trawl catcher processor sector under Amendment 85.

Option 7.1

Allocation of halibut PSC

Using the Pacific cod trawl sector allocations resulting from Option 2.1 (excluding the AFA 9) as an example (see Table 3-63), the following trawl sector allocations for halibut PSC can be determined. Table 3-98 shows the resultant halibut PSC allocations from applying the Pacific cod allocations under this option to the fixed halibut PSC limit. Column 1 of Table 3-98 shows the respective proportions of Pacific cod sector allocations for the trawl sectors, as a percent of the total allocation to all sectors. Column 2 of the table translates the proportional share of only the trawl sector allocations of Pacific cod under Option 2.1, in effect normalizing column 1 to 100 percent. Column 3 shows the current apportionment (1,434 mt for 2006) of halibut PSC for all trawl sectors in the directed Pacific cod fishery. Column 4 shows the allocation of halibut PSC that would result under Option 2.1 Pacific cod allocations for the respective trawl sectors. The respective halibut PSC allocations in this example are: AFA Trawl CPs – 66.18 mt; AFA Trawl CVs – 812.6 mt; non-AFA trawl CPs – 489.03 mt; and non-AFA trawl CVs – 66.18 mt. This example is only one of the many options for allocating Pacific cod to the various trawl sectors. Each option under Component 2 will result in a different allocation of halibut PSC under Option 7.1.

Table 3-98 Example of trawl halibut PSC allocations under Option 7.1 resulting from Pacific cod sector allocations

Trawl Sector	Option 2.1 Sector Allocation	Percent of total BSAI trawl cod harvest	Trawl cod fishery group halibut PSC allocation	Halibut PSC allocation (mt)
AFA Trawl CPs	1.80%	4.62%	1,434 mt	66.18
AFA Trawl CVs	22.10%	56.67%	1,434 mt	812.60
Non-AFA Trawl CPs	13.30%	34.10%	1,434 mt	489.03
Non-AFA Trawl CVs	1.80%	4.62%	1,434 mt	66.18
Total	39.00%	100.00%	1,434 mt	1,434.00

Source: Table 3-63, Option 2.1 excluding the AFA 9

Table 3-70 in a previous section provides the full range of potential sector allocations resulting from Alternative 2, Components 1 and 2. Using this information, one can determine the potential ranges of halibut PSC trawl sector allocations that could occur under Option 7.1.

Table 3-99 below applies the potential range of Pacific cod allocations to the trawl halibut PSC allocation to show for each sector the lowest and highest halibut PSC allocation that would be possible under the different Pacific cod allocation options and Option 7.1. Note that none of the options under consideration would simultaneously achieve all of the lowest sector allocations or all of the highest sector allocations.

Neither the high nor the low could be reached by applying the many sector allocation options because none of them has all of the highest or lowest allocations by sector. Each Pacific cod allocation option has a unique mix of allocation by sector but under the method selected by the Council, the halibut PSC sector allocations for each individual option will total 1,434 mt. Table 3-99 serves to show the bounds of the range of the various sector allocations under all of the alternatives. The halibut PSC allocation calculated for any particular option can be compared to the overall ranges shown in Table 3-99.

Table 3-99 Range of trawl halibut PSC allocations under Option 7.1 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest P. Cod Sector Allocation	Halibut Trawl PSC Allocation (mt) - Low	Highest P. Cod Sector Allocation	Halibut Trawl PSC Allocation (mt) - High
AFA Trawl CPs	0.9% ¹	32.92	3.7% ¹	126.63
AFA Trawl CVs	17.8% ²	688.01	24.4% ²	861.81
Non-AFA Trawl CPs	12.7% ³	476.75	16.2% ³	606.55
Non-AFA Trawl CVs	0.50% ⁴	17.11	3.10% ⁴	113.40

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

As shown in the analysis under Alternative 1, Component 7, the historical average annual halibut mortality by sector over the period from 1995-2003 is: **non-AFA trawl CPs – 458.7 mt; AFA trawl CPs – 20.8 mt; and trawl CVs – 736.5 mt. The annual total for the average halibut PSC harvest for these three sectors totaled 1,216 mt.** This is less than the current PSC limit of 1,434 mt allocated to the trawl cod fishery group. Under the allocation method selected by the Council for Option 7.1, the halibut PSC allocation is set to equal the amount currently set in regulation, and would not fluctuate with changes in resource abundance or changes in future fishing conditions, unless regulations were revised.

By not tying the sector allocation of halibut PSC to historical use levels in the cod fishery, it is likely that the sectors would receive more halibut PSC than historically needed to prosecute the fishery. As a result, other fisheries, such as the trawl CP fisheries for yellowfin sole and flathead sole would be precluded from using a portion of the ‘unused’ halibut PSC Pacific cod allocation used in the past. The result could be much less flexibility for inseason management decisions and potential reductions in reaching TAC levels for the other species. However, note that it is primarily the non-AFA trawl CP sector that has benefited from ‘unused’ halibut PSC in the Pacific cod trawl group, and this sector is proposed to receive all of the PSC necessary to prosecute all of its fisheries under Amendment 80.

Allocation of crab PSC

Option 7.1 also makes allocations of crab PSC for the different trawl cod sectors. The crab PSC allocations are determined in the Council specifications process. The 2006 limits for crab PSC in the BSAI Pacific cod trawl fishery are: red king crab – 26,563 animals; *C. opilio* – 139,331 animals; *bairdi* in Zone 1 – 183,112 animals; and *bairdi* zone 2 – 324,176 animals.

Under Option 7.1, the sector allocations of crab PSC would occur in the same manner as described above for halibut, for each unique Pacific cod allocation set out in Table 3-63–Table 3-69. The range of sector allocations of PSC crab that would occur under each of the options are shown below in Table 3-100 – Table 3-103.

Crab PSC is generally not a strong concern for the BSAI Pacific cod trawl fisheries, however, there have been occasional PSC crab closures in the past. In 2002, both the A season trawl CP fishery and the A

season trawl CV fisheries were closed by red king crab PSC harvests in zone 1. In 1997, both the A season trawl CP and trawl CV fisheries were similarly closed in zone 1 due to the PSC limit for bairdi.

While the allocation method for Option 7.1 would result in allocation of the entire PSC limit to the Pacific cod trawl sectors, the historical use has been less than the amount available in most years. During 1995-2002, the annual average PSC harvest of red king crab has been: non-AFA trawl CPs – 4,730 crab; AFA trawl CPs – 166 crab; and trawl CVs – 1,114 crab. The annual total for the average halibut PSC harvest for these three sectors totaled 6,010, well below the PSC limit red king crab PSC of 26,563.

For the same period, the annual average PSC harvest of bairdi Tanner crab in Zone 1 was non-AFA trawl CPs – 72,391 crab; AFA trawl CPs – 469 crab; and trawl CVs – 59,810 crab. The annual total for the average Zone 1 bairdi PSC harvest for these three sectors has totaled 132,670 crab, again well below the current Zone 1 bairdi PSC limit of 183,112.

Again for the same time period, 1995-2002, the annual average PSC harvest of bairdi Tanner crab in Zone 2 was: non-AFA trawl CPs – 25,546 crab; AFA trawl CPs – 1,685 crab; and trawl CVs – 19,376 crab. The annual total for the average Zone 2 bairdi PSC harvest for these three sectors has totaled 46,607 crab, well below the current Zone 2 bairdi PSC limit of 324,176.

The annual average PSC harvest of *C. opilio* Tanner crab within the COBLZ zone during 1995-2002 was as follows: non-AFA trawl CPs – 34,645 crab; AFA trawl CPs – 189 crab; and trawl CVs – 6,768 crab. The annual total for the average PSC harvest for these three sectors has totaled 41,602 crab, well below the current COBLZ PSC limit of 139,331.

Table 3-100 Range of trawl red king crab PSC allocations under Option 7.1 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest P. Cod Sector Allocation	Red King Crab PSC Allocation (# of crab) by Trawl Sector - Low	Highest P. Cod Sector Allocation	Red King Crab PSC Allocation (# of crab) by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	610	3.7% ¹	2,346
AFA Trawl CVs	17.8% ²	12,745	24.4% ²	15,964
Non-AFA Trawl CPs	12.7% ³	8,831	16.2% ³	11,236
Non-AFA Trawl CVs	0.50% ⁴	317	3.10% ⁴	2,101

Source: Based on the BSAI Trawl Bycatch Allowances for 2005/2006 (26,563 red king crab).

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Table 3-101 Range of trawl C. Opilio crab PSC allocations under Option 7.1 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest P. Cod Sector Allocation	C. Opilio Crab PSC Allocation (# of crab) - by Trawl Sector - Low	Highest P. Cod Sector Allocation	C. Opilio PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	3,199	3.7% ¹	12,304
AFA Trawl CVs	17.8% ²	66,849	24.4% ²	83,736
Non-AFA Trawl CPs	12.7% ³	46,322	16.2% ³	58,934
Non-AFA Trawl CVs	0.50% ⁴	1,663	3.10% ⁴	11,019

Source: Based on the BSAI Trawl Bycatch Allowances for 2005/2006 (139,331 C. Opilio).

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Table 3-102 Range of trawl Zone 1 Bairdi crab PSC allocations under Option 7.1 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest P. Cod Sector Allocation	Zone 1 Bairdi PSC Allocation (# of crab) - by Trawl Sector - Low	Highest P. Cod Sector Allocation	Zone 1 Bairdi PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	4,204	3.7% ¹	16,170
AFA Trawl CVs	17.8% ²	87,854	24.4% ²	110,048
Non-AFA Trawl CPs	12.7% ³	60,878	16.2% ³	77,452
Non-AFA Trawl CVs	0.50% ⁴	2,185	3.10% ⁴	14,481

Source: Based on the BSAI Trawl Bycatch Allowances for Zone 1 Bairdi 2005/2006 (183,112 crab).

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Table 3-103 Range of trawl Zone 2 Bairdi crab PSC allocations under Option 7.1 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest Pacific Cod Sector Allocation	Zone 2 Bairdi PSC Allocation (# of crab) - by Trawl Sector - Low	Highest Pacific Cod Sector Allocation	Zone 2 Bairdi PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	7,443	3.7% ¹	28,627
AFA Trawl CVs	17.8% ²	155,535	24.4% ²	194,825
Non-AFA Trawl CPs	12.7% ³	107,776	16.2% ³	137,119
Non-AFA Trawl CVs	0.50% ⁴	3,868	3.10% ⁴	25,636

Source: Based on the BSAI Trawl Bycatch Allowances for Zone 2 Bairdi 2005/2006 (324,176 crab).

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Option 7.2

Option 7.2 would apportion the annual PSC allocations to the trawl Pacific cod fishery to the cod trawl sectors based on each sector’s directed cod harvests during the qualifying period under Component 2. In effect, one first calculates the percent of total BSAI trawl cod harvest to each trawl sector, as done under Option 7.1. Because there are a multitude of options available under Component 2, the analysis of this option also uses an example of the Pacific cod trawl sector allocations resulting from Option 2.1 (excluding the AFA 9). Then one calculates the percent of retained Pacific cod that is harvested in the target Pacific cod fishery by sector. The result of multiplying these two percentages is the percentage of the total trawl cod fishery group PSC allowance that is allocated to each trawl sector.

Table 3-104 below shows the percent of Pacific cod harvested in the Pacific cod, pollock, and ‘other’ target fisheries for the non-AFA and AFA trawl CV sectors during 1999 – 2003. Targeting was determined by computing total retained harvests for each vessel by sector, NMFS week-ending date, area, and BSAI TAC species group, as well as the total retained harvests for the entire week, all species combined. The target is assigned as the dominant (largest retained mt) BSAI TAC species group by week.

On average, the **non-AFA trawl CV sector** harvested about **99.8%** of its total retained Pacific cod catch in the Pacific cod target fishery. Less than 0.2% of the retained cod by this sector was taken in fisheries other than the Pacific cod target fishery. In the **AFA trawl CV sector**, about **92.2%** of the total retained Pacific cod catch by this sector was harvested in the directed Pacific cod fishery. The remaining 7.8% of this sector’s total retained cod was taken in the directed pollock fishery.

Table 3-104 Percent of Pacific cod harvested in the Pacific cod target, by trawl CV sector

Year	Sector	% Pacific cod from Pacific cod targeted weeks	% Pacific cod from pollock targeted weeks	% Pacific cod from other species targeted weeks
1999	Non-AFA Trawl CV	99.86	0.14	0
2000	Non-AFA Trawl CV	99.68	0.32	0
2001	Non-AFA Trawl CV	99.82	0.02	0.16
2002	Non-AFA Trawl CV	99.99	0	0.01
2003	Non-AFA Trawl CV	99.70	0.00	0.30
1999 - 2003	Non-AFA Trawl CV	99.81%	0.06%	0.13%
Year	Sector	% Pacific cod from Pacific cod targeted weeks	% Pacific cod from pollock targeted weeks	% Pacific cod from other species targeted weeks
1999	AFA Trawl CV	94.26	5.72	0.02
2000	AFA Trawl CV	93.81	6.16	0.03
2001	AFA Trawl CV	90.88	9.12	0
2002	AFA Trawl CV	91.36	8.64	0
2003	AFA Trawl CV	90.02	9.98	0
1999 - 2003	AFA Trawl CV	92.20%	7.79%	0.01%

Source: ADF&G fishtickets, 1999 - 2003.

Note: Targeting was determined by computing total retained harvests (mt) for each vessel by sector, NMFS week-ending date, area, and BSAI TAC species group, as well as the total retained harvests (mt) for the entire week, all species combined. The target is assigned as the dominant (largest retained mt) BSAI TAC species group by week. CDQ harvests and product codes of meal are not included.

Table 3-105 is a comparable table for the non-AFA and AFA trawl CP sectors during 1999 – 2003. On average, the **non-AFA trawl CP sector** harvested about **54.1%** of its total retained Pacific cod catch in the Pacific cod target fishery. The remainder of the Pacific cod harvested by this sector was taken in target fisheries other than Pacific cod, primarily the yellowfin sole, rock sole, flathead sole, and Atka mackerel fisheries.⁸⁹

In the **AFA trawl CP sector**, about **84.3%** of the total retained Pacific cod catch by this sector was harvested in the directed Pacific cod fishery. The remaining 14.7% and 1.0% of this sector’s total retained cod was taken in the directed pollock fishery and flatfish fisheries, respectively.

Table 3-105 Percent of Pacific cod harvested in the Pacific cod target, by trawl CP sector

Year	Sector	% Pacific cod from Pacific cod targeted weeks	% Pacific cod from pollock targeted weeks	% Pacific cod from other species targeted weeks
1999	Non-AFA Trawl CP	50.88	0.2	48.92
2000	Non-AFA Trawl CP	49.73	0.12	50.14
2001	Non-AFA Trawl CP	43.79	0.33	55.88
2002	Non-AFA Trawl CP	60.16	0.04	39.8
2003	Non-AFA Trawl CP	62.69	0.03	37.28
1999 - 2003	Non-AFA Trawl CP	54.1%	0.1%	45.8%
Year	Sector	% Pacific cod from Pacific cod targeted weeks	% Pacific cod from pollock targeted weeks	% Pacific cod from other species targeted weeks
1999	AFA Trawl CP	89.45	8.42	2.13
2000	AFA Trawl CP	88.66	10.57	0.78
2001	AFA Trawl CP	83.9	16.1	0
2002	AFA Trawl CP	76.16	23.53	0.31
2003	AFA Trawl CP	73.45	26.35	0.2
1999 - 2003	AFA Trawl CP	84.3%	14.7%	1.0%

Source: Weekly processor reports, 1999 - 2003.

⁸⁹On occasion, a non-AFA vessel appears to have a pollock target. This can occur when a vessel fished in more than one Federal zone during the same week (separate targets are assigned for each Federal zone). In addition, there is one ‘unlisted’ trawl CP that is eligible to target BSAI pollock under the AFA but is included in the non-AFA trawl CP sector for purposes of non-pollock fisheries.

Allocation of halibut PSC

The following table shows the resulting halibut PSC apportionments to each trawl sector under Option 7.2. Due to the multitude of allocation options possible, Table 3-106 uses the average percentage of targeted cod by sector from 1999 – 2003 as shown previously and the same example of BSAI Pacific cod trawl sector allocations used in Option 7.1.⁹⁰ **The result of multiplying these two percentages (and adjusting to 100% of the total) is the percentage of the total trawl cod fishery group halibut PSC allowance that is allocated to each trawl sector under Option 7.2 (column 5).** Column 6 translates that percentage to metric tons, using the existing cod trawl halibut bycatch cap of 1,434 mt.

Table 3-106 Example of trawl halibut PSC allocations under Option 7.2 resulting from Pacific cod sector allocations

Column number	1	2	3	4	5	6
Trawl Sector	Option 2.1 Sector Allocation* (% of ITAC)	Percent of total BSAI trawl cod allocation	Percent of cod harvested in target cod fishery**	Product of Column 2 x Column 3	Percent of trawl cod halibut PSC allocation (adjusted to 100% of total)	Halibut PSC allocation (mt)
AFA Trawl CP	1.8%	4.6%	84.3%	3.9%	4.9%	70.5
AFA Trawl CV	22.1%	56.7%	92.2%	52.2%	66.0%	946.1
Non-AFA Trawl CP	13.3%	34.1%	54.1%	18.4%	23.3%	334.1
Non-AFA Trawl CV	1.8%	4.6%	99.8%	4.6%	5.8%	83.4
Total	39.0%	100.0%	n/a	79.2%	100.0%	1434.0

*See Table 3-63, Option 2.1 excluding the AFA 9.

**Average percentage of BSAI Pacific cod harvested in the directed BSAI Pacific cod fishery by sector, 1999 – 2003.

Note that primary result of Option 7.2 is to increase the halibut PSC allowance to the trawl cod sectors which catch the great majority of their Pacific cod in the target cod fishery. The intent is such that because the PSC being allocated is for the trawl cod fishery group, each sector should receive the necessary halibut PSC for the target cod fishery. Halibut PSC necessary to prosecute other target trawl fisheries would be allocated under a different trawl fishery group. In effect, this option would not provide additional PSC for other target trawl fisheries that catch cod incidentally.

Overall, the non-AFA trawl CP sector has the lowest percentage of targeted cod relative to the other three trawl sectors. About 54% of the retained Pacific cod harvested by the non-AFA trawl CP sector was caught in the cod target fishery on average during 1999 – 2003. The remaining three trawl sectors show a much higher percentages of targeted cod: AFA trawl CP (84.3%); AFA trawl CV (92.2%); and non-AFA trawl CV (99.8%). **Because of this substantial difference, Option 7.2 results in increasing the percentage of the total trawl cod halibut PSC allowance to the AFA trawl CV, AFA trawl CP, and non-AFA trawl CV sectors relative to the non-AFA trawl CP sector.**

⁹⁰The example BSAI Pacific cod trawl allocations are from Alternative 2, Component 2, Option 2.1 (excluding the AFA 9).

As provided for the analysis of Option 7.1, Table 3-107 below provides the possible range of halibut PSC allocations to the trawl sectors under Option 7.2, based on the minimum and maximum Pacific cod allocations proposed for each sector in Component 2. As shown in the previous example, this means that the minimum/maximum allocation was determined for each sector, and then translated to a percentage of the total trawl cod allocation. That percentage was then adjusted to account for cod harvested in the target cod fishery only (and adjusted to 100% scale). Note that the estimates of metric tons of halibut mortality are based on the current halibut PSC allowance of 1,434 mt for the trawl cod fishery group.

Table 3-107 Range of trawl halibut PSC allocations under Option 7.2 associated with the range of proposed Pacific cod sector allocations

Trawl Sector	Lowest P. Cod Sector Allocation	Halibut Trawl PSC Allocation (mt) - Low	Highest P. Cod Sector Allocation	Halibut Trawl PSC Allocation (mt) - High
AFA Trawl CPs	0.9% ¹	35.9	3.7% ¹	135.2
AFA Trawl CVs	17.8% ²	829.9	24.4% ²	1,004.3
Non-AFA Trawl CPs	12.7% ³	325.3	16.2% ³	429.2
Non-AFA Trawl CVs	0.50% ⁴	21.7	3.10% ⁴	146.3

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Finally, Table 3-108 below compares the resulting range of halibut PSC allocations to each trawl sector (percentage and metric tons) under Option 7.1 and Option 7.2. **Note that the resulting halibut PSC allocations to each trawl sector under either Option 7.1 or 7.2, with the exception of the non-AFA trawl CP sector, are higher than the average amount of halibut PSC used by each sector during 1995 – 2003 (refer to Table 3-49).** By contrast, the non-AFA trawl CP sector had an average halibut mortality of about 458.7 mt during 1995 – 2003, and Option 7.2 could allocate a range of 325.3 mt – 429.2 mt to that sector under the current halibut bycatch allowance, depending on the allocations selected under Component 2. This is because a relatively high percentage of the Pacific cod caught by this sector was in a different species target, and Option 7.2 bases halibut allocations on the sector’s Pacific cod allocation and the percentage of cod harvested in the target cod fishery.

Table 3-108 Comparison of range of trawl sector halibut PSC allocations under Option 7.1 and Option 7.2

Sector	Option 7.1				Option 7.2			
	Minimum halibut (mt)	Minimum % of total halibut	Maximum halibut (mt)	Maximum % of total halibut	Minimum halibut (mt)	Minimum % of total halibut	Maximum halibut (mt)	Maximum % of total halibut
AFA Trawl CP	32.92	2.3%	126.63	8.8%	35.9	2.5%	135.2	9.4%
AFA Trawl CV	688.01	48.0%	861.81	60.1%	829.9	57.9%	1004.3	70.0%
Non-AFA Trawl CP	476.75	33.2%	606.55	42.3%	325.3	22.7%	429.2	29.9%
Non-AFA Trawl CV	17.11	1.2%	113.4	7.9%	21.7	1.5%	146.3	10.2%

Note: The estimates of halibut mortality in metric tons are based on the current halibut PSC limit of 1,434 mt allocated to the BSAI cod trawl fishery group.

Note: Maximum and minimum allocations are from Table 3-99 and Table 3-107.

It is important to recall that upon implementation of proposed BSAI Amendment 80, the non-AFA trawl CP sector will receive the halibut PSC associated with all of its fisheries (including Pacific cod) using the methodology selected under the preferred alternative for Amendment 80. In effect, the halibut PSC associated with the cod trawl fishery group that remains after the non-AFA trawl CP sector PSC is subtracted will be further divided upon the three other trawl sectors using the method selected under Amendment 85. Thus, because the non-AFA trawl CP sector exhibits a significantly lower percentage of targeted cod than the other three trawl sectors, and because the other three trawl sectors have relatively similarly high percentages of targeted cod (84% - 100%), **Option 7.1 and Option 7.2 will have fairly similar effects upon exclusion of the non-AFA trawl CP sector.**

Allocation of crab PSC

As noted under the discussion of Option 7.1, crab bycatch allowances are determined in the Council specifications process. The 2006 limits for crab PSC in the BSAI Pacific cod trawl fishery are: red king crab – 26,563 animals; *C. opilio* – 139,331 animals; bairdi in Zone 1 – 183,112 animals; and bairdi in Zone 2 – 324,176 animals. The PSC limits are set to fluctuate in response to changes in resource abundance for the specific crab species.

As is the case for halibut PSC described above, under Option 7.2, crab PSC is apportioned to the different trawl sectors according to each sector's proportional share of directed Pacific cod harvest. The sequence of calculations to determine the results of Option 7.2 is outlined in Table 3-106. The percent allocations for each sector, shown in column 5 of Table 3-103 for halibut PSC, are the same percentages used to apportion crab PSC. This is because the same data (the sector allocation of Pacific cod and the sector's percent of cod harvested in the target cod fishery) is used to determine both halibut and crab PSC apportionments under Option 7.2.

As noted in the discussion above, an analysis of all of the possible allocation options would be unnecessarily confusing and voluminous. **Instead, the following tables present an example of the allocations that would result from one specific Pacific cod allocation option (Component 2, Option 2.1, excluding the AFA 9, shown in Table 3-63).** The examples below are based on the average percentages of targeted cod by sector from 1999 – 2003.

The results of the example option are shown below for each of the four crab PSC allocations in Table 3-109. The second column shows the percent of the total crab PSC allowance to the trawl cod fishery group allocated to each trawl sector under the example allocation scenario. These are the same percentages calculated in Table 3-106. The percentages in column 2 are then translated to numbers of crab using the current crab PSC limit for the trawl cod fishery group. Each of the sector allocation options in Component 2 would result in a different crab PSC apportionment among sectors, depending on the Pacific cod allocation selected and the sector's historical percentage of targeted cod.

Table 3-109 Example of crab PSC allocations under Option 7.2 resulting from one example of Pacific cod sector allocations*

Trawl Sector	Percent of trawl cod crab PSC allocation (adjusted to 100% of total)	Red king crab PSC allocation (# of crab)	C. Opilio PSC allocation (# of crab)	Bairdi Zone 1 PSC allocation (# of crab)	Bairdi Zone 2 PSC allocation (# of crab)
AFA Trawl CP	4.9%	1,302	6,827	8,972	15,885
AFA Trawl CV	66.0%	17,531	91,958	120,854	213,956
Non-AFA Trawl CP	23.3%	6,189	32,464	42,665	75,533
Non-AFA Trawl CV	5.8%	1,541	8,081	10,621	18,802
Total	100.0%	26,563	139,330	183,112	324,176

*See Table 3-63, Option 2.1 excluding the AFA 9.

The following four tables indicate the maximum and minimum crab PSC allocations to each trawl sector, by applying the potential range of BSAI Pacific cod allocations proposed under Component 2. There is not an individual option that would simultaneously achieve all of the minimum or all of the maximum allocations of crab PSC to each sector. However, Table 3-110 through Table 3-113 below encompass the entire range of crab PSC allocations possible under the full suite of options.

Table 3-110 shows the range of apportionments for red king crab, followed by tables for C. opilio, Zone 1 bairdi and Zone 2 baridi. Maps showing these designated areas are included in Section 3.4.2.5 of the analysis.

Table 3-110 Range of red king crab PSC allocations to the trawl sectors under Option 7.2

Trawl Sector	Lowest P. Cod Sector Allocation	Red King Crab PSC Allocation (# of crab) by Trawl Sector - Low	Highest P. Cod Sector Allocation	Red King Crab PSC Allocation (# of crab) by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	665	3.7% ¹	2,504
AFA Trawl CVs	17.8% ²	15,372	24.4% ²	18,602
Non-AFA Trawl CPs	12.7% ³	6,025	16.2% ³	7,950
Non-AFA Trawl CVs	0.50% ⁴	402	3.10% ⁴	2,710

Source: Based on the 2006 BSAI trawl bycatch allowances of 26,563 red king crab.

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Similar to the PSC allocations under Option 7.1, Option 7.2 would result in allocating the entire crab PSC limit to the BSAI Pacific cod trawl sectors. However, the historical use of crab PSC has been less than the crab PSC limit available in most years. The lowest possible red king crab PSC allocations to each trawl sector under Option 7.2 are higher than the average annual harvest during 1995 – 2002. During 1995-2002, the annual average PSC harvest of red king crab was: non-AFA trawl CPs – 4,730 crab; AFA trawl CPs – 166 crab; and trawl CVs – 1,114 crab. The annual average total of red king crab PSC harvest for these sectors totaled 6,010 crab, well below the PSC limit red king crab PSC of 26,563 crab.

The annual average PSC harvest of *C. opilio* Tanner crab within the COBLZ zone during 1995-2002 was: non-AFA trawl CPs – 34,645 crab; AFA trawl CPs – 189 crab; and trawl CVs – 6,768 crab. The annual total for the average PSC harvest for these three sectors has totaled 41,602 crab, well below the current COBLZ PSC limit of 139,331 crab.

For the same period, the annual average PSC harvest of *bairdi* Tanner crab in Zone 1 was: non-AFA trawl CPs – 72,391 crab; AFA trawl CPs – 469 crab; and trawl CVs – 59,810 crab. The average annual total for Zone 1 *bairdi* PSC harvest for these three sectors was 132,670 crab, well below the current Zone 1 *bairdi* PSC limit of 183,112 crab.

Also during 1995-2002, the annual average PSC harvest of *bairdi* Tanner crab in Zone 2 was: non-AFA trawl CPs – 25,546 crab; AFA trawl CPs – 1,685 crab; and trawl CVs – 19,376 crab. The average annual total for Zone 2 *bairdi* PSC harvest for these three sectors was 46,607 crab, well below the current Zone 2 *bairdi* PSC limit of 324,176 crab.

Table 3-111 through Table 3-113 shows the range of PSC apportionments for *C. opilio*, Zone 1 *bairdi* and Zone 2 *bairdi* that result from Option 7.2. These ranges can be compared with the historic levels of *C. opilio* and *bairdi* PSC taken in each trawl sector. In most cases, crab PSC harvest for the different trawl sectors is less than the minimum allocations under Option 7.2. However, for *C. opilio*, the average annual use for the non-AFA trawl CP sector was 34,645 crab during 1995 - 2002, which is higher than the minimum allocation (31,605 crab) shown below. Also for the non-AFA trawl CP sector, the historical average annual use of zone 1 *bairdi* was 72,391 crab during 1995 - 2002. This is much higher than either the minimum apportionment under Option 7.2 (41,536 zone 1 *bairdi*) or the maximum apportionment under Option 7.2 (54,806 zone 1 *bairdi*).

Table 3-111 Range of *C. Opilio* crab PSC allocations to the trawl sectors under Option 7.2

Trawl Sector	Lowest P. Cod Sector Allocation	<i>C. Opilio</i> Crab PSC Allocation (# of crab) - by Trawl Sector - Low	Highest P. Cod Sector Allocation	<i>C. Opilio</i> PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	3,486	3.7% ¹	13,134
AFA Trawl CVs	17.8% ²	80,633	24.4% ²	97,576
Non-AFA Trawl CPs	12.7% ³	31,605	16.2% ³	41,703
Non-AFA Trawl CVs	0.50% ⁴	2,114	3.10% ⁴	14,215

Source: Based on the 2006 BSAI trawl bycatch allowance of 139,331 *C. Opilio*.

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Table 3-112 Range of Zone 1 Bairdi crab PSC allocations to the trawl sectors under Option 7.2

Trawl Sector	Lowest P. Cod Sector Allocation	Zone 1 Bairdi PSC Allocation (# of crab) - by Trawl Sector - Low	Highest P. Cod Sector Allocation	Zone 1 Bairdi PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	4,581	3.7% ¹	17,260
AFA Trawl CVs	17.8% ²	105,970	24.4% ²	128,237
Non-AFA Trawl CPs	12.7% ³	41,536	16.2% ³	54,806
Non-AFA Trawl CVs	0.50% ⁴	2,775	3.10% ⁴	18,681

Source: Based on the 2006 BSAI trawl bycatch allowances for Zone 1 Bairdi of 183,112 crab.

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Table 3-113 Range of Zone 2 Bairdi crab PSC allocations to the trawl sectors under Option 7.2

Trawl Sector	Lowest Pacific Cod Sector Allocation	Zone 2 Bairdi PSC Allocation (# of crab) - by Trawl Sector - Low	Highest Pacific Cod Sector Allocation	Zone 2 Bairdi PSC Allocation (# of crab) - by Trawl Sector - High
AFA Trawl CPs	0.9% ¹	8,110	3.7% ¹	30,557
AFA Trawl CVs	17.8% ²	187,606	24.4% ²	227,026
Non-AFA Trawl CPs	12.7% ³	73,534	16.2% ³	97,027
Non-AFA Trawl CVs	0.50% ⁴	4,912	3.10% ⁴	33,072

Source: Based on the 2006 BSAI trawl bycatch allowances for Zone 2 Bairdi of 324,176 crab.

¹ lowest sector allocation from Option 2.6 drop year ; highest sector allocation from Option 2.2 (Table 3-63)

² lowest sector allocation from Option 2.6 (Table 3-69); highest sector allocation from Option 2.2 w/o AFA 9 (Table 3-66)

³ lowest sector allocation from Option 2.1 w/AFA 9 (Table 3-69) ; highest sector allocation from Option 2.6. (Table 3-63)

⁴ lowest sector allocation from Option 2.2.drop year w/AFA 9 (Table 3-66) ; highest sector allocation from Option 2.6 drop year w/AFA 9 (Table 3-63)

Finally, the four tables below (Table 3-114 through Table 3-117) provide a comparison of Option 7.1 and Option 7.2 for each crab species. Since the percentages for the crab allocations are the same as presented in Table 3-108, they are not repeated in this series of tables—the results are only presented in terms of numbers of crab. Note that all options assume that the current overall trawl crab bycatch allowances are maintained; the options only propose methods for splitting the total among the four trawl sectors.

The general conclusion in comparing Option 7.1 and Option 7.2 is that for three of the four sectors (AFA trawl CP, AFA trawl CV and non-AFA trawl CV), the range of crab PSC allocations is higher under Option 7.2 than under Option 7.1. In the non-AFA trawl CP sector, however, the range of crab PSC allocations is higher under Option 7.1 than under Option 7.2. This is because Option 7.2 is based on the percentage of Pacific cod harvested by each sector in the *targeted* Pacific cod fishery, and the non-AFA trawl CP sector has a much lower percentage of targeted cod than any other trawl sector (see Column 3 of Table 3-106).

In general, the historical use of crab PSC by the trawl sectors is less than the minimum proposed allocations of crab PSC under either Option 7.1 or 7.2. However, there are a couple of noted exceptions. The historic use of *C. opilio* PSC in the non-AFA trawl CP sector averaged 34,645 crab for the years 1995 – 2002, which is greater than the minimum allocation of 31,605 crab under the most restrictive sector allocation under Option 7.2. Of greater concern for the non-AFA trawl CP sector is for Zone 1 bairdi, historic use of which averaged 72,391 crab in 1995 - 2002. This historic use level is greater than the both the minimum (41,536 crab) and maximum (54,806 crab) proposed under Option 7.2 and also greater than the minimum (60,878 crab) allocation under Option 7.1. If future harvests for Zone 1 bairdi follow the average use during 1995 - 2002, the PSC allocation for the non-AFA trawl CP sector will be constraining under most of the Pacific cod allocations combined with Option 7.1 or Option 7.2.

Note, however, that a cooperative structure is being proposed for the non-AFA trawl CP sector under Amendment 80. This amendment would also provide the cooperative(s) in the non-AFA trawl CP sector with halibut and crab PSC allocations for all of their target fisheries, including PSC associated with Pacific cod. Under this management structure, the non-AFA trawl CP sector is expected to be able to better manage its PSC use internally. **There are options under Amendment 80 (Component 6) that establish a methodology for determining halibut and crab PSC allocations to this sector that differ from the options provided under Amendment 85.** Both amendments are clear that upon implementation of Amendment 80, only the three remaining trawl sectors will receive PSC apportionments as determined under the options in Amendment 85.

Table 3-114 Comparison of Option 7.1 and 7.2: red king crab PSC

Sector	Option 7.1		Option 7.2	
	Minimum red king crab (# of crab)	Maximum red king crab (# of crab)	Minimum red king crab (# of crab)	Maximum red king crab (# of crab)
AFA Trawl CP	610	2,346	665	2,504
AFA Trawl CV	12,745	15,964	15,372	18,602
Non-AFA Trawl CP	8,831	11,236	6,025	7,950
Non-AFA Trawl CV	317	2,101	402	2,710

Note: The estimates of red king crab mortality in numbers of crab are based on the current red king crab PSC limit of 26,563 crab allocated to the BSAI cod trawl fishery group.

Table 3-115 Comparison of Option 7.1 and 7.2: C opilio PSC allocations

Sector	Option 7.1		Option 7.2	
	Minimum C. opilio (# of crab)	Maximum C. Opilio (# of crab)	Minimum C. Opilio (# of crab)	Maximum C. Opilio (# of crab)
AFA Trawl CP	3,199	12,304	3,486	13,134
AFA Trawl CV	66,849	83,736	80,633	97,576
Non-AFA Trawl CP	46,322	58,934	31,605	41,703
Non-AFA Trawl CV	1,663	11,019	2,114	14,215

Note: The estimates of *C. opilio* crab mortality in numbers of crab are based on the current *C. opilio* PSC limit of 139,331 crab allocated to the BSAI cod trawl fishery group.

Table 3-116 Comparison of Option 7.1 and 7.2: Zone 1 bairdi PSC allocations

Sector	Option 7.1		Option 7.2	
	Minimum bairdi zone 1 (# of crab)	Maximum bairdi zone 1 (# of crab)	Minimum bairdi zone 1 (# of crab)	Maximum bairdi zone 1 (# of crab)
AFA Trawl CP	4,204	16,170	4,581	17,260
AFA Trawl CV	87,854	110,048	105,970	128,237
Non-AFA Trawl CP	60,878	77,452	41,536	54,806
Non-AFA Trawl CV	2,185	14,481	2,775	18,681

Note: The estimates of bairdi zone 1 crab mortality in numbers of crab are based on the current bairdi zone 1 PSC limit of 183,112 crab allocated to the BSAI cod trawl fishery group.

Table 3-117 Comparison of Option 7.1 and 7.2: Zone 2 bairdi PSC allocations

Sector	Option 7.1		Option 7.2	
	Minimum bairdi zone 2 (# of crab)	Maximum bairdi zone 2 (# of crab)	Minimum bairdi zone 2 (# of crab)	Maximum bairdi zone 2 (# of crab)
AFA Trawl CP	7,443	28,627	8,110	30,557
AFA Trawl CV	155,535	194,825	187,606	227,026
Non-AFA Trawl CP	107,776	137,119	73,534	97,027
Non-AFA Trawl CV	3,868	25,636	4,912	33,072

Note: The estimates of bairdi zone 2 crab mortality in numbers of crab are based on the current bairdi zone 2 PSC limit of 324,176 crab allocated to the BSAI cod trawl fishery group.

Economic Impacts Associated with Allocations of PSC

Finally, there may be some economic impacts associated with further dividing PSC among the various sectors. Currently, Federal regulations do not include specific provisions for reallocating PSC among different fishery categories within the same gear sector (i.e., moving halibut PSC allocated to the cod trawl fishery group to the flatfish trawl fishery group). Nevertheless, reallocating unutilized PSC, specifically halibut PSC, by a specific fishery group has been an important economic benefit of in-season management adjustments routinely administered by NMFS toward the end of each fishing year. Allocating PSC by individual trawl sector, as proposed under Component 7, reduces the flexibility to shift PSC among trawl sectors and fisheries to some extent.

Table 3-118 shows the amount of halibut PSC allocated to and used in the BSAI Pacific cod trawl fishery during 1995 - 2005. The column on the right provides the annual percent utilization of the halibut PSC allocation to the Pacific cod trawl sectors. Over the 11 years from 1995 through 2005, the utilization of the halibut PSC allocation within the BSAI trawl cod fishery averaged 85 percent. This table highlights a trend toward slightly higher utilization of halibut PSC within the Pacific cod trawl fishery in recent years, leaving a smaller proportion 'left over' to be reallocated to other trawl fisheries.

There are likely a number of factors that may help to explain this trend, but a few are obvious. Pacific cod was not seasonally allocated for trawl gear until 2001, so the trawl sector only fished cod in the A season. This left the unused allocation to be reallocated to other trawl fisheries later in the year. There is

also the potential that better record keeping changed the halibut PSC use records from 2003 to the present. In 2003, NMFS began using halibut mortality estimates for the CV sector based at the vessel level instead of the processor level (with implementation of the catch accounting database replacing the blend database). Also, as noted in the market information, Pacific cod prices have increased in recent years, making it a higher priority fishery than when prices were lower. With a higher intensity fishery, vessels are targeting Pacific cod in the spring, summer, and fall, and with the extended fishery use a higher proportion of their total halibut PSC allowance.

Table 3-118 Halibut mortality in the BSAI Pacific cod trawl fishery, 1995 - 2005

Year	Halibut PSC limit (mt)	Halibut mortality (mt)	remaining PSC allowance (mt)	% utilized
2005	1,434	1,302	132	90.8%
2004	1,434	1,578	-144	110.0%
2003	1,434	1,234	200	86.1%
2002	1,434	1,128	306	78.7%
2001	1,334	672	662	50.4%
2000	1,434	935	499	65.2%
1999	1,473	1,364	109	92.6%
1998	1,434	1,186	248	82.7%
1997	1,600	1,350	250	84.4%
1996	1,685	1,640	45	97.3%
1995	1,550	1,510	40	97.4%

Source: NMFS, Alaska Region. Catch accounting annual summaries, 1995 – 2005.

Movement of PSC within the trawl fisheries, as administered by NMFS in-season managers, has enabled late season flatfish fisheries that otherwise could not have occurred. Data is not available to show which trawl fisheries received PSC that was not utilized in the Pacific cod trawl fishery. The extent of the harvest of yellowfin sole, or other flatfish that was leveraged by the use of the PSC, is also unknown. Note also that in 2004, the typical situation was reversed. The BSAI trawl Pacific cod fishery exceeded its halibut PSC allocation, due primarily to Pacific cod being in deeper waters than normal. In the late summer/early fall, the only fishery that still had TAC available was the Pacific cod fishery. The flatfish fisheries experienced lower than normal halibut mortality, so halibut PSC allocation from the yellowfin sole fishery was utilized to enable additional fishing in the Pacific cod fishery.

If Amendment 85 created a situation where ‘left over’ PSC allocated to the cod trawl fishery group would be encumbered to the extent that in-season managers could not use it in other late summer and early fall fisheries as they have in the past, there would be a negative impact (largely to the non-AFA trawl CP sector) from this outcome. As stated previously, the shift of halibut PSC between trawl fishery groups has occurred largely to extend fisheries primarily prosecuted by the non-AFA trawl CP sector. However, this sector is proposed to receive all of the PSC associated with all of its target fisheries (including Pacific cod) under BSAI Amendment 80. Thus, the concern described above would be allayed for this sector under Amendment 80, as this sector’s PSC would not be allocated by NMFS to separate fishery groups. Instead, the sector would be able to use its PSC allocation as needed for any of its target fisheries, as determined by the sector through the cooperative structure.

There are obvious benefits to all sectors that result from continuing to allow PSC to be reallocated from one trawl fishery group to another. Amendment 85 does not contain any options to explicitly prohibit this practice; thus, it is expected that inseason managers would continue to have the flexibility to shift PSC from within one trawl sector fishery group to another fishery group within the same sector if necessary.

3.4.3.8 Component 8: Apportionment of cod non-trawl halibut PSC

The total amount of non-trawl halibut PSC for the non-CDQ fisheries is 833 mt. The 833 mt is apportioned between cod hook-and-line sectors and other non-trawl fisheries during the annual specifications process. Generally, 775 mt is apportioned to hook-and-line cod fisheries and 58 mt to other non-trawl. This component would divide the halibut PSC amount apportioned to non-trawl cod between the hook-and-line CP sector and hook-and-line CV sector (for CVs $\geq 60'$ and CVs $< 60'$ combined):

- Option 8.1 In proportion to the BSAI Pacific cod TAC allocated to the sectors
- Option 8.2 10 mt for CVs, remainder for CPs

Component 8 under Alternative 2 proposes to establish separate halibut PSC limits for the hook-and-line CP and hook-and-line CV sectors. Recall from Section 3.4.2.7 under Alternative 1, current Federal regulations establish a BSAI non-trawl halibut PSC limit for these sectors combined of about 833 mt, 775 mt of which is allocated to the BSAI Pacific cod hook-and-line fisheries and 58 mt of which is allocated to other non-trawl fisheries (primarily used in the target Greenland turbot fishery). The groundfish pot and jig gear fisheries are exempt from the halibut bycatch allowances. In effect, the hook-and-line sectors fishing BSAI Pacific cod share an annual halibut bycatch allowance of 775 mt. Recall that this limit is apportioned among three seasons as follows:

Table 3-119 2005 and 2006 non-trawl halibut PSC allowances

Non-trawl Fisheries	BSAI Halibut mortality (mt)
Pacific cod – Total	775
January 1 – June 10	320
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

If a seasonal apportionment of halibut PSC is reached, both hook-and-line CP and CV sectors are closed to directed BSAI Pacific cod fishing for the remainder of the season. Thus, because there is no halibut PSC allowance from June 10 to August 15, the hook-and-line Pacific cod fishery essentially cannot operate during the summer. Anecdotal evidence and public testimony indicate that the hook-and-line CP sector generally supports this management system, given that halibut bycatch rates increase substantially in the summer months and may risk closing the directed Pacific cod fishery prior to the allocation being fully harvested.

However, the hook-and-line CV sector, which is also constrained by the lack of halibut bycatch allowance in the summer months, is comprised of smaller vessels with slower catch rates and a relatively small Pacific cod allocation. Note that the general hook-and-line CV sector currently receives an allocation

equal to 0.15% of the BSAI Pacific cod ITAC.⁹¹ Under Alternative 2, the $\geq 60'$ hook-and-line CV sector could receive an allocation in the range of 0.1% - 0.4% of the BSAI Pacific cod ITAC. Recall that nine hook-and-line CVs $\geq 60'$ comprise this sector and could fish the sector's BSAI Pacific cod allocation as proposed under Alternative 2. These vessels range from about 80' - 166' length overall. Under Alternative 2, the hook-and-line CV sector will continue to receive a relatively small portion of the BSAI Pacific cod ITAC, representing a few to several hundred metric tons under recent TAC levels.

In addition, the $< 60'$ hook-and-line (and pot) CVs currently receive a separate Pacific cod allocation of 0.7% of the BSAI Pacific cod TAC. Under Alternative 2, the range of potential allocations to this sector is 0.1%–2% of the BSAI Pacific cod ITAC. While 116 non-trawl vessels $< 60'$ have the necessary Federal license to fish in the Federal BSAI Pacific cod fisheries, since 2001, a range of 2–24 hook-and-line vessels $< 60'$ have been fishing off the BSAI Pacific cod allocation to the $< 60'$ fixed gear sector. The top three $< 60'$ hook-and-line vessel harvests comprised 100%, 73%, 85%, and 96% of the total $< 60'$ hook-and-line sector harvest during 2001–2004, respectively. Thus, a few vessels have been dominating the overall catch by this sector to date. Note also that in recent years, about 20% of the total $< 60'$ fixed gear harvest was taken by $< 60'$ hook-and-line vessels, and 80% taken by $< 60'$ pot vessels. Under Alternative 2, the $< 60'$ hook-and-line CV sector will likely continue to harvest a relatively small portion of the BSAI Pacific cod ITAC, representing a few to several hundred metric tons under recent TAC levels.

The hook-and-line CV sectors, regardless of vessel length, may benefit from a halibut PSC limit separate from the hook-and-line CP sector and, potentially, the ability to fish Pacific cod in the summer months. While the halibut bycatch allowance has not been constraining to the BSAI hook-and-line fisheries in recent years, if it did become constraining in the future, the hook-and-line CV sector would likely benefit from having a separate allowance. This is consistent with the concept of establishing separate Pacific cod allocations and separate PSC limits for each trawl and non-trawl sector, such that no sector can impede another sector's Pacific cod fishery. Note that under Component 8, while the hook-and-line CV and CP sectors would receive separate halibut bycatch allowances, all hook-and-line CVs, regardless of length, would be subject to the same halibut bycatch limit.

As outlined in Section 3.3.5.8, the Pacific cod hook-and-line CP and CV sectors have varying amounts of halibut PSC. Table 3-120 provides a summary of that data for 1999 – 2003.

Table 3-120 Halibut mortality in the BSAI Pacific cod hook-and-line sectors, 1999 - 2003

Year	H&L CP halibut mortality (mt)	H&L CP retained BSAI cod (mt)	H&L CP halibut mortality (mt) per mt retained P. cod	H&L CV halibut mortality (mt)	H&L CV retained BSAI cod (mt)	H&L CV halibut mortality rate per mt P. cod
1999	496	68,271	.0073	3.7	223	.0166
2000	706	75,181	.0094	5.2	443	.0117
2001	762	86,436	.0088	14.3	1,777	.0080
2002	577	79,269	.0076	8.2	375	.0218
2003	487	89,580	.0054	3.0	482	.0062
Average 1999–2003	606	79,747	.0076	6.9	660	.0129

Note that the halibut mortality limit for the BSAI Pacific cod hook-and-line fishery in 1999 and 2000 was reapportioned mid-season to 598 mt and 673 mt, respectively. In 2001 – 2003, it was 775 mt.

⁹¹Note that under Alternative 1, the $< 60'$ hook-and-line vessels would continue to be able to fish off the general hook-and-line CV allocation when that directed fishery is open.

The hook-and-line CV sector shows a slightly higher halibut mortality rate per metric ton of retained BSAI Pacific cod than the hook-and-line CP sector. On average (1999–2003), the rate of halibut mortality per metric ton of retained BSAI Pacific cod was 0.0076 for the hook-and-line CP sector. During the same time period, the rate of halibut mortality per metric ton of retained BSAI Pacific cod for the hook-and-line CV sector was 0.0129. Note that the CV sector includes vessels of any length (<60' and ≥60'). In addition, halibut mortality data is based on observer reports, and extrapolated to total groundfish harvest. While all hook-and-line CPs have either 30% or 100% observer coverage based on vessel length, the hook-and-line CV sector has minimal coverage by comparison. The majority of these vessels are <60' and thus are not subject to observer requirements. Extrapolation from the ≥60' CV sector and all CPs are used to estimate the halibut mortality attributed to the hook-and-line CV sector overall.

Combined, the hook-and-line sectors did not exceed the halibut bycatch allowance during 1999–2003, averaging about 85% taken. Note that during 1999 and 2000, the halibut bycatch allowance to the BSAI hook-and-line Pacific cod fishery group was reduced mid-season by 20% and 10%, respectively, to allow for an increase in the halibut allowance to the BSAI non-trawl fisheries other than Pacific cod. This action was taken primarily to allow further prosecution of the BSAI non-trawl Greenland turbot fishery.

Effects of Option 8.1 and Option 8.2

Option 8.1 would establish halibut limits for each hook-and-line CP sector and CV sector in proportion to the BSAI Pacific cod ITAC allocated to the sectors. For example, if the hook-and-line CP sector received 99% of the total BSAI Pacific cod ITAC allocated to the hook-and-line sectors, this sector would also receive 99% of the total halibut allowance apportioned to the non-trawl BSAI Pacific cod sectors.

Because the <60' hook-and-line CV sector would continue to receive a separate Pacific cod allocation from the ≥60' hook-and-line CV sector under Alternative 2, both hook-and-line CV sectors' allocations need to be taken into account under Option 8.1. To complicate the issue, the <60' hook-and-line CV sector shares an allocation with the <60' pot CV sector. Thus, only a portion of the allocation to the <60' fixed gear sector is harvested by vessels using hook-and-line gear that would be subject to the halibut bycatch limit. As mentioned previously, on average during 1999–2003, about 33% of the total <60' fixed gear harvest was taken by <60' hook-and-line vessels, and 67% was taken by <60' pot vessels. This apportionment is used as a proxy in this analysis to determine what portion of the <60' fixed gear allocation should be attributed to the <60' hook-and-line sector in order to provide a better estimate of the halibut bycatch needs in the hook-and-line CV sectors overall.

Table 3-121 below provides the resulting halibut PSC allowances to each sector under Options 8.1 and 8.2. This table provides the range of BSAI Pacific cod allocations proposed to each hook-and-line sector under Component 2, in both percentage of the ITAC and metric tons using the 2006 ITAC. This table also provides the average halibut mortality rate by sector during 1999 - 2003, as estimated in Section 3.4.2.7. Note that the last row of the table provides the hook-and-line sector allocations ‘adjusted’ to account for the fact that only about one-third of the <60’ pot/hook-and-line sector allocation has been harvested with hook-and-line gear on average during 1999–2003. Thus, this data likely represents better estimates of the actual halibut bycatch needs in the hook-and-line CV cod fishery than the estimates without the adjustment.

Note that the halibut bycatch allowances under Option 8.1 are based on each sector’s proposed BSAI Pacific cod allocation, and Option 8.2 establishes a set amount similar to that under Option 8.1. It is important, however, to consider each sector’s historical use of halibut bycatch and whether the apportionments proposed in Options 8.1 and 8.2 would likely allow each sector to fully harvest its range of proposed cod allocations, including any reallocated quota.

While Option 8.1 cannot be definitively determined until a preferred alternative is selected under Component 2, in general, the CV sector could receive about 0.4% – 4.4% of the total BSAI Pacific cod allocation established for hook-and-line gear, and the CP sector could receive 95.6% - 99.6%. This includes the adjustment made for the <60’ hook-and-line sector as described above (ascribing 33% of the <60’ hook-and-line/pot allocation to the <60’ hook-and-line vessels).⁹² **Therefore, the resulting apportionment of halibut PSC to the hook-and-line sectors under Option 8.1 would be in the range of 3 mt - 34 mt to the hook-and-line CV sector and 741 mt – 772 mt to the hook-and-line CP sector, using the current halibut PSC limit to the non-trawl cod fishery of 775 mt.**

Option 8.2 would allocate 10 mt to the hook-and-line CV sector, with the remaining 765 mt allocated to the hook-and-line CP sector, using the current halibut PSC limit to the non-trawl cod fishery of 775 mt. Given the discussion above, the allocations under Option 8.2 are in the middle of the range established under Option 8.1. Ten metric tons represents about 1.3% of the current 775 mt halibut limit.

Given the halibut mortality rates per metric ton of BSAI Pacific cod estimated for each hook-and-line sector, the range of proposed allocations under Component 2, and recent TAC levels, **the halibut PSC apportionment under Option 8.1 or Option 8.2 appears sufficient for the hook-and-line CP sector to prosecute its entire initial BSAI Pacific cod allocation.** Note that this conclusion is dependent on maintaining the halibut bycatch allowance for the non-trawl BSAI Pacific cod fishery near the current level of 775 mt.

Given the same factors, the range of halibut PSC apportioned to the hook-and-line CV sector under Option 8.1 also appears sufficient for this sector to fully prosecute its proposed range of cod allocations, if the <60’ hook-and-line sector continues to harvest about one-third (or less) of the total <60’ fixed gear allocation. If the <60’ hook-and-line sector harvested the entire <60’ fixed gear allocation and the hook-and-line CV sector received the upper end of the potential cod allocations proposed under this amendment, the amount of halibut PSC allowance established under Option 8.1 would likely not be sufficient.

⁹²Alternatively, if this adjustment was not made, and one wanted to ascribe the entire potential <60’ fixed gear allocation to the <60’ hook-and-line CV sector, the overall hook-and-line CV sector could be apportioned up to 4% of the total BSAI Pacific cod allocation established for hook-and-line gear. The hook-and-line CP sector would receive about 96% of the total.

Option 8.2 does not appear sufficient for the hook-and-line CV sector to fully prosecute the upper end of the range of its potential BSAI Pacific cod allocations under Component 2. If the hook-and-line CV sector (with adjustment for <60' CVs) received the upper end of its allocation, using the estimated halibut mortality rate, this sector is projected to need a maximum of 16 mt of halibut PSC. Option 8.2 would establish a limit of 10 mt.

Table 3-121 Estimated projections of halibut bycatch needs in the BSAI Pacific cod hook-and-line CP and CV sectors, based on proposed allocations in Alternative 2, Component 2

Hook-and-line CP sector					
% of P. cod ITAC (allocation range proposed under Component 2)	P. cod allocation (mt) using 2006 ITAC	Average halibut mortality rate, 1999 - 2003	Estimate of halibut mortality (mt) needed to prosecute proposed Pacific cod allocation	Halibut mortality (mt) proposed under Option 8.1	Halibut mortality (mt) proposed under Option 8.2
45.8% - 50.3%	82,188 – 90,263	.0076	625 – 686	741 - 772	765
Hook-and-line CV sector¹					
0.2 % - 2.3%	359 – 4,127	.0129	5 - 53	3 - 34	10
Hook-and-line CV sector with adjustment ²					
0.12% - 0.7%	215 – 1,256	.0129	3 - 16	3 - 34	10

¹ Under Component 2, 0.2% is the minimum combined allocation to the >60' hook-and-line CV sector (0.1%) and <60' fixed gear sector (0.1%). (These allocations result from Component 2, Option 2.2.) By contrast, 2.3% is the maximum combined allocation to the >60' hook-and-line CV sector (0.3%) and <60' fixed gear sector (2%). (These allocations result from Component 2, Option 2.8 and Option 2.4 drop year. Option 2.8 with Option 2.5 drop year or Option 2.6 produces the same result).

²As noted previously, the <60' hook-and-line CV sector shares an allocation with the <60' pot CV sector. Thus, only a portion of the allocation to the <60' fixed gear sector is harvested by vessels using hook-and-line gear that would be subject to the halibut bycatch limit. In recent years, about 33% of the total <60' fixed gear harvest was taken by <60' hook-and-line vessels and 67% taken by <60' pot vessels. This apportionment is used as a proxy to determine what portion of the <60' fixed gear allocation should be attributed to the <60' hook-and-line sector in order to provide a better estimate of the halibut bycatch needs in the hook-and-line CV sectors overall. The result is that the minimum and maximum Pacific cod allocations for the <60' fixed gear sector in the above row are reduced to 33% of the allocation.

Note also that the table above uses the potential BSAI Pacific cod allocations to each hook-and-line sector to project halibut bycatch needs, which by definition does not include any quota that may be reallocated from other sectors mid-season. If the <60' fixed gear sector continues to receive reallocations from the jig sector on a seasonal basis, this could potentially double the amount of Pacific cod quota that the <60' fixed gear sector is allowed to harvest annually. Therefore, basing the halibut bycatch apportioned to the hook-and-line sectors solely on the initial allocation received under Component 2 may not allocate sufficient halibut for the <60' hook-and-line CV sector to harvest reallocated jig quota in the spring and summer. However, note that in the past five years, which includes 2003 (the first year in which the <60' fixed gear sector received jig reallocations), the halibut mortality attributed to the hook-and-line CV sector overall averaged 7 mt. In 2003 specifically, it was 3 mt. Thus, it is not possible to definitively conclude that the hook-and-line CV sector would need more than the range of halibut bycatch apportioned under Options 8.1 and 8.2.

The same issue exists for the CP sector, as this sector harvests the majority of reallocated quota each year, and it will need halibut bycatch to continue to prosecute the reallocated quota. This issue has not been of concern in the past, as the hook-and-line sectors as a whole have not reached the halibut bycatch limit in recent years, even with trawl reallocations. However, the great majority of the halibut bycatch allowance would continue to be apportioned to the CP sector. In addition, reallocations from the trawl sector to the hook-and-line CP sector are expected to decrease under Alternative 2 under the revised allocations, while reallocations from the jig sector to the <60' hook-and-line CV sector are expected to be similar to the past few years.

In sum, if there exists a concern that the hook-and-line CV sector will be constrained by the halibut allowance under Option 8.1 or Option 8.2 due to the potential for jig reallocations to the <60' fixed gear sector, it may be prudent to provide a slightly larger buffer. However, recall that both the hook-and-line CV and hook-and-line CP sectors will likely continue to receive reallocated quota from other gear sectors. Additional and more refined information on projected halibut bycatch needs for each sector will be possible upon selection of the preferred allocations under Component 2. Whether the halibut bycatch allowance is sufficient for both sectors to prosecute their cod allocations is highly dependent on halibut bycatch rates, BSAI Pacific cod TAC levels, and reallocations from other sectors in the future. The uncertainty associated with this process may influence the mechanism by which the Council chooses to establish the halibut PSC apportionments.

One approach to establishing the halibut bycatch apportionment between the hook-and-line CP and CV sectors is through the Federal regulations to implement Amendment 85. Note that if the apportionment is implemented through this rulemaking, it will be even more important to select the apportionment necessary for each sector to prosecute its Pacific cod fishery, as the apportionments would only be changed through subsequent analysis and rulemaking.

Another approach is through the annual specifications process. The halibut PSC apportionment could thus be adjusted annually as necessary, based upon recent performance of the fishery. In this case, NMFS and the Council would have more flexibility to modify the apportionments if they proved severely constraining for one sector compared to another.

The regulations currently identify two targets to which NMFS allocates halibut mortality in the non-trawl fisheries during the annual specifications process: one for 'non-trawl Pacific cod' and one for 'other non-trawl.' (The non-trawl Pacific cod allowance is only for hook-and-line gear, as the pot and jig gear sectors are exempt.) The 'other non-trawl' category of PSC is typically used for targeting Greenland turbot. **If the Council wanted to set the hook-and-line CP and CV sectors' halibut PSC allowances annually in the specifications process, the Council's preferred alternative under Component 8 could be limited to replacing the current 'non-trawl Pacific cod' category in the regulations with the two new categories for which halibut PSC would be apportioned ('non-trawl Pacific cod CP' and 'non-trawl Pacific cod CV'). In effect, the Council would not choose either of Options 8.1 or 8.2 for establishing the amount of halibut PSC allocated to each sector, but would limit their preferred alternative to establishing the two categories.** The analysis provided under Component 8 for Options 8.1 and 8.2 could serve as guidance for the amounts to be established in a future specifications process.

3.4.4 Part II: Apportionment of BSAI Pacific cod sector allocations to BS and AI subareas

Part II of the amendment addresses the apportionment of the (non-CDQ) BSAI Pacific cod sector allocations between the BS and AI subareas, should the BSAI TAC be apportioned by subarea in a future specifications process. Part II includes a no action alternative and three action alternatives. Any of Alternatives 3–6 can be selected in conjunction with Alternatives 1 or 2 from Part I. Alternatives 3–6 are mutually exclusive.

ALTERNATIVE 3: No action. A methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. (If this alternative was selected, only the approach described under Alternative 5 could be implemented by NMFS without a new regulatory or plan amendment.)

ALTERNATIVE 4: Sector allocations remain as BSAI (with BS and AI TACs)

No allocation to a sector of a specific percentage of a sub-area. Sectors would have a BSAI allocation (in Part I) to fish in either sub-area (BS and AI) if the sub-area is open for directed fishing and TAC is available.

ALTERNATIVE 5: BS and AI sector allocations based on equal percentage from BSAI sector allocations

Allocation to a sector of an equal percentage in both sub-areas. The allocation percentage of BSAI TAC a sector receives in Part I would result in that same percentage being applied to both the BS and AI sub-areas so that a sector would have the same percentage in both sub-areas.

ALTERNATIVE 6: (Preliminary preferred alternative). BS and AI sector allocations based on a sector's historic harvest in the AI with remainder of sector's overall BSAI allocation to be caught in the BS. Sector's BSAI allocation is maintained and used in annual calculation.

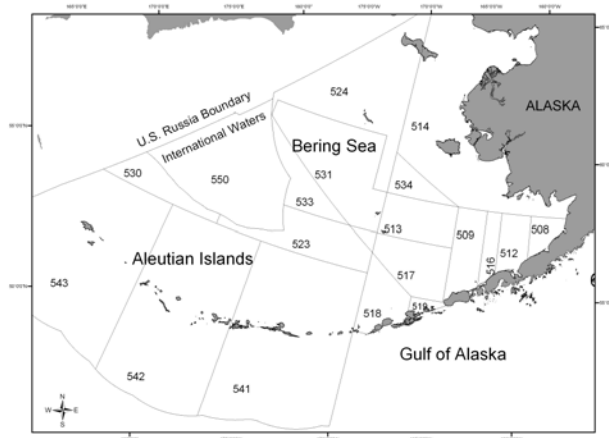
Option 6.1	1995 – 2002
Option 6.2	1997 – 2003
Option 6.3	2000 – 2003
Option 6.4	2002 – 2003

3.4.4.1 Background

Part II addresses the need to establish a methodology by which to maintain sector allocations and minimize competition among gear groups, should the BSAI Pacific cod TAC be apportioned between the BS and AI subareas in the future. **Thus, this action does not determine whether to split the BSAI TAC by subarea, it only provides direction on how to apportion the various BSAI cod sector allocations from Part I, should the TAC be split during a future specifications process.**

The BS and AI management areas are comprised of the Federal management areas shown below in Figure 3-18. The AI is comprised of Areas 541, 542, and 543. The BSAI Pacific cod ABC is currently based on an Eastern Bering Sea assessment model and expanded by a multiplier into a BSAI-wide amount.

Figure 3-18 BSAI Federal management areas



The issue of whether to split the combined BSAI ABC (and TAC) by subarea has been raised at Plan Team, SSC, and Council meetings during the last several years. In December 2003, the SSC recommended that the ABC should be split between BS and AI subareas, but noted that management implications may preclude the Council from adopting separate subarea TACs in the specifications process. The SSC requested that the assessment authors evaluate potential methods for splitting the ABC and their potential management implications, so that specific recommendations could be made to the Council in the future. In the November 2005 BSAI Pacific cod SAFE report, the stock assessment authors noted the following:

At present, ABC of BSAI Pacific cod is not allocated by area. Pacific cod is something of an exception in this regard. Based on a Kalman filter analysis of the shelf bottom trawl survey time series in the EBS and AI, last year's assessment concluded that the best estimate of the BSAI Pacific cod biomass distribution was 85% EBS and 15% AI (Thompson and Dorn, 2004). The analysis was not repeated for this year's assessment, because no AI survey was conducted this year...if there were no other management complications, setting a separate ABC for the AI would be expected to impose only a modest new constraint on the existing fishery while helping to control future expansion of the fishery in this area. However, at present, there are potentially significant management complications arising from certain allocation formulas (by gear type, CDQ, etc.) pertaining to Pacific cod in the Fishery Management Plan. Until such time as these complications can be resolved, specification of separate ABCs for the EBS and AI is not recommended. [excerpt from 2005 BSAI SAFE]

While the decision to split the BSAI cod TAC into BS and AI subarea TACs is not part of this amendment, at the February 2006 Council meeting, the SSC requested that the analysis include additional background information on the biological basis for managing cod as separate BS and AI stocks rather than as a single BSAI stock (SSC minutes, February 2006). The SSC specifically asked whether evidence suggests that the BS and AI stocks are separate and that cod form a single stock throughout the AI, or whether evidence suggests that cod form a suite of independent or partially independent stocks along the length of the AI. The following response from stock assessment scientists at the Alaska Fisheries Science Center indicates that there is not sufficient evidence at this time that Pacific cod stocks in the BS and AI are separate:

At present, there is insufficient evidence to confirm or refute the hypotheses that the BS and AI stocks are separate, that cod form a single stock throughout the AI, or that cod form a suite of independent or partially independent stocks along the length of the Aleutian Islands. The available data, or lack thereof, may be summarized as follows:

- 1) *Size Composition.* The size compositions of catches taken from the AI are typically more heavily weighted toward large fish than the size compositions of catches taken from the BS. However, this could be evidence of a difference in fishing mortality rates or gear selectivities between the two areas rather than evidence of biological structure.
- 2) *Length at Age.* Although a good collection of age data are available for Pacific cod in the BS, very few (<100) age data are available for Pacific cod in the AI, making it difficult to draw firm conclusions about possible differences in length at age between the two areas. More age data from Pacific cod in the AI should be available within a few weeks.
- 3) *Tagging.* In a study described by Shimada and Kimura (1994, *Fishery Bulletin* 92:800-816), substantial numbers of Pacific cod were tagged in both the AI and BS management areas. Over 300 fish tagged in the BS management area were recovered. The vast majority of these were recovered in the BS management area, although there were isolated cases of BS-tagged fish being recovered in the AI management area. Two fish tagged in the vicinity of Unimak Pass were recovered near Seguam Pass within 250 days. Very few recoveries were made of AI-tagged fish. However, two fish tagged in Tanaga Pass near Adak Island were captured on the outer northwest shelf in the BS management area (above 57°N) after 3 and 5 years at liberty. In a separate study, AFSC's Fisheries Interaction Team tagged large numbers of Pacific cod in the vicinity of Unimak Pass. Out of 2,609 tag returns, only 1 was recovered in the AI management area.
- 4) *Genetics.* Grant et al. (1987, *Can. J. Fish. Aquat. Sci.* 44:490-498) showed clear differentiation between Pacific cod in the Asian and North American portions of the species' range, but little differentiation within the North American portion. A new study, using more powerful methodology, is currently underway at the AFSC. Although final results will not be available for a few months, preliminary results confirm Grant et al.'s finding of a distinct break between Asian and North American populations, and also indicate the potential for stock structure on scales finer than the species' North American range. Unfortunately, very few data from the Bering Sea were available for the new analysis. Once the present study is completed, the authors hope to conduct further studies (pending availability of funds), including expanded coverage of the Bering Sea portion of the species' range (Thompon, March 2, 2006).

It is thus uncertain whether the Plan Team and/or SSC would recommend splitting the BSAI Pacific cod ABC/TAC into separate BS and AI subarea ABCs/TACs in the future. While Pacific cod is currently managed as a single unit in the BS and AI, historically, the great majority of the BSAI Pacific cod catch has come from the BS management subarea. A history of biomass estimates for the eastern Bering Sea is provided in Chapter 2. The stock assessment model for Pacific cod is configured to represent the portion of the Pacific cod population inhabiting the BS survey area. The model projections are then adjusted to include biomass in the AI survey area. **As stated above, the best estimate of long-term average biomass distribution is 85% in the BS and 15% in the AI** (Thompson and Dorn). Consider the example that results if separate BS and AI TACs were set in 2006. Using the 2006 TAC of 194,000 mt, if the subarea split was implemented as described above, the BS and AI TACs would be 164,900 mt and 29,100 mt, respectively. After deduction of the CDQ reserve (7.5%), the BS and AI subarea ITACs would be 152,533 mt and 26,918 mt, respectively.

As stated above, given the management implications related to the numerous sector allocations in the BSAI, the Pacific cod TAC has continued to be established for the entire BSAI management area. However, if the Council determines that it is likely that the TAC groupings will be modified in the foreseeable future, it would be beneficial to provide direction to NMFS regarding the formula for establishing new subarea allocations to each sector. Part II of this amendment package provides three alternative approaches for this action. The intent is to provide direction to NMFS regarding how to establish sector allocations in the BS and AI management areas prior to separate TACs being issued in the

annual specifications process. Absent this direction, there is concern that the time necessary to undergo an analysis and notice and comment rulemaking after the TAC is divided would cause significant interruption of the cod fisheries. **Absent action on Part II, NMFS could likely only implement equal allocations in both areas (e.g., if a sector receives a 40% BSAI allocation, it would receive 40% in the BS and 40% in the AI upon a TAC split).** While this is one of the methodologies evaluated (Alternative 5), the public and the Council raised concerns about this methodology being the only potential solution by default. The primary concern being that it does not reflect recent historical catch by sector in the Aleutian Islands subarea.

Note that methods to apportion the BSAI Pacific cod CDQ reserve between the BS and AI subareas are not included under Part II. Alternatives 3 – 6 only apply to the non-CDQ fisheries. The CDQ Program would be affected by the decision to establish separate Pacific cod BS and AI subarea TACs, but that decision would be made in the annual specifications process and is not part of this amendment. The regulations for the CDQ reserves are at 50 CFR 679.20(b)(1)(iii). Paragraph (C)(1) addresses the apportionment of the overall CDQ groundfish reserves by TAC category, and (C)(2) addresses how to modify the CDQ reserves if overall TACs are split or combined during the final harvest specifications. NMFS has operated such that if a new TAC is established, the CDQ Program receives its 7.5% allocation, unless a species is explicitly allocated at a different percentage (e.g., pollock under the AFA) or explicitly not allocated to the program (e.g., squid). Thus, if the BSAI Pacific cod TAC is split into BS and AI subarea TACs, under the status quo allocations, the CDQ Program would receive 7.5% of the BS TAC and 7.5% of the AI TAC. The effect of making the split on the CDQ Program and its participants would need to be addressed in the final TAC-setting EA.

3.4.4.2 LLP area endorsements by sector

Recall that groundfish licenses are currently required to participate in the BSAI groundfish fisheries in Federal waters. Groundfish licenses contain endorsements that define what the vessel using the license is allowed to do. Area endorsements define the geographic locations the licenses allow a vessel to fish. **Under the groundfish LLP, separate BS subarea and AI subarea endorsements were issued and earned based on historic fishing patterns.** Licenses may contain endorsements for both subareas, one of the two subareas, or neither of the subareas. Gear endorsements define what type of gear may be used: non-trawl, trawl, or both. Further, cod gear endorsements are required for non-trawl vessels $\geq 60'$ to participate in the BSAI fixed gear Pacific cod fishery: hook-and-line catcher processors, pot catcher processors, hook-and-line catcher vessel, and pot catcher vessel. As stated previously, vessels fishing with jig gear in the BSAI are exempt from the LLP, provided they comply with gear limitations. Table 3-122 shows the number of groundfish LLPs with a Bering Sea and/or Aleutian Islands endorsement by sector, as of December 2005. Generally, this table shows the number of licenses associated with each eligible sector that may currently fish in the Federal BS and AI management areas for Pacific cod. **Regardless of whether the BSAI TAC is split into separate subarea TACs, only those vessels with an AI endorsement may fish in Federal waters in the AI.**

In the **trawl CP** sectors, the majority of licenses are endorsed for the BSAI, with very few vessels endorsed in only one area, and only one non-AFA trawl CP vessel endorsed only for the AI. In the **AFA trawl CV** sector, more than half of the total LLPs (59) are endorsed only for the BS; the remaining licenses (43) are endorsed for the BSAI. None are endorsed only for the AI. The AFA sectors also benefit from the cooperative structure in place under the AFA and the non-AFA trawl CP sector will potentially benefit from a similar structure under Amendment 80. Thus, it is expected that these sectors have the ability to manage their allocations internally with the existing LLP area endorsements.

In the **non-AFA trawl CV** sector, the majority (44 of 50) of eligible licenses are endorsed only for the BS. Four are endorsed for the BSAI and two are endorsed for the AI only. Thus, only six LLPS in this

sector can be used to fish in the AI. **Note also that the three vessels that qualify under Part I, Alternative 2, Component 1, Option 1.1 (to participate as part of the AFA trawl CV sector for purposes of the cod sector allocations) currently only have BS endorsements.** These vessels harvested more than half of the total non-AFA trawl CV sector Pacific cod catch during 1995 – 2003. This is important to consider should Option 1.1 not be selected, and these vessels are maintained as part of the non-AFA trawl CV sector for Pacific cod. In that case, should an alternative be selected under Part II that would establish the majority of the non-AFA trawl CV sector's overall BSAI allocation in the AI only under a TAC split, these three vessels would be substantially affected. Under that scenario, these vessels would need to purchase an LLP with an AI endorsement in order to continue their historical level of Pacific cod catch.

In the **hook-and-line** sectors, the majority of the eligible vessels (CP and $\geq 60'$ CV) are endorsed for the BSAI, with only 2 CPs and 1 CV endorsed only in the BS, and only 1 CV endorsed only for the AI. In the pot CP sector, there are only 8 eligible LLPs, 5 of which are endorsed for the BSAI and 3 for the BS only. In the $\geq 60'$ **pot CV** sector, the great majority (48 of 53) of licenses are endorsed only for the BS, with only 5 licenses endorsed for the BSAI. In the **<60' fixed gear** sector, of the 116 total licenses being used on <60' vessels, 90 are endorsed only for the BS, 2 only for the AI, and 24 for the BSAI.

Table 3-122 shows that only six licenses are endorsed for the AI subarea only. Note that because a vessel is not limited to participating in one sector if it has the appropriate license and/or permit, the number of licenses across sectors is not necessarily additive nor does it represent the number of unique vessels. The number of LLPs is higher than the number of unique vessels, as one vessel may carry more than one license or a vessel may not yet have been designated for use on a license. Regardless of the resulting BS and AI sector allocations established under this part, only the vessels with AI endorsements in each sector are allowed to fish in that Federal management area.

Overall, about 46% of the licenses endorsed for trawl gear are endorsed to fish both subareas. About 36% of the non-trawl gear licenses are endorsed to fish both subareas. The majority of licenses are endorsed for the BS subarea only.

For those sectors with a majority of participants that hold only a BS endorsement, a relatively small proportion of the fleet would be allowed to harvest the AI sector cod allocation. Based on the table below, this appears to be an issue primarily for the non-AFA trawl CV sector, $\geq 60'$ pot CV sector, and <60' fixed gear sector. Of these three sectors, however, only the non-AFA trawl CV sector has had a substantial percentage of its overall Pacific cod catch in the AI in recent years. Thus, the possibility that a substantial portion of a sector's overall BSAI allocation is attributed to the AI allocation but only a small portion of the eligible vessels in the sector have AI endorsements appears primarily an issue for the non-AFA trawl CV sector.

Note that this situation, in which only a subset of vessels with AI endorsements could fish a portion of the TAC that is established only for the AI, is a factor of the decision to split the BSAI TAC by subarea. That decision is not part of Amendment 85, as it is part of the annual specifications process. Regardless of the Council's preferred alternative under Amendment 85, only those vessels with an AI endorsement will continue to be able to fish in the AI in Federal waters. The Council's decision under Amendment 85 is limited to determining how to apportion each sector's BSAI allocation into the BS and AI subareas, should the TAC split occur in the future. Recall, however, that the AI endorsements are based on an individual's history in the AI. Thus, if the BS and AI sector allocations are based on actual harvest history (as proposed under Alternative 6), this alternative should serve to mirror actual harvest history by sector in the AI subarea. **Recall that LLPs are not required to fish within State waters, thus, all eligible vessels would continue to be allowed to fish in the BS or AI in the parallel Pacific cod fishery within 3 nm.**

State water Aleutian Islands Pacific cod fishery

Note that to date, the Pacific cod fishery in State waters has been 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. However, at its recent meeting on February 23 – 25, 2006, the Alaska Board of Fisheries voted to establish a State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude for 2006 and 2007. The fishery is provided a guideline harvest level of 3% of the Federal BSAI Pacific cod ABC, which equates to 5,820 mt in 2006. **As stated previously, an LLP is not required to fish in State waters, either in the parallel fishery or in a State managed fishery, such as the one recently established. The primary elements of the fishery are provided in Section 3.3.2.**

The State waters AI fishery starts on or after March 15, and only after the Federal Pacific cod trawl CV A season is closed.⁹³ NMFS closed the directed trawl CV Pacific cod fishery in the BSAI on March 8, 2006, in order to avoid exceeding the A season allocation, thus, the expectation is that the State water AI fishery would begin at noon on March 15. As the 2006 TAC has already been specified and sectors are currently fishing under the existing allocations, NMFS will effect an inseason adjustment under Federal regulations (50 CFR 679.25) to re-specify the TAC, accounting for the 3% reduction for the GHL. This will necessitate re-calculating the sector allocations and seasonal apportionments that are currently published in Federal regulations.⁹⁴ This modification is expected to occur in mid-March.

This action will also necessarily affect the 2006 BSAI Pacific cod CDQ reserve, as that reserve is calculated as 7.5% of the BSAI Pacific cod TAC. Thus, all sectors will realize a proportional reduction of 3% of their current Federal allocations as a result of this action. The result is that, while separate BS and AI area ABCs and TACs have not been established, 3% of the BSAI ABC will be allocated to the AI area in State waters during 2006 and 2007. Because the same gear types are allowed to fish the GHL as are allowed in the Federal fishery, recognizing that trawl and hook-and-line are excluded from the AI State water fishery during May 1 – September 15, it is not clear to what extent each sector will participate in and benefit from the State water fishery in the Aleutians. The overall economic effect on the sectors is uncertain absent an analysis.

Note also that the State fishery is limited to 70% of the total GHL in the first half of the year (prior to June 10) and any unharvested quota from the first season is rolled over to the second season (on or after June 10). Under a 2006 GHL of 5,820 mt, this represents 4,074 mt in the first season and 1,746 mt in the second season. This provision mirrors the overall Pacific cod seasonal apportionments in place under the current Steller sea lion mitigation measures.

The press release announcing the AI State Pacific cod fishery also states that bycatch limits that apply in the parallel fishery will apply in the State waters fishery (ADF&G news release, 3/1/06). Halibut mortality from a State waters groundfish fishery cannot be deducted from a Federal fishery category, thus, the PSC allowances for the Federal Pacific cod fisheries will not be modified as a result of this action. The State could choose to enforce Federal closures that result from reaching PSC limits in State waters, but that decision is at the Commissioner's discretion. Note that both trawl and longline gear are prohibited from participating in the State water AI fishery from May 1 – September 15; these are the only gear sectors that are subject to PSC bycatch allowances in the Federal Pacific cod fishery. Pot and jig gear are

⁹³ Amendment 85 includes an option to establish separate BSAI Pacific cod allocations for the non-AFA trawl CV and AFA trawl CV sectors. Staff is uncertain, should the Council choose this option, whether the State water AI Pacific cod fishery would only begin after both Federal BSAI Pacific cod trawl CV sector A seasons are closed.

⁹⁴ See Table 5 (2006 and 2007 Gear Shares and Seasonal Allowances of the BSAI Pacific cod TAC) in 71 FR 10870, March 3, 2006.

exempt from PSC limits due to very low bycatch rates. However, the duration of the State water fishery is uncertain. Given a March 15 start date, it may only take about a week to harvest the first season GHL of 4,074 mt, and all identified gear types are allowed to participate prior to May 1.

Finally, note that the Board's action to establish the State water AI Pacific cod fishery was limited to 2006 and 2007. Thus, while the overall effect on the Federal BSAI Pacific cod fishery is that the ABC would be reduced by 3% prior to the TAC and sector allocations (including CDQ) being established, this action may be limited to two years. In that case, the State water AI Pacific cod fishery may not overlap with the action being considered under Amendment 85, depending on the timing of implementation.

Table 3-122 Number of BS, AI and BSAI LLPs in the BSAI Pacific cod sectors

SECTOR	Permit required and/or eligibility criteria per statute	BS only LLP	AI only LLP	BSAI LLP	Total # of valid LLPs
AFA Trawl CP	AFA CP permit/listed in 208(e)(1)-(20); trawl LLP (CP/BSAI)	1	0	19	20
Non-AFA Trawl CP	trawl LLP (CP/BSAI); not an AFA trawl CP; must have harvested with trawl gear and processed no less than 150 mt of non-pollock groundfish during 1997 through 2002.	5 (1 interim)	1	23 (2 interim)	29 LLPs (on 26 vessels) ¹
AFA Trawl CV	AFA CV permit; trawl LLP (CV/BSAI) ²	60	0	51 (1 interim)	111
Non-AFA Trawl CV	trawl LLP (CV/BSAI)	44 (2 interim)	2	4	50
Hook-and-line CP	non-trawl LLP (BSAI/H&L CP cod endorsement)	2	0	42 (5 interim)	44
Hook-and-line CV >60'	non-trawl LLP (BSAI/H&L CV cod endorsement)	1	1	7	9
Pot CP	non-trawl LLP (BSAI/pot CP cod endorsement)	3	0	5 (2 interim)	8
Pot CV >60'	non-trawl LLP (BSAI/pot CV cod endorsement)	48 (2 interim)	0	5 (2 interim)	53
Hook-and-line/Pot <60'	non-trawl LLP (CV/BSAI)	90 (3 interim)	2	24 (3 interim)	116
Jig CV	LLP is not required for <60' jig CV in the BSAI	N/A	N/A	N/A	N/A

¹Note that 44 BSAI trawl CP licenses exist (that are not associated with AFA vessels), but only 26 vessels (on which 29 LLPs are used) qualify under the eligibility criteria to participate in the non-AFA trawl CP sector for BSAI groundfish authorized in the Consolidated Appropriations Act of 2005. Of the remaining 15 trawl CP licenses currently being used on vessels ineligible for the non-AFA trawl CP sector, 9 are being used on AFA CVs and 5 others have a BSAI hook-and-line CP cod endorsement and are accounted for in the hook-and-line CP sector.

²Note that of the 111 total LLPs held by this sector, there are 102 trawl CV LLPs and 9 trawl CP LLPs (all 9 are transferable; 8 are endorsed for the BSAI and 1 is endorsed for the BS).

Note that a vessel is not limited to participating in one sector if it has the appropriate license and/or permit; thus, the sum of the number of licenses does not represent the number of unique vessels. Note also that the number of LLPs is higher than the number of unique vessels, as one vessel may carry more than one license or a vessel may not yet have been designated for use on a license.

Note that the three non-AFA trawl CVs that qualify under Alternative 2, Component 1, Option 1.1, have BS endorsements only.

3.4.4.3 Harvest distribution between BS and AI by sector

In considering the division of the BSAI Pacific cod sector allocations between BS and AI management areas upon a TAC split, it is useful to consider the historic harvests of different vessel types, gear types, and sectors from those areas. This section provides a general description of historic harvests from 1995 to 2003. Table 3-123 shows the amount and division of retained catch between the BS and AI subareas during 1995–2003.

Table 3-123 Pacific cod retained catch in the Aleutian Islands and Bering Sea from 1995 to 2003 (in metric tons and percent of total)

Area		1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Aleutian Islands	Retained catch	9,782	21,603	13,169	25,187	24,441	29,793	30,410	27,442	29,384	211,210
	Percent of BSAI	5.5	11.2	6.2	15.3	17.0	18.5	19.9	16.5	16.2	13.6
Bering Sea	Retained catch	167,255	171,798	200,245	139,382	119,643	131,434	122,141	138,795	151,496	1,342,190
	Percent of BSAI	94.5	88.8	93.8	84.7	83.0	81.5	80.1	83.5	83.8	86.4
BSAI	Retained catch	177,037	193,402	213,414	164,569	144,084	161,228	152,551	166,236	180,880	1,553,400

The table above shows that retained catch from the Aleutian Islands fluctuated from 1995 through 1997, then stabilized from 1999 through 2003 at between 15% and 20% of the combined BSAI retained catch. From 2000 to 2003, approximately 17.7% of the BSAI retained harvests were from the Aleutian Islands area.

Table 3-124 shows the annual Bering Sea, Aleutian Islands, and Bering Sea/Aleutian Islands Pacific cod retained catch by catcher vessels and catcher processors from 1995 to 2003. The table shows that Pacific cod harvest from the Aleutian Islands fluctuated from 1995 to 1998, and then stabilized between approximately 24,000 metric tons and 30,000 metric tons from 1999 to 2003. During this later period, catch from the Bering Sea represented between 80% and 84% of the total BSAI Pacific cod harvests.

Table 3-124 Pacific cod retained catch of catcher vessels and catcher processors in the Aleutian Islands and Bering Sea from 1995 to 2003 (in metric tons)

Area	Vessel Type	1995	1996	1997	1998	1999	2000	2001	2002	2003
Aleutian Islands	Catcher vessels	47	2,755	712	4,055	*	*	7,672	15,168	17,028
	Catcher processors	9,734	18,848	12,458	21,132	*	*	22,737	12,274	12,356
	Total	9,782	21,603	13,169	25,187	24,441	29,793	30,410	27,442	29,384
Bering Sea	Catcher vessels	59,822	74,499	71,045	43,640	36,728	43,816	30,392	38,696	43,176
	Catcher processors	107,433	97,299	129,200	95,742	82,915	87,619	91,750	100,098	108,320
	Total	169,794	171,812	200,245	139,382	119,643	131,434	122,141	138,795	151,496
Bering Sea and Aleutian Islands	Catcher vessels	59,869	77,254	71,756	47,695	*	*	38,064	53,864	60,204
	Catcher processors	117,167	116,147	141,658	116,874	*	*	114,487	112,372	120,676
	Total	179,575	193,416	213,414	164,569	144,084	161,228	152,551	166,236	180,880

*Withheld for confidentiality.

From 1995 to 2003, catcher processors have steadily harvested between 65% and 75% of the total BSAI Pacific cod harvest. During this same period, however, the catcher processor share of the catch in the different areas has fluctuated greatly. From 1995 to 1998, catcher processors accounted for more than 80% of the AI Pacific cod catch. In the two most recent years shown (2002 and 2003), however, catcher processors harvest of Pacific cod in the AI was slightly more than 12,000 mt (or slightly more than 40% of the AI Pacific cod catch). In the BS, catcher processors Pacific cod harvest has been between 65% and 75% of the total BS Pacific cod catch (except in 1996 when relatively high catch by the catcher vessel sector dropped the catcher processor share to slightly more than 55%).

Catcher vessel harvest of Pacific cod in the AI has also fluctuated greatly during the time period shown, ranging from 47 mt in 1995 to 17,000 mt in 2003. As a result, the catcher vessel share of the AI harvest has ranged from a fraction of a percent at the start of the period to in excess of 50% in the two most recent years. Catcher vessel Pacific cod harvests in the BS have also fluctuated, but show a slightly declining

trend in recent years. Catcher vessels accounted for slightly more than 35% of the catch from 1995 to 1997, but dropped to between 25% and 30% from 2001 to 2003.

Table 3-125 provides BS, AI and BSAI Pacific cod retained catch by gear type from 1995 to 2003. The table shows that the relative portion of the total retained harvest of Pacific cod from the Bering Sea/Aleutian Islands of the two gear types have remained constant, with fixed and jig gear harvesting about 60% of the catch and trawl gear harvesting the remaining 40%. The single exception occurred in 2001, when trawl catch was substantially below its typical range during the period, which resulted in the fixed gear sector harvesting almost 70% of the total catch.

Table 3-125 BS/AI Pacific cod retained catch (mt) by gear type, 1995 to 2003

Area	Gear Type	1995	1996	1997	1998	1999	2000	2001	2002	2003
Aleutian Islands	Fixed (including jig)	3,992	9,634	5,722	10,731	10,686	12,845	16,171	1,903	692
	Trawl	5,790	11,969	7,447	14,456	13,755	16,948	14,238	25,538	28,692
	Total	9,782	21,603	13,169	25,187	24,441	29,793	30,410	27,442	29,384
Bering Sea	Fixed (including jig)	105,045	104,009	123,096	84,538	73,010	81,944	89,622	93,706	109,506
	Trawl	62,210	67,789	77,149	54,844	46,633	49,490	32,520	45,088	41,990
	Total	167,255	171,798	200,245	139,382	119,643	131,434	122,141	138,795	151,496
Bering Sea and Aleutian Islands	Fixed (including jig)	109,037	113,644	128,818	95,269	83,696	94,789	105,793	95,610	110,198
	Trawl	68,000	79,758	84,596	69,300	60,388	66,438	46,758	70,627	70,682
	Total	177,037	193,402	213,414	164,569	144,084	161,228	152,551	166,236	180,880

The division of the catch in the AI by gear type was relatively stable from 1995 through 2000, with the trawl sector harvesting between 55% and 60% of the catch from that area. In 2001, the fixed gear portion of the total retained AI catch rose to approximately 53%, as a result of an increase in fixed gear catch in that year. In 2002 and 2003, fixed gear catch in the AI dropped to its lowest levels during the period, while trawl catch rose to its highest levels, resulting in trawl catch taking in excess of 95% of the AI retained catch during those years.

In the BS, from 1999 through 2000, the fixed gear sector harvested approximately 60% of the retained BS Pacific cod catch. Since then, fixed gear harvests have constituted between 65% and 75% of total BS Pacific cod harvests. This increase corresponds with the drop in fixed gear harvests in the Aleutian Islands and reflects a shift in effort from the Aleutian Islands to the Bering Sea by fixed gear vessels.

All sectors for which allocations are being considered under this action have some history in both the Aleutian Islands and Bering Sea Pacific management areas. Table 3-126 shows, for each sector, the average annual retained catch in each subarea and the BSAI as a whole, the percent of the sector's catch from each subarea, and the number of unique vessels with Pacific cod catches in each subarea and in the BSAI as a whole for two time periods, 1995–1999 and 2000–2003. For two sectors, the AFA trawl CP sector and the non-AFA trawl CV sector, data are shown for the periods from 1995–1998 and from 1999–2003, because of confidentiality limitations. Vessel counts in all cases are for the years 1995–1999 and 2000–2003.

Table 3-126 shows significant differences in participation levels in the two areas by the different sectors, as well as some variation in participation across the two time periods. Overall harvest by both AFA sectors (CV and CP) has decreased since 1999, but the AFA CV sector has more than tripled its annual catch from the Aleutian Islands in the 2000 to 2003 period. The non-AFA trawl CP sector has increased its annual catch slightly in the Bering Sea from the first to the second period, but has more than doubled its Aleutian Islands catch. Similarly, the non-AFA trawl CV sector had no catch in the AI prior to 1999, but since then has almost half of its catch in the AI. Annual Pacific cod harvest by the hook-and-line CP sector and the ≥60' pot CV sector are stable and largely from the BS in both time periods. Pacific cod harvest by the jig CV sector and ≥60' hook-and-line CV sector are relatively small in both areas. Catches in these sectors are heavily weighted toward the BS. Harvest by fixed gear vessels <60' has increased

substantially across the two periods (likely due to the separate allocation established for this sector in 2000), but are predominantly from the Bering Sea in both periods.

Table 3-126 Retained Pacific cod catch in the Bering Sea and Aleutian Islands by sector and percent of each sector's catch by area, 1995 – 1999 and 2000 – 2003

		1995 - 1999			2000 - 2003		
		Average annual catch (mt)	Percent of sector BSAI catch	Unique Vessels	Average annual catch (mt)	Percent of sector BSAI catch	Unique Vessels
AFA -9	BS	1,459	43.9	8	0	0.0	0
	AI	1,860	56.1	7	0	0.0	0
	BSAI	3,319		9	0		0
AFA Trawl CPs	BS	1,590*	38.7*	18	577**	30.3**	12
	AI	2,518*	61.3*	9	1,328**	69.7**	3
	BSAI	4,107*		20	1,905**		16
Longline CPs	BS	80,248	93.1	55	75,849	91.8	47
	AI	5,967	6.9	33	6,768	8.2	27
	BSAI	86,215		58	82,617		49
Non-AFA Trawl CPs	BS	15,814	81.1	39	18,774	69.9	25
	AI	3,676	18.9	21	8,069	30.1	15
	BSAI	19,491		40	26,843		25
Pot CPs	BS	3,491	73.1	22	1,893	83.5	9
	AI	1,283	26.9	12	375	16.5	9
	BSAI	4,774		24	2,268		12
Hook and Line and Pot CVs < 60 feet	BS	235	90.0	70	1,095	96.3	76
	AI	26	10.0	19	42	3.7	27
	BSAI	261		79	1,137		93
AFA Trawl CVs	BS	40,406	94.0	108	20,728	67.9	104
	AI	2,589	6.0	40	9,809	32.1	41
	BSAI	42,995		109	30,537		105
Jig CVs	BS	259	92.6	67	108	86.1	45
	AI	21	7.4	6	17	13.9	10
	BSAI	280		73	126		52
Longline CVs > 60 feet	BS	22	71.4	25	400	88.0	27
	AI	9	28.6	12	55	12.0	17
	BSAI	31		34	454		34
Non-AFA Trawl CVs	BS	2,806*	100*	31	2,166**	52.0**	26
	AI	0*	0*	2	1,998**	48.0**	18
	BSAI	2,579		32	4,163**		37
Pot CVs > 60 feet	BS	13,684	94.2	183	14,350	95.7	115
	AI	848	5.8	42	646	4.3	34
	BSAI	14,532		189	14,997		134

* Retained catch and percent are for 1995-1998.

** Retained catch and percent are for 1999-2003.

Harvest by sector in 2004 and 2005

Baseline BSAI Pacific cod harvest information from weekly production reports and fishtickets is presented above in Table 3-126. That table shows the retained harvest in the non-CDQ BSAI Pacific cod fishery by sector and the percentage of each sector's harvest taken in BS and AI during two aggregated time periods: 1995 – 1999 and 2000 – 2003. Only retained catch is included and the data are refined on an individual vessel basis and aggregated by sector. Table 3-126 represents the most recent data available for this refined data set and is used to determine the BS and AI sector allocations proposed in Alternative 6 of this part.

Although the alternatives and options developed during the past year do not include harvest data beyond 2003, it is important to consider the most recent data available by sector. Table 3-127 below provides total catch by sector, as reported from the NMFS catch accounting database, which utilizes observer data, shoreside processor landings data, and weekly production reports. Note that confidential data for the <60' fixed gear and jig gear sectors are not provided in the table, thus, the totals for each year also do not include those confidential data.

Table 3-127 below indicates that about 14.4% and 11.3% of the total BSAI Pacific cod harvest was taken in the AI in 2004 and 2005, respectively. While these totals do not include harvest from the <60' fixed gear or jig sectors, those sectors had very little harvest in the AI. Note that Table 3-123 from the previous section showed that from 1999 to 2003, approximately 16% - 20% of the BSAI retained harvests were from the AI. **Thus, while the two data sets are not exactly comparable, it appears that the Pacific cod harvest in the AI is a slightly smaller share of the overall BSAI Pacific cod harvest than realized in 1999 - 2003.**

Table 3-127 Pacific cod total catch by sector in the BS, AI, and BSAI areas

2004						
SECTOR	BS (mt)	BS (%)	AI (mt)	AI (%)	BSAI (mt)	% of total BSAI
Hook-and-line CP	93,866	97.0%	2,921	3.0%	96,786	48.9%
Hook-and-line CV	272	100.0%	-	0.0%	272	0.1%
Hook-and-line and Pot CVs < 60'	1,970	*	*	*	1,970*	1.0%*
Hook-and-line and Pot Gear ICA	346	69.8%	150	30.2%	496	0.3%
Jig Gear	231	100.0%	-	0.0%	231	0.1%
Pot CP	3,234	100.0%	-	0.0%	3,234	1.6%
Pot CV	12,364	100.0%	-	0.0%	12,364	6.3%
Trawl CP	29,352	71.0%	11,980	29.0%	41,332	20.9%
Trawl CV	27,576	67.1%	13,517	32.9%	41,093	20.8%
Total*	169,211	85.6%	28,567	14.4%	197,778	100.0%
2005						
SECTOR	BS (mt)	BS (%)	AI (mt)	AI (%)	BSAI (mt)	% of total BSAI
Hook-and-line CP	97,925	97.9%	2,128	2.1%	100,054	52.6%
Hook-and-line CV	235	100.0%	-	0.0%	235	0.1%
Hook-and-line and Pot CVs < 60'	2,234	*	*	*	2,234*	1.2%*
Hook-and-line and Pot Gear ICA	824	86.3%	131	13.7%	955	0.5%
Jig Gear	104	*	*	*	104*	0.1%*
Pot CP	3,339	100.0%	-	0.0%	3,339	1.8%
Pot CV	12,205	100.0%	-	0.0%	12,205	6.4%
Trawl CP	24,187	68.2%	11,281	31.8%	35,467	18.6%
Trawl CV	27,740	77.6%	8,007	22.4%	35,747	18.8%
Total*	168,792	88.7%	21,547	11.3%	190,339	100.0%

Source: NMFS catch accounting database, 2004 - 2005.

*Totals exclude confidential data.

Generally, while the two data sets are not exactly comparable, the data in Table 3-127 indicate that the overall BSAI harvest share by sector is similar to what has occurred during 1995 – 2003. The $\geq 60'$ pot CV share of Pacific cod harvest decreased slightly in the past two years compared to 1995 – 2003. Although a small portion of the $<60'$ fixed gear harvest is confidential and thus not reported in the above table, it is clear that the $<60'$ fixed gear share of the total BSAI Pacific cod harvest has increased slightly in the past two years, likely due to additional quota reallocated from the jig sector starting in 2004. Excluding confidential data, the table shows that this sector harvested about 1.0% and 1.2% of the 2004 and 2005 total BSAI Pacific cod harvest. All sectors, with the exception of the $<60'$ fixed gear sector and the combined trawl CP sector, had harvests in 2004 and 2005 that fall within the range of the catch shares during 1995 – 2003. Harvests attributed to the trawl CP sector would be slightly lower if only retained harvest was counted. Thus, while these data are not comparable to the retained only harvest data in the previous tables, they provide a general view of the fishery in the two most recent years.

The data in Table 3-127 are important to consider in determining whether the distribution of harvest by sector in the two subareas has changed in recent years. The overall trend discussed previously in this section is that the trawl sectors have generally increased the percentage of their Pacific cod harvest in the AI compared to the BS over time, while the fixed gear sectors have generally decreased their share harvested in the AI. **The data provided for 2004 and 2005 follows this trend, as the trawl sectors appear to continue to take more of their total harvest in the AI than they did in 1995 – 1999.**

The table above shows that the combined trawl CP sectors harvested about 29% and 32% of their total BSAI Pacific cod harvest in the AI in 2004 and 2005, respectively. This can be roughly compared to about 32% of their total BSAI Pacific cod harvest taken in the AI during 2000 – 2003 (see Table 3-126). The combined trawl CV sectors harvested about 33% and 22% of their total BSAI Pacific cod harvest in the AI in 2004 and 2005, respectively. This can be roughly compared to about 34% of their total BSAI Pacific cod harvest taken in the AI during 2000 – 2003 (see Table 3-126).

While the fixed gear sectors have not harvested a significant amount of cod in the AI during any of the years considered, they continue to harvest less of their total cod share in the AI in the most recent years. The hook-and-line CP sector harvested about 3% and 2% of its total cod catch in the AI during 2004 and 2005, respectively. This compares to an estimated 8% in 2000 – 2003. Hook-and-line and pot catcher vessels of any length, as well as jig vessels, harvested little to none of their total BSAI Pacific cod harvest in the AI in 2004 and 2005, and less than was harvested on average in 2000 – 2003.

3.4.4.4 Halibut mortality rates in the BS and AI by sector

At its February 2006 meeting, the Council requested that available data on halibut PSC harvest rates for the Pacific cod fishery in the BS and AI subareas be included in Part II of the analysis as background information.

The data to address this analysis was provided by an updated (March 2006) PSC data file developed jointly by the Council and the Pacific States Marine Fisheries Commission (PSMFC). These data were sorted by target (Pacific cod), PSC sector, area (Bering Sea or Aleutian Islands) and year. Due to confidentiality issues, the sectors were combined into the following four groups: (1) AFA and non-AFA trawl CVs, (2) AFA and non-AFA trawl CPs, (3) hook-and-line CVs and CPs, and (4) pot CVs and CPs. Data for the $<60'$ hook-and-line and pot CV sector and jig sector are not provided due to confidentiality concerns.

The results of the analysis are shown in Table 3-128 for the four combined sector groups described above. The PSC data file is based on weekly production reports for each period during the year. For each record of landings by week-ending date, a ratio was calculated by dividing the halibut mortality by the

corresponding groundfish harvest. The overall groundfish harvests reported in the PSC file are almost entirely Pacific cod. For example, the relative proportions of retained Pacific cod harvests compared with total groundfish harvests were calculated using other data, and found to vary between 96 percent and 99 percent, depending on the year. It was therefore determined that the total groundfish category in the PSC data file was appropriate for calculating the PSC ratios for the Bering Sea and Aleutian Islands.

Table 3-128 Halibut mortality as a percent of groundfish mortality in the targeted Pacific cod fishery in the BS and AI, 1995 - 2004

Sector/year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Trawl CV										
Aleutian Islands	0.1521	0.7629	0.1842	0.5267	0.2795	0.1824	0.0941	0.0864	0.1766	0.1418
Bering Sea	1.5962	2.0070	1.1866	2.0852	1.6528	1.5405	1.5614	1.9660	2.7491	1.8143
Trawl CP										
Aleutian Islands	0.2529	1.5161	0.1662	1.2007	1.0487	0.6497	1.4332	0.3293	0.5217	0.2618
Bering Sea	1.7474	2.2099	1.3489	2.9010	3.4204	2.2095	3.1561	3.1131	2.9147	2.8025
Hook-and-line CV & CP										
Aleutian Islands	1.2281	1.0302	0.8758	0.7539	0.7307	0.6782	1.0151	1.0041	0.5217	0.9440
Bering Sea	0.8863	0.9319	0.7981	0.8676	0.7161	0.9098	0.7966	0.6668	2.9147	0.4263
Pot CV & CP										
Aleutian Islands	0.0323	0.0793	0.0022	0.0181	0.0252	0.0002	0.0115	0.0000	0.0000	0.0000
Bering Sea	0.0672	0.0983	0.1012	0.0101	0.0256	0.0166	0.0149	0.0399	0.0115	0.0234

Source: NPFMC PSC data files, March 2006.

The following average (1995 – 2004) annual halibut PSC rates were calculated from Table 3-128:

Table 3-129 Average halibut mortality rate (as percent of groundfish mortality in the Pacific cod fishery) by sector and area, 1995 – 2004

Trawl CV	Halibut mortality rate	Hook-and-line CV & CP	Halibut mortality rate
Aleutian Islands	0.2587	Aleutian Islands	0.8782
Bering Sea	1.8159	Bering Sea	0.9914
Trawl CP		Pot CV & CP	
Aleutian Islands	0.7380	Aleutian Islands	0.0169
Bering Sea	2.5824	Bering Sea	0.0409

The data indicate that the average (1995 – 2004) halibut PSC rates associated with the Pacific cod fishery in the Bering Sea are higher than in the Aleutian Islands for all sectors. Only the **hook-and-line sector** realized higher halibut mortality rates in the AI than in the BS in an individual year. While the *average* halibut mortality rate during 1995 – 2004 in the hook-and-line Pacific cod fishery is slightly greater in the BS than in the AI, the rate in the AI is greater in seven of the ten years considered. The average halibut mortality rate (1995 – 2004) in the **pot sector** is about 2.4 times higher in the Bering Sea than in the Aleutian Islands. Note that the hook-and-line and pot sector Pacific cod harvest share in the AI has substantially declined as a percentage of the sectors' overall BSAI Pacific cod harvest in recent years.

The largest difference in halibut mortality rates between the two areas is in the **trawl CV sector**, in which the average (1995 – 2004) Bering Sea halibut mortality rate is over 7 times higher than in the Aleutian Islands. There is a much greater difference in rates between the two areas in several of the individual years during the time period considered.

Overall, halibut mortality rates are higher in the trawl CP sector than in the trawl CV sector, but the trawl CP sector also exhibits a lower rate in the Aleutian Islands. In the **trawl CP sector**, the average (1995 – 2004) halibut mortality rate is 3.5 times higher in the Bering Sea than in the Aleutian Islands.

Because the halibut mortality rate for all sectors is lower in the AI than in the BS on average, this may be interpreted as a favorable reason to support splitting the BSAI TAC into BS and AI subarea TACs in a future specifications process. However, a positive impact on halibut mortality is dependent on whether the AI TAC would be constraining to the fishing industry's desired harvest level in the AI. For instance, if established, the AI TAC is projected to be set at 15% of the BSAI TAC. Harvests from the AI have been exceeding 15% of the BSAI Pacific cod harvest on average in recent years (about 17.7% on average during 2000 – 2003), as currently there is no limit on how much of the total BSAI Pacific cod TAC that can be harvested in the AI. Thus, based on recent harvest distribution, one could assert that without a TAC split, a higher share of the BSAI Pacific cod harvest would be harvested in the AI than with a TAC split. In this case, a TAC split would constrain the fishery and halibut mortality overall would likely be higher than if a TAC split had not occurred.

Likewise, if the Pacific cod harvest in the AI was naturally lower than 15% of the total BSAI harvest, as exhibited in 2005, establishing an AI TAC at 15% of the BSAI TAC would require the industry to harvest more in the AI than they would otherwise without a TAC split. In this case, overall halibut mortality would likely be lower than if a TAC split had not occurred.

While the decision to split the BSAI TAC into separate subarea TACs is not part of this amendment, the data provide a limited analysis of the possible effects of such a future decision. In sum, overall halibut mortality rates may be negatively affected if the specified AI TAC would constrain the fishing industry's AI harvests compared to status quo. Based on the recent historical data series, it appears that the projected AI TAC would be constraining compared to the current situation in which there is no limit on the amount of the total BSAI Pacific cod TAC that can be harvested in the AI. In addition, a TAC split would likely require sectors that often exhibit a higher halibut mortality rate in the AI compared to the BS, such as the hook-and-line sectors, to fish a portion of their overall allocation in the AI when they might not otherwise choose to do so.

3.4.5 ALTERNATIVE 3: No action

Under Alternative 3, a methodology to apportion the BSAI Pacific cod allocations to the jig, trawl, and fixed gear sectors between the BS and AI subareas would not be selected. Note that selecting no action under Alternative 3 does not mean that the BSAI TAC will not be split into the BS and AI subareas in a future specifications process, however, the likelihood of the Council recommending this split without having a methodology to apportion the numerous industry sector allocations by subarea is uncertain. As noted above, the only approach that could be implemented without a new regulatory amendment is an equal percentage in both the BS and AI subarea by sector. The implications of that potential action are described under Alternative 5 in Section 3.4.7.

Alternative 3 effectively means that the Council would explicitly not select a method of apportioning by subarea the numerous sector allocations determined under Part I that were established for the entire BSAI area. In the event the BSAI TAC is split by subarea in the future, it is likely that NMFS would implement equal percentages of each sector's BSAI allocation in each area (e.g., if a sector receives a 40% BSAI allocation, it would receive 40% in the BS and 40% in the AI upon a TAC split) under the current regulations. It is likely that this management system would not be satisfactory to most participants, as it would not reflect each sector's recent harvest history by subarea (see Table 3-126 above).

Thus, Alternative 3 may effectively mean that a separate, new regulatory amendment would be initiated following the TAC split, in order to allocate each sector's BSAI allocation by subarea in a manner that reflects recent harvest patterns. The primary intent under Part II is provide direction in the regulations prior to separate TACs being issued in the annual specifications process, in order to avoid expediting an analysis to mitigate these circumstances. As the action would require notice and comment rulemaking

under the current amendment process, it would likely require a minimum of six months to a year to implement new subarea sector allocations.

Recall that the problem statement for Part II of Amendment 85 states:

In the event that the BSAI Pacific cod ABC/TAC is apportioned between the BS and the AI management areas, a protocol needs to be established that would continue to maintain the benefits of sector allocations and minimize competition among gear groups; recognize differences in dependence among gear groups and sectors that fish for Pacific cod in the BS and AI; and ensure that the distribution of harvest remains consistent with biomass distribution and associated harvest strategy.

The problem statement references the need to recognize differences in dependence among gear groups and sectors that harvest Pacific cod in the BS and AI management areas and recognizes that the benefits of sector allocations of Pacific cod need to be maintained to minimize competition among gear groups. Thus, because the no action alternative would likely mean that a subarea allocation scheme would be implemented by default (equal percentages in both areas by sector), as the only scheme that is authorized under current allocations, and because this scheme would not reflect differences in the sectors' dependence in the BS versus the AI, the no action alternative does not appear to meet the concerns outlined in the problem statement.

3.4.6 ALTERNATIVE 4: Sector allocations remain BSAI

Under Alternative 4, sectors would not be allocated a specific percentage of the individual AI subarea TAC or BS subarea TAC. Instead, sectors would continue to be issued an overall amount of BSAI Pacific cod, as determined in Part I, that could be harvested anywhere in the BSAI. In effect, a sector's allocation could be fished from either the BS or AI subarea, as long as TAC was available in that subarea and the area was open to directed Pacific cod fishing. Once the Pacific cod TAC for either the BS or AI was reached, NMFS would issue a closure notice and all sectors would be required to stop directed Pacific cod fishing in the closed subarea. The sectors would then only be permitted to continue directed fishing in the open subarea.

This alternative provides the greatest flexibility for sectors and may be the simplest alternative for inseason management to monitor. NMFS would not be required to manage two separate subarea allocations for each of the ten proposed sectors. They would instead be required only to monitor each sector's overall BSAI allocation and a single harvest limit for each subarea, using the existing tools to open and close fisheries. Alternative 4 would also provide maximum flexibility to the fleet since the sectors would be able to fish in either subarea if it was open. Thus, regardless of historical harvest patterns, sectors could move in and out of a subarea as desired on an inseason or annual basis, and focus their efforts in the area in which they can optimize their harvest at that point in time. Thus, while some sectors have not had substantial participation in the AI in the past, if this area became more advantageous due to shifts in the stock or a desire to deliver to a new port, these sectors would be able to shift more of their fishing to the AI. Note, however, that only vessels with an AI endorsement earned on their LLP would be eligible to fish in the AI under any of the alternatives.

Under Alternative 4, it is assumed that each sector would attempt to fish in its preferred area first, especially if that area is the most constrained by TAC, such as the Aleutian Islands. A possible disadvantage of this alternative is that it could cause sectors (both within sectors and among sectors) to race for Pacific cod in the subarea they expect to close first. This could affect a sector's ability to rationalize their harvest, especially if some members of the sector wanted to fish the subarea that is expected to close later in the year. The sectors that operate under a cooperative structure (e.g., the AFA

sectors and in the future, the non-AFA trawl CP sector) will manage their sector's Pacific cod harvest through internal agreements and thus will be much better positioned to strategize and fish in the subarea they expect to close first.

The level of risk in creating a race for fish in the AI under Alternative 4 is difficult to characterize; it is speculative and dynamic, depending on each sector's participation in the AI each year. **As stated previously, the best estimate of long-term average biomass distribution is 85% in the BS and 15% in the AI. During the past nine years for which data is available (1995 – 2003), the AI share of BSAI Pacific cod retained harvest was 13.6%, and the BS share was 86.4%.** Under this long-term average, it does not appear that a race for fish in the AI would be inevitable. **However, if the time frame is shortened to the most recent years (2000 – 2003), the share percentages change to 17.7% in the AI and 82.3% in the BS.** In addition, the annual share taken in the AI has ranged from a low of 5% (1995) to a high of 20% (2001) during 1995 – 2003 (see Table 3-123). Thus, while the long-term average share taken in the AI does not exceed the 15% projected, the average of a subset of the most recent harvest years slightly exceeds 15%. In addition, each individual year during the past five years (1999 – 2003) also exceeded 15%.

Generally, the trawl sectors have increased their share of AI harvest as a percentage of their overall BSAI harvest and the fixed gear sectors have decreased their share of AI harvest as a percentage of their overall BSAI harvest, in the past several years. As stated above, because three of the four trawl sectors (AFA and non-AFA CP sectors) operate, or will operate, under a cooperative structure, these sectors should be better positioned to manage their harvest between subareas within their respective sectors. If the AI subarea is expected to close first, Alternative 4 may result in the trawl sectors fishing first in the AI, in order to ensure their historical level of harvest in the AI. Since the trawl sectors generally have been increasing their harvest in the AI, this may mean that the race for fish in the AI may be an issue among the trawl sectors more so than with or among the fixed gear sectors. At the same time, with the exception of the non-AFA trawl CV sector, the trawl sectors are better able to plan their fishing year and react to closures than the sectors operating under a limited access regime.

In sum, when considering this alternative, the Council may want to weigh the negative effects of a possible race for fish to harvest the AI TAC with the flexibility that sectors would be provided when determining where to fish on an inseason and annual basis. The problem statement for Part II references the need to recognize differences in dependence among gear groups and sectors that harvest Pacific cod in the BS and AI management areas. Alternative 4 provides maximum flexibility for the sectors to change their fishing patterns in reaction to a shifting stock, preferable fishing location, or market conditions.

3.4.7 ALTERNATIVE 5: Equal percentages in BS and AI subareas

Under Alternative 5, NMFS would be directed to allocate sectors the same percentage of the BS subarea and AI subarea TACs, as determined by the BSAI sector allocations determined in Part I. For example, if the hook-and-line CP sector is allocated 50% of the BSAI Pacific cod ITAC under Part I, this sector would be allocated 50% of the BS ITAC and 50% of the AI ITAC. Note that this alternative also reflects the default scenario under the current regulations, should the Council choose to take no action (Alternative 3) on this part.

Table 3-130 shows the range of BSAI allocations proposed under Part I for each sector, and the annual average of each sector's BSAI harvest that was taken in the BS and AI subareas during 2000 – 2003. **In effect, under Alternative 5 and a BSAI TAC split, each sector would be allowed 85% of its BSAI Pacific cod allocation in the Bering Sea and 15% of its BSAI Pacific cod allocation in the AI, using the stock assessment projections of an 85% - 15% split between areas.** Refer to the last two columns

in Table 3-130 to compare the proposed split and each sector's historical split as a percentage of its annual average BSAI Pacific cod harvest.

Table 3-130 Percentage of BSAI Pacific cod harvest taken in BS and AI subareas by sector, average 2000–2003

Sector	Range of BSAI allocations under Part I (% of P. cod ITAC)	% of sector's BSAI cod allocation allocated to BS under Alt. 5	% of sector's BSAI cod allocation allocated to AI under Alt. 5	% of sector's BSAI cod harvest in BS, Ave. 2000 – 2003	% of sector's BSAI cod harvest in AI, Ave. 2000 – 2003
AFA trawl CP	0.9% – 3.7%	85%	15%	30.3%*	69.7%*
Non-AFA trawl CP	12.7% – 16.2%	85%	15%	69.9%	30.1%
Hook-and-line CP	45.8% – 50.3%	85%	15%	91.8%	8.2%
Pot CP	1.4% – 2.3%	85%	15%	83.5%	16.5%
AFA trawl CV	17.8% – 24.4%	85%	15%	67.9%	32.1%
Non-AFA trawl CV	0.5% – 3.1%	85%	15%	52.0%*	48.0%*
Hook-and-line CV ≥60'	0.1% – 0.4%	85%	15%	88.0%	12.0%
Pot CV ≥60'	7.3% – 9.2%	85%	15%	95.7%	4.3%
<60' fixed gear	0.1% – 2.0%	85%	15%	96.3%	3.7%
Jig CV	0.1% – 2.0%	85%	15%	86.1%	13.9%

Source: ADF&G fishtickets and WPRs, 2000 – 2003. *Retained catch and percentages are for 1999 – 2003, to avoid confidentiality concerns.

Table 3-130 shows that most sectors' recent harvest patterns in the BS and AI do not exactly mirror an 85% (BS) and 15% (AI) split. The fixed gear sectors harvested 84% to 96% of their harvest in the BS during the past several years (2000 – 2003). However, the trawl sectors harvested noticeably less than 85% of their total harvest in the BS during this time period: AFA trawl CP sector – 30%; non-AFA trawl CP sector – 70%; AFA trawl CV sector – 68%; non-AFA trawl CV sector – 52%. Note that due to confidentiality restrictions, the AFA trawl CP and non-AFA trawl CV sectors' harvest includes 1999 in the time period shown (1999 – 2003). In general, the individual trawl sectors have increased the percentage of their total retained BSAI cod catch harvested in the AI in recent years, and the fixed gear sectors have taken less of their total retained BSAI cod catch from the AI.

Table 3-131 provides the potential BS and AI allocations by sector, by converting percentage allocations to metric tons, based on the 2006 BSAI Pacific cod ITAC and the projected split of 85% (BS) and 15% (AI). The first two data columns provide the lower and upper end of the range of BSAI allocations to each sector proposed in Part I. These represent percentage shares of the BSAI Pacific cod ITAC. The next three columns provide the lower and upper end of the projected BS allocation to that sector under Alternative 5, followed by the average annual BS Pacific cod harvest by that sector in 2000–2003. Finally, the last three columns show the same information by sector for the AI.

Table 3-131 Projected BS and AI allocations by sector under Alternative 5, using the 2006 BSAI Pacific cod ITAC and the range of allocations proposed under Part I

Sector	Low end of potential allocation under Part 1 (% of BSAI Pcod ITAC)	High end of potential allocation under Part 1 (% of BSAI Pcod ITAC)	Low end estimate of BS allocation using 2006 ITAC (mt)	High end estimate of BS allocation using 2006 ITAC (mt)	Average Annual BS cod retained harvest (mt) 2000-2003	Low end estimate of AI allocation using 2006 ITAC (mt)	High end estimate of AI allocation using 2006 ITAC (mt)	Average annual AI cod retained harvest (mt) 2000-2003
AFA trawl CP	0.9%	3.7%	1,373	5,644	577*	242	996	1328*
Non-AFA trawl CP	12.7%	16.2%	19,372	24,710	18,774	3,419	4,361	8,069
Hook & line CP	45.8%	50.3%	69,860	76,724	75,849	12,328	13,540	6,768
Pot CP	1.4%	2.3%	2,135	3,508	1,893	377	619	375
AFA trawl CV	17.8%	24.4%	27,151	37,218	20,728	4,791	6,568	9,809
Non-AFA trawl CV	0.5%	3.1%	763	4,729	2166*	135	834	1988*
Hook & line CV>60'	0.1%	0.4%	153	610	400	27	108	55
Pot CV >60'	7.3%	9.2%	11,135	14,033	14,350	1,965	2,476	646
<60' fixed gear	0.1%	2.0%	153	3,051	1,095	27	538	42
Jig CV	0.1%	2.0%	153	3,051	108	27	538	17

Source: ADF&G fishtickets, 1995 - 2003 and weekly processor reports, 1995 - 2003.

Note: The 2006 BSAI Pacific TAC = 194,000 mt. Applying the 7.5 percent CDQ reserve results in a BSAI ITAC = 179,450. The BS/AI TAC split is projected to be 85% BS and 15% AI, which means the projected BS ITAC = 152,533 mt and the AI ITAC = 26,918 mt.

* average annual retained harvests are based upon 1999-2003 due to confidentiality purposes.

Note that Table 3-131 uses the 2006 BSAI Pacific cod TAC of 194,000 mt, and assumes the 85% (BS) and 15% (AI) split occurs in the future to determine the projected BS and AI TACs. This table also assumes that the CDQ Pacific cod reserve is 7.5%, meaning 7.5% is removed from the BS and AI TACs to determine the subarea ITACs allocated among the various (non-CDQ) sectors. If the CDQ reserve was increased from its current 7.5% to 10% or 15% under Part I, the various allocations to each sector would be reduced proportionally. Under a 10% or 15% CDQ reserve, the allocations to each sector in Table 3-131 would be reduced by 3.2% or 8.6%, respectively.

Table 3-131 compares the upper and lower ends of the range of potential BS and AI allocations to each sector (in mt) under Alternative 5 to each sector’s average annual harvest in the BS and AI. In general, in the fixed gear sectors, the high end range of the AI allocation to each sector is more than 50% higher than the annual average harvest by sector in the AI (2000 – 2003). In hook-and-line CP sector, for example, the AI allocation would be 50% higher, and in the pot CV sector the AI allocation would be 74% higher than the recent harvest. For the <60’ fixed gear CV and jig sectors, with the smallest allocations, this percentage difference exceeds 90%. In the trawl sectors, the opposite is true; generally, the high end range of the AI allocation to each sector is more than 50% lower than the annual average harvest by trawl sector in the AI (2000 – 2003). In the non-AFA trawl CP and CV sectors in particular, the high end estimate of the AI allocation would be 85% and 138% lower than the recent harvest in that area.

The problem statement for Part II references the need to recognize differences in dependence among gear groups and sectors that harvest Pacific cod in the BS and AI management areas. While Alternative 5

would mitigate the problem of disproportionate impacts that result from TAC fluctuations, it may force vessels to fish in areas they have very limited historical participation and do not want to fish. This issue impacts all sectors, but would likely be most onerous on the sectors comprised of smaller vessels, as they would be required to travel greater distances to fish in conditions that may not be well suited for their vessels.

Given the data above, Alternative 5 does not result in an allocation scheme between the two subareas that reflects current harvest patterns by sector. In general, Alternative 5 would allocate a lower share of the trawl sectors' BSAI allocations to the AI than has been harvested in the AI in the recent past. In contrast, Alternative 5 would allocate a higher share of the fixed gear sectors' BSAI allocations to the AI than has been harvested in the AI in the recent past. In sum, Alternative 5 does not appear to meet the concerns described in the problem statement.

3.4.8 ALTERNATIVE 6: AI allocation based on historic harvest

Alternative 6 would define the sector allocations for each area based on the relative percentages of Pacific cod that were harvested by the sectors during the identified series of years. Thus, the overall sector splits determined at the combined BSAI level in Part I remain in place, and the sector allocations are then calculated at the individual subarea level. Alternative 6 divides the Aleutian Islands ITAC among the sectors based upon each sector's relative historic harvest in the Aleutian Islands. The remainder of each sector's overall BSAI allocation is allocated in the Bering Sea, after accounting for the respective allocation for the Aleutian Islands. **In February 2006, the Council identified Alternative 6 as its preliminary preferred alternative under Part II.**

This alternative allows the BSAI sector allocations to be maintained, but sectors would be allocated different percentages of each area based on their historic harvest patterns in the AI. It also allows the overall BSAI allocations to each sector to be based on a different series of years than the years on which the AI allocations are based. This is because the Council may want to base the BS – AI subarea sector allocations on a smaller subset of (recent) years than the overall BSAI sector allocations, in order to reflect the fact that sectors generally tended to fish more or less in the AI in recent years.

The general intent under Alternative 6 is thus to base the percentage AI allocations for each sector on recent harvest shares in the AI. **Thus, in the case that the Council chooses an option under Alternative 6 as its final preferred alternative, and a BSAI TAC split between the BS and AI subareas does not occur for several years, it may be preferable at that time to consider whether the preferred alternative continues to reflect recent AI harvest shares by sector.** For instance, if the harvest distribution between the BS and AI changes dramatically for one or more sectors between now and when a TAC split occurs, the Council may want to consider initiating a new amendment to revise the sector AI allocations resulting from this part.

The combinations of options for determining the overall sector allocations are in Part I, Component 2 in either Alternative 1 or 2 (see Table 3-66) and are based on various series of years from 1995 – 2003. The options for determining each sector's allocation in the AI under Alternative 6 are as follows:

Option 6.1	1995 – 2002
Option 6.2	1997 – 2003
Option 6.3	2000 – 2003
Option 6.4	2002 – 2003

As stated in earlier sections, the trawl sectors have generally increased their share of AI harvest as a percentage of their overall BSAI harvest in the past several years. By contrast, the fixed gear sectors have generally decreased their share of AI harvest as a percentage of their overall BSAI harvest in the past several years. Because of this variation in AI harvest by sectors, the time period selected for the allocations largely determines whether certain fixed gear sectors, primarily the pot sectors and the hook-and-line CV sector, will be significant participants in the AI Pacific cod fishery in the future. Other sectors would also be impacted by the years selected as the historic base period, but in most cases would be less likely to be effectively excluded from the AI fishery.

One fundamental concern regarding Alternative 6 is that TAC fluctuations will have disproportionate impacts on the sectors that are allocated the greatest percentage of the subarea with the declining TAC. While model predictions indicate that the Pacific cod stock is neither overfished nor approaching an overfished condition, the biomass is expected to decline slowly in the next several years. However, the impact on the separate BS and AI subarea TACs in the future is uncertain. Recall that Alternative 5 mitigates the potentially disproportionate impacts on the various sectors due to TAC

fluctuations created by Alternative 6 by allocating an equal percentage by area. However, Alternative 5 may potentially spur a race for fish by subarea, as discussed in Section 3.4.7.

The calculations for the AI harvest by sector under Alternative 6 are made using the four options above. In completing the allocation calculations for this section, it was necessary to make several adjustments to overcome potential problems with confidential data. It was necessary to combine the <60' hook-and-line and pot catcher vessel sector with the jig catcher vessel sector. Under Option 6.3 (2000 - 2003), it was necessary to estimate allocations to the AFA trawl catcher processor sector and non-AFA trawl catcher vessel sector based on those sectors' average annual harvests during the years 1999 - 2003.⁹⁵ The estimates for all other sectors are unaffected, as this calculation was only undertaken for the AFA trawl catcher processor and non-AFA trawl catcher vessel sectors.

The first step in evaluating the Aleutian Islands and Bering Sea allocations resulting from the options under Alternative 6 was to calculate each sector's AI historic retained Pacific cod harvest share, as a percentage of the historical AI harvests for all CV and CP sectors, during the years identified. These estimates are show in Table 3-132 (excluding the AFA 9) and Table 3-133 (including the AFA 9 in the AFA CP sector). Note that Option 6.3 (2000 – 2003) and Option 6.4 (2002 – 2003) have the same results in both tables, since the AFA 9 did not participate in any of the years applicable under those options. The first column for each option shows the retained catch of Pacific cod in the Aleutian Islands by each sector during the years specified in the options, while the second column shows the percent of the total Aleutians Islands retained catch by the sector during that period.

Table 3-132 Aleutian Islands Pacific cod catch (mt) and percent of the total Aleutian Islands allocation to each sector (excludes AFA-9) under Alternative 6, Options 6.1 – 6.4

Sector	Option 6.1 (1995-2002)		Option 6.2 (1997-2003)		Option 6.3 (2000-2003)		Option 6.4 (2002-2003)	
	mt	percent	mt	percent	mt	percent	mt	percent
HAL and Pot CVs <60' and Jig CVs	456	0.3	468	0.3	237	0.2	76***	0.1***
AFA Trawl CPs	15,704	9.1	12,063	6.9	5,310*	4.6*	22,108†	38.9†
AFA Trawl CVs	39,571	22.9	50,998	29.4	39,236	33.5	24,644	43.4
Longline CPs	56,230	32.6	49,059	28.2	27,072	23.1	2,519‡	4.4‡
Longline CVs >60'	261	0.2	245	0.1	218	0.2	‡	‡
Non-AFA Trawl CPs	39,979	23.2	41,956	24.1	32,275	27.6	†	†
Non-AFA Trawl CVs	5,587	3.2	9,988	5.7	7,991*	6.9*	7,478	13.2
Pot CPs	7,912	4.6	3,753	2.2	1,500	1.3	***	***
Pot CVs >60'	6,825	4.0	5,226	3.0	2,585	2.2	***	***
Denominator	172,526		173,757		117,028**		56,825	

* Estimated based on average annual catch from 1999-2003.

** Denominator is based on actual catch from 2000-2003.

*** Aggregation includes HAL and Pot CVs < 60 feet and Jig and Pot CPs and Pot CVs > 60 feet.

† Aggregation includes AFA Trawl CPs and Non-AFA Trawl CPs.

‡ Aggregation includes Longline CPs and Longline CVs >60 feet.

⁹⁵These allocations were estimated independently of the allocations to the other sectors by crediting these sectors with 4 years of their average annual harvests for the period 1999 through 2003.

Table 3-133 Aleutian Islands Pacific cod catch and percent of the total Aleutian Islands allocation to each sector (includes AFA-9 in the AFA trawl CP sector) under Alternative 6, Options 6.1 – 6.4

	Option 6.1 (1995-2002)		Option 6.2 (1997-2003)		Option 6.3 (2000-2003)		Option 6.4 (2002-2003)	
	mt	percent	mt	percent	mt	percent	mt	percent
Hook and Line and Pot CVs < 60 feet	456	0.3	468	0.3	237	0.2	76***	0.1***
AFA Trawl CPs	25,005	13.8	18,131	10.1	5,310*	4.6*	22,108†	38.9†
AFA Trawl CVs	39,571	21.8	50,998	28.4	39,236	33.5	24,644	43.4
Longline CPs	56,230	30.9	49,059	27.3	27,072	23.1	2,519‡	4.4‡
Longline CVs > 60 feet	261	0.1	245	0.1	218	0.2	‡	‡
Non-AFA Trawl CPs	39,979	22.0	41,956	23.3	32,275	27.6	†	†
Non-AFA Trawl CVs	5,587	3.1	9,988	5.6	7,991*	6.9*	7,478	13.2
Pot CPs	7,912	4.4	3,753	2.1	1,500	1.3	***	***
Pot CVs > 60 feet	6,825	3.8	5,226	2.9	2,585	2.2	***	***
Denominator	181,826		179,825		117,028**		56,825	

* Estimated based on average annual catch from 1999-2003.

** Denominator is based on actual catch from 2000-2003.

*** Aggregation includes HAL and Pot CVs <60 feet and Jig and Pot CPs and Pot CVs >60 feet.

† Aggregation includes AFA Trawl CPs and Non-AFA Trawl CPs.

‡ Aggregation includes Longline CPs and Longline CVs >60 feet.

Recall that each sector's overall BSAI allocation (as determined in Part I) is maintained under Alternative 6. Thus, to represent the AI percentage estimates above as a potential allocation to each sector requires the use of an allocation option from Part I, Component 2, as this part determines each sector's allocation of the overall BSAI ITAC.

Table 3-134, Table 3-135, Table 3-136, and Table 3-137 below show estimated allocations using Option 6.1 and 6.2, both excluding and including the AFA 9, together with Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2 (2.71% small boat allocation) in Component 2. (See the first column of Table 3-67 for reference). The selection of this option under Component 2 is for illustrative purposes only.

The first column of Table 3-134 shows the BSAI allocation to each sector, as a percent of the BSAI ITAC, under the selected option in Component 2. The second column shows the estimated allocation to each sector in metric tons, based on a 2006 BSAI ITAC of 179,450 mt. The third column shows the Aleutian Islands allocation to each sector, as a percent of the Aleutian Islands ITAC, based on Option 6.1 (excluding the AFA 9). The third column shows each sector's Aleutian Islands allocation in metric tons, based on a projected Aleutian Islands ITAC of 26,918 mt. The fourth column shows each sector's remaining Bering Sea allocation in metric tons (i.e., each sector's overall BSAI allocation minus its AI allocation). The last two columns show the respective percentages of each sector's total BSAI allocation that is from the BS subarea and the AI subarea, based on the previous estimates. In reviewing this table, it is important to bear in mind that the division of a sector's allocation between the BS and AI will vary annually with the respective ITACs.

Table 3-134 Example of BSAI, AI, and BS allocations by sector, under Option 6.1 (1995 - 2002) excluding AFA 9

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.1)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as percent of sector BSAI allocation)	AI allocation (as percent of sector BSAI allocation)
HAL and Pot CVs < 60 feet and Jig CVs	2.7	4,845	0.3	71	4,774	98.5	1.5
AFA Trawl CPs	1.8	3,160	9.1	2,450	710	22.5	77.5
AFA Trawl CVs	21.6	38,773	22.9	6,174	32,599	84.1	15.9
Longline CPs	48.5	87,002	32.6	8,773	78,229	89.9	10.1
Longline CVs > 60 feet	0.1	266	0.2	41	225	84.7	15.3
Non-AFA Trawl CPs	13.0	23,332	23.2	6,238	17,094	73.3	26.7
Non-AFA Trawl CVs	1.8	3,163	3.2	872	2,292	72.4	27.6
Pot CPs	2.2	3,979	4.6	1,234	2,744	69.0	31.0
Pot CVs > 60 feet	8.3	14,912	4.0	1,065	13,847	92.9	7.1

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Table 3-135 Example of BSAI, AI, and BS allocations by sector, under Option 6.1 (1995 - 2002) including AFA 9

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.1)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as percent of sector BSAI allocation)	AI allocation (as percent of sector BSAI allocation)
HAL and Pot CVs < 60 feet and Jig CVs	2.7	4,845	0.3	68	4,778	98.6	1.4
AFA Trawl CPs	2.8	5,077	13.8	3,702	1,375	27.1	72.9
AFA Trawl CVs	21.3	38,273	21.8	5,858	32,415	84.7	15.3
Longline CPs	47.9	85,988	30.9	8,324	77,664	90.3	9.7
Longline CVs > 60 feet	0.1	266	0.1	39	227	85.4	14.6
Non-AFA Trawl CPs	12.9	23,116	22.0	5,919	17,197	74.4	25.6
Non-AFA Trawl CVs	1.7	3,132	3.1	827	2,305	73.6	26.4
Pot CPs	2.2	3,923	4.4	1,171	2,752	70.1	29.9
Pot CVs > 60 feet	8.2	14,744	3.8	1,010	13,734	93.1	6.9

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Table 3-136 Example of BSAI, AI, and BS allocations by sector, under Option 6.2 (1997 - 2003) excluding AFA 9

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.2)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as percent of sector BSAI allocation)	AI allocation (as percent of sector BSAI allocation)
HAL and Pot CVs < 60 feet and Jig CVs	2.7	4,845	0.3	73	4,773	98.5	1.5
AFA Trawl CPs	1.8	3,160	6.9	1,869	1,291	40.9	59.1
AFA Trawl CVs	21.6	38,773	29.4	7,901	30,872	79.6	20.4
Longline CPs	48.5	87,002	28.2	7,600	79,402	91.3	8.7
Longline CVs > 60 feet	0.1	266	0.1	38	228	85.7	14.3
Non-AFA Trawl CPs	13.0	23,332	24.1	6,500	16,832	72.1	27.9
Non-AFA Trawl CVs	1.8	3,163	5.7	1,547	1,616	51.1	48.9
Pot CPs	2.2	3,979	2.2	581	3,398	85.4	14.6
Pot CVs > 60 feet	8.3	14,912	3.0	810	14,102	94.6	5.4

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Table 3-137 Example of BSAI, AI, and BS allocations by sector, under Option 6.2 (1997 - 2003) including AFA 9

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.2)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as percent of sector BSAI allocation)	AI allocation (as percent of sector BSAI allocation)
HAL and Pot CVs < 60 feet and Jig CVs	2.7	4,845	0.3	70	4,775	98.6	1.4
AFA Trawl CPs	1.8	3,160	10.1	2,714	446	14.1	85.9
AFA Trawl CVs	21.6	38,773	28.4	7,634	31,139	80.3	19.7
Longline CPs	48.5	87,002	27.3	7,344	79,658	91.6	8.4
Longline CVs > 60 feet	0.1	266	0.1	37	229	86.2	13.8
Non-AFA Trawl CPs	13.0	23,332	23.3	6,280	17,051	73.1	26.9
Non-AFA Trawl CVs	1.8	3,163	5.6	1,495	1,668	52.7	47.3
Pot CPs	2.2	3,979	2.1	562	3,417	85.9	14.1
Pot CVs > 60 feet	8.3	14,912	2.9	782	14,130	94.8	5.2

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (including AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Table 3-138 and Table 3-139 below show estimated allocations under Options 6.3 and 6.4, respectively, using the same allocation example from Component 2 as shown in the above tables. Again, the selection of this example allocation option (Option 2.1, excluding AFA 9, and Option 2.8, Suboption 2) under Component 2 is for illustrative purposes only.

Table 3-138 Example of BSAI, AI, and BS allocations by sector, under Option 6.3 (2000 - 2003)

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.3)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as percent of sector BSAI allocation)	AI allocation (as percent of sector BSAI allocation)
HAL and Pot CVs < 60 feet and Jig CVs	2.7	4,845	0.2	54	4,791	98.9	1.1
AFA Trawl CPs	1.8	3,160	4.6*	1,238	1,922	60.8	39.2
AFA Trawl CVs	21.6	38,773	33.5	9,025	29,748	76.7	23.3
Longline CPs	48.5	87,002	23.1	6,227	80,775	92.8	7.2
Longline CVs > 60 feet	0.1	266	0.2	50	216	81.1	18.9
Non-AFA Trawl CPs	13.0	23,332	27.6	7,424	15,908	68.2	31.8
Non-AFA Trawl CVs	1.8	3,163	6.9*	1,857	1,306	41.3	58.7
Pot CPs	2.2	3,979	1.3	345	3,634	91.3	8.7
Pot CVs > 60 feet	8.3	14,912	2.2	595	14,317	96.0	4.0

Assumptions for purposes of this example: overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Note: AFA 9 are excluded as these vessels did not have any history in the fishery after 1998.

*Estimated based on average annual catch from 1999 – 2003, due to confidentiality rules.

Table 3-139 Example of BSAI, AI, and BS allocations by sector, under Option 6.4 (2002 - 2003)

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.4)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as % of sector BSAI allocation)	AI allocation (as % of sector BSAI allocation)
HAL and Pot CVs < 60' and Jig CVs and Pot CPs and Pot CVs >60'	13.2	23,736	0.1	36	23,700	99.8	0.2
AFA Trawl CPs and Non-AFA trawl CPs	14.8	26,492	38.9	10,473	16,019	60.5	39.5
AFA Trawl CVs	21.6	38,773	43.4	11,674	27,099	69.9	30.1
Longline CPs and Longline CVs >60'	48.6	87,268	4.4	1,193	86,074	98.6	1.4
Non-AFA Trawl CVs	1.8	3,163	13.2	3,542	-379	-12.0	112.0

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2. Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt.

Note: AFA 9 are excluded as these vessels did not have any history in the fishery after 1998.

Note: Several sectors had to be aggregated due to confidentiality rules.

Note that under Option 6.4, because only two years are used to determine the AI allocations, several of the sectors need to be aggregated due to confidentiality rules. In Table 3-139, the <60' fixed gear, jig gear, and pot gear sectors are aggregated, resulting in an AI allocation of 0.1% of the AI ITAC combined. This represents about 36 mt using an estimated 2006 AI ITAC of 26,918 mt. Thus, under Option 6.4, about 36 mt would be divided among the four sectors. Note again that the effects of the options under Alternative 6 depend on the overall BSAI allocation selected under Part I; thus, not every combination of options under Part I and Alternative 6, Option 6.4, would result in such a small allocation to these combined fixed gear sectors. **However, because the fixed gear sectors have been taking less of their total Pacific cod harvest in the AI in the most recent years, and because all of the fixed gear sectors except for the hook-and-line CP sector receive a relatively small percentage of the overall BSAI ITAC, using 2002 – 2003 to determine the AI allocations will result in relatively small allocations to these sectors under every allocation scenario.** This result may not represent a concern to these sectors, unless and until they desire to increase their Pacific cod share in the AI in the future.

In addition, note that Option 6.4, under the BSAI allocation example in Table 3-139, results in a negative BS subarea allocation to the non-AFA trawl CV sector. This is because the non-AFA trawl CV sector's BSAI allocation of 1.8% of the BSAI ITAC under the example⁹⁶ allocation is not large enough to support the AI allocation determined under Option 6.4. Under Option 6.4 and this example, the AI allocation to the non-AFA trawl CV sector is 13.2% of the AI ITAC. However, under this option, the AI allocation to the non-AFA trawl CV sector could not exceed 11.7% of the AI ITAC in order to prevent a negative BS allocation. Using an AI allocation of 11.7% of the AI ITAC would result in this sector having its entire allocation in the AI, and no allocation in the BS.

Recall also that the non-AFA trawl CV sector could receive an overall BSAI allocation as low as 0.5% of the BSAI Pacific cod ITAC under the various options in Component 1 (Option 1.1) and Component 2. A lower overall allocation exacerbates the situation illustrated in Table 3-139. For example, a BSAI Pacific cod allocation of 0.5% of the ITAC to the non-AFA trawl CV sector results in a negative BS allocation to this sector of -2,712 mt (see Table 3-140 below). Under this example scenario, the AI allocation to the non-AFA trawl CV sector could not exceed 3.1% of the AI ITAC in order to prevent a negative BS allocation. In effect, the entire allocation would need to be allocated in the AI.

Table 3-140 Second example of BSAI, AI, and BS allocations by sector, under Option 6.4 (2002 - 2003)

Sector	BSAI allocation (as percent of ITAC)	BSAI allocation (mt)	AI allocation (as percent of ITAC - Option 6.4)	AI allocation (mt)	BS allocation (mt) (remaining portion of sector's allocation)	BS allocation (as % of sector BSAI allocation)	AI allocation (as % of sector BSAI allocation)
HAL and Pot CVs < 60' and Jig CVs and Pot CPs and Pot CVs >60'	10.5	18,842	0.1	36	18,806	99.8	0.2
AFA Trawl CPs and Non-AFA trawl CPs	16.8	30,148	38.9	10,473	19,675	65.3	34.7
AFA Trawl CVs	23.7	42,530	43.4	11,674	30,856	72.6	27.4
Longline CPs and Longline CVs >60'	48.5	87,033	4.4	1,193	85,840	98.6	1.4
Non-AFA Trawl CVs	0.5	831	13.2	3,542	-2,712	-326.5	426.5

Assumptions for purposes of this example: Overall BSAI sector allocations are from Part I, Component 2, Option 2.2 (drop year, excluding AFA 9). Example also assumes a projected 2006 BS ITAC of 152,533 mt and AI ITAC of 26,918 mt. Note: AFA 9 are excluded as these vessels did not have any history in the fishery after 1998. Note: Several sectors had to be aggregated due to confidentiality rules.

⁹⁶The BSAI allocation example is from Part I, Component 2, Option 2.1 (excluding AFA 9) and Option 2.8, Suboption 2.

Summary

If the Council wants to mirror the most recent sector shares of the AI Pacific cod harvest, it may want to simply choose percentages that fall within the range provided under Options 6.1 – 6.4. The range of AI allocations resulting from Alternative 6, shown as a percentage of the AI ITAC, is provided below. Note that several sectors had to be combined in order to show both upper and lower bounds as a result of the options, since not all AI harvest data can be provided by sector under both Option 6.3 and 6.4.

Table 3-141 Range of potential AI allocations (as % of AI ITAC) under Alternative 6, Options 6.1 – 6.4

Sector	Range of potential AI allocations (% of AI ITAC)
<60' fixed gear, pot gear, and jig gear	0.1 – 8.9
Trawl CP (AFA and non-AFA)	31.0 – 38.9
AFA trawl CV	21.8 – 43.4
Non-AFA trawl CV	3.1 – 13.2
Hook-and-line (CP and CV)	4.4 – 32.8

Note: See Table 3-132 and Table 3-133. The range accounts for AI allocations including and excluding the AFA 9.

Selecting AI percentage allocations to each sector that fall within the range analyzed would allow the Council to choose percentages that do not result in a negative BS allocation to each sector under the current projected TAC levels, but could also provide for an AI allocation that mirrors the most recent harvest levels by sector in that area. However, because 1) the BSAI TAC split has not yet occurred, 2) it is uncertain how TACs in the BS and AI would fluctuate relative to one another in the future, and 3) the subarea allocations under Alternative 6 are dependent first on maintaining the overall BSAI allocation to each sector, **it is possible that Alternative 6 could result in negative allocations in the BS subarea for one or more sectors.** This is because the BSAI allocation by sector is established at final action and implemented through rulemaking, and would not vary by year. Each sector's percentage share of the AI ITAC also would be established in regulation. The actual allocation (in metric tons) would vary depending on the AI ITAC. **Thus, it is possible, depending on TAC fluctuations, that a sector could have an AI allocation that is greater (in mt) than its overall BSAI allocation.** If the Council wants to provide for this concern, the following language could potentially be added under Alternative 6:

If, in a particular year, the AI allocation to a sector is greater than the BSAI allocation to that sector, set the sector's AI allocation equal to the sector's BSAI allocation and set the BS allocation equal to zero. All other sector AI allocations would be adjusted (increased) proportionately to allocate the full AI ITAC.

Note that Alternative 6 could result in sectors having no allocation in the Bering Sea, and all of the allocation in the Aleutian Islands. Recall also from Table 3-122 that in many sectors, including the non-AFA trawl CV sector, the majority of the LLPs are endorsed only for the Bering Sea area. In the case of the non-AFA trawl CV sector, there are 50 valid LLPs, and only 6 have AI endorsements. Thus, selecting an allocation option that would result in no allocation in the Bering Sea could severely affect the ability of eligible vessels to continue participating in this sector for Pacific cod. While the tables indicate that other sectors, such as the smaller fixed gear sectors, could receive a relatively small BSAI allocation, there is less likely the possibility for a negative or zero BS allocation as a result of Alternative 6 since these sectors have taken very little of their overall harvest in the AI in 2002 and 2003.

In addition, the AI allocations would also be seasonally apportioned, resulting in extremely small AI seasonal allocations to some sectors. Thus, implementing BS and AI allocations for each of ten sectors of

the Pacific cod fishery may be more difficult to manage than it appears on an aggregate gear level. However, in such case that 1) allocations are refined to four trawl sectors as opposed to the current two; 2) there exist relatively small allocations to most of the fixed gear sectors with the exception of the hook-and-line CP sector; and 3) seasonal apportionments of the AI allocations are implemented, the result is very small allocations to particular sectors (e.g., non-AFA trawl CV, <60' fixed gear, hook-and-line CV, and pot CP sectors). This effect is exacerbated as the overall BSAI TAC declines. **It is thus possible that some sector AI allocations will be so small that inseason management could not open a directed fishery.**

In sum, all options under Alternative 6 would base each sector's AI allocation on recent AI harvest. Because it is uncertain how TACs in the BS and AI would fluctuate relative to one another in the future, and because the subarea allocations under Alternative 6 are dependent first on maintaining the overall BSAI allocation to each sector, it is possible that Alternative 6 could result in negative allocations in the BS subarea for one or more sectors. This concern is most prominent under Option 6.4, but it exists under every option under Alternative 6. Of particular concern is the non-AFA trawl CV sector, since this sector would have a very small overall BSAI allocation but has harvested an estimated 13.2% of the overall AI harvest in 2002 – 2003. All sectors can be better evaluated once a preferred alternative is selected. Regardless of the resulting AI and BS allocations under the option selected, because of the potential fluctuations in the TAC, the Council may consider including language that addresses potential negative allocations in one subarea (see suggestion above in bold italics).

Two related concerns with Alternative 6 are that TAC fluctuations will disproportionately affect sectors with more of their allocation in the area with the declining TAC, and that some AI sector allocations will not be large enough to open a directed fishery in the AI.

3.5 Inseason Management Issues

Current management system

Currently, NMFS credits both directed harvest of Pacific cod and the incidental harvest of Pacific cod against the Pacific cod TAC to ensure that Pacific cod are not overharvested. When cod is open for directed fishing, all cod must be retained. Directed fishing for Pacific cod is closed when the amount of cod available for harvest in the directed fishery is caught, reserving the remainder of the TAC for incidental catch in other groundfish fisheries. NMFS then allows vessels to retain incidental catches of Pacific cod (if the TAC has not been reached) taken in other directed fisheries that are open, up to the maximum retainable amount (MRA). A proportion of target species determines the MRA. If the fishery is closed to directed fishing and the TAC is reached, NMFS issues a prohibition of retention of cod and all cod caught must be discarded. If the fishery is closed to directed fishing, the ABC has been taken, and the harvest of cod approaches the overfishing level, then NMFS could close target fisheries that harvest cod incidentally. The overfishing level is the critical harvest point when determining whether directed fisheries for other target species will be closed due to incidentally caught fish. Thus, the OFL currently functions as a hard cap, and leading up to the OFL closures are two soft caps: directed fishing closures and prohibiting retention.

In the existing management system, an annual ICA for the fixed gear Pacific cod sectors is deducted off the top of the aggregate amount of the BSAI Pacific cod TAC allocated to all of the fixed gear sectors combined (51%). Since 2000, an ICA of 500 mt⁹⁷ has been deducted from the fixed gear sector's overall allocation (51%) before the allocation is apportioned to the separate fixed gear sectors. While the trawl

⁹⁷The 500 mt ICA was initially derived from estimates of incidental catch of Pacific cod in other groundfish fisheries from 1996 – 1999. NMFS determines the ICA on an annual basis in rulemaking (679.20(a)(7)(i)(C)(1)).

sectors do not have an ICA established at the beginning of the year, NMFS currently has the ability to establish a directed fishing allowance (DFA) for the cod target trawl fisheries and an ICA for cod caught incidentally in the non-cod target trawl fisheries during the fishing year, should NMFS determine that any allocation or apportionment of Pacific cod has been or will be reached during the season.⁹⁸ This system allows NMFS to close the directed fishery for cod as described above, and allow other directed trawl fisheries to continue fishing (using the ICA). The current management system is commonly referred to as a 'soft cap' system because incidental catch of cod would not shut down other non-cod target fisheries unless the overall catch of cod approached the overfishing level.

In June 2005, as part of the motion on the BSAI Pacific cod allocation amendment, the Council requested that the analysis include a discussion of management measures that could be used to manage the Pacific cod sector allocations. The following priorities and potential management tools were identified (June 6, 2005 Council motion):

Priorities:

1. Avoid exceeding the Pacific cod overfishing level (OFL)
2. Avoid exceeding the Pacific cod Allowable Biological Catch (ABC)
3. Avoid closure of the non-Pacific cod fisheries as the result of 'hard cap' closures
4. Avoid erosion of one sector's Pacific cod allocation as the result of another sector exceeding its allocation
5. Avoid foregone harvest

Management Tools:

- Cooperatives – Highlight the benefits of cooperative management to keep harvest levels at or below associated allocations.
- Incidental Catch Allowance (ICAs) – An ICA for non-Pacific cod fisheries is a useful tool for achieving these objectives. In order to ensure that one sector does not erode another sector's allocations, however, ICAs should be established only at the sector level. For instance, there would be a separate ICA for each trawl sector rather than an overall 'trawl ICA'.
- MRA Limits – Maximum retainable amounts serve to constrain harvest levels and would be useful in addressing priorities 3 and 4.
- PSC Status – This would further constrain Pacific cod bycatch and would be useful in addressing priorities 2, 3, and 4.
- Closure of Non-Pacific Cod Fisheries – In order to avoid exceeding the Pacific cod OFL, NMFS may close any fishery that has a reasonable likelihood of Pacific cod bycatch.

Under this amendment, the **fixed gear** cod sectors will continue to be managed using an ICA established at the beginning of the year during the annual specifications process. The fixed gear fisheries (primarily the hook-and-line CP sector) fish almost entirely Pacific cod, and thus they finish their season in the directed cod fishery. In addition, their other target species (Greenland turbot, IFQ halibut/sablefish) have relatively low incidental catches of Pacific cod, and this sector has been fairly predictable over the years. Because there are not subsequent fixed gear target fisheries that need cod for incidental catch later in the year, the hook-and-line CP sector has typically harvested its directed fishing allowance into December and the fixed gear sector does not harvest its entire ICA (M. Furuness, 3/9/05). The non-trawl component has been managed for several years with a directed fishing allowance for the several fisheries and a single, small ICA that covers incidental catch in the few alternate fisheries in which they participate. With a few exceptions, the non-trawl directed fisheries are managed by NMFS without seasonal apportionments being exceeded significantly (A. Smoker, 5/18/05).

⁹⁸See 50 CFR 679.20(d)(1)(i).

NMFS has not typically put **trawl** Pacific cod on bycatch status in the recent past, due to both the seasonal apportionments and the fact that the trawl sectors are not currently constrained by their Pacific cod allocations.⁹⁹ Other than the amount of TAC that is apportioned to the trawl gear sectors, those fisheries are confined by both the Steller sea lion restrictions and PSC caps. The way the fishery is currently allocated essentially results in a large portion of the overall Pacific cod TAC from the trawl CP sector and some from the trawl CV sector acting as a ‘slush fund’ that is not taken until the end of the year when it is reallocated primarily to the hook-and-line CP sector.¹⁰⁰ The seasonal allocations to the trawl sectors have ensured that a sufficient amount of Pacific cod is left for incidental catch in the other non-cod target trawl fisheries later in the year, specifically, a few thousand tons for the AFA trawl catcher vessel sector participating in the B season pollock fishery, and several thousand tons for the trawl catcher processor sector participating in the flatfish, rockfish, and B season Atka mackerel fisheries (A. Smoker, 2/24/05). In effect, exceeding ABC and incurring an OFL closure have not been a past concern.

However, if the BSAI Pacific cod allocations among the trawl, jig, and fixed gear sectors are revised such that they reflect actual recent historical catch by sector and the overall trawl allocations are potentially reduced (Alternative 2), the trawl sectors will be more constrained by their Pacific cod allocations, in both their target cod fishery and in their late season non-cod target fisheries. This concern is exacerbated by further splitting the two existing trawl allocations (CP and CV) into four trawl sectors (AFA CV, non-AFA CV, AFA CP, and non-AFA CP). Because of the lack of ‘extra’ in the proposed trawl allocations, NMFS would have the difficult task of determining how much cod should be made available for the directed fishery and how much should be left to accommodate incidental catch of cod, on an individual trawl sector basis. As stated previously, this determination has not been necessary in the past, due to the fact that cod has not been the primary constraining factor to these sectors.

The remainder of this discussion outlines the potential management measures that can be used in managing the BSAI Pacific cod trawl sector allocations, per the priorities listed above. Note that the terms ‘hard cap’ and ‘soft cap’ often have a variety of meanings. In this discussion, a **hard cap** is a limit that stops any fishing that takes a species when its catch limit is taken. The intention is to prevent any further mortality of the species. A **soft cap** implies that retention of the species is restricted (either discards are required or it may be retained as a proportion of another target fishery under the MRA) but continued mortality is accepted.

Hard caps

One management approach is to establish each trawl sector’s allocation as a hard cap, meaning that when an individual sector’s allocation of BSAI Pacific cod is fully harvested, all directed fishing for BSAI Pacific cod closes for that sector, as well as any fisheries in which Pacific cod would be caught incidentally by that sector. In effect, reaching an allocation for a species (whether targeted or taken incidentally) under a hard cap system is like approaching the overfishing level under the current management system. Within the context of the Pacific cod apportionments, hard and soft caps can play a variety of roles. Hard caps are seen as a way to prevent one component of the fishery from impacting another. Once the sector has taken its allocation, it stops fishing. Hard caps have the best chance of succeeding without large disruptions to the fishing industry when fishing is conducted in a controlled cooperative manner rather than in a competitive environment.

Managing sector allocations (especially small ones) as a hard cap is more feasible if a sector is organized under a cooperative system. The individual sector should be better able to manage its allocation such that

⁹⁹ Establishing an ICA inseason for the trawl sectors has not usually been necessary; however, NMFS did close the BSAI Pacific cod trawl CP fishery on 3/14/04, and set aside 500 mt for an ICA until 3/28 (the next seasonal apportionment started 4/1).

¹⁰⁰ A large portion of the 2% jig allocation (and in some years a portion of the pot allocation) is also typically reallocated.

it can be used in a manner that will most benefit its participants (whether in the directed fishery or as incidental catch in other trawl fisheries). Under a system of self-management, members of the sector are responsible for staying within their allotments through internal controls, which are verified by NMFS. If the collective membership of the sector cannot control the actions of individual members within the sector, it is unlikely that the sector will be able to stay within its catch limit. Therefore, a hard cap is typically considered an appropriate tool to manage a rationalized sector.

Alternatively, if NMFS was to manage the allocations, it would need to establish directed fishing allowances (DFAs) and incidental catch allowances (ICAs) for each trawl sector. This approach would be relatively difficult, given that the agency would need to determine exactly when to close the directed cod fishery and the amount of cod quota needed to be held back for incidental catch needs in the other trawl fisheries during the year. NMFS would need to be relatively conservative in establishing the ICA, given the more refined, smaller allocations to each sector and the annual variability of Pacific cod required for incidental catch in the trawl fisheries. In addition, it is possible that some small allocations may not be opened to directed fishing unless the sectors themselves are responsible for staying within their allotments. The problem statement for this amendment emphasizes that the Pacific cod allocations should be adjusted in order to reduce uncertainty in and provide stability to the sectors. Allocating appropriate amounts of incidentally caught cod, so that each sector's directed fisheries can be harvested, is an important concern when creating stability.

Thus, given that the amendment proposes a defined allocation to each of the four trawl sectors, a hard cap system may be more feasible if each sector can potentially manage the use of its Pacific cod (whether for directed catch or incidental use) on its own. The notion that the trawl sector allocations can be managed using hard caps is at least partly fueled by the fact that three of those sectors are either already operating under, or have the potential to operate under, a cooperative system. The effectiveness of this management system will depend on whether each trawl sector can successfully manage its Pacific cod allocation between its directed cod fishery and other fisheries, so that no fisheries unfairly 'pre-empt' the other for lack of cod. Without cooperatives, or similar internal controls at the sector level, it is unlikely that the aggregate sector participants will be able to control the actions of individuals within the sector. However, whether NMFS is managing the fishery and setting a DFA and ICA for each sector, or the sector manages its own allocation through a cooperative structure, a hard cap means that it would be up to each sector to operate within that allocation. The remainder of this section considers whether each of the four trawl sectors is structured such that managing their own allocations is a feasible option.

AFA Sectors

The **AFA trawl sectors** have relatively predictable incidental Pacific cod catch needs for their directed pollock fishery and currently closely regulate both directed and incidental catch through legal agreements. Both the AFA trawl CV sector and AFA trawl CP sector are defined under the AFA, and thus the number of eligible participants has been determined and is relatively constant. These vessels currently operate in a cooperative system established through the AFA for BSAI pollock, and manage their Pacific cod sideboards through the cooperative as well. It is expected that these sectors' existing structure could continue to manage their Pacific cod if it represented a direct allocation.

One issue that could complicate the management of the Pacific cod allocation for the AFA trawl CV sector (self-managed under a hard cap) is Option 1.1 proposed under Component 1 discussed previously. If selected, this option would allow three non-AFA trawl CVs that meet a specified threshold (100 mt of Pacific cod landings in each of the years 1995, 1996, and 1997) to be part of the AFA trawl CV sector for purposes of the cod allocations. The level of complexity this option introduces depends on the ability of those three vessels to work or contract with the current AFA trawl CV cooperatives. Public testimony

may provide additional information as to the feasibility of managing the AFA trawl CV sector allocation through the cooperatives if this option is selected.

Non-AFA Sectors

The most complex fishery within the trawl component is the **non-AFA trawl CP sector**. Pacific cod is taken in all of their groundfish target fisheries. Incidental catch of Pacific cod averages about 13% in the non-Pacific cod targets ranging from 3% in the Atka mackerel target to 12% in rock sole (A. Smoker, 5/18/05).

Under the 2005 Consolidated Appropriations Act, the non-AFA CP sector is defined by sector eligibility requirements,¹⁰¹ and under Amendment 80 this sector is proposed to receive sector allocations of five target flatfish species (and be subject to sideboards in BSAI Pacific cod) and associated PSC. At the same time, Amendment 80 proposes to establish a cooperative structure for this sector. Given that the expectation is that Amendment 80 will be approved either prior to or soon following the BSAI Pacific cod allocation amendment, it is assumed that the non-AFA trawl CP sector will also be in position to cooperatively manage a Pacific cod allocation under a hard cap.

One issue that would detract from the non-AFA trawl CP sector's ability to manage a direct Pacific cod allocation through cooperatives is the potential that not all of the non-AFA trawl CPs will join a cooperative. It is uncertain whether any eligible non-AFA trawl CPs would opt not to join a cooperative, however, Amendment 80 allows for this possibility, and proposes options for allocating both groundfish and PSC between the cooperative(s) and eligible non-AFA trawl CPs who elect not to join a cooperative on an annual basis. **In addition, there is an option to establish separate Pacific cod sideboards under Amendment 80 for the non-AFA trawl CP cooperative(s) and for the eligible vessels not in a cooperative.**

Amendment 85 proposes a direct Pacific cod allocation to the eligible non-AFA trawl CP sector as a whole, and does not propose to further apportion that allocation between vessels that are in a cooperative and vessels that are not. **Given the concern noted above, in February 2006, the Council added an option under Amendment 80 that, should Amendment 85 be approved and replace the Pacific cod sideboard to this sector with a direct allocation, would allow the Pacific cod allocation to the non-AFA trawl CP sector to be apportioned between cooperatives and the remaining limited access fishery.** The approach proposed is to use the same methodology selected under Amendment 80 for apportioning the Pacific cod sideboards. Including this intent in Amendment 80 mitigates the concern described above and simplifies management of the cod allocation within the sector by continuing cooperative management.¹⁰² Sector members that join cooperatives will have the added advantage of exclusive cooperative allocations of BSAI Pacific cod that can be harvested to maximize returns.

If the non-AFA trawl CP Pacific cod allocation is further subdivided into separate cooperative 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 (the non-AFA trawl CP allocation is estimated to be 13.2%–16.1% of the BSAI Pacific cod TAC in Table 3-63 based on catch history) and also due to the variability and unpredictability in the catch of the non-cooperative

¹⁰¹ The Consolidated Appropriations Act of 2005 (P.L. 108-792) establishes catcher processor sector definitions for participation in the non-pollock groundfish fisheries. BSAI Amendment 80 will be consistent with those definitions.

¹⁰²This intent could be added to Amendment 80 by including the following provision: *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 sideboard within the sector.*

vessels. NMFS would need a sufficiently large ICA to manage the non-cooperative vessels (the vessels in the cooperative would manage their own allocation).

The **non-AFA trawl CV** sector is not likely to operate under a cooperative structure in the near future (see Section 3.6). The non-AFA trawl CV sector is the only trawl sector whose eligibility is not fixed in a manner that lends itself to cooperative management. Table 3-7 shows that while 14 non-AFA trawl CVs landed Pacific cod on average during 1995 – 2003, there are 50 valid LLPs qualified for use on a non-AFA trawl CV in the Federal groundfish fisheries. Because it is the only trawl sector that is not either currently under a cooperative structure or being proposed to be under a cooperative structure, it is assumed that NMFS will need to continue to manage this fishery through Federal Register notice.

The non-AFA trawl CV cod fishery would likely continue to be managed as it is currently, such that NMFS would establish a DFA and ICA if necessary. NMFS would close the directed fishery once the DFA is caught, reserving the remainder of the allocation for incidental catch in other groundfish fisheries. NMFS then would allow vessels to retain incidental catches of Pacific cod 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 allocation (including ICA) is reached, NMFS would issue a prohibition of retention of cod. In practice, however, it is not likely that an ICA would need to be created for this sector, since this sector does not generally have any other BSAI target fishery at this time. If it became a concern at some point in the future and an ICA was necessary in order to ensure the allocation is not exceeded, the fishery would have to be managed relatively conservatively. This could result in a reduced directed fishing allowance and the potential for some amount of foregone catch. The degree to which that occurs depends on the number of vessels fishing and whether they can work effectively with inseason management to ensure the limit is not exceeded.

Note also that the allocation to the non-AFA trawl CV sector would be substantially affected by Component 1, Option 1.1. If this option is selected, the non-AFA trawl CV sector allocation could be significantly reduced due to three vessels with the most Pacific cod history in this sector moving that history to the AFA CV sector. **Without accounting for this option, Table 3.52 indicates that the non-AFA trawl CV sector would receive an allocation in the range of 1.3%–3.1% of the BSAI Pacific cod ITAC. This allocation could be reduced to 0.5%–1.8% under Option 1.1, making it more difficult to manage this sector’s fishery within its allocation.**¹⁰³ While this sector does not generally have any other target fishery, the small allocation and uncertain number of participants mean that NMFS would likely set a conservative harvest limit so as to avoid exceeding the allocation.

In sum, the AFA trawl CP sector has a definitive set of participants that would potentially allow for self-management of its Pacific cod allocation under a hard cap, by establishing an arrangement within the existing cooperative structure to apportion a sufficient amount of cod for directed fishing and a sufficient amount of cod to support incidental catch in other target fisheries. The AFA trawl CV sector may also be in a position to manage its allocation as a hard cap, depending on the ability of the various cooperatives to work together, as well as with potentially three non-AFA trawl catcher vessels that may qualify to participate in that sector for Pacific cod. The non-AFA trawl CP sector’s ability to manage a hard cap allocation is improved with the formation of a cooperative(s) under Amendment 80, and this includes a provision that would apportion the Pacific cod allocation to the non-AFA trawl CP sector between cooperatives and the remaining limited access fishery. The non-AFA trawl CV sector’s allocation will need to continue to be managed by NMFS inseason.

¹⁰³Note that 0.5% - 1.8% of the 2006 BSAI Pacific cod ITAC represents about 902 mt – 3,247 mt. Note also that the 3 vessels that qualify under Component 1, Option 1.1 have signed a confidentiality waiver for public use of their harvest data in this analysis. The waiver is on file with NOAA Fisheries.

Soft caps

Another management approach is to manage the trawl allocations under soft caps, but have the sectors manage their own harvests under a cooperative system where possible (e.g., in the AFA CP, AFA CV, and non-AFA CP sectors). This system would operate the same as the current soft cap approach, but without NMFS designating the DFA and ICA. As stated previously, NMFS has rarely had to establish an ICA inseason for the trawl sectors to date because the current allocations of cod have not been the constraining factor for the trawl fisheries. However, with more refined (smaller) allocations to each trawl sector that reflect actual retained harvest history of cod, there will no longer be as much flexibility in the allocations later in the year. Because the trawl fisheries are more unpredictable, and these sectors participate in other fisheries that have a high incidental catch of cod, they have a greater potential for exceeding their allocations. Thus, if NMFS was setting the ICA, it would have to be set fairly conservatively to account for these factors. Cooperatives are expected to more effectively determine how to apportion between the sector's directed fishery needs and incidental catch needs.

The same advantages and disadvantages generally related to a soft cap system apply to this approach; the difference is that the cooperative would better determine how to apportion between the sector's directed fishery needs and incidental catch needs. The primary advantage overall to the soft cap approach is that if a trawl sector harvests its ICA, that sector's other directed fisheries that catch cod incidentally are not immediately closed. In addition, harvest of a sector's ICA would trigger management actions for that sector only. However, the primary disadvantage to this approach is the potential consequence of exceeding the ABC. For the past few years, and in 2006 and potentially 2007, the BSAI Pacific cod TAC is set equal to ABC. If one sector harvests its entire cod ICA early in the year, and cod is placed on prohibited species status for that sector, that sector can continue to fish in its directed non-cod fisheries and harvest (and discard) additional cod. There then exists the potential for this sector of the fishery to push the overall Pacific cod catch over the ABC. If the overall harvest approached the OFL, then all sectors that catch cod (whether directed or incidental) would be closed. In effect, this would allow one sector of the fishery to pre-empt all other sectors, which is the fundamental concern that direct sector allocations are intended to help prevent.

This approach follows the earlier discussion that some sectors are, or are proposed to be, structured under a cooperative system with limited participants. The status of each sector with regard to cooperatives and its ability to manage participants is discussed in an earlier part of this section. As stated previously, this approach is likely not feasible for the one trawl sector that does not have a cooperative structure (e.g., the non-AFA CV sector).

Summary

Upon deciding the structure of the allocation system under the BSAI Pacific cod apportionments, a fundamental question that affects the amount of catch allowed in the directed fishery is whether catch management can be deferred to the industry sectors (i.e., whether they are capable of managing their allocations). If the industry can control and limit its catch, it can best decide how much of its allocation is necessary to apply to a directed fishery and how much is needed for incidental catch in other target fisheries. In effect, this allows industry to realize more of the benefits of a slower paced, more controlled fishery.

The sectors identified for analysis that continue to operate in a competitive (not cooperative) system, specifically the non-trawl sectors, are relatively simple for the agency to manage. Many have little incidental catch and catch rates are slow enough to allow the agency to consistently monitor and close the fishery accurately (A. Smoker, 5/18/05). **The intent under this amendment is for NMFS to continue to manage the non-trawl sectors, as well as the non-AFA trawl catcher vessel sector. The fixed gear**

cod sectors would continue to be managed using an ICA established at the beginning of the year during the annual specifications process. The non-AFA trawl CV sector would continue to be managed by NMFS through Federal Register notice. If the non-AFA trawl CV sector started targeting fisheries other than Pacific cod, NMFS could establish a DFA and ICA inseason at such time that the sector started to reach its allocation.

The intent under this amendment is for the AFA trawl CV and CP sectors, as well as the non-AFA trawl CP sector, to manage their own Pacific cod allocations under a hard cap. The AFA trawl sectors currently operate in a cooperative system established through the AFA for BSAI pollock, and manage their Pacific cod sideboards through the cooperative as well. The AFA trawl sectors have relatively predictable incidental Pacific cod catch needs for their directed pollock fishery and currently closely regulate both directed and incidental catch through legal agreements. It is expected that these sectors' existing structure could continue to manage Pacific cod if it represented a direct allocation. In the non-AFA trawl CP sector, there is increased variability in the amount of incidental catch of Pacific cod in their other target fisheries, and catch rates are frequently higher. A cooperative structure is also being developed for the non-AFA trawl CP sector under Amendment 80, and final action by the Council is scheduled for April 2006. Should the Council provide for the cod allocation to this sector to be divided among cooperatives and the limited access fishery (if not all participants join a cooperative) as proposed, the non-AFA trawl CP sector should also have all of the tools necessary to manage its own Pacific cod allocation under Amendment 80.

The primary issue is how well catch can be controlled. The more likely the directed fishery will exceed the catch limit in a competitive (vs. cooperative) fishery and the more uncertain the level of incidental catch of a species, the greater the ICA established by NMFS. The greater the ICA, the less opportunity the industry has to extract the greatest value from the fishery. If the industry can control and limit its catch, it is assumed that it can best decide how much of its allocation is necessary to apply to a directed fishery and how much is needed for incidental catch in other target fisheries. In effect, this allows the industry to realize the greatest benefit from the fishery.

3.5.1 NMFS catch accounting system

Currently, NMFS accounts for each sector's allocation based on the gear type used and the mode of delivery. The assignment of catch to each allocation is dependent on how it is reported. The majority of the hook-and-line catcher processors in the BSAI Pacific cod fishery are over 125 feet LOA, and thus are 100% observed. Pot vessels of all lengths over 60 feet LOA are 30% observed. Observers distinguish between catcher processor and catcher vessel activity for each set. Catch accounting for 100% observed vessels utilizes observer data. Catch accounting for 30% observed vessels (including all observed pot vessels) utilizes vessel weekly production reports for activity as a catcher processor, and reports from the shoreside or floating processor for activity as a catcher vessel.

In this sense, previous amendments created quotas for fleets of vessels based on their activity: if a vessel is acting as a catcher processor, that catch is deducted from the catcher processor allocation; if a vessel acts as a catcher vessel, that catch is deducted from the catcher vessel allocation. With the implementation of Amendment 67, however, the Council identified criteria by which to define an eligible fleet of vessels in each $\geq 60'$ fixed gear cod sector (hook-and-line CP, hook-and-line CV, pot CP, and pot CV). Under BSAI Amendment 67, a $\geq 60'$ fixed gear license holder cannot receive two endorsements of the same gear type on one LLP. Thus, the license holder is awarded the 'highest' endorsement for which it qualifies, for example, either a pot CP or a pot CV, but not both. This created a group of licenses on vessels that met the landings criteria, and while their eligibility is based on harvests by normal activity type, their endorsement does not necessarily denote the mode in which they must operate.

For instance, while a pot vessel endorsed only as a CV for BSAI Pacific cod cannot act as a CP, a vessel endorsed as a CP can act as either a CP or a CV (i.e., NMFS cannot force a catcher processor to process its catch). Under the current system, therefore, a pot vessel endorsed as a CP could operate as a CV and its catch would be attributed to the pot CV allocation; and when it is operating as a CP its harvest would come off the pot CP allocation. Although the opportunity exists, with the implementation of both allocations and cod endorsements, this has been very rare in the past, as most catcher processors want to operate as such for economic reasons, and may not be well equipped to hold and transport round fish. In addition, an LLP is designated for a CP or a CV, and they are not easily changed back and forth. If a person holds a groundfish license with a CP vessel designation, they may, upon request to the Regional Administrator, have the license reissued with a CV designation. The vessel designation change to a catcher vessel is permanent, and that license is then valid for only those activities specified in the definition of catcher vessel designation. (50 CFR 679.4(C)). Thus, any other case in which a CP is delivering shoreside has likely been a unique situation that NMFS addresses on a case by case basis (e.g., if the freezer malfunctions).¹⁰⁴

Note that in both 2003 and 2005, a very small amount of the pot CV allocation was attributed to a pot vessel that held a CP cod endorsement that was operating as a CV. The data cannot be provided due to confidentiality rules. This particular vessel is designated on two LLPs, however, one that carries a pot CP cod endorsement and one that carries a pot CV cod endorsement. Thus, this vessel is designated on two separate licenses with the proper endorsements to act in either operating mode in the BSAI Pacific cod fishery. NMFS has reported that this is the only vessel to which this situation has occurred.

Although the vessel mentioned above has the proper cod endorsements to act in either mode, a concern has been noted about the future potential for vessels with only a pot CP cod endorsement to deliver to an inshore processor, meaning that harvest comes off the pot CV allocation. **Note that if a CP operates as a CV and delivers Pacific cod shoreside during the years under consideration, those landings are attributed to the CV sector when determining sector allocations. Therefore, one could contend that as long as any CPs that at times operate as CVs do so at historical levels, that catch is accounted for in establishing the sector allocations.** This issue appears only to be applicable to the pot CP and CV sectors; the hook-and-line CPs do not appear to operate as CVs in the Pacific cod fishery, and the AFA vessels mode of operation is defined by statute to restrict the activities of each sector.

In sum, the catch accounting system is not cognizant of LLP permits or allocation scenarios. It currently attributes catch to an allocation depending on the gear type used and the vessel's mode of activity. In February 2006, the Council requested additional information on this issue, and expressed an interest in changing the system. If the Council determines that it wants to establish a specific fleet of vessels based on their historical activity—and not necessarily how they are operating at any one point in time in the future—the catch accounting system would need to be revised to reflect that intent. NMFS has noted that this change would represent a significant programming effort.

One of the primary issues is how to determine the sector to which a vessel belongs. NMFS currently distinguishes the sector in a functional manner (i.e, it is a CV if it delivers unprocessed landings shoreside; if it processes at sea, NMFS receives weekly production reports). Staff assumes that the intent of a change to the catch accounting system would be to base the vessel's sector designation on the LLP cod endorsement, which is attributed to a person and not a vessel. Once a clear set of rules is established, NMFS can add or modify code in the catch accounting system to correctly identify the proper allocation to debit. This will likely be more feasible if the change is limited to a sector with few eligible licenses and

¹⁰⁴NMFS reports that the primary operation mode change with CPs is between a catcher processor and mothership, rather than a catcher processor and catcher vessel, as a CP can act as a catcher processor or just as a processor.

to that which poses the concern, for example, the pot CP sector. **NMFS has provided the remainder of this section in response to the Council's request for additional information on the changes required to implement the proposed change.**

The remainder of this section represents a preliminary discussion on the impacts that proposed changes under Amendment 85 would have on the NMFS Alaska Region Catch Accounting System (CAS). There are two major issues in the amendment that will have a large impact on the CAS. The first is that the CAS and virtually all catch reporting are based on the identity of the vessel, and not on the licenses that are associated with the vessel. Switching to management based on the multiple LLP licenses that can be associated with a vessel will result in a fundamental change to the CAS. The second major issue is that all catch reporting to date has been based on the mode in which a vessel operated – processing its own catch or delivering the catch for someone else to process. NMFS does not identify individual vessels as a catcher processor or as a catcher vessel on the Federal Fishing Permits – these designations are based on how the vessel operates. Changing from this means of processing data will also be a major change in the CAS. These two issues in combination, identifying catch based on an LLP and attributing the catch to the LLP endorsement rather than processing mode, will result in complex and protracted programming changes in the CAS. A thorough analysis would be required to determine all of the impacts, and it is possible that significant issues exist that are not addressed in this section.

The current CAS handles the distinction between CPs and CVs functionally, based on how the vessel operates rather than how it is licensed. If a vessel processes catch at sea, it is required to submit a Weekly Production Report on the processed catch and is thus classified as a CP on these reports. Observer data are also used for reporting CP catch. The observer records the type of operation for the vessel on a haul by haul basis, and if the vessel has caught and processed at-sea, the vessel is designated as a CP for the catch from that haul. All vessels with landed catch reported at a shoreplant or landed catch delivered to a vessel acting as a mothership are classified as CVs. The CAS processes the various landing reports based on the vessel classification derived from method of operation and reporting source, and the catch associated with that vessel for that landing is debited from the proper account.

All records processed through the CAS are based on a vessel identifier. The only exception to vessel-based reporting is a few WPRs that are submitted by shoreplants that do not use the Shoreside Processor Electronic Logbook Reporting software (SPELR). In this case, the weekly production of the plant is provided, but not at the vessel specific level. To date, there is no process established to identify a vessel with the LLPs associated with that vessel, although NMFS RAM Division maintains tables that identify the vessel named on each LLP at any time.

In order to debit catch against the pot CP BSAI Pacific cod account by a vessel that is listed as a CP on an LLP license but that delivers to a shoreside plant, it would require changes to the CAS. This raises several problems or questions (itemized at the bottom of this section). The programming changes required in the CAS could not be generic changes throughout the system since all other accounts are vessel-based and established based on method of processing operation. The proposed changes under Amendment 85 would only apply to catch of a single species in a single FMP area yet require significant and specific changes to the CAS. Therefore, a separate independent functionality would need to be added and maintained in the system specifically for this action.

The first process that would need to be programmed into the CAS would be to look up the LLP licenses associated with the vessel and evaluate the LLP endorsements on the license(s) found. Since LLP information is not captured from landing information, the vessel identifier would be used to return all of the LLP licenses which name that vessel at the time of the landing. Since LLP licenses are transferable, a separate time-sensitive table would need to be established that associated each LLP with each vessel between specific dates (dates of transfer). This is necessary so that any changes to historic data would

find the proper LLP-vessel combinations valid at that time. After the LLP licenses are selected, the endorsements from each LLP would need to be evaluated for Bering BSAI pot Pacific cod endorsements. A set of rules would need to be established for any and all conflicts when multiple LLP licenses and endorsements are encountered for a single vessel (e.g. CV and CP endorsements on the same vessel). This code would need to be evaluated and called at the proper times during processing of the CAS. It is assumed that at a minimum, all vessels landing groundfish in the BSAI with pot gear would need to be evaluated in this manner.

A process would need to be established that would determine if the Pacific cod catch was part of the sector allocations established under Amendment 85, and if so, use the information above to locate one of three accounts: BSAI pot caught Pacific cod by CP vessels processed at sea; BSAI pot caught Pacific cod by CP vessels processed shoreside; BSAI pot caught Pacific cod by CV vessels. The catch from the new account (CP vessels delivering shoreside) would show up on the reports as catch by the CP pot sector.

Separate programming would also be required in the bycatch and discard estimation sub-systems since one of the bycatch rate estimation levels is the sector level. Direction would need to be given as to whether the bycatch and discard rates are calculated based on vessel performance or on LLP endorsement. The application of the rates against the groundfish basis weights to determine the amount of bycatch and discard would need to either be based on the designation of the catch by operation mode or LLP endorsement. Changes to these sub-systems would be substantial since individual vessel characteristics would need to be evaluated before included in the proper sector for estimation.

This programming constitutes major restructuring of the CAS and could add significant time to the implementation schedule. We believe such changes could not be implemented mid-year, and would require a new reporting cycle for start-up. The CAS has recently been modified for sideboards under the Crab Rationalization Program and to accommodate changes in State management of Pacific cod. In the remainder of 2006 and into 2007, incorporation of the complex rules for the Gulf of Alaska Rockfish Pilot Program are necessary to be made in CAS, and it is expected that large changes will also result from BSAI Amendment 80. Interactions across management programs such as sideboards and individual species management further complicate this process and may lead to delays in program implementation.

The questions raised by the proposed changes in catch accounting are as follows:

- 1) What would be the specific rules in place should two LLPs name the same vessel with conflicts in endorsements? For example, one of the eight CPs listed is named on an LLP endorsed as a CP for pot Pacific cod, and is also named on an LLP endorsed as CV for pot Pacific cod. LLP licenses can be transferred at any time raising new conflicts where few may now exist. Any and all possible rules would need to be established to clarify direction should permit endorsement conflicts occur.
- 2) If the system is based on LLP endorsement rather than performance, vessels can be endorsed for fisheries in which they never participate. Does this take precedence over the actual ways that the vessel is functioning? A vessel can be endorsed as a CP and operate as a CV without ever processing fish.
- 3) If it is determined that landings by a vessel endorsed as a CP but operating as a CV be accounted for as CP catch, what are the reporting requirements expected for this vessel? For instance, would the vessel be expected to meet CP record keeping and reporting requirements when functionally operating as a CV? A CP is required to submit several reports not required by a CV (e.g. WPRs, Product Transfer Reports, and others required in regulations). If CDQ fishing is involved, additional observer requirements would also be required. Is CDQ pot cod catch evaluated under the same rules as when fishing under the non-CDQ sector allocations established under Amendment 85? Is additional programming needed for the CDQ component of the CAS?

- 4) Does reporting based on LLP endorsement, rather than performance, result in a reallocation of catch between processing sectors for which allocations were established based on historical harvest? If this is a reallocation, has it been analyzed to ensure that it is fair and equitable?
- 5) LLP endorsements on a vessel are transferable and can change any time. How does this impact reporting requirements, and does it add to the reporting burdens on a vessel since a vessel might be reclassified and therefore required to switch from one set of requirements to another?
- 6) The AFA stipulated the vessels that can harvest pollock and the mode of operation under which they must harvest, regardless of LLP endorsements. This means that changes to the CAS will need to be species specific as noted above. Is it the intention that only catch relevant to the Amendment 85 be processed according to LLP endorsements? (The only other program with LLP implications currently are Crab Rationalization groundfish sideboards). BSAI Pacific cod endorsements are the only species-specific endorsements currently on LLP groundfish licenses.
- 7) Specific language and direction would be required on the application of bycatch and discard rates – both rate calculation and rate use. The implications of these changes have not been fully explored in this document.

3.6 Harvest Cooperative Formation

Long-term allocations of the BSAI Pacific cod TAC among the various sectors and limited eligibility in a sector may provide an opportunity for members of some gear sectors to form harvest cooperatives in the BSAI Pacific cod fishery. Sectors that have strict controls on who can participate in the harvest of Pacific cod and a direct allocation are most likely to be able to form a cooperative. However, no conclusions can be drawn regarding whether cooperatives will actually form in the future. Too many unknowns exist for the analyst to develop a sound conclusion; instead, a discussion of current cooperatives and the factors that encourage or discourage their formation is presented. Note that there is no explicit provision proposed in this amendment package that would create an increased advantage or motivation to form cooperatives over the status quo. Only inasmuch as modifying sector allocations to more closely represent the harvest by sector would this amendment impose additional incentive to form cooperatives.

Sectors/Fisheries with Cooperatives

The BSAI pollock fishery and the North Pacific scallop fishery currently employ cooperative structures to manage individual harvests. Both of these programs are considered successful by the cooperative participants, as they allow participants to better plan their fishing activities. Cooperatives in the BSAI pollock fishery were formed through an act of Congress (American Fisheries Act) in 1999 and regulatory amendments. Implementation required several changes to the FMP as well as annual review of the program through mandatory cooperative reports.¹⁰⁵ The AFA cooperatives and their inter-cooperative agreements, including the cod allocation agreement of 2000, are discussed in Section 3.4.3.8.

Scallop cooperatives were formed by participants in that fishery after the Council implemented a relatively strict license limitation program that identified all eligible participants. Cooperatives in that fishery were formed outside of the Council process after fishing licenses were issued, because the entire fleet agreed to operate under the cooperative system they developed. Without additional action by the

¹⁰⁵The annual cooperative reports are available through the Council office. Each cooperative that receives a pollock allocation is required to submit a summary of the year's activities.

Council, cooperatives in the Pacific cod fishery would need to form with limited Federal oversight, like they did in the scallop fishery.

Potential for Cooperative Formation in the Fixed and Jig Gear Sectors

As stated previously, no conclusions can be drawn regarding whether cooperatives will actually form in the future. This section only reviews each sector and identifies factors which may or may not contribute to the likelihood of harvest cooperatives forming in the future. It is assumed that individual sectors are more likely to be able to form cooperatives if: 1) all eligible participants are easily identified through a restrictive license limitation program or other mechanism, and 2) separate allocations are made to each sector. This assumption is based on the theory that cooperatives are more likely to form in fisheries where the participants' activities are more homogeneous and there are fewer participants.

Hook-and-line CP sector – Freezer longline vessels are typically very reliant on the BSAI Pacific cod fishery (see Chapter 4.0). The importance of the Pacific cod fishery to the health of the businesses that participate in this sector may help motivate the formation of cooperatives.

A total of 44 hook-and-line CP cod endorsements are currently issued on groundfish licenses that are eligible to fish in the BSAI. Because some entities own more than one vessel (and the associated license), there are fewer entities holding those licenses than there are licenses. Therefore, reaching agreement to form a cooperative may require fewer entities agreeing than there are vessels eligible to fish cod. Those owners have the opportunity to develop contracts that define the acceptable behavior of each member, if they wish to form cooperatives.

Cooperatives will form and be successful only if all individuals eligible to harvest Pacific cod from the hook-and-line CP allocation abide by cooperative contracts. Note that not all members of the inshore BSAI pollock fleet joined cooperatives the first year they were created for a variety of reasons.¹⁰⁶ However, cooperatives were still able to form and function properly because NMFS was authorized to allocate pollock to individual cooperatives based on the catch history of its members. Vessel owners that elected not to join cooperatives had their history allocated to the limited access portion of the BSAI inshore pollock fishery. Any pollock harvested from the limited access fishery was deducted from that TAC allotment. Once NMFS determined a date when the limited access fishery allocation would be harvested, NMFS would issue a closure order to all vessels operating in the limited access pollock fishery. Vessels that are cooperative members would be allowed to continue fishing until the cooperatives' allocations were taken.

NMFS does not have a mechanism to allocate catch history to individual cooperatives and the open access fishery in the Pacific cod fisheries. Therefore, either all vessel owners would need to voluntarily join a cooperative and abide by its bylaws, or additional regulations would need to be implemented to provide NMFS with the necessary authority and structure for allocating Pacific cod to individual cooperatives.

The uncertainty of interim licenses may impede any sector's ability to form cooperatives. In the hook-and-line CP sector, there are only 5 interim licenses as of October 2005. It is possible in the future that the hook-and-line CP sector would develop a cooperative, having seen the advantages derived from the Bering Sea pollock fishery. However, there is no explicit provision proposed in this amendment package that would create an increased advantage or motivation to form cooperatives. The hook-and-line CP

¹⁰⁶The primary motivating factor was that some people thought they would fare better in the open access fishery. Most of these people would have access to relatively small quotas in a cooperative and felt they could harvest more in open access. This assumption was buoyed by the fact that the history of some vessels that did not meet the qualification criteria was included in the open access allocation. After the first year, the open access allocation structure was changed such that catch history did not 'fund' the open access fishery. That encouraged several more vessels to join cooperatives the following year.

sector has had a separate allocation since 2000 and eligibility requirements defined the number of licenses eligible to fish in the Federal BSAI Pacific cod fishery since 2003. This amendment proposes to modify the sector allocations to more closely represent the harvest by sector, but does not impose any additional incentive to form cooperatives.

Hook-and-line CV sector – Cooperative formation in the $\geq 60'$ hook-and-line CV sector in the future will likely depend on whether participants anticipate the costs of cooperative formation will outweigh the benefits derived from setting up and maintaining a formal cooperative. Given that currently 9 hook-and-line catcher vessels $\geq 60'$ are licensed to participate in this sector, and the sector is currently allocated 0.015% of the ITAC, it leaves less gross revenue per vessel to cover cooperative costs than other sectors may have. The smaller number of vessels, all with transferable licenses, may make development of the cooperative rules less costly, but if cooperatives are not considered warranted, they will not be formed. Whether the costs of cooperative formation and management will be too great to entice members of this fleet to form a cooperative in the future is unknown.

Pot CP sector – The pot CP sector is likely influenced by similar factors as the hook-and-line CV sector. Formation in the future will likely depend on whether participants anticipate the costs of cooperative formation will outweigh the benefits derived from setting up and maintaining a formal cooperative. Only 8 pot CPs are licensed to participate in this sector, and 2 of those licenses are interim. The sector is currently allocated 1.68% of the Pacific cod ITAC. Whether the costs of cooperative formation and management will be too great to entice members of this fleet to form a cooperative in the future is unknown.

Pot CV sector – The pot CV sector $\geq 60'$ has more eligible participants than any other fixed gear sector $\geq 60'$. Fifty-three licenses are currently issued to fish in the Federal BSAI Pacific cod pot CV fishery, and only four of those are interim. The relatively large number of members may make it most difficult for this sector to form a cooperative in the future, especially because not all members are heavily dependent on Pacific cod. While the majority of the revenues attributed to this fleet are from Pacific cod, about X% is attributed to crab and X% to other fisheries. Thus, because cod is of lesser importance to this fleet overall, it may disadvantage the fleet in its ability to form a harvest cooperative.

Less than 60' fixed gear sector – Hook-and-line and pot CVs $< 60'$ currently share an allocation of .71 of the BSAI Pacific cod ITAC, although options are proposed in Alternative 2, Component 2 to increase that allocation to 1% or 2%. These vessels are exempt from the BSAI Pacific cod endorsements required for the greater than 60' fixed gear fleet, thus all vessels $< 60'$ that hold a groundfish LLP with a non-trawl endorsement for the BS/AI can participate. As of October 2005, 116 licenses are eligible, with 6 being interim. This does not include vessels $< 32'$ that are exempt from the general LLP requirement. Given the diverse nature of this sector and the unconstrained entry into the fishery, it is unlikely that this sector will be able to form cooperatives in the near future.

Jig gear sector – Similar factors affect the jig sector as affect the $< 60'$ fixed gear sector. While an average of 21 jig vessels have participated in the BSAI Pacific cod fishery during 1995 – 2003, there are few eligibility requirements that constrain the number of potential members in this sector. Vessels that do not exceed 60', and that are using jig gear (but no more than 5 jig machines, one line per machine, and 15 hooks per line) are exempt from the LLP requirements in the BSAI. Thus, this sector is the least confined regarding new entrants, in order to support future growth in the small boat cod fishery. This sector currently receives 2% of the BSAI Pacific cod ITAC; however, because it has never harvested more than 9% of its overall allocation, there is likely no anticipated need to limit entry into this fishery or form harvest cooperatives.

Cooperative Formation in the Trawl Sectors

AFA trawl CP and CV sectors – Both the AFA trawl CV sector and AFA trawl CP sector are defined under the AFA, and thus the number of eligible participants has been determined and is fairly constant. These vessels operate in a cooperative system established through the AFA for BSAI pollock, and currently manage their Pacific cod sideboards through the cooperatives as well. It is expected that should either of these sectors receive a direct allocation of Pacific cod under this new amendment package (which will replace their Pacific cod sideboards), the existing cooperative structure in place for these sectors could accommodate management of Pacific cod allocations.

One issue that could complicate the management of the Pacific cod allocation for the AFA trawl CV sector is Alternative 2, Component 1, Option 1.1. If selected, this option would allow three non-AFA trawl CVs that meet a specified threshold to be part of the AFA trawl CV sector for purposes of the cod allocations. The level of complexity this option introduces depends on the ability of those vessels to work or contract with the current AFA trawl CV cooperatives. Public testimony may provide additional information as to the feasibility of managing the AFA trawl CV sector allocation through the cooperatives if this option is selected.

Non-AFA trawl CP sector – A cooperative system is currently proposed for this sector under BSAI Amendment 80. This follows the 2005 Consolidated Appropriations Act, which provided criteria for this sector that resulted in 26 eligible vessels that may participate as a non-AFA CP in the BSAI non-pollock groundfish fisheries identified in the Act. The current expectation is that the Council would take final action on Amendment 80 at the same time it makes final recommendations on Amendment 85. This sector is proposed to be managed under voluntary cooperative(s), and would receive direct allocations of its five target flatfish species and PSC associated with all of its fisheries under Amendment 80. Given that the expectation is that Amendment 80 will be approved at the same time as the BSAI Pacific cod allocation amendment, one could surmise that the non-AFA trawl CP sector will also be in position to cooperatively manage a BSAI Pacific cod allocation.

Note also that Amendment 80 proposes Pacific cod sideboards for the non-AFA trawl CP sector, to be established separately between vessels in a cooperative(s) and those not in a cooperative. While Amendment 85 proposes a direct Pacific cod allocation to the non-AFA trawl CP sector as a whole (which would replace the sector's cod sideboard), it does not propose to further apportion that allocation between non-AFA trawl catcher processor vessels that are in a cooperative and vessels that are not. However, in February 2006, the Council included a provision in Amendment 80 that would allocate the Pacific cod allocation made to the sector under Amendment 85 between cooperatives and vessels who elect not to join a cooperative, in the same manner that the Pacific cod sideboards are proposed to be apportioned. Thus, should not every eligible non-AFA trawl CP join a cooperative, it should not detract from the ability of those vessels that join cooperatives to manage a direct Pacific cod allocation through internal measures.

Non-AFA trawl CV sector – The non-AFA trawl CV sector is not likely to operate under a cooperative structure in the near future, even with a direct sector allocation of BSAI Pacific cod. This sector is the only trawl sector whose eligibility is not fixed through regulation or statute, such that the number of non-AFA trawl catcher vessels participating in the Federal BSAI Pacific cod fishery could vary substantially on an annual basis. On average, 14 non-AFA trawl CVs landed Pacific cod during 1995 – 2003 (ranging from 9 to 22 unique vessels), while 50 non-AFA trawl CVs have a valid LLP to participate in this sector in Federal waters. Thus, while participants in this sector generally do not have any other target fishery, the uncertainty in the annual number of participants is likely strong enough to preclude a cooperative from being formed.

3.7 Capacity Reduction Programs

2005 Consolidated Appropriations Act

The Consolidated Appropriations Act of 2005 (P.L. 108-792) establishes catcher processor sector definitions for participation in the non-pollock groundfish fisheries and the fishing capacity reduction program authorized by Congress.¹⁰⁷ The following sectors are defined in the Act under Section 219(a): AFA trawl catcher processor, non-AFA trawl catcher processor, hook-and-line catcher processor, and pot catcher processor.

Under the Act's criteria, there are 20 AFA CPs and 26 non-AFA CPs that qualify for their respective sectors. There are also a maximum of 44 hook-and-line CP license holders (5 are interim licenses) and 8 pot CP license holders (2 are interim) that could potentially qualify. The hook-and-line catcher processor and pot catcher processor sectors are defined as the holders of an LLP license that is (or becomes) transferable, and that is endorsed for the BS and/or AI, CP, Pacific cod, and the respective gear type (hook-and-line gear or pot gear). It is uncertain whether the interim licenses in each of these sectors would ultimately become transferable upon resolution of the appeal.

The application of these criteria with regard to defining the sectors is discussed in Section 3.3.4. This section refers only to the capacity reduction program that is also included in the Act. Section 219(b) and (c) are as follows:

(b) AUTHORITY FOR BSAI CATCHER PROCESSOR CAPACITY REDUCTION PROGRAM.—

(1) IN GENERAL.—A fishing capacity reduction program for the non-pollock groundfish fishery in the BSAI is authorized to be financed through a capacity reduction loan of not more than \$75,000,000 under sections 1111 and 1112 of the Merchant Marine Act, 1936 (46 U.S.C. App. 1279f and 1279g).

(2) RELATIONSHIP TO MERCHANT MARINE ACT, 1936.—The fishing capacity reduction program authorized by paragraph (1) shall be a program for the purposes of subsection (e) of section 1111 of the Merchant Marine Act, 1936 (46 U.S.C. App. 1279f), except, notwithstanding subsection (b)(4) of such section, the capacity reduction loan authorized by paragraph (1) may have a maturity not to exceed 30 years.

(c) AVAILABILITY OF CAPACITY REDUCTION FUNDS TO CATCHER PROCESSOR SUBSECTORS.—

(1) IN GENERAL.—The Secretary shall make available the amounts of the capacity reduction loan authorized by subsection (b)(1) to each catcher processor subsector as described in this subsection.

(2) INITIAL AVAILABILITY OF FUNDS.—The Secretary shall make available the amounts of the capacity reduction loan authorized by subsection (b)(1) as follows:

(A) Not more than \$36,000,000 for the longline catcher processor subsector.

(B) Not more than \$6,000,000 for the AFA trawl catcher processor subsector.

(C) Not more than \$31,000,000 for the non-AFA trawl catcher processor subsector.

(D) Not more than \$2,000,000 for the pot catcher processor subsector.

Section 219(d)(2) specifies that the Secretary shall revoke all Federal fishery licenses, fishery permits, and area and species endorsements issued for a vessel, or any vessel named on an LLP license purchased through the fishing capacity reduction program. Each catcher processor subsector, after noticing the Council, must submit a capacity reduction plan to the Secretary with several requirements. Following the

¹⁰⁷The non-pollock groundfish fishery is defined as 'target species of Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole harvested in the BSAI.'

approval of the Secretary, the Secretary will conduct a referendum for approval of the plan. Final approval requires 100% of the AFA trawl CP sector. Approval for the hook-and-line CP sector, non-AFA trawl CP sector, and pot CP sector requires not less than two-thirds of the members of each of those respective sectors.

The Act provides flexibility as to which vessels get bought out, at what cost, and how remaining vessel owners will plan to re-pay the loan. The referendum is intended to ensure that the remaining fleet, which is responsible for re-paying the loan, agrees with the final terms of the plan.

As of the writing of this document, staff is aware of only one sector that is in the formal process of developing a cooperative for the purpose of participating in the capacity reduction program. In June and October 2005, a representative from the hook-and-line CP sector consulted with the Council on the efforts of the Freezer Longline Conservation Cooperative, which was incorporated in the State of Washington on February 26, 2004. This non-profit entity has potentially 100% membership of the eligible hook-and-line CP sector. Of the 44 LLP holders, 43 are members and only one interim LLP holder has not joined. (Recall to be eligible for the sector under the Act, one must hold an LLP that is 'non-interim and transferable, or that is interim and subsequently becomes transferable.')

To date, the cooperative has agreed to develop a buyback program for the hook-and-line CP sector in the BSAI non-pollock fisheries, and it has organized the buyout rules and procedures and submitted them to the Secretary. The final plan that would be submitted by the cooperative would include the specific vessels to be bought and the details of how the loan will be repaid through the fee system. Given the loan amount allocated to this sector, there is the potential the hook-and-line CP sector could be reduced by several vessels.

The cooperative's expectation is that the buyback would be completed by January 2007. Several members have noted that it is necessary to have approval of Amendment 85 to revise the BSAI Pacific cod sector allocations prior to completing the buyback program, as the allocations will establish the context for the buyback. **Note that this cooperative was formed for the purpose of the buyback program only and does not represent a harvest cooperative.**

It is uncertain whether the other catcher processor sectors will participate in the capacity reduction plan authorized under the Act. The Act specifies that the Secretary may make available any of the \$75 million authorized under the program to one or more of the catcher processor sectors for fishing capacity reduction that remains unused after January 1, 2009.

BSAI Crab Rationalization

The Consolidated Appropriations Act of 2001 (Public Law 106-554) directed the Secretary of Commerce to establish a \$100 million fishing capacity reduction program in the BSAI king and Tanner crab fishery. Congress amended the authorizing Act twice (Public Law 107-20 and Public Law 107-117), once to change the crab reduction program's funding from a \$50 million appropriation and a \$50 million loan to a \$100 million loan and once to clarify provisions about crab fishery vessels. NMFS published the crab reduction program's proposed implementation rule on December 12, 2002 (67 FR 76329) and its final rule on December 12, 2003 (68 FR 69331).

The crab reduction program's maximum cost was \$100 million consisting of a 30-year loan to be repaid by fees on future crab landings. In return for reduction payments equaling their bid amounts, voluntary program participants relinquished, among other things, their crab fishing license limitation program (LLP) licenses and other permits, their catch histories associated with those licenses and permits, and their crab fishing vessels' worldwide fishing privileges. NMFS published a final rule to implement an industry fee

system for repaying a \$97,399,357.11 Federal loan financing a fishing capacity reduction program in the BSAI king and Tanner crab fishery on September 16, 2005.

In the fall of 2004, NMFS accepted 25 bids totaling \$97,399,357.11, as the next lowest scoring bid would have exceeded the program's maximum cost. The accepted bids involved 25 fishing vessels as well as 62 fishing licenses or permits. Twenty-five of the permits were non-interim crab fishery LLP licenses. The remaining included 15 groundfish fishing licenses, 20 Federal fishery vessel permits, one high seas permit, and one halibut IFQ share allocation. In a fee referendum held by NMFS, over 79% of the qualifying voters approved the fees. Accordingly, the reduction contracts were in effect. On December 27, 2004, NMFS required all accepted bidders to then permanently stop all further fishing with the reduction vessels and permits.

Because pot gear is used in both the BSAI Pacific cod and crab fisheries, it is conceivable that this recent capacity reduction program could have also reduced the eligible Pacific cod pot catcher processor and/or pot catcher vessel sectors. Note, however, that none of the 25 vessels removed from fisheries through the crab buyback program had a BSAI Pacific cod pot CP or pot CV endorsement on their LLP and were therefore eligible to fish BSAI Pacific cod. Thus, this program did not reduce the Pacific cod sectors at issue in this amendment.

3.8 Net Benefit Implications

Effects on Production Efficiency

In the simplest terms, production efficiency as considered here 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 cost, quantity, and quality of outputs produced and the cost, quantity, and quality of the various inputs (e.g., fuel, vessels, and labor) used for that production. The effects of the components and options under Alternatives 1 and 2 on the affected sectors are described in Sections 3.4.2 and 3.4.3, from which an understanding of the effects on production efficiency can be developed.

Production efficiency is not expected to change significantly under either alternative; however, there are some increases worth noting under Alternative 2 compared to Alternative 1. Under the no action alternative, for the most part, production efficiency is limited by the race for fish in the current limited access fishery. Only the AFA trawl CV and CP sectors currently operate under the cooperative system. While that system was formed for the prosecution of the BSAI pollock fishery under the AFA, these sectors currently manage their Pacific cod sideboards under inter-cooperative agreement. Since the sideboards are constraining, these sectors have effectively managed the sideboard similar to management of an allocation. Both AFA sectors are likely to continue to receive the benefits of cooperative management of the sideboards under the no action alternative. There is also a current amendment under consideration to allow the non-AFA trawl CP sector to operate under a cooperative system (BSAI Amendment 80). When implemented, that amendment will limit the sector's Pacific cod harvest using a sideboard, similar to the AFA sideboard. If members of that sector are constrained by the sideboard, it is possible that some benefit could come from the cooperatives internal management of the sideboard as an allocation under the no action alternative. In the remaining industry sectors, participants have (and will continue to) race for Pacific cod with other sector participants, when the fisheries are open.

Sector allocations under Alternative 2 could provide additional production efficiency benefits. Both AFA sectors and the non-AFA catcher processor sector (on implementation of Amendment 80) should be able to manage their Pacific cod allocations through cooperatives. Although the non-AFA sectors (with the possible exception of the non-AFA trawl catcher processor sector) will continue to race for fish under Alternative 2, some improvement in production efficiency could be realized by those sectors. In addition,

increased production efficiency could be realized by establishing a separate allocation to the AFA trawl CV sector and allowing the three participants with the greatest harvest history in the non-AFA trawl CV sector to fish off the AFA trawl CV allocation (given that their cod history would be attributed to the AFA trawl CV sector in determining that sector's allocation). This means that a greater percentage of the trawl CV allocation would be managed under a cooperative system, and the three participants with the greatest cod history in the non-AFA trawl CV sector would be capable of fishing under a more rationalized system via contracts with the AFA CV sector.

Overall, the intent of Alternative 2 is to revise the BSAI Pacific cod allocation such that the initial allocations established at the beginning of the year better reflect the actual historical harvests by sector. Meaning, under Alternative 1, one would expect that substantial amounts of cod quota would continue to need to be reallocated among sectors near the end of the fishing year, in order to prevent it from remaining unharvested. While the frequency and level of reallocation varies annually, on average during 2000–2004, NMFS has annually reallocated 17,291 mt of BSAI Pacific cod quota among the existing sectors, which represents about 9% of the total initial allocation. Reallocations from the trawl sectors accounted for about 77% of the reallocations on average during this time period, with most of the remaining reallocations from the jig sector. Jig and trawl reallocations have occurred every year since the cod allocation was apportioned among the jig, fixed, and trawl gear sectors in 1994. To the extent that the options under Alternative 2 would establish distinct BSAI Pacific cod allocations that limit the need to reallocate catch during the year, participants in the sectors receiving those reallocations could benefit from the increased ability to plan their fishing year. Instead of being uncertain of the level and timing of reallocated quota from the trawl sectors late in the year, the harvest history that represents the reallocations would be incorporated in the fixed gear sector's initial allocation. This would reduce overall uncertainty and allow these sectors, particularly the hook-and-line CP sector, to better plan their annual operations.

Production efficiency is not expected to change significantly under Alternatives 3–6; however, there are some potential differences worth noting among alternatives. In effect, Alternatives 3 and 5 would result in the same sector allocation percentage in the BS and AI as the sector receives under Part I. For example, if the sector received 30% of the BSAI Pacific cod ITAC in Part I, the sector would receive 30% of the AI Pacific cod ITAC and 30% of the BS Pacific cod ITAC under Alternative 3 or 5. Thus, regardless of harvest history between the two subareas, the sector would receive the same percentage in each area. If a sector had very little fishing history in one of the two areas, for example, the Aleutian Islands, creating equal percentages in each area may serve to reduce production efficiency by forcing participants into unfamiliar fishing grounds. This could be either a short-term effect as participants gain experience in the fishing grounds of a new subarea or a long-term effect as a particular gear type may not be well suited for the subarea. The division of the TAC between the Aleutian Islands and Bering Sea could lower production efficiency, if it serves to create a greater race for fish in one subarea than exists overall in the BSAI. While speculative, this potential exists if the allowable catch allocated to a subarea is not sufficient to support the number of participants that want to fish in the area. The recent model applied by stock assessment scientists shows that the BSAI Pacific cod ITAC may be split in the range of 85% in the BS and 15% in the AI. The potential for decreased production efficiency is greater under Alternative 4, since each sector would be limited by an allocation that could be harvested in either area until the TAC for that area was fully harvested.

Finally, Alternative 6 is based on catch history in the Aleutian Islands, which is likely the limiting factor for the BSAI sector allocations. If Alternative 6 establishes the sector allocations in the AI based on recent catch history, it is not expected to significantly affect production efficiency and would likely have less of an effect than Alternatives 3–5. Note again that production efficiency overall in the BSAI Pacific cod fishery is limited by the race for fish under the current limited access program for most sectors. The exceptions are the AFA trawl sectors, and potentially in the future, the non-AFA trawl CP sector.

Effects on Consumers

In the current cod fishery, catcher processors for all gear types produce mostly eastern and western cut headed and gutted (H&G) products and a few ancillary products. Shorebased processors taking catcher vessel deliveries produce fillets, salted and split, and H&G products, along with a wide variety of ancillary products. Under any alternative, consumers are likely to continue to be supplied with products from the various BSAI Pacific cod fisheries that are currently produced under the status quo. As mentioned above, this means primarily frozen head and gut and whole fish from the catcher processor sectors, as well as fillets and ancillary products from shorebased plants. Recall that the allocations proposed under Alternative 2 are intended to reflect actual retained catch over a series of years, including reallocated quota. Thus, production mixes are not anticipated to change significantly from previous years. Alternatives 3 – 6 are limited to apportioning the sector allocations between the BS and AI subareas, if necessary in the future. It does not affect the overall allocations to each sector. Market prices for these products will continue to depend on world cod markets and should be unaffected by the choice of alternatives under this action.

Some minor quality improvement could occur because of the direct sector allocation made to those sectors that operate under cooperatives (AFA trawl sectors and potentially the non-AFA trawl CP sector), however, it is unlikely to be substantial. Overall, U.S. consumers could realize a minor benefit from the improved product quality, but are unlikely to realize any notable change in benefits under this action.

Effects of an increased CDQ Program reserve

Alternative 2 includes two options to increase CDQ BSAI Pacific cod reserve from 7.5% (Alternative 1) to 10% or 15%. Increasing CDQ allocations for BSAI Pacific cod could directly benefit the CDQ groups by increasing the amount of BSAI Pacific cod catch and the resulting royalties associated with that catch. Note that on average during 2001–2003, Pacific cod royalties comprised over 6% or \$3.0 million of the total royalties for the CDQ groups combined. During that time period, the average royalty payment to the CDQ groups was \$232 per metric ton of Pacific cod. Using the 2006 TAC of 194,000 mt, the two options to increase the CDQ reserve under Alternative 2 to 10% or 15% represent estimated increases of 4,850 mt and 14,550 mt to the CDQ Pacific cod reserve, respectively. Using the average royalty rates from the most recent time period available (2001 – 2003), one could estimate that the projected increase in royalty payments to the CDQ groups combined would be \$1.13 million and \$3.38 million, respectively. It is also anticipated that current CDQ allocations of non-target species harvested incidentally in the Pacific cod fishery appear sufficient to support an increase in the CDQ cod allocation.

In addition, selection of either option would correspondingly decrease the amount of the BSAI Pacific cod TAC allocated to the non-CDQ sectors by either 2.5 percent (Option 5.2) or 7.5 percent (Option 5.3), effectively reducing revenues to the non-CDQ sectors. The non-CDQ sectors include the ten sectors under consideration in this amendment package under Alternative 2, Component 1. As the CDQ reserve is taken off the top of the BSAI Pacific cod TAC, each sector's resulting allocation under Component 2 would be reduced proportionally, either by 2.5% or 7.5%, depending on the option selected under Component 5. Recall that the non-CDQ Pacific cod TAC has historically been fully utilized.

Note also that the vessels that have historically harvested CDQ BSAI Pacific cod are a subset of the hook-and-line CP sector. 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 the CDQ groups in the form of royalties. Thus, while all non-CDQ sectors would be affected proportional to their sector allocations resulting from Component 2, the hook-and-line CP sector would likely continue to lease CDQ from the CDQ groups subject to a royalty rate.

Estimates of the impacts various allocation alternatives would have on the profitability of the companies that own vessels in the non-CDQ Pacific cod fisheries cannot be generated, as information on the vessels' cost structure is necessary to develop those estimates and this information is not available. It is only clear that revenues from these firms would be reduced under Options 5.2 and 5.3, as a direct result of a reduced (non-CDQ) BSAI Pacific cod ITAC. A general estimate of the relative reduction to each sector can be made by multiplying the proposed allocations to each sector under Component 2 by the reduction proposed under Option 5.2 (2.5%) or Option 5.3 (7.5%). The resulting percentage can be multiplied by the BSAI Pacific cod ITAC for a given year, and then multiplied by a sector's estimated ex-vessel or first wholesale price, in order to generate an estimate of the reduction in ex-vessel or first wholesale revenues by sector. This calculation results in gross estimates, and thus, it is not used in this analysis to compare the benefits and costs for each sector. Note only that the increase in the BSAI Pacific cod CDQ reserve represents a redistribution of Pacific cod among the existing sectors.

Alternatives 3 – 6 would not affect the CDQ Program. The CDQ Program would be affected by the decision to establish separate Pacific cod BS and AI subarea TACs, but that decision would be made in the annual specifications process and is not part of this amendment. The regulations for the CDQ reserves are at 50 CFR 679.20(b)(1)(iii). If a new TAC is established, the CDQ Program receives its 7.5% allocation, unless a species is explicitly allocated at a different percentage (e.g., pollock is 10% under the AFA) or explicitly not allocated to the program (e.g., squid). Thus, if the BSAI Pacific cod TAC is split into BS and AI subarea TACs, under the status quo allocations, the CDQ Program would receive 7.5% of the BS TAC and 7.5% of the AI TAC.

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 under any of the alternatives. NMFS will continue to conduct annual stock assessments to establish the overfishing level, ABC, and TAC for BSAI Pacific cod through the specifications process. NMFS would continue to credit both directed harvest of Pacific cod and the incidental harvest of Pacific cod against the Pacific cod TACs to ensure that Pacific cod are not overharvested.

Under Alternative 2, distinct cod sector allocations could be made for each of the ten sectors identified, including the four trawl sectors: non-AFA trawl CV; AFA trawl CV; non-AFA trawl CP; and AFA trawl CP. Note that the AFA sectors operate under a cooperative system and the non-AFA trawl CP sector is being considered for a cooperative management regime under Amendment 80. Thus, to the extent distinct cod allocations to the four trawl sectors reduce the race for fish within the overall trawl CV and trawl CP sectors, these measures could potentially reduce bycatch and discards, contributing additional non-use benefits that arise from more productive use of the resource.

Note also that options exist under Alternative 2 to revise the seasonal apportionments to the trawl, fixed, and jig gear sectors (Component 3). The current seasonal apportionments are primarily a result of the 2001 Biological Opinion and Steller sea lion mitigation measures. The 2001 opinion consulted on a comprehensive management regime, of which temporal dispersion of the BSAI Pacific cod fishery was one part. These measures were established to meet a seasonal target of 70% harvest of TAC in the first season (Jan. 1 – June 10) and 30% in the second season (June 10 – Dec. 31), such that the prey species were protected for foraging Steller sea lions in the first half of the year.

Options exist under Alternative 2 that would establish seasonal apportionments that exceed the 70% - 30% target established in the Biological Opinion. In sum, there are options that would modify the allocations and seasons for each sector such that overall, up to 70.8% of the BSAI Pacific cod ITAC would be allowed in the first half of the year, and 29.6% in the second half. Upon selection of a preferred

alternative, NMFS Protected Resources staff may informally consult on this issue. Note that options also exist under Alternative 2 that would either maintain the 70% - 30% target, or decrease the apportionment to the first half of the year such that it is less than 70%.

Public non-use benefits derived from the management of healthy stocks of these species are likely to be maintained under Part II, Alternatives 3 – 6. NMFS will continue to conduct annual stock assessments to establish the overfishing level, ABC, and TAC for BSAI Pacific cod through the specifications process. Should this process compel NMFS to recommend establishing separate BS and AI subarea ABCs and TACs, Alternatives 4 – 6 would establish a way to further split the sector allocations in accordance with the new subarea TACs. NMFS would continue to credit both directed harvest of Pacific cod and the incidental harvest of Pacific cod against the Pacific cod TACs to ensure that Pacific cod are not overharvested.

Effects on Management, Monitoring, and Enforcement Costs

No changes are expected to the existing management system under Alternative 1, thus, no effects on management, monitoring, or enforcement are expected. NMFS would continue to monitor eight separate sector allocations, with seasonal apportionments for each sector, with the exception of the <60' hook-and-line catcher vessel sector. NMFS would also be expected to continue its current practice of reallocating cod quota inseason that is projected to remain unused by a particular sector to other sectors that could potentially use it. In sum, on average 2000–2004, NMFS has annually reallocated 17,291 mt of BSAI Pacific cod quota among the sectors, which represents about 9% of the total initial allocation. Reallocations from the trawl sectors accounted for about 77% of the reallocations on average during this time period, with most of the remaining reallocations from the jig sector. The frequency and level of reallocations varies annually.

Under some options under Alternative 2, NMFS would be required to monitor ten sector allocations of BSAI Pacific cod, as opposed to the current eight under Alternative 1. This results from splitting the current trawl CV and trawl CP allocations by AFA and non-AFA sectors. However, the frequency and level of inseason reallocations of cod quota among sectors is expected to decline, as the allocations are adjusted under Alternative 2 to better reflect actual catch history. Note that while the management of the fixed gear sectors, the jig sector, and the non-AFA trawl CV sector are expected to remain the same as status quo, the management of the AFA trawl CV, AFA trawl CP, and non-AFA trawl CP cod allocations could be modified under this amendment. If the industry can control and limit its catch, it can best decide how much of its allocation is necessary to apply to a directed fishery and how much is needed for incidental catch in other target fisheries. In effect, this allows the industry to realize the greater benefit from the fishery than by having NMFS determine the level of incidental catch needs. The more uncertain the level of incidental catch of a species, the greater the ICA established by NMFS. The greater the ICA, the less opportunity the industry has to extract the greatest value from the fishery.

The sectors identified under Alternative 2 that continue to operate in a competitive limited access system, specifically the non-trawl sectors, would not expect any changes in agency management or monitoring. Many have little incidental catch and catch rates are slow enough to allow the agency to consistently monitor and close the fishery accurately. The intent under any of the options under Alternative 2 is for NMFS to continue to manage the non-trawl sectors, as well as the non-AFA trawl catcher vessel sector. The fixed gear cod sectors would continue to be managed using an ICA established at the beginning of the year during the annual specifications process. The non-AFA trawl CV sector would continue to be managed by NMFS through Federal Register notice. While the non-AFA trawl CV sector typically only targets Pacific cod in the BSAI, if this sector started targeting other fisheries, NMFS could establish a DFA and ICA inseason at such time that the sector started to reach its allocation.

The current intent under Alternative 2 is for the AFA trawl CV and CP sectors, as well as the non-AFA trawl CP sector, to manage their own Pacific cod allocations under a hard cap. The AFA trawl sectors currently operate in a cooperative system established through the AFA for BSAI pollock, and also manage their Pacific cod sideboards through inter-cooperative agreement. The AFA trawl sectors have relatively predictable incidental Pacific cod catch needs for their directed pollock fishery and currently closely regulate both directed and incidental catch through legal agreements. It is expected that these sectors' existing structure could continue to manage Pacific cod if it represented a direct allocation. In the non-AFA trawl CP sector, there is increased variability in the amount of incidental catch of Pacific cod in their other target fisheries, and catch rates are frequently higher. A cooperative structure is currently being developed for the non-AFA trawl CP sector under Amendment 80. Thus, the non-AFA trawl CP sector should also have all of the tools necessary to manage its own Pacific cod allocation under Amendment 80.

Another important issue under Alternative 2 is the potential to divide the trawl cod fishery group halibut and crab bycatch allowances among the four trawl sectors. While it may be beneficial to the AFA sectors and non-AFA trawl CP sector to be able to manage a certain apportionment of the halibut and crab bycatch allowances, depending on the outcome, more refined apportionments can also make it difficult for a sector whose bycatch needs are relatively variable from year to year. Monitoring of trawl PSC will be a considerable task for both the trawl sectors and NMFS. While a further apportionment of the non-trawl halibut bycatch allowance is also proposed under Alternative 2 between the hook-and-line CP and hook-and-line CV sectors, the level and rate of halibut bycatch in the non-trawl sectors reduces this concern.

If the (potentially) ten BSAI Pacific cod sector allocations under Alternative 2 are further split by BS and AI subarea in the future, NMFS would effectively be managing two subarea allocations for each of the ten sectors, notwithstanding seasonal apportionments. Under Alternative 1, NMFS would effectively be managing two subarea allocations for each of eight sectors, notwithstanding seasonal apportionments. This task may prove difficult if the seasonal allocations to a particular sector in the AI are extremely small, given the relatively small potential TAC and the number of apportionments. Note, however, that the action under Alternatives 3 – 6 is not to determine *whether* to split the BSAI TAC into BS and AI subareas; it is limited to determining how to divide the sector allocations by subarea should separate TACs be established in a future specifications process. Effects on industry and the ability of NMFS to manage seasonal sector allocations in each subarea as a result of the proposal to split the BSAI Pacific cod TAC by subarea would need to be addressed in the final TAC-setting EA.

Alternatives 1 – 6 would have no effect on current observer coverage requirements to which the various sectors are subject. The direct costs of observer coverage are paid by the vessels and processors, and management costs of the observer program are funded by NMFS. The agency costs are not expected to change significantly as a result of this action, although the existing monitoring program and NMFS database would need to be revised such that the system could account for any newly identified sectors and/or the new subarea split. Cost data for the harvesting and processing sectors affected by the proposed action are not currently available. For this reason, a quantitative cost/benefit examination of the preferred alternative is not feasible, nor is it possible to derive comparative net benefit conclusions about the alternatives, options, and suboptions. In general, this action constitutes a redistribution of the BSAI Pacific cod TAC among the various industry sectors that better reflects historical harvests by sector, and the amount of catch at issue and the differences in ex-vessel and first wholesale prices among sectors is not sufficient for any proposed redistribution of quota to significantly affect the overall benefits to the Nation.

Summary

In sum, a few factors could potentially contribute to an increase in net benefits to the Nation under this action. The increased certainty in the total annual allowable harvest by sector and the reduction in reallocated quota could increase the ability of participants to plan the fishing year, potentially increasing net benefits in production. In addition, given that ex-vessel and first wholesale prices are slightly higher for fixed gear compared to trawl gear, to the extent that this action provides the fixed gear sector with a more certain future allocation (by moving unused trawl quota that has historically been reallocated from the trawl sectors to the fixed gear sectors into the fixed gear sector's *initial* allocation) this may result in increased revenues. Absent cost data, however, whether this potential increase in revenues results in a net benefit to the Nation cannot be established.

Because this action will not eliminate the fishery or affect the annual BSAI Pacific cod TAC, one can conclude that the net benefits to the U.S. economy would not decrease by \$100 million annually, even if costs were included in the calculation. Therefore, based on this criterion, none of the proposed alternatives constitute a 'significant' action under E.O. 12866, recognizing both that there are distributional economic impacts among the various sectors of the industries affected by this proposed action, and that distributional results will be substantially similar to the current harvest situation. The overall intent of Part I of the amendment is to revise the BSAI Pacific cod allocations such that they better reflect actual annual harvest by sector. The intent of Part II is to establish a method by which to split the BSAI sector allocations into BS and AI subarea sector allocations, in the event that the BSAI ABC and TAC are established by subarea in a future specifications process.

4 CONSISTENCY WITH OTHER APPLICABLE LAWS

4.1 Consistency with National Standards

Below are listed the ten 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.

The BSAI Pacific cod fisheries will be managed as currently, regardless of the specific allocations between sectors, to achieve the TAC without overfishing. In effect, all sector's directed Pacific cod fisheries and other directed fisheries in which cod is caught incidentally would be closed by NMFS if the Pacific cod harvest exceeded the ABC and approached OFL. Pacific cod stocks in the BSAI are not currently in danger of being overfished and are considered stable. Overall yield in terms of Pacific cod catch will be unaffected by the proposed sector allocations. 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 will not be significantly affected by the redistribution of BSAI Pacific cod quota among gear sectors, as the price differential between sectors and the level of change in the allocations to each sector are not sufficient to significantly affect the overall benefit to the Nation. However, the analysts ability to quantify those effects is quite limited. While modest 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, recognizing that some information (such as operational costs) is unavailable. Information previously developed on the BSAI Pacific cod fisheries, as well as the most recent data available, have been incorporated into this analysis. It represents the best scientific information available. The harvest data are based on 1995 – 2003 weekly production report and fishticket data. Data from 2004 and 2005 are also provided when possible and referenced as preliminary data.

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 Pacific cod according to the Council and NMFS's harvest specification process. NMFS conducts the stock assessment for Pacific cod and makes allowable biological catch recommendations to the Council. The Council sets the Pacific cod TAC based on the most recent stock assessment and survey information. The sector allocations proposed under Alternatives 1 and 2 assume that the BSAI Pacific cod stock will continue to be managed as a single stock. Alternatives 3 – 6 address how those allocations would be changed, should the stock assessment scientists determine and recommend that the BSAI ABC (and TAC) be separated into BS and AI subarea ABCs (and TACs) in a future specifications process. Regardless of whether the BSAI ABC and TAC are separated into the two subareas, separate quotas for each sector would continue to be monitored inseason 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. None of the alternatives consider residency as a criteria for the determination of the sector allocations. Residents of various states, including Alaska and the Pacific Northwest, participate in each of the major sectors affected by the proposed allocations. Within each sector, no further allocations are made to individual fishermen, nor are discriminations made among fishermen based on residency or any other criteria. Allocations are made based on industry sectors, and do not result in 'the acquisition' of any particular share of the privilege to any individual entity.

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 1996 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, but does not highlight any one alternative in terms of this standard. National Standard 5 recognizes the importance of various other issues in addition to economic efficiency.

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

Continuing to establish explicit allocations between industry sectors will likely reduce the flexibility of fishermen to respond to variations among groundfish and crab stocks. For example, pot fishermen who traditionally rely on crab fisheries for the majority of their income, but switch to Pacific cod fishing in response to higher cod prices (or lower crab stocks for example), would still be able to do so, but their overall harvest would continue to be constrained by the sector allocations. Conversely, in the event of lower Pacific cod quotas, sector allocations serve to protect the relative harvest levels of sectors that have long-term participation and are dependent on the Pacific cod resource from increased participation by other sectors. This is the primary intent of the amendment package under consideration.

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 are closely linked, culturally, economically, and socially to the crab and groundfish fisheries, 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 BSAI include Dutch Harbor, St. Paul, Akutan, Sand Point, King Cove, and Kodiak. Additionally, the greater Seattle, Washington metropolitan area is home to many catcher and catcher processor vessels operating in these fisheries, as well as cold storage, transshipping, and secondary processing facilities. Summary information on these coastal communities is provided in the Steller Sea Lion SEIS (NMFS 2001b), the Draft Programmatic SEIS (NMFS 2001a), and the crab rationalization EIS (NPFMC 2004). Detailed information on Kodiak, Akutan, Dutch Harbor, and King Cove is in the Comprehensive Baseline Commercial Fishing Community Profiles Final Report (EDAW 2005).

In terms of potential impacts resulting from the proposed sector allocations, the analysts reviewed data similar to those reviewed for previous cod allocation amendments: (1) harvest levels by vessels in each sector; (2) price and revenues resulting from that harvest; (3) where those harvests are delivered for processing or for first sale (in the case of catcher processors), and (4) the residency of the vessel owner as reported on the CFEC vessel license file. Much of the information cannot be presented in its detailed form due to confidentiality restrictions, but is summarized qualitatively. The information presented does not attempt to trace the economic impact of these revenues through the communities involved, nor does this analysis attempt to predict changes in such economic activity from the proposed alternatives; rather, it is provided as a broad indicator of the relative importance of the BSAI Pacific cod fishery to vessels from these communities in the recent past.

It is important to note that eligibility to participate in each sector has changed since 1995. The data below include 1999 – 2003, the most recent five years of data available. This is detailed in Sections 3.3.3 and 3.3.4. First, the American Fisheries Act (AFA) defines eligible catcher vessels and catcher processors that may participate in the BSAI pollock fishery. The vessels defined under the AFA operate in a cooperative system for pollock and manage their BSAI Pacific cod catch through inter-cooperative agreement. Thus, eligibility for both the AFA trawl CV sector and AFA trawl CP sectors was defined under the AFA in 1999. Under the AFA and the 2005 Consolidated Appropriations Act (discussed later in this section), 20 AFA CPs and 111 AFA CVs are eligible for these sectors in the BSAI Pacific cod fishery.¹⁰⁸

Secondly, the License Limitation Program (LLP) was implemented on January 1, 2000. The program limited eligibility to participate in the groundfish fisheries in the EEZ, including the BSAI Pacific cod

¹⁰⁸Under the AFA, 21 trawl CPs qualify for the AFA trawl CP sector in the BSAI pollock fishery; 20 are listed in the AFA and 1 meets specified criteria. Recently, the 2005 Consolidated Appropriations Act provided eligibility requirements for the CP sectors in the BSAI non-pollock groundfish fisheries. This statute qualifies only the 20 AFA trawl CPs that are listed in the AFA for participation in the BSAI non-pollock groundfish fisheries.

fishery, to those vessels that met participation requirements to receive the proper area endorsement on a groundfish LLP. In effect, to participate in the BSAI Pacific cod fishery in the EEZ, a person must hold a BS/AI endorsement on a groundfish LLP. Note that if a person appealed the administrative decision regarding a license application, the license was designated as ‘interim’ until the appeal was resolved. To date, some LLPs are still under appeal.

In addition, Amendment 67, effective January 1, 2003, created eligibility requirements for vessels in the BSAI $\geq 60'$ fixed gear cod fishery. These requirements are provided in Section 3.3.4. To date, Amendment 67 has effectively reduced the $\geq 60'$ fixed gear cod sectors as follows: 8 pot catcher processor licenses (2 are interim), 55 $\geq 60'$ pot catcher vessel licenses (6 are interim), 44 hook-and-line catcher processor licenses (5 are interim), and 9 $\geq 60'$ hook-and-line catcher vessel licenses. These estimates are based on staff’s review at the current time. Because individual determinations by the RAM Division on whether or not a license holder will receive a cod endorsement can be appealed, these numbers cannot be considered final until all appeals are submitted and final agency determinations are made on each appeal. In the meantime, persons who have appealed for a cod endorsement receive an interim license for the gear type/operation(s) in which they believe they should qualify.

Finally, the Consolidated Appropriations Act of 2005 (P.L. 108 – 792) established catcher processor sector definitions for participation in the CP sectors of the BSAI non-pollock groundfish¹⁰⁹ fisheries and the fishing capacity reduction program authorized by Congress. Under Section 219(a), the AFA trawl CP, non-AFA trawl CP, hook-and-line CP, and pot CP sectors are defined. With the exception of the non-AFA trawl CP sector, the Act does not appear to establish new eligibility requirements for participating in the BSAI Pacific cod fishery in one of the CP sectors. The non-AFA trawl CP sector is defined as the owner of each trawl CP that (a) is not an AFA trawl CP; (b) to whom a valid LLP license endorsed for BS or AI trawl CP 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 mt of non-pollock groundfish during 1/1/97 through 12/31/02. Applying the criteria appears to qualify 26 vessels, on which 29 LLPs are currently being used.

Revenue data for the catcher processor sectors were derived by applying average wholesale prices by product form to the NMFS WPRs. Prices were developed from the annual COAR reports for Pacific cod, other groundfish, and crab species. Submission of the COAR report is required of all processing plants operating in Alaska and, since 2001, of catcher processor operations fishing in the EEZ off Alaska. The intent is to provide a snapshot of the revenues which might be associated with various coastal communities. The vessel owner residency data are from the most recent available CFEC vessel license file.

Percent of Ex-vessel Revenue Attributed to BSAI Pacific cod – CV Sectors

The following table provides the relative distribution of total ex-vessel revenues across several fisheries in the CV sectors during 1999 – 2003, in order to compare the percentage of estimated ex-vessel revenues attributed to BSAI Pacific cod and all other fisheries. The data provide a general assessment of the relative dependence on BSAI Pacific cod as a part of total ex-vessel revenues by sector, during 1999 – 2003. The table also provides the number of unique vessels that participated in BSAI Pacific cod, other BSAI groundfish, and Gulf groundfish, by sector, during this period.

Table 4-1 indicates that of the total estimated ex-vessel value for each catcher vessel sector, the percentage attributed to BSAI Pacific cod is as low as 1.6% ($\geq 60'$ hook-and-line CV sector) to as high as 34.7% (non-AFA trawl CV sector). The remaining CV sectors had the following percentages attributed to

¹⁰⁹The non-pollock groundfish fishery is defined as ‘target species of Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole harvested in the BSAI.’

BSAI Pacific cod: <60 fixed gear sector - 3.7%; AFA trawl CV – 9.9%; jig CV – 12.8%; ≥60’ pot CV – 14.5%.

Table 4-1 Estimated ex-vessel value by catcher vessel sector and fishery, 1999 - 2003

Sector	Total estimated ex-vessel value, all species	Percent of total estimated ex-vessel value							Number of unique vessels		
		% BSAI Pcod	% Other BSAI Groundfish	% Gulf Groundfish	% Crab	% Halibut	% Other Species	% Salmon	BSAI Pcod	BSAI other groundfish	Gulf groundfish
<60 hook-andline/pot CV	\$65,540,584	3.7%	10.5%	24.4%	1.1%	57.5%	1.1%	1.6%	92	51	60
AFA trawl CV	\$896,798,816	9.9%	79.0%	6.6%	4.1%	0.3%	0.0%	0.0%	107	107	84
Jig CV	\$5,030,071	12.8%	3.7%	33.6%	1.1%	34.1%	2.2%	12.6%	58	15	39
Hook-and-line CV >60'	\$43,952,854	1.6%	4.4%	27.1%	15.7%	51.2%	0.0%	0.0%	33	23	27
Non-AFA trawl CV	\$34,320,307	34.7%	1.6%	46.4%	4.1%	7.7%	1.7%	3.8%	37	26	30
Pot CV >60'	\$295,309,932	14.5%	0.9%	3.8%	74.7%	5.9%	0.2%	0.0%	148	83	79

Source: ADF&G fishtickets and ex-vessel prices from Economic SAFE report, 1999 – 2003.

The majority of ex-vessel revenues in the <60’ fixed gear and ≥60’ hook-and-line CV sectors were from halibut, with slightly lesser amounts from Gulf of Alaska groundfish landings and other (non-Pacific cod) BSAI groundfish. The majority of ex-vessel revenues in the jig sector, while much lower overall, were also attributed about evenly between halibut and Gulf groundfish (34% each), with lesser amounts in salmon (13%). In the ≥60’ pot CV sector, the great majority of revenues were from crab landings (75%), with lesser amounts in halibut and Gulf groundfish.

The two trawl CV sectors also exhibit much different trends. The AFA trawl CV sector had by far the highest total ex-vessel revenues of all CV sectors, and about three times greater than the non-AFA trawl CV sector. The non-AFA trawl CV sector had the highest percentage attributed to BSAI Pacific cod (35%), but still had the majority of its revenues attributed to Gulf groundfish (46%) and lesser amounts (<8%) spread across all other fisheries. As far as BSAI groundfish, however, the primary species of importance to this sector is Pacific cod. In the AFA trawl CV, 79% of ex-vessel revenues are attributed to other BSAI groundfish (pollock), with about 10% from BSAI Pacific cod, and much lower amounts in other fisheries.

Percent of First Wholesale Revenue Attributed to BSAI Pacific cod – CP Sectors

Table 4-2 provides the relative distribution of total first wholesale revenues across three groundfish fisheries in the CP sectors during 1999 – 2003, in order to compare the percentage of estimated first wholesale revenues attributed to BSAI Pacific cod and all other *groundfish* fisheries. The data provide a general assessment of the relative dependence on BSAI Pacific cod as a part of total first wholesale revenues attributed to *groundfish* by sector, during 1999 – 2003. The table also provides the number of unique vessels that participated in BSAI Pacific cod, other BSAI groundfish, and Gulf groundfish, by sector, during this period.

Table 4-2 indicates that of the total estimated first wholesale value of groundfish products for each catcher processor sector, the percentage attributed to BSAI Pacific cod is lowest in the AFA trawl CP sector (1.7%) and highest in the hook-and-line CP sector (82.3%). The pot CP sector is 63.3% and non-AFA trawl CP sector is 21.2%. The non-AFA trawl CP sector exhibited the highest estimates of total first wholesale value attributed to groundfish products during this time period, followed by the hook-and-line CP sector, AFA trawl CP sector, and pot CP sector.

Table 4-2 Estimated first wholesale value by catcher processor sector and groundfish fishery, 1999 – 2003

Sector	Total estimated first wholesale value, all species	Percent of total estimated first wholesale value			Number of unique vessels		
		% BSAI Pcod	% Other BSAI Groundfish	% Gulf Groundfish	BSAI Pcod	BSAI other groundfish	Gulf groundfish
AFA Trawl CP	\$586,518,030	1.7%	98.3%	0.0%	14	14	0
Hook-and-line CP	\$590,662,016	82.3%	7.0%	10.7%	45	44	34
Non-AFA trawl CP	\$747,719,860	21.2%	65.2%	13.6%	25	25	23
Pot CP	\$23,298,092	63.3%	0.1%	36.6%	13	6	10

Source: Weekly production reports and first wholesale product prices from Economic SAFE, 1999 – 2003.

The majority of estimated first wholesale revenue from groundfish in the hook-and-line CP sector is from BSAI Pacific cod, with much lower amounts from Gulf and other BSAI groundfish. There were 45 unique vessels in the hook-and-line CP sector during this time period, with 44 of those vessels also participating in BSAI other groundfish and the majority also participating in Gulf groundfish. About two-thirds of the first wholesale groundfish revenue in the pot CP sector is from BSAI Pacific cod, with the remainder from Gulf groundfish. Of the 13 unique vessels in the pot CP sector during this time period, 10 participated in Gulf groundfish and 6 in other BSAI groundfish.

Overall, the non-AFA trawl CP sector had much higher total first wholesale revenues attributed to groundfish than the other CP sectors. The non-AFA trawl CP sector had the majority (65%) of its first wholesale groundfish revenues from other BSAI groundfish (flatfish), with lesser amounts in BSAI Pacific cod and Gulf groundfish. In the AFA trawl CP sector, almost all (98%) of the estimated first wholesale groundfish revenues are attributed to other BSAI groundfish, primarily pollock. The remaining 1.7% was from BSAI Pacific cod, as there was no participation in Gulf groundfish by this fleet.

Note that data was not available at this time to provide total first wholesale revenue estimates for all fisheries (i.e., including fisheries other than groundfish) for the CP sectors. Table 4-2 above only includes groundfish. Note, however, that there is participation in the crab and halibut fisheries by the fixed gear CP sectors. **Table 4-3 is provided below to show the amount of *ex-vessel value* estimated for these sectors due to halibut and crab landings, as estimates of first wholesale value are not available at this time.** The portion of the revenues in Table 4-3 generated when the vessel was operating as a CP versus a CV is not known. The estimates provided only indicate the estimated value of the halibut and crab landings if they had been delivered to shoreside processors, based on the landings reported on the fishticket.

The estimated ex-vessel value of crab and halibut landings by the hook-and-line CP sector during 1999 – 2003 is \$11.3 million and \$6.4 million, respectively. The estimated ex-vessel value of crab landings by the pot CP sector during 1999 – 2003 is \$20.6 million (halibut data is confidential). Crab comprises a substantial portion of the estimated revenues to the pot CP fleet, but is not possible to estimate at this time what portion of the landings reported were processed at sea. The trawl CP sectors did not have crab and halibut landings.

Table 4-3 Estimated ex-vessel value of crab and halibut harvested by the fixed gear CP sectors, 1999 - 2003

Sector	Estimated crab ex-vessel revenue	Pounds Crab	Estimated halibut ex-vessel revenue	Pounds Halibut	Unique vessels crab	Unique vessels halibut
Hook-and-line CP	\$11,321,121	5,839,306	\$6,396,311	2,163,387	6	12
Pot CP	\$20,611,801	12,798,754	conf.	conf.	12	1

Source: ADF&G fishtickets and ex-vessel prices from Economic SAFE report, 1999 - 2003.

Community Linkages by Sector

Hook-and-line CP sector

The data show that 45 unique hook-and-line catcher processors participated in the BSAI Pacific cod fishery in 1999 - 2003. Forty of the 45 participating vessel owners reported non-Alaska residency and 5 reported residency in Kodiak, Petersburg, Anchorage, Sitka and Unalaska at some point during the period. Based on the landings and first wholesale information for 1999 - 2003, the total first wholesale value of Pacific cod products by all participating vessels was about \$486 million, which averages to more than \$97 million per year. In 1999 – 2003, the total value from all *groundfish* products for this sector was about \$590.6 million, therefore, about 82.3% of this fleet’s estimated total first wholesale revenue from groundfish products is attributed to the BSAI Pacific cod fishery during this time period.

First wholesale value of Pacific cod products produced by non-Alaska based vessels constituted almost 87% of the total cod revenues, with most of that coming from the H&G product form. Hook-and-line catcher processors based in Alaska realized about 13% of the total.

Hook-and-Line CV sector ≥60'

It is likely that any future involvement by the hook-and-line catcher vessel fleet would continue to result in benefits to Alaskan coastal communities and non-Alaskan communities, through deliveries to coastal plants and income to the participants which could benefit their community of residence. The data show that 33 unique hook-and-line catcher vessels participated in the BSAI Pacific cod fishery during 1999 - 2003, and these same vessels also fished several other fisheries and gear types. Total ex-vessel value of all fisheries for these vessels was \$44.0 million during 1999 – 2003, which averages to about \$8.8 million per year. BSAI Pacific cod accounted for about 1.6%, or \$695,000, of the total during this time period.

Twelve of the 33 participating vessels were based (by vessel owner’s reported residency) in Alaska. Seven of the 12 were from Kodiak, with the remaining vessel owners from Homer, Petersburg, Sitka, and Unalaska. Twenty-one of the 33 vessel owners reported non-Alaskan residency. Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during this time period, about 26% is attributed to vessel owners residing in Alaska and 74% is attributed to non-Alaskan vessel owners.

Pot CP sector

The data show that 13 unique pot catcher processors participated in the BSAI Pacific cod fishery in 1999 - 2003, although these same vessels also fished several other (primarily crab) fisheries. Eleven of the 13 participating vessel owners reported non-Alaska residency and two reported residency in Kodiak, Alaska. In 1999 – 2003, the total first wholesale value of BSAI Pacific cod products produced by all participating pot CPs was about \$14.7 million, while the total value from all *groundfish* products for this sector was

about \$23.3 million. Therefore, about 63% of this fleet's estimated total first wholesale revenue from groundfish products is attributed to the BSAI Pacific cod fishery during this time period. First wholesale value of Pacific cod products produced by non-Alaska based vessels constituted the vast majority of total revenues from BSAI Pacific cod products for this sector; the Alaska and non-Alaska revenue breakouts are not reported due to confidentiality concerns.

Pot CV sector ≥60'

This sector is much more numerous and more widely dispersed geographically than any of the other sectors involved in the BSAI Pacific cod fishery. In 1999 – 2003, there were 148 unique vessels fishing BSAI Pacific cod in this sector. Of this total, 41 reported Alaska residency, with about half of those in Kodiak and the remaining half from Homer, Anchorage, Cordova, Petersburg, and several other southcentral and southeast coastal communities. Of the 107 non-Alaskan based vessels, these were widely distributed through the Pacific Northwest, with the majority of vessel owners from Seattle. In 1999 - 2003, the total value from BSAI Pacific cod for this fleet was about \$8.0 million, while the total value of all species to these vessels was about \$295 million, which averages to about \$59 million per year. About 14.5% (or \$42.8 million) of this fleet's total gross earnings during this time period was from the BSAI Pacific cod fishery.

Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during this time period, about 18% is attributed to vessel owners residing in Alaska and 82% is attributed to non-Alaskan vessel owners.

Jig CV sector

The jig CV sector is also relatively diverse, with ex-vessel revenues attributed to halibut, Gulf groundfish, other BSAI groundfish, BSAI Pacific cod, and salmon. In 1999 – 2003, there were 58 unique vessels fishing BSAI Pacific cod in this sector. Of this total, 42 reported Alaska residency, primarily in Unalaska/Dutch Harbor (14 vessel owners) and Kodiak (10 vessel owners), with a few owners from Sand Point, Homer, Anchorage, and several other coastal communities. In 1999 - 2003, the total value of all species to these vessels was about \$5 million, which averages to about \$1 million per year. About 12.8% (or \$642,000) of this fleet's total gross earnings during this time period was from the BSAI Pacific cod fishery.

Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during 1999 – 2003, about 73% is attributed to vessel owners residing in Alaska and 27% is attributed to non-Alaskan vessel owners.

<60' hook-and-line and pot CV sector

The <60' fixed gear sector is also relatively diverse in terms of fishery and residency, with ex-vessel revenues attributed to halibut, Gulf groundfish, other BSAI groundfish, BSAI Pacific cod, and salmon. In 1999 – 2003, there were 92 unique vessels fishing BSAI Pacific cod in this sector. Of this total, 71 reported Alaska residency, primarily in Kodiak (19 vessel owners), Saint Paul (14 vessel owners), Homer (11 vessel owners) and Dutch Harbor/Unalaska (8 vessel owners), with a few owners from Sand Point, False Pass, Sitka, and several other coastal communities. In 1999 - 2003, the total value of all species to these vessels was about \$65.5 million, which averages to about \$13 million per year. Nearly 4% (or \$2.4 million) of this fleet's total gross earnings during this time period was from the BSAI Pacific cod fishery. Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during 1999 – 2003, about 95% is attributed to vessel owners residing in Alaska and 5% is attributed to non-Alaskan vessel owners.

AFA Trawl CV sector

The non-AFA trawl CV sector is also relatively diverse in terms of fisheries prosecuted. In 1999 – 2003, there were 107 unique vessels fishing BSAI Pacific cod in this sector. Of this total, only 7 reported Alaska residency, primarily in Kodiak. The non-Alaskan based vessels were from the Pacific Northwest, with the majority of vessel owners from Seattle. In 1999 - 2003, the total value of all species to these vessels was about \$897 million, which averages to about \$179 million per year. About 9.9% (or \$89 million) of this fleet's total gross earnings during this time period was from the BSAI Pacific cod fishery. The majority (79%) of gross earnings for this sector came from other BSAI groundfish, primarily pollock.

Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during 1999 – 2003, less than 1% is attributed to vessel owners residing in Alaska and over 99% is attributed to non-Alaskan vessel owners.

AFA Trawl CP sector

All of the AFA trawl CP vessel owners report non-Alaskan residency, and the majority are based in the Seattle area. There were 14 unique vessels participating in the BSAI Pacific cod fishery in 1999 - 2003. Based on the landings and first wholesale information for 1999 - 2003, the total first wholesale value of Pacific cod products by all participating vessels was \$10.3 million, which averages to \$2.1 million per year. Most of that product is headed and gutted cod. This constituted 1.8% of the sector's total first wholesale value from all groundfish products during 1999 – 2003 of \$586.5 million. BSAI pollock is the primary revenue source for this fleet.

Non-AFA Trawl CV sector

This sector is fairly diverse in its overall fisheries, and focuses almost wholly on Pacific cod in its BSAI groundfish fisheries. In 1999 – 2003, there were 37 unique vessels fishing BSAI Pacific cod in this sector. Of this total, 15 reported Alaska residency, primarily in Sand Point (8 vessel owners) and Kodiak (4 vessel owners), with one owner each from Cordova, Girdwood, and Sitka. The non-Alaskan based vessels were from the Pacific Northwest. In 1999 - 2003, the total value of all species to these vessels was about \$34 million, which averages to about \$6.9 million per year. About 34.7% (or almost \$12 million) of this fleet's total gross earnings during this time period was from the BSAI Pacific cod fishery. The majority (46%) of gross earnings for this sector came from Gulf groundfish.

Of the total ex-vessel revenues generated by BSAI Pacific cod landings in this sector during 1999 – 2003, about 16% is attributed to vessel owners residing in Alaska and about 84% is attributed to non-Alaskan vessel owners.

Non-AFA Trawl CP sector

The majority of the BSAI Pacific cod non-AFA trawl CP sector is based in the Seattle area (22 of the 25 unique vessels participating in 1999 - 2003), with 3 vessel owners reporting residency in Kodiak, Alaska during this time period. Based on the landings and first wholesale information for 1999 - 2003, the total first wholesale value of Pacific cod products by all participating vessels was \$158.7 million, which averages to \$31.7 million per year. This constituted 21.2% of the sector's total first wholesale value from all groundfish products during 1999 – 2003 of \$747.7 million. First wholesale value of Pacific cod products produced by non-Alaska based vessels constituted 94% of total revenues from BSAI Pacific cod products for this sector, with most of that coming from the H&G product form. Non-AFA trawl catcher processors based in Alaska accounted for the remaining 6%. The BSAI flatfish fisheries are the primary revenue source for this fleet.

Shorebased processors taking CV deliveries

Deliveries of Pacific cod contribute to the economies of the communities in which the shorebased plants are located, though these amounts are unlikely to be significant in the context of the other groundfish, pollock, and crab processing activities that occur in these same plants and communities. Table 4-4 provides the percentage of each catcher vessel sector's BSAI Pacific cod estimated ex-vessel revenues by port, from 1999 – 2003. Note that several ports were grouped together due to confidentiality concerns.

Deliveries of BSAI cod to shorebased processors come primarily from pot and trawl vessels, with smaller amounts from hook-and-line and jig catcher vessels. The vast majority of shoreside deliveries were to shore plants in Dutch Harbor, with lesser amounts delivered to Adak, Atka, King Cove, Kodiak, Chignik, Sand Point, and Saint Paul. Some of the smaller fixed gear and jig sectors also deliver to Homer and Seward. Several sectors deliver to inshore floating processors.

Table 4-4 Percent of each CV sector's BSAI Pacific cod estimated ex-vessel values by port groupings, 1999 - 2003

Sector	Port Groupings	Estimated Ex-vessel Value	% Port Group	Sector	Port Groupings	Estimated Ex-vessel Value	% Port Group
Non-AFA trawl CV	Adak & Atka	\$3,049,588	25.6%	Hook-and-line CV >60'	Adak & Atka	\$90,871	13.1%
	Akutan, King Cove, Chignik, Sand Point & St. Paul	\$2,476,762	20.8%		Akutan, King Cove, Chignik, Sand Point & St. Paul	*	*
	Dutch Harbor	\$3,063,887	25.7%		Dutch Harbor	\$158,736	22.8%
	Inshore floating processors	\$3,309,485	27.8%		Homer	\$729	0.1%
	Kodiak & Alitak	\$13,831	0.1%		Inshore floating processors	\$441,789	63.6%
	Total	\$11,913,553	100.0%		Kodiak & Alitak	*	*
AFA trawl CV	Adak & Atka	\$9,874,551	11.1%	Seward	*	*	
	Akutan, King Cove, Chignik, Sand Point & St. Paul	\$23,786,416	26.7%	Total	\$695,160	100.0%	
	Dutch Harbor	\$33,432,306	37.6%	Jig CV	Adak & Atka	\$186,436	29.0%
	Inshore floating processors	\$21,830,807	24.5%		Akutan, King Cove, Chignik, Sand Point & St. Paul	*	*
	Kodiak & Alitak	*	*		Dutch Harbor	\$363,200	56.6%
	Total**	\$88,924,080	100.0%		Homer	*	*
			Inshore floating processors		\$19,195	3.0%	
			Total		\$641,797	100.0%	
Pot CV >60'	Adak & Atka	\$1,565,392	3.7%	<60' hook-and-line and pot CV	Adak & Atka	\$84,379	3.5%
	Akutan, King Cove, Chignik, Sand Point & St. Paul	\$11,815,779	27.6%		Akutan, King Cove, Chignik, Sand Point & St. Paul	\$527,921	21.9%
	Dutch Harbor	\$21,740,812	50.8%		Dutch Harbor	\$1,779,259	73.8%
	Inshore floating processors	\$7,484,915	17.5%		Homer	*	*
	Kodiak & Alitak	\$178,928	0.4%		Inshore floating processors	*	*
	Total	\$42,785,826	100.0%		Kodiak & Alitak	*	*
			Seward	*	*		
			Total	\$2,412,486	100.0%		

*Not shown due to confidentiality concerns. **The total for the non-AFA trawl CV sector excludes confidential data.

As shown in Table 4-4, pot boat deliveries were primarily (50.8%) to shore plants in Dutch Harbor, with lesser amounts (27.6%) to the group of Akutan, Saint Paul, King Cove, Chignik, Kodiak, and Sand Point. Almost 18% of the ex-vessel revenues are attributed to cod delivered to inshore floating processors. The <60' fixed gear sector exhibits a similar pattern: 73.8% to Dutch Harbor, 21.9% to the ports in the Aleutians east area, and 3.5% to Adak and Atka combined. The hook-and-line CV sector had the majority of its revenues (63.6%) associated with deliveries to inshore floaters, and the remainder primarily delivered to Dutch Harbor (22.8%) and Adak and Atka (13.1%). The jig sector also delivers primarily to Dutch Harbor (56.6%), with the remainder to Adak and Atka (29.0%).

In the trawl sectors, deliveries are distributed fairly evenly among several port groupings during this time period. Ex-vessel revenues attributed to BSAI Pacific cod from the non-AFA trawl CV sector were

distributed about evenly: 27.8% to inshore floaters, 25.7% to Dutch Harbor, 25.6% to Adak and Atka combined, and 20.8% to the ports in the Aleutians East area. The majority of estimated ex-vessel revenues generated from BSAI Pacific cod in the AFA trawl CV sector was from Dutch Harbor (37.6%), followed by the Aleutian East ports (26.7%), inshore floaters (24.5%), and Adak and Atka (11.1%).

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.

Chapter 2 presents information on historical bycatch patterns in the BSAI Pacific cod fishery by sector. In summary, bycatch rates in the fixed gear Pacific cod fisheries are low overall. Some differences among the fixed gear sectors are evident, as the hook-and-line sectors report higher incidental catch of halibut, while the pot sectors report higher incidental catch of crab. The trawl sectors overall report a higher incidental catch of both halibut and crab than the fixed gear sectors. Because each of the alternatives establishes sector allocations based on catch history during the recent past, none of the proposed allocations are expected to have significant bycatch implications.

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 continue or modify the sector allocation percentages of BSAI Pacific cod would change safety requirements for fishing vessels. Note also that all of the allocation options under Alternative 2 would continue a separate allocation for the <60' fixed gear sector, but would not allow this sector to fish off the general hook-and-line and pot allocations when those directed fisheries are open. While not necessarily proposed to promote safety, this provision may reduce incentives for the <60' fixed gear sector to harvest Pacific cod earlier in the year in more difficult weather. In the recent past, the A season for the directed hook-and-line CV and pot CV BSAI Pacific cod fisheries has been increasingly short, and thus in order for the <60' fixed gear participants to fish off the general allocation, they need to fish earlier in the year (January/February). Alternative 2 eliminates this incentive by allowing each sector only to fish off their separate allocation. In addition, Alternative 2 could establish separate sector allocations to each of the four trawl sectors. To the extent this eliminates competition between trawl sectors for their historical share of Pacific cod, allows the trawl sectors to better manage their Pacific cod fisheries through internal mechanisms and cooperatives, and reduces competition among individual vessels within trawl sectors, this may promote safety at sea.

4.2 MSA Section 303(a)(9) – Fisheries Impact Statement

This section of the Magnuson Stevens Act requires that any management measure submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. The impact to participants in the BSAI Pacific cod fisheries is the primary topic of Chapter 3. Section 4.2 addresses potential impacts to other fisheries that could result from a change in the BSAI Pacific cod apportionments, as vessels constrained by those allocations may move into other fisheries to attempt to make up lost revenues. However, note that all of the allocation options proposed under Alternative 1 and 2 are based on historical participation in the BSAI Pacific cod fishery by sector. Thus, especially for the allocation options based on a broad series of years, the allocation options should not substantially differ from a sector's recent historical participation.

In the past, one of the concerns with BSAI Pacific cod sector allocations has been the potential impact on BSAI crab fisheries. Pot vessels with qualified crab licenses whose Pacific cod sector allocation could be reduced, could exert additional effort in the BSAI crab fisheries. However, NMFS recently implemented a

program to comprehensively rationalize the BSAI crab fisheries (2005). Participants in these fisheries are thus now constrained by the amount of quota for which they qualify under a specified set of qualifying years (NPFMC 2004). Thus, the fixed gear cod vessels under consideration in this amendment that have qualifying history in the BSAI crab fisheries will receive quota based on past participation. If these vessels want to expand their participation in the BSAI crab fisheries under this program, they will need to purchase quota from another individual. Thus, vessels cannot move into these fisheries in the future and erode other vessels' shares.

The pot and jig sectors in this amendment may also potentially exert additional effort in the Gulf of Alaska State water cod fisheries which are not limited entry, and which are limited to pot and jig gear. However, the alternatives under consideration propose to establish the Pacific cod hook-and-line and pot gear allocations based on the historical harvest distribution among the sectors according to catch histories from 1995 – 2003. This is very similar to the allocations that have been in effect under Amendments 64 and 77 since mid-2000. Thus, it is not expected that any fixed gear sector would be severely constrained compared to what it has harvested in the recent past.

In addition, recall that under Amendment 67, the $\geq 60'$ Pacific cod fixed gear fishery in Federal waters is limited to those license holders that qualify for a BSAI Pacific cod endorsement by meeting specific year and landings requirements. This amendment became effective January 1, 2003. Thus, "cod endorsed" fixed gear vessels realize less competition within their sectors for their respective BSAI Pacific cod allocations under Amendment 67. Because Amendment 67 does not affect $<60'$ hook-and-line and pot vessels, it is possible that the $<60'$ sector could be constrained by a separate BSAI Pacific cod allocation in the future as the number of participants increases, thus spurring these vessels to move into other fisheries. However, the $<60'$ fleet has historically harvested a very small percentage of the total BSAI Pacific cod ITAC, averaging about 0.4% during the period 1995 – 2003, with the majority of the harvest during the years in which this sector had a separate allocation (2001 – 2003). The current allocation to this sector (Alternative 1) represents about 0.7% of the BSAI Pacific cod ITAC. Under Alternative 2, options exist to continue a separate cod allocation for the $<60'$ fixed gear sector, based on either catch history (0.1% – 0.8% of the BSAI Pacific cod ITAC) or a policy decision to increase the $<60'$ fixed gear sector's allocation to 1% or 2% of the BSAI Pacific cod ITAC. Note also that while 116 $<60'$ fixed gear vessels have the necessary LLP to fish BSAI Pacific cod, only 26 such vessels have retained BSAI Pacific cod harvests on average during 1995 – 2003. Thus, it is not expected, due to the relatively small number of participating vessels and the options to continue and increase a separate allocation to $<60'$ fixed gear vessels, that this action will have significant spillover effects.

Finally, the implementing regulations for the AFA establish sideboards (harvest limits) on participation by AFA-qualified vessels in the non-pollock BSAI groundfish fisheries (including Pacific cod) and GOA groundfish fisheries. While the action considered in this amendment would replace the BSAI Pacific cod sideboards for the AFA trawl CV and AFA trawl CP sectors with direct allocation to each sector if selected, it would not affect the sideboards in place for the other BSAI non-pollock groundfish fisheries or the GOA groundfish fisheries. In addition, the AFA trawl sectors currently manage Pacific cod through an inter-cooperative agreement, even though these sectors do not currently receive a distinct allocation, and it is expected that this type of management system would continue. Thus, this action is not expected to substantially affect participation in other fisheries by the AFA trawl sectors.

The non-AFA trawl CP sector is also currently proposed to be managed under a cooperative system under BSAI Amendment 80. This amendment would establish cooperative provisions for the non-AFA trawl CP sector, as well as five target flatfish allocations and sideboards in other 'non-allocated' groundfish fisheries to the sector. The sideboards proposed in Amendment 80 include non-allocated BSAI species,

GOA groundfish fisheries,¹¹⁰ and GOA halibut PSC. Upon approval of Amendment 85, the current BSAI Pacific cod sideboard to this sector would be replaced by a direct allocation of cod. Thus, the non-AFA trawl CP sector, upon implementation of Amendment 80, would likely be constrained to historical participation levels in every other potential fishery.

The non-AFA trawl CV sector does not have eligibility requirements defined in statute as do the other trawl sectors. This sector differs also from the AFA CV sector such that it has a higher percentage of its overall BSAI revenues from Pacific cod; cod is the only target fishery for this sector in the BSAI. In addition, vessels in this sector also commonly participate in the GOA groundfish fishery and the halibut IFQ fishery using hook-and-line gear. Should this sector receive a distinct cod allocation under Alternative 2, it will be relatively small compared to the current allocation that it shares with the AFA trawl CV sector. This is especially so if Component 1, Option 1.1 is selected. If the allocation under this action is sufficiently small, and additional non-AFA trawl CV vessels enter the fishery, NMFS will have to manage the seasonal allocations to this sector fairly conservatively to ensure the allocations are not exceeded. This could spur some vessels in this sector, which have been historically more dependent on BSAI Pacific cod, to increase their participation in the GOA fisheries to make up for foregone revenues. However, under Component 1, Option 1.1, the three non-AFA trawl CVs with the most participation in the BSAI cod fishery would continue to share a much larger allocation with the AFA trawl CV sector. These three vessels' history comprise 54% of the total non-AFA trawl CV sector's BSAI Pacific cod harvest on average during 1995 – 2003. Thus, if the two trawl CV sectors receive separate allocations under Alternative 2, and Component 1, Option 1.1 is also selected, this action may not significantly affect participation in other GOA groundfish fisheries by the non-AFA trawl CV sector.

4.3 Initial Regulatory Flexibility Analysis (IRFA)

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 either 'certify' that the action will not have a significant adverse impact on a substantial number of small entities, and support that certification with the "factual basis" upon which the decision is based; or it must prepare and make available for public review an 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).

Analytical requirements for the IRFA are described below in more detail. The Council will recommend a preferred alternative under this amendment, and, if approved by the Secretary, NMFS will develop

¹¹⁰Component 12 of BSAI Amendment 80 addresses GOA sideboards for the non-AFA trawl CP sector in the GOA pollock, Pacific cod, directed rockfish species (Pacific Ocean perch, northern rockfish, pelagic shelf rockfish), and flatfish fisheries. In the BSAI, they are mostly focused on Pacific cod. The non-allocated BSAI species that are proposed to be sideboarded are: other rockfish, BS Pacific Ocean perch, sablefish (trawl), Greenland turbot, incidental pollock catch, arrowtooth flounder, northern rockfish, other flatfish/Alaska plaice, other species & squid, and shortraker and rougheye rockfish.

proposed regulatory amendments to implement the Council's preferred alternative. **The IRFA contained in this section will be modified to reflect the preferred alternative selected by the Council at final action. Final Council action is scheduled for April 2006.**

The IRFA must contain:

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- 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 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, staff includes only those entities, both large and small, that are directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis. NOAA currently interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

Data on cost structure, affiliation, and operational procedures and strategies in the fishing sectors subject to the proposed regulatory action are insufficient, at present, to permit preparation of a "factual basis" upon which to certify that the preferred alternative does not have the potential to result in a "significant adverse impact on a substantial number of small entities" (as defined under the RFA). Because, based on all available information, it is not possible to 'certify' this outcome, should the proposed action be adopted by the Secretary, a formal IRFA, focusing on the complete range of available alternatives (including the Council's preferred alternative), will be prepared and included in this package for Secretarial review.

4.3.1 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 and fish processing businesses. Effective January 5, 2006, a business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$4.0 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$4.0 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. **The SBA size standards applicable to RFA analyses increased from \$3.5 million to \$4.0 million on January 5, 2006, to adjust for inflation (70 FR 72577, 12/6/05).**

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.

4.3.2 Reason for considering the proposed action

The Pacific cod fishery in the Bering Sea and Aleutian Islands is fully utilized and has been allocated among gear groups since 1994. Members of the gear sectors have expressed concern that the current allocations (under Amendments 46 and 77) are overdue for review, as the overall gear split between the trawl, jig and fixed gear sector has been in place since 1997. Harvest patterns among sectors have varied significantly, resulting in annual inseason reallocations of BSAI Pacific cod quota from the trawl and jig sectors to the fixed gear sectors, primarily the hook-and-line CP sector. Thus, a need has been identified to revise the sector allocations to better reflect actual historic use by sector. This need is described in **Part I** of the problem statement, with the expressed intent that sector allocations will be based on catch history as well as socio-economic and community factors.

In addition, vessels using trawl gear can be divided into four recognized sectors: non-AFA trawl CP, non-AFA trawl CV, AFA trawl CP, and AFA trawl CV. Each of these sectors may benefit from having a distinct BSAI Pacific cod allocation, especially the AFA sectors and non-AFA trawl CP sector, which are

either currently or proposed to be managed under a cooperative system. Having an established allocation by which to manage internally should benefit those sectors. Thus, this amendment considers establishing separate BSAI Pacific cod allocations for each of the trawl sectors.

It is also recognized that allocations at the sector level are necessary as a first step toward comprehensive rationalization. Should the BSAI Pacific cod fisheries overall ultimately be managed under cooperatives or individual fishing quotas, sector allocations represent the first level of apportionment. Thus, Part I of this action is necessary to consider revising the sector allocations to better reflect actual use by sector.

Finally, **Part II** of this action addresses the need to establish a methodology by which to apportion each sector's BSAI Pacific cod allocation among the BS and AI subareas, should the BSAI ABC and TAC be apportioned as such in the future. This amendment does not provide the basis for deciding *whether* to split the BSAI ABC and TAC among subareas, as that decision would be made by the Council, likely upon recommendation from NMFS stock assessment scientists and the SSC, during the annual specifications process. The environmental analysis (EA) for the specifications process would provide the relevant data to inform the Council and the public on the need for that action, should it be proposed in the future. Amendment 85, by contrast, is limited to proposing several mechanisms (Alternatives 4 – 6) for apportioning the sector cod allocations should the BSAI Pacific cod ABC and TAC be apportioned by subarea in the future. This is necessary in order to avoid disruption in the management of the fishery should the subarea split occur.

4.3.3 Objectives of, and legal basis for, the proposed action

The legal basis for this action is that allocation of the BSAI Pacific cod TAC is allowed under the Magnuson-Stevens Fishery Conservation and Management Act. Part of the stated purpose of the MSA is to promote domestic commercial and recreational fishing under sound conservation and management principles, as well as to provide for the preparation and implementation, in accordance with national standards, of fishery management plans which will achieve and maintain, on a continuing basis, the optimum yield from each fishery (Section 2(b)). The objectives of the proposed action, as stated previously, are to maintain stability in the BSAI Pacific cod fishery by continuing to provide separate allocations for the industry sectors identified. The further objective of the proposed action is to provide these separate allocations in a manner that reflects the catch distribution that has historically occurred among sectors, with an additional allocation made for the smallest vessel classes in the BSAI Pacific cod fisheries (<60' fixed gear CV and jig CV sectors).

4.3.4 Number and description of affected small entities

For purposes of the IRFA, all small businesses with annual receipts of less than \$4.0 million can be considered small businesses. The IRFA uses the most recent year of data available to conduct this analysis (2003). As stated previously, the entities directly regulated by the proposed action are divided into ten sectors for purposes of the BSAI Pacific cod allocations. A description of the eligibility requirements for, and the participants in, each sector is provided in detail in Section 3.3.4.

The majority of the catcher vessels in all gear sectors can be considered small entities under the existing threshold. In 2003, only five AFA trawl catcher vessels are considered large entities, and the remaining 220 catcher vessels of all gear types are considered small entities. Thus, the following are considered small entities in 2003: 22 <60' hook-and-line and pot CVs; 90 AFA trawl CVs; 22 non-AFA trawl CVs; 15 jig CVs; 6 hook-and-line CVs $\geq 60'$; and 65 pot CVs $\geq 60'$.

The vessels that would be considered large entities were either affiliated under owners of multiple vessels or were catcher processors. However, little is known about the ownership structure of the vessels in the fleet, so it is possible that the IRFA overestimates the number of small entities. In the catcher processor sector, the data indicate that less than half meet the threshold for small entities, or 32 of the 75 participating vessels in 2003. Thus, the following are considered small entities in 2003: one of the ten AFA trawl CPs; 24 of the 39 hook-and-line CPs; 4 of the 19 non-AFA trawl CPs; and all 3 pot CPs.

Shorebased plants and floating processors operating within Alaska waters process most of the cod harvested by catcher vessels. Data is not currently available to determine how many of these processors are considered small entities. In sum, of the 300 vessels in 2003, the number of small entities directly regulated by the proposed action is estimated as 252 vessels.

4.3.5 Recordkeeping and reporting

Implementation of the proposed amendment to establish and modify sector allocations would not change the overall reporting structure and recordkeeping requirements of the vessels in the BSAI Pacific cod fisheries.

4.3.6 Relevant Federal rules that may duplicate, overlap, or conflict with proposed action

There do not appear to be any Federal rules that duplicate, overlap, or conflict with any of the actions proposed in the alternatives. Some current regulations may need to be modified under the preferred alternative, such as the regulations implementing the current BSAI Pacific cod allocations to each sector and the regulations implementing the BSAI Pacific cod sideboards to the AFA sectors. There is an option under Alternative 2 to establish direct allocations to each AFA sector, which would replace the current BSAI Pacific cod sideboards to which the AFA CP and AFA CV sectors are subject. The scope of the regulatory changes necessary will not be certain until a preferred alternative is selected.

4.3.7 Description of significant alternatives

The alternatives under consideration are described in detail in Section 3.4.1 (Part I, Alternatives 1 – 2) and Section 3.4.4 (Part II, Alternatives 3 – 6). The reason for considering the action is in Section 3.1 and outlined in Section 1.1.1. **Part I, Alternative 1** is the no action alternative, which would continue 1) the current overall gear allocations in the BSAI Pacific cod fishery that were established under Amendment 46 in 1997 and 2) the current apportionment of the fixed gear portion of the BSAI Pacific cod ITAC established under Amendment 77 in 2004.

The multiple options under **Part I, Alternative 2** would revise the allocations to each of the sectors based on actual catch history (including reallocated quota) or other considerations during a series of years from 1995 – 2003. Alternative 2 could also further apportion the trawl CP and trawl CV allocations between AFA and non-AFA sectors. Table 4-5 provides a summary of the range of potential allocations to each sector under Alternative 2.

Alternative 2 also includes options to either continue the existing allocation established explicitly for the smaller fixed gear operations (i.e., the 0.7% of the BSAI Pacific cod ITAC allocation for hook-and-line and pot vessels <60'), or to increase that allocation to 1% or 2%. Another option exists to base the allocation on actual catch history. In addition, the jig sector allocation is proposed to be based on catch history or maintained at 2%. Note that exemptions are currently provided to the classes of smaller vessels under the current LLP (e.g., LLP exemption for vessels <32' LOA in the BSAI; Pacific cod endorsement exemption for vessels <60' LOA; LLP exemption for jig vessels <60' LOA using no more than 5 jig machines, one line per machine, and 15 hooks per line) in recognition of the disproportionate impact that may potentially accrue to the smallest of the small elements of the industry.

Table 4-5 Range of proposed BSAI Pacific cod allocations by sector under Component 2, compared to historical catch and status quo allocations

Sectors	Range of potential sector allocations resulting from Components 1 & 2	Current allocation	Difference between proposed and status quo allocations	Annual share of retained cod harvests, average 1995–03
<60' hook-and-line/pot CV	0.1% – 2%	0.7%	-0.6% to 1.3%	0.4%
AFA trawl CP	0.9% – 3.7%	23.5% (AFA CP sector is subject to sideboard of 6.1%)	-2.4% to -5.2%	1.7%
Non-AFA trawl CP	12.7% – 16.2%		n/a	13.6%
Jig CV	0.1% – 2%	2%	-1.9% to 0%	0.1%
Hook-and-line CP	45.8% – 50.3%	40.8%	5% to 9.5%	49.6%
Hook-and-line CV ≥60'	0.1% – 0.4%	0.2%	0% to 0.3%	0.1%
AFA trawl CV	17.8% – 24.4%	23.5% (non-exempt AFA CV sector is subject to sideboard of 20.2%)	-2.4% to 4.2%	21.7%
Non-AFA trawl CV	0.5% – 3.1%		n/a	2.1%
Pot CP	1.4% – 2.3%	1.7%	-0.3% to 0.6%	2.1%
Pot CV ≥60'	7.3% – 9.2%	7.7%	-0.4% to 1.5%	8.6%

Note: The <60' fixed gear sector is currently allocated 0.71% of the BSAI Pacific cod ITAC. However, this sector can currently fish off the general hook-and-line CV and pot CV Pacific cod allocations when those directed fisheries are open, respectively, by gear type. The proposed amendment would allow the <60' fixed gear sector to only fish off its direct allocation.

Note: The last column denoting annual average harvest share excludes harvests by the AFA 9. If the AFA 9 are included, the average share of the AFA trawl CP sector increases to 2.7%. The non-AFA trawl CP and ≥60' pot CV sectors' shares are each reduced by 0.1%. The AFA trawl CV sector share is reduced by 0.2% and the hook-and-line CP sector share is reduced by 0.5%.

Part II, Alternative 3 is the no action alternative for Part II, which means the Council would choose not to select a methodology by which to apportion the BSAI Pacific cod sector allocations between the BS and AI subareas. If this alternative was selected as the preferred alternative in Part II, the only option that exists under current regulations is to give each sector its same BSAI percentage allocation in each subarea (e.g., if a sector received 40% of the BSAI Pacific cod ITAC under Part I, it would then receive 40% in the BS and 40% in the AI). Note that Alternatives 3 – 6 only apply to the non-CDQ fisheries. The CDQ Program is required to receive the same amount in each subarea, should they be split in a future specifications process. Note also that Alternatives 3 – 6 are dependent on first establishing each sector's BSAI Pacific cod allocation under Part I.

Part II, Alternative 4 would keep the sector allocations on the BSAI level, regardless of whether the BSAI ABC and TAC were divided among subareas. This means that each sector would maintain its BSAI allocation that is selected above in Part I, and each sector could fish in both subareas (BS and/or AI) as long as the subarea is open for directed fishing and TAC is available. Once the TAC is reached in a subarea, the subarea would be closed to directed BSAI Pacific cod fishing by all sectors.

Part II, Alternative 5 would create equal percentage allocations in both subareas by sector. This alternative effectively mirrors Alternative 3.

Part II, Alternative 6 would maintain each sector's BSAI Pacific cod allocation selected in Part I, and then establish an AI allocation by sector based on each sector's historic retained harvest in the AI. The

remainder of each sector's BSAI allocation would be established for the BS. The resulting BS and AI allocations from Alternative 6 are provided in Section 3.4.8.

The Council therefore identified six primary alternatives to be analyzed which would meet the stated objectives of this action. For a complete analysis of each of these alternatives, options, and suboptions, refer to the RIR in Chapter 3. As previously noted, virtually all of the potentially regulated entities are assumed to be "small," as defined under the RFA. Upon selection of a preferred alternative, the IRFA will be expanded to conclude whether the action would have a negative economic impact on small entities.

4.3.8 Measures taken to reduce impacts on small entities

Most firms operating in the fishery regulated by the proposed action have expected annual gross revenues of less than \$4.0 million; this analysis estimates that 252 of 300 vessels participated in 2003 are considered small entities. The ownership characteristics of vessels operating in the fishery are not available and therefore it is not possible to determine with certainty, if they are independently owned and operated, or affiliated in one way or another with a larger parent company. Furthermore, because analysts cannot quantify the exact number of small entities that may be directly regulated by this action, a definitive finding of non-significance for the proposed action under the RFA is not possible.

However, because the proposed action would result in establishing a percentage distribution very close to the average harvest level during 1995 – 2003, net effects would be expected to be minimal relative to the status quo. As with many allocation-based management measures, the alternatives propose a percentage allocation of the ITAC among competing groups of vessels. In this case, vessels in each group are primarily small entities, representing a tradeoff in terms of impacts; i.e., some small entities could be negatively affected and others positively affected.

In addition, several options are proposed under Alternative 2, Component 2 to make allocations to the smallest of the small entities (jig CVs and <60' hook-and-line and pot CVs) that are greater than their actual catch history, in order to provide for potential growth in those sectors. No further eligibility requirements to participate in the jig and <60' fixed gear sectors are included in the proposed action. The requirement for participating in the BSAI Pacific cod fishery with a <60' catcher vessel using pot or hook-and-line gear continues to be an LLP, without the additional requirement of a cod endorsement, as is required of all ≥60' fixed gear vessels. In the jig CV fishery, an LLP is not required to fish BSAI Pacific cod in Federal waters if the vessel does not exceed 60' LOA. Finally, options are included to maintain the current reallocation scheme, such that any unused jig quota is first considered for reallocation to the <60' fixed gear sector before being reallocated to any other sector. In sum, considerable opportunity is provided for the smallest of the small entities under this amendment in terms of an increased initial allocation and the potential to receive additional quota through reallocations.

Detail on the provisions included to reduce impacts on small entities will be provided upon the selection of a preferred alternative.

4.4 Marine Mammal Protection Act (MMPA)

The MMPA of 1992 (16 U.S.C. 1361 *et seq.*), as amended through 1996, establishes a Federal responsibility to conserve marine mammals with management responsibility for cetaceans (whales) and pinnipeds (seals), other than walrus vested with the Department of Commerce. The Department of the Interior, USFWS, is responsible for all other marine mammals in Alaska including sea otters, walrus, and polar bear. Congress found that certain species and population stocks of marine mammals are, or may be in danger of, depletion due to human activities. Congress also declared that marine mammals are

resources of great international significance and should be protected using sound policies of resource management.

Species listed in the Endangered Species Act (ESA) present in the management area under consideration are listed in Chapter 2. Marine mammals not listed under the ESA that may be present in the BSAI management area include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp.*)] as well as pinnipeds [Pacific harbor seal (*Phoca vitulina*), northern fur seal (*Callorhinus ursinus*), Pacific walrus (*Odobenus rosmarus*), spotted seal (*Phoca largha*), bearded seal (*Erignathus barbatus*), ringed seal (*Phoca hispida*) and ribbon seal (*Phoca fasciata*)], and the sea otter (*Enhydra lutris*).

The primary management objective of the MMPA is to maintain the health and stability of the marine ecosystem, with a goal of obtaining an optimum sustainable population of marine mammals within the carrying capacity of the habitat. The MMPA is intended to work in concert with the provisions of the Endangered Species Act (see Chapter 2). The Secretary is required to give full consideration to all factors regarding regulations applicable to the "take" of marine mammals, including the conservation, development, and utilization of fishery resources, and the economic and technological feasibility of implementing the regulations. If a fishery affects a marine mammal population, then the potential impacts of the fishery must be analyzed in the appropriate EA or EIS, and the Council or NMFS may be requested to consider regulations to mitigate adverse impacts. This action is intended to continue to establish in regulation specific allocations of BSAI Pacific cod to the various industry sectors, based on the historical harvest distribution among sectors. No adverse impacts on marine mammals are anticipated as a result of implementing the alternatives under consideration.

4.5 Coastal Zone Management Act

Implementation of any of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

4.6 Executive Order 12898

Executive Order (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. The 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 which focuses 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.

Pot, hook-and-line, trawl, and jig vessels are owned by persons living throughout Alaska, the Pacific Northwest, and other states in the U.S. Vessel owner residency information for each of the affected sectors is provided in Section 4.1 of this chapter, and a discussion of the relative importance of the BSAI Pacific cod fishery to these regions is provided in Section 4.1. Note that the number of vessels eligible to fish BSAI Pacific cod is not affected by this action; further data on this issue are provided in Section 3.3.4.

Overall, the population structures of these regions vary considerably, but in the Aleutian Islands and Kodiak regions there are areas with substantial Alaska Native and other minority populations. The city of Kodiak has about 6,334 persons (2000 U.S. Census) and about 46 percent of its population is white. The predominant minority in the city and its surrounding area is Asian/Pacific Islanders (33%), followed by American and Alaska Native (11%). The ethnic composition of the Kodiak Island Borough (population 13,913), which includes the city of Kodiak, Kodiak Station, the unincorporated population, and all named places on Kodiak Island, is similarly structured: 60% white; 17% Asian/Pacific Islander; and 15% Native American/Alaskan Native.

In King Cove (2000 pop. 792), Alaska Natives make up about 47% of the population, with Asian and Pacific Islanders the next largest minority population (27%). In Unalaska, the 2000 U.S. Census reports a population of 4,283 persons, the majority of which (44%) are white. The remaining composition is about 31% Asian/Pacific Islander; 13% 'other'; 8% Native American/Alaskan; and 4% African American.¹¹¹ Akutan's population (2000 pop. 713) is also dominated by minority populations: 39% Asian/Pacific Islander, 20% 'other', and 16% Alaska Native. About 24% of the Akutan population in 2000 was white.

While the relationship of Washington and Oregon to the Alaska groundfish fishery is more involved than some regions of Alaska (in terms of absolute number of jobs), it has been asserted that the fishery is generally less important to or vital for these states than for the Alaskan communities involved. For example, the size of Seattle dilutes the overall impact of the Alaska groundfish fishery jobs, whereas in Alaskan communities such jobs represent a much greater proportion of the total employment in the community (NMFS 2004a, Appendix F). Thus, while the majority of vessel owners that appear eligible to fish BSAI cod report residency in Washington, there are relatively more individual catcher vessels, specifically in the fixed gear fisheries, that are attributed to Alaskan communities than there are catcher processors. It is this distinction, and the minority populations associated with these communities, that would determine whether this action may have any environmental justice impacts.

Note that this action also proposes an increase in the current BSAI Pacific cod CDQ Program reserve from 7.5% of the BSAI Pacific cod TAC to 10% or 15%. The CDQ region of western Alaska consists of 65 communities with predominantly Alaska Native populations (84% of the combined 2000 population of 27,073). All of the communities represented by the six CDQ groups have significant Alaska Native populations, and three of the six regions have Alaska Native populations of 90% or more. While the BSAI Pacific cod CDQ reserve has been historically (since 1998) caught by a subset of the hook-and-line catcher processors that make up that sector, the revenue generated from leasing the Pacific cod CDQ accrues to the CDQ groups and is used in part to benefit the CDQ communities through fisheries economic development projects and/or education and training opportunities.

The effects of the action under consideration are discussed in Chapter 3 (RIR) and Section 4.3 (IRFA). It is assumed that, absent revised sector allocations, each (non-CDQ) sector would continue to harvest its relative historical share of the BSAI Pacific cod ITAC, meaning substantial reallocations of Pacific cod quota would continue to be necessary among gear sectors to ensure there is no foregone harvest. Under

¹¹¹In the 2000 U.S. Census, the 'other' category represents 'some other race' other than the four primary races listed and 'two or more races.'

this amendment, those reallocations are expected to be reduced, as the allocations would be modified to reflect actual retained catch by sector, including reallocated quota. It is not expected that this action would have a constraining effect on any one sector relative to another. In addition, because the action would reflect historical harvests by sector, it is not expected that this action would significantly affect historical delivery patterns by vessels delivering to shoreside processing plants.

The action proposed in this amendment is to continue or modify the current Pacific cod allocations among the BSAI industry sectors, based on the historical distribution of harvest among sectors. Thus, 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.

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Appendix A: Participation patterns within the sectors

In addition to the number of vessels and their aggregate retained catch by sector, information on participation is important to consider. Tables that represent each vessel's participation history by sector during 1995 – 2003 are provided in this appendix. A separate table is provided for each sector under consideration; the shaded cells in the tables represent participation in that year. The column on the left side of the table represents the number of years out of the nine-year period that the vessels had retained BSAI Pacific cod harvests in 1995 – 2003. The two columns on the far right side of the table report the number of unique vessels that are represented by that particular participation pattern. The first right side column reports the total number of unique vessels that generated that particular participation pattern; the next right side column reports the number of unique vessels that generated that particular participation pattern and whose history is also associated with an LLP. Note that the vessels shown in the LLP column may not have an LLP for *both* the BS and AI subareas, and they may not necessarily have generated an LLP for an area in which they fished. For example, vessels that harvested Pacific cod in the AI but only received an LLP with a BS endorsement would be included in the LLP column.

Note also that the last two rows of each table provides the unique number of vessels that participated in *each* year during 1995 - 2003. These rows provide both the total number of vessels and the number that that participated and whose history is associated with an LLP. Note also that these tables represent participation patterns by all vessels that retained BSAI Pacific cod, whether that harvest was in Federal or State waters.

Note that several important issues were being considered by the Council that would affect Pacific cod vessels during this time period. The first was the LLP. Qualifying years for LLP area endorsements were January 1, 1992 through June 17, 1995. The second issue was the BSAI Pacific cod TAC split among the fixed, trawl, and jig gear sectors, which was scheduled to sunset on December 31, 1996. The Council made its final decision on this amendment (Amendment 46) during the June 1996 meeting. The third issue was the BSAI Pacific cod TAC split among the fixed gear sectors, approved by the Council in October 1999. Finally, the Council made a decision on the Pacific cod endorsement for the $\geq 60'$ fixed gear sectors in April 2000. These actions may have provided incentive for vessels to fish in a manner that they would not have otherwise. However, it is not possible to determine exactly how or whether participation patterns were influenced by these amendments. It is clear that the first and last year for LLP endorsement qualification were years that many vessels fishing in just one year participated. This trend is consistent across the fixed gear sectors.

Table A. 1 provides participation patterns for the **AFA trawl CV** sector. This sector exhibited a consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 91 – 99 vessels harvested cod each year, and only one vessel was not associated with an LLP. Thus, almost 100% of the harvests were made by AFA trawl CVs that have LLPs.

Table A. 2 provides participation patterns for the **non-AFA trawl CV** sector. This sector also exhibited a fairly consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 9 – 22 vessels harvested cod each year, and half of the total number of unique vessels that participated during this nine-year period were not associated with an LLP. However, nearly 81% of the cod harvests made during this time period were by non-AFA trawl CVs that have LLPs.

Table A. 3 provides participation patterns for the **$\geq 60'$ hook-and-line CV** sector. Overall, 3 – 19 vessels harvested cod each year, and 32 of the 46 total unique vessels that participated during this nine-year period were associated with an LLP. In addition, about 97% of the cod harvests made during this time period were by $\geq 60'$ hook-and-line CVs that have LLPs.

Table A. 4 provides participation patterns for the **≥60' pot CV** sector. This sector exhibited a fairly broad range of participants annually during 1995 – 2003, from 54 to 110. Overall, about two-thirds of the total number of unique vessels that participated during this nine-year period were associated with an LLP, and those vessels represent almost 90% of the cod harvests made during this period.

Table A. 5 provides participation patterns for the **<60' pot/hook-and-line CV** sector. This sector had a range of 11 to 41 participants each year during 1995 – 2003. Overall, about one-third of the total number of unique vessels that participated during this nine-year period was associated with an LLP, however, harvests by those LLP vessels represent about 79% of the total retained cod harvest by this sector.

Table A. 6 provides participation patterns for the **jig CV** sector. Similar to the <60' fixed gear sector, the jig sector had a range of 10 to 42 participants each year during 1995 – 2003. Overall, about 29% of the total number of unique vessels that participated during this nine-year period were associated with an LLP, and harvests by those LLP vessels represent about 42% of the total retained cod harvest by this sector. Note that of all affected sectors, only the jig sector is exempt from the LLP requirement in Federal waters (vessels that do not exceed 60' LOA, and that are using no more than 5 jig machines, one line per machine, and 15 hooks per line are exempt from the LLP requirements in the BSAI.)

Table A. 7 shows participation patterns for the **AFA trawl CP** sector. This sector had a range of 8 to 14 vessels that had retained BSAI Pacific cod harvests annually during this time period, all of which were associated with an LLP. Thus, 100% of the harvests made during this time period by the AFA trawl CP sector were made by vessels associated with an LLP. **Table A.8** is provided for the **AFA 9**. Recall that these are the nine trawl CPs that may no longer participate in United States fisheries under the AFA provisions. During the four years considered in which these vessels operated prior to the AFA (1995 – 1998), between 6 and 7 vessels participated each year. Clearly, none of the vessels in the AFA 9 generated an LLP.

Table A. 9 is provides participation patterns for the **non-AFA trawl CP** sector. This sector also exhibited a fairly consistent number of vessels that had retained BSAI Pacific cod harvests during this time period. Overall, 22 – 30 vessels harvested cod each year, and 35 of the 41 unique vessels and almost 100% of the retained Pacific cod harvests during this nine-year period were associated with an LLP.

Table A. 10 is provided for the **pot CP** sector. This sector had a range of 3 – 13 vessels with retained Pacific cod harvests each year during 1995 – 2003. Of the 26 unique pot CPs that had retained cod harvests during this period, 18 were associated with an LLP. Nearly 96% of the retained cod harvests by this sector were made by vessels associated with an LLP.

Table A. 11 is provided for the **hook-and-line CP** sector. Each year during 1995 – 2003, the hook-and-line CP sector had a range of 37 – 43 vessels with retained BSAI Pacific cod harvests. Overall, 59 of the 66 unique vessels that participated during this nine-year period were associated with an LLP, comprising nearly 100% of the retained cod harvested by this sector.

Table A. 1 Participation patterns of the AFA trawl CV sector in the BSAI Pacific cod fishery, 1995 - 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1				■						1	0
3	■				■					1	1
3	■		■	■	■					1	1
4	■		■	■	■					1	1
4		■					■	■	■	1	1
4				■				■	■	1	1
4					■	■	■	■	■	1	1
5	■	■	■	■	■					1	1
5			■		■			■	■	1	1
5							■	■	■	1	1
5		■		■	■			■	■	1	1
5			■					■	■	1	1
6	■	■	■							1	1
6				■	■			■		1	1
6			■		■			■	■	2	2
6					■			■	■	1	1
6		■	■			■				1	1
6				■	■	■				1	1
7	■	■	■					■	■	3	3
7					■	■				1	1
7			■	■	■				■	1	1
7					■				■	1	1
7		■	■		■	■			■	1	1
7				■	■	■				1	1
7		■	■					■	■	2	2
8	■	■	■							5	5
8								■	■	1	1
8							■	■		1	1
8					■					2	2
8			■	■	■					2	2
8		■	■		■	■				3	3
8				■	■	■				1	1
8	■	■	■							7	7
9										58	58
Total # unique vessels by year	91	99	92	93	99	98	98	97	91	109	108
LLP only	91	99	92	92	99	98	98	97	91		

Source: ADF&G fishtickets, 1995 - 2003.

Table A. 2 Participation patterns of the non-AFA trawl CV sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	■									3	2
1		■								5	3
1			■							1	0
1				■						2	2
1					■					2	1
1						■				4	0
1							■			3	0
1								■		3	0
1									■	6	3
2							■			1	0
2								■	■	2	1
2	■	■								2	2
2	■			■						1	1
2		■		■						1	0
2		■				■				1	1
2			■	■						1	0
2			■		■		■			1	0
3						■		■	■	1	0
3							■	■	■	2	1
3				■		■	■			1	1
3		■	■					■		1	0
4			■	■				■	■	2	2
4				■	■				■	1	1
4		■					■		■	1	0
5	■	■		■	■					1	1
5			■	■				■	■	1	1
8			■		■	■	■	■	■	1	1
9	■	■	■	■	■	■	■	■	■	3	3
Total # unique vessels by year	12	17	9	12	11	11	13	18	22	54	27
LLP only	11	12	6	10	9	6	6	10	14		

Source: ADF&G fishtickets, 1995 - 2003.

Table A. 3 Participation patterns of the ≥60' hook-and-line CV sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	
										vessels	LLP only
1	■									1	1
1		■								4	3
1			■							2	1
1				■						5	3
1					■					5	2
1						■				3	2
1							■			1	1
1								■		1	1
2	■		■							1	1
2	■			■						1	1
2				■	■	■				2	1
2					■		■			1	0
2					■	■	■		■	1	1
2						■	■	■		3	3
2							■	■		1	1
3	■				■	■				1	1
3	■				■		■			1	0
3			■			■	■			1	0
3			■				■	■		1	1
3					■				■	1	1
3	■				■	■	■			1	1
4	■		■		■	■			■	1	1
4		■	■		■					1	1
4		■			■	■	■			1	0
4			■				■	■		1	1
4	■		■	■	■	■	■	■	■	1	0
5	■		■	■		■			■	1	1
5		■	■	■	■	■	■	■		1	1
5				■	■					1	1
Total # unique vessels by year	7	7	10	3	18	19	19	6	6	46	32
LLP only	6	5	8	3	11	12	13	5	6		

Source: ADF&G fishtickets, 1995 - 2003.

Table A. 4 Participation patterns of the $\geq 60'$ pot CV sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	█									18	14
1		█								11	5
1			█							2	0
1				█						11	2
1					█					7	2
1						█				11	4
1							█			1	1
1								█		1	1
1									█	3	1
2	█	█								4	3
2			█							1	1
2				█						1	1
2						█				10	8
2									█	1	1
2	█	█	█							2	0
2		█				█				2	1
2		█					█			1	0
2		█							█	2	1
2			█	█	█					4	1
2				█	█	█				10	2
2					█				█	1	1
2								█	█	1	0
3	█	█	█							2	1
3					█					1	1
3		█				█				2	2
3	█	█	█	█						1	0
3				█	█					2	2
3	█						█			2	2

Table A.4 continued

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
3										1	1
3										1	1
3										1	0
3										1	1
3										1	1
3										1	0
3										1	0
3										1	0
3										1	0
4										1	0
4										2	1
4										2	2
4										1	0
4										2	2
4										1	1
4										2	2
4										1	1
4										1	1
4										1	0
4										1	1
4										1	0
4										1	1
4										1	1
4										1	0
4										1	1
4										1	1
4										1	0
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4										1	1
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4										1	1
4										1	0
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Table A. 5 Participation patterns of the <60' fixed gear CV sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	■									24	14
1		■								6	2
1			■							8	2
1				■						7	0
1					■					6	0
1						■				15	1
1							■			17	3
1								■		9	2
1									■	12	4
2	■	■								8	5
2	■		■							1	1
2	■				■					1	1
2	■						■			1	0
2					■	■				4	0
2					■			■		1	0
2						■	■			7	1
2							■	■		3	1
2								■	■	4	1
3	■			■					■	1	1
3		■	■			■				1	1
3			■	■	■	■				1	0
3				■	■	■	■			1	0
3					■		■	■		1	1
3					■		■	■	■	1	1
3						■		■	■	2	1
3			■			■		■	■	2	2
4			■				■		■	1	1
4					■		■	■	■	1	1
4	■					■	■	■	■	2	1
5	■			■	■	■				1	1
5		■		■	■	■	■	■		1	1
5			■	■	■	■	■	■	■	1	0
7	■		■		■	■	■	■	■	1	1
Total # unique vessels by year	38	16	13	11	20	38	41	30	25	152	51
LLP only	24	9	6	2	6	9	14	15	13		

Source: ADF&G fishtickets, 1995 - 2003.

Table A. 6 Participation patterns of the jig CV sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	■									26	17
1		■								13	1
1			■							3	0
1				■						6	0
1					■					7	0
1						■				9	0
1							■			10	1
1								■		7	2
2	■	■								6	3
2		■	■							2	0
2				■			■			1	0
2					■	■				1	0
2							■		■	2	0
2								■	■	3	1
3	■	■	■							1	1
3		■	■	■				■	■	1	1
3		■	■	■	■					1	0
3			■		■	■	■			1	0
3					■	■	■			1	0
4	■	■	■	■						1	0
4		■	■			■				1	1
4	■			■			■	■		1	1
4		■	■	■			■	■		1	0
5	■	■	■	■	■					1	0
5					■				■	1	0
6	■	■	■	■	■	■				2	1
7	■	■	■	■	■	■	■			1	1
7		■	■	■	■	■	■	■		1	1
8									■	1	0
Total # unique vessels by year	42	34	17	10	15	16	19	18	15	112	32
LLP only	26	9	5	4	3	4	3	5	4		

Source: ADF&G fishtickets, 1995 - 2003.

Table A. 7 Participation patterns of the AFA trawl CP sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	■									2	2
1				■						1	1
1					■					1	1
2	■	■								1	1
2				■	■			■		1	1
3	■	■	■	■				■	■	1	1
4	■	■	■	■						1	1
4						■		■	■	1	1
5	■	■	■	■	■					1	1
6							■	■	■	1	1
6				■	■			■	■	1	1
7	■	■	■	■	■	■	■	■	■	1	1
8	■	■	■	■	■	■	■	■	■	6	6
unique vessels by year	14	12	11	13	11	8	8	11	10	19	19
LLP only	14	12	11	13	11	8	8	11	10		

Source: Weekly processors reports, 1995 – 2003.

Table A. 8 Participation patterns of the AFA 9 (trawl CP) sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1			■							1	0
2	■	■		■						1	0
3	■	■	■	■						1	0
4	■	■	■	■						5	0
Total # unique vessels by year	6	6	7	7	0	0	0	0	0	8	0
LLP only	0	0	0	0	0	0	0	0	0		

Source: Weekly processors reports, 1995 – 2003.

Table A. 9 Participation patterns of the non-AFA trawl CP sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1										1	1
1	■									4	3
1		■								1	0
1			■							4	0
2	■	■								3	3
3	■	■	■							3	3
4	■	■	■	■						1	1
5					■	■	■	■	■	1	1
5	■	■			■	■	■	■		1	1
6			■	■	■		■	■	■	1	1
7		■				■	■	■	■	1	1
7	■	■					■	■	■	1	1
9	■	■	■	■	■	■	■	■	■	19	19
Total # unique vessels by year	33	30	30	23	24	23	22	22	23	41	35
LLP only	32	29	26	23	24	23	22	22	23		

Source: Weekly processors reports, 1995 – 2003.

Table A. 10 Participation patterns of the pot CP sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
9	■	■	■	■	■	■	■	■	■	1	1
6	■	■	■	■	■	■	■	■	■	1	1
8	■	■	■	■	■	■	■	■	■	1	1
5	■	■	■	■	■	■	■	■	■	1	1
5	■	■	■	■	■	■	■	■	■	1	1
4	■	■	■	■	■	■	■	■	■	1	1
1	■	■	■	■	■	■	■	■	■	2	0
3	■	■	■	■	■	■	■	■	■	1	0
3	■	■	■	■	■	■	■	■	■	1	1
1	■	■	■	■	■	■	■	■	■	5	2
4	■	■	■	■	■	■	■	■	■	1	1
2	■	■	■	■	■	■	■	■	■	1	1
1	■	■	■	■	■	■	■	■	■	1	1
3	■	■	■	■	■	■	■	■	■	1	1
1	■	■	■	■	■	■	■	■	■	1	0
4	■	■	■	■	■	■	■	■	■	1	1
2	■	■	■	■	■	■	■	■	■	1	1
1	■	■	■	■	■	■	■	■	■	2	1
3	■	■	■	■	■	■	■	■	■	1	1
2	■	■	■	■	■	■	■	■	■	1	1
Total # unique vessels by year	8	13	9	8	13	10	5	5	3	26	18
LLP only	6	9	8	7	12	9	5	5	3		

Source: Weekly processors reports, 1995 – 2003.

Table A. 11 Participation patterns of the hook-and-line CP sector in the BSAI Pacific cod fishery, 1995 – 2003

Years fished	1995	1996	1997	1998	1999	2000	2001	2002	2003	All vessels	LLP only
1	■									6	4
1		■								1	1
1			■							2	2
1				■						1	1
1					■					3	1
1						■				2	0
2	■	■								5	5
2			■	■						1	1
2					■	■				1	0
2								■	■	2	2
3	■	■	■							1	1
3							■	■	■	2	2
4	■	■	■	■						1	1
4		■	■		■		■			1	1
4						■	■	■	■	1	1
5				■	■	■	■		■	1	1
6								■	■	2	2
7	■	■	■					■	■	1	1
7					■			■	■	1	1
7	■	■	■					■	■	3	3
8	■			■						2	2
9	■	■	■	■	■	■	■	■	■	26	26
Total # unique vessels by year	43	39	37	38	38	41	42	40	39	66	59
LLP only	41	39	37	38	37	38	40	40	39		

Source: Weekly processors reports, 1995 – 2003.

Appendix B: Letter from J. Balsiger, Administrator, Alaska Region, NOAA Fisheries to C. Oliver, Executive Director, North Pacific Fishery Management Council. May 23, 2005.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

May 23, 2005

Mr. Chris Oliver
Executive Director
North Pacific Fishery Management Council
605 W. 4th Street, Suite 306
Anchorage, Alaska 99501-2252

Dear Mr. Oliver:

Thank you for your letter regarding the proposed changes to the Pacific cod fishery in the Bering Sea and Aleutian Islands (BSAI). NMFS has reviewed the draft discussion paper dated June 2005, and the North Pacific Fishery Management Council (Council) motion dated April 8, 2005, and offers the following preliminary comments specific to requirements for consultation under section 7 of the ESA.

The Pacific cod fisheries in the BSAI have undergone formal section 7 consultation in 2001 (2001 Biological Opinion) and informal consultation on changes to the fixed gear fisheries in 2003 (informal consultation on Amendment 77 to the Fishery Management Plan for Groundfish of the BSAI). These consultations considered a complex Pacific cod fishery in which roll-overs occur between seasons and between gear types under specific scenarios. This fishery was further considered in the Supplement (dated June 19, 2003) to the 2001 Biological Opinion, which evaluated the performance of the fishery in relation to the fishery regulations and the proposed action considered in 2001.

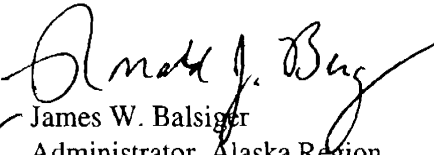
The concept being proposed would effectively implement in regulation the observed fishery as it has occurred given roll-overs between seasons and gear types. Table 9 of the discussion paper provides one proposal for achieving the Council's goal as described in the Council's motion (April 8, 2005). After review of this conceptual approach, our preliminary response is that the proposal in Table 9 is unlikely to trigger a formal re-consultation. Because there would be no change to the actual fishery as it currently occurs, no effects to listed species under the ESA would be expected. This action appears to be merely a re-allocation of Total Allowable Catch (TAC) to a gear type that already effectively harvests those fish under the roll-over scenario. Although the apportionments by gear type and the allocations by season would change from the specific numbers considered in previous consultations, the proposed approach would be crafted in such a way as to maintain the relative portion of the TAC taken by gear and season as is currently observed and has been considered in previous consultations.

In summary, we would anticipate no effects to listed species (e.g., the western distinct population segment of Steller sea lions) or the designated critical habitat based on the Council's proposed



approach under the scenario described above. However, if an approach were adopted that modified the proportion of TAC harvested by gear type and season, such as is described in Table 5 of the discussion paper, further consultation may be necessary.

Sincerely,


For James W. Balsiger
Administrator, Alaska Region

Appendix C: Market Conditions for Pacific Cod

As part of an ongoing contract with the Council, Gunnar Knapp with the Institute of Social and Economic Research (ISER) at the University of Alaska Anchorage is analyzing market information for Pacific cod. This project is not complete, but an interim summary report titled, "Selected Market Information for Pacific Cod" was provided to the Council in January. At the February Council meeting, a portion of this report was presented to the SSC as part of the overview of Amendment 85. While it is not anticipated that actions being considered under Amendment 85 will specifically be affected by market conditions, this information is included as an appendix to Amendment 85 as information on the general market conditions for Pacific cod.

The portions of the report receiving the most interest relate to the product form and export trends for Pacific cod. The attached report provides a sequence of data as follows:

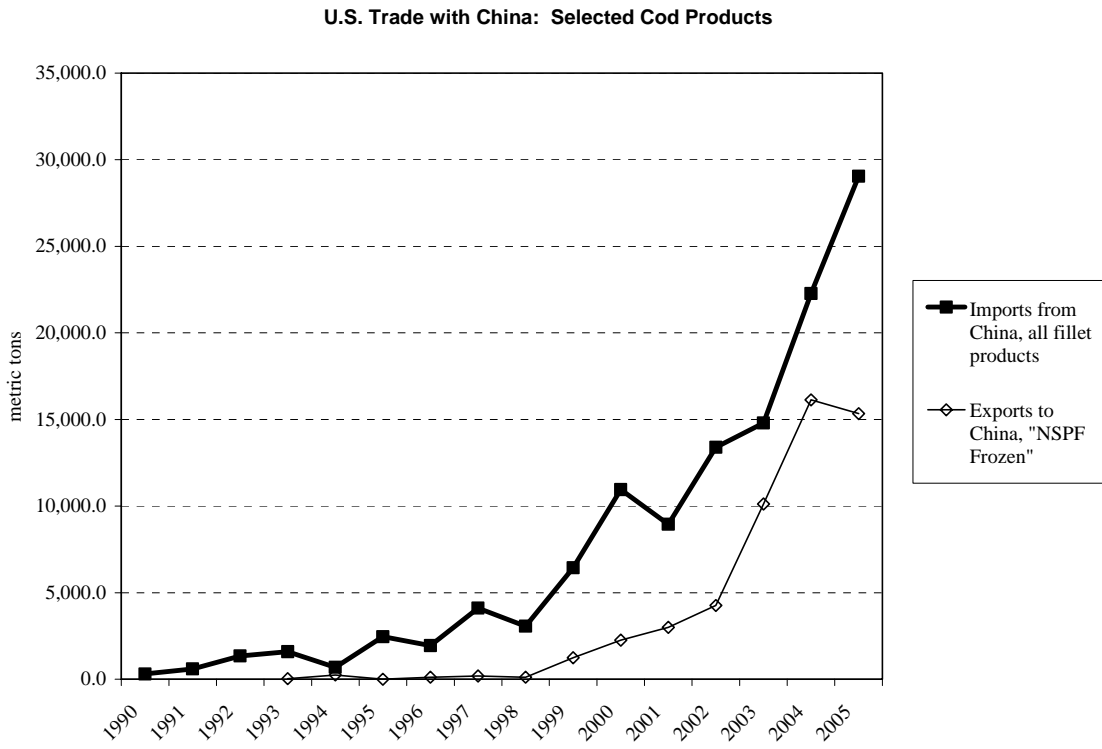
- Figure 7 shows the proportion of frozen (headed and gutted) cod to be steadily increasing from 1995 through 2004. The overall amount of exported cod has also increased.
- Figure 8 suggests that a high proportion of total U.S. exports of cod are frozen (presumably headed and gutted product).
- Figure 9 show an increasing convergence between headed and gutted production in the U.S. with total exports of frozen cod (currently over 90 percent). This suggests that almost all headed and gutted Pacific cod is being exported.
- Figures 11 and 12 show a trend (since 2001) of declining exports of Pacific cod fillets as a share of total U.S. production. The production of Pacific cod fillets have been declining in the U.S. since 1997 and the proportion of the fillet production exported has recently decreased.
- Figures 13 and 14 show that China has received an increasing share of U.S. exports of frozen cod since 1999.
- Figure 18 estimates the U.S. consumption of Pacific cod fillets. Over the period from 1995-2004, the proportional share from imported fillets has increased steadily to become the major source for Pacific cod fillet consumption in the U.S.

Following the February meeting, additional information was gathered to 'close the loop' on the cycle of Pacific cod exports and imports that are outlined above. Specifically, the following graph (Figure C-1) was added to show China's imports and exports of cod with the U.S. As can be noted from the figure, China's exports of cod fillets to the U.S. are larger than the amount they are importing as headed and gutted frozen cod from the U.S. This suggests that most of the exports from the U.S. may be imported back to the U.S. after being reprocessed. It also appears as if cod from other countries is being exported to the U.S., since the imports from China are greater than the amount of cod they receive from the U.S.

In sum, the market trend for Pacific cod is for frozen headed and gutted product to be exported by all sectors of the industry (shorebased processors and catcher processors). The exported headed and gutted cod is being reprocessed into fillets (and other products) and imported by the U.S. This trend suggests an industry shift away from 'value-added' processing at U.S. processing plants (shorebased or catcher processors) in favor of reprocessing in China and other overseas nations.

The preliminary report is attached. Questions and comments on this information are encouraged. Please contact either the Council staff or Gunnar Knapp at ISER.

Figure C-1



Source: NOAA Fisheries, at <http://www.st.nmfs.gov/st1/index.html>. Graph by ISER.

SELECTED MARKET INFORMATION FOR PACIFIC COD

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January 12, 2006

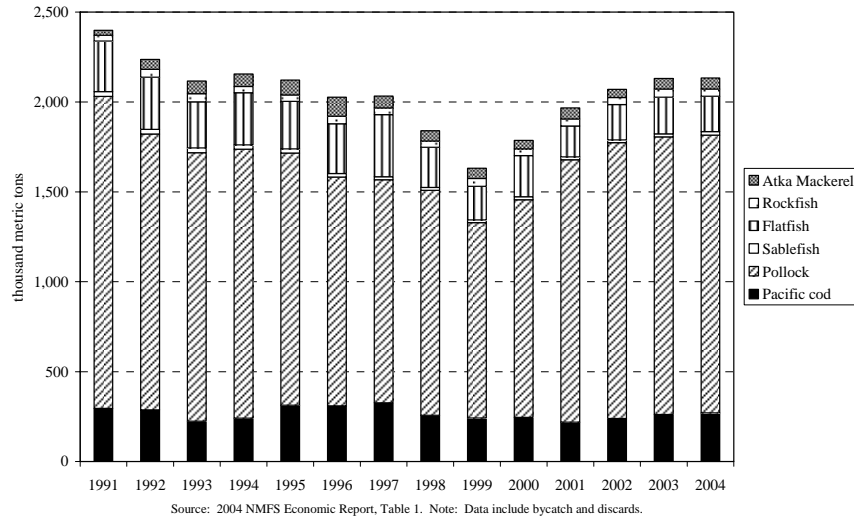
*Note: This document includes selected materials from a report entitled
“Overview of Markets for Pacific Cod” which is in preparation for the
North Pacific Fisheries Management Council.*

Economic Significance of Pacific Cod

Pacific cod (*Gadus macrocephalus*) is an important North Pacific groundfish species. Between 2000 and 2004, annual harvests of Pacific cod off Alaska ranged between 218 and 271 thousand metric tons, and accounted for 12% of the volume of the groundfish catch off Alaska.

Figure 1

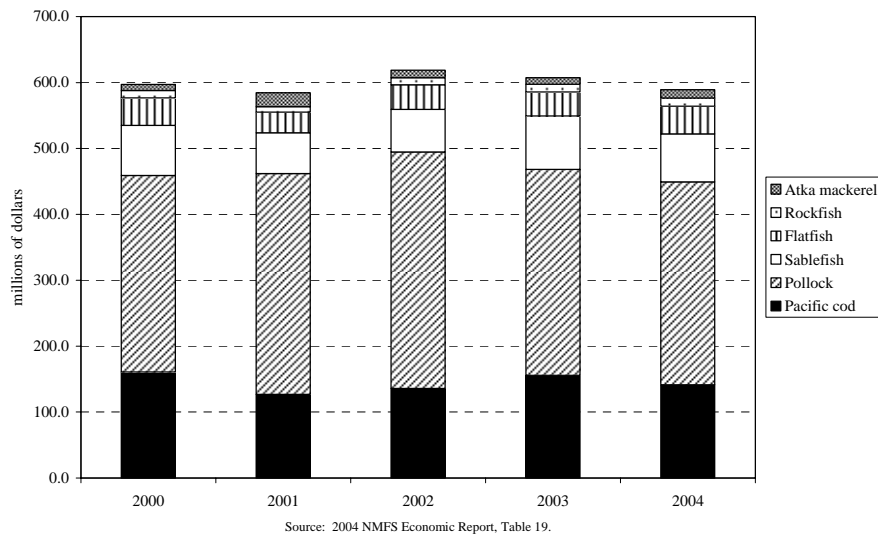
Groundfish Catch in Commercial Fisheries off Alaska, by Species, 1991-2004



During these years, the annual ex-vessel value of Pacific cod harvests was between \$127 million and \$161 million, and accounted for 24% of the ex-vessel value of the groundfish catch off Alaska.

Figure 2

Ex-Vessel Value of Groundfish Catch off Alaska, by Species, 2000-2004



Pacific Cod vs. Atlantic Cod

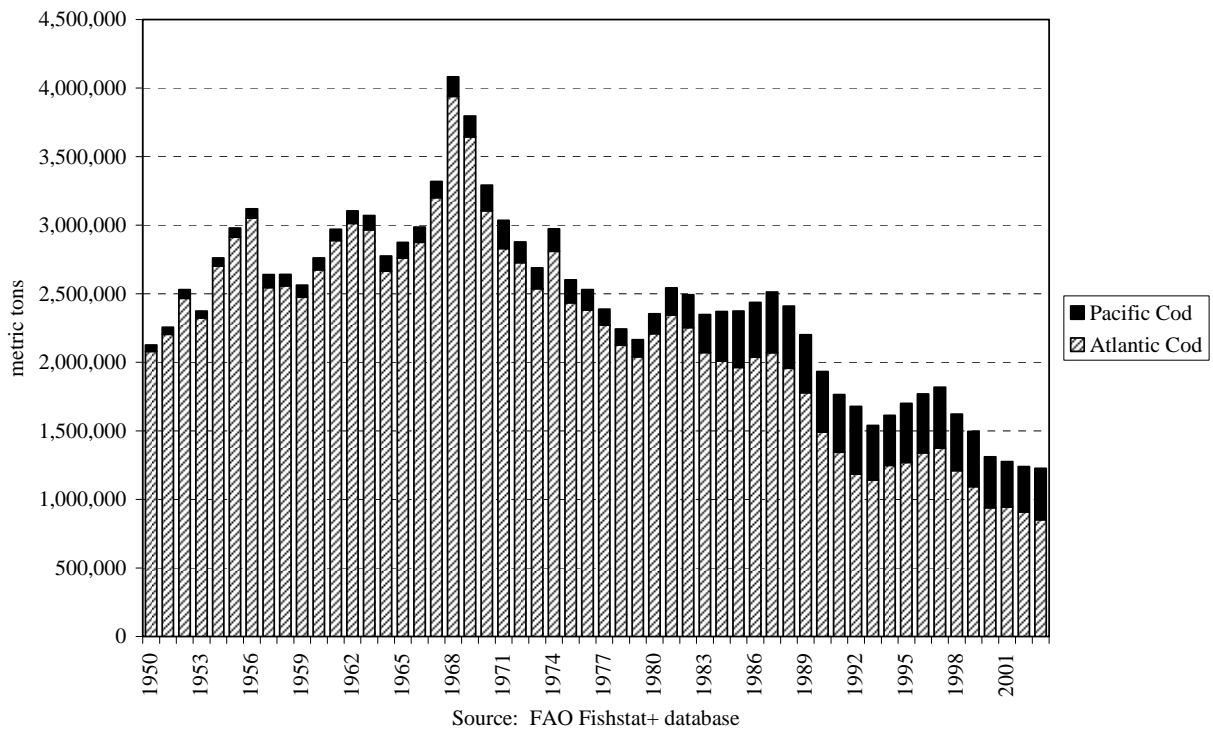
Pacific cod (*Gadus macrocephalus*) is one of the two cod species of commercial importance in the world. The other is Atlantic cod (*Gadus morhua*).

Prior to the 1980s, world harvests of Atlantic cod greatly exceeded harvests of Pacific cod. For most of the 1960s and 1970s, annual world harvests of Atlantic cod exceeded 2.5 million metric tons, while annual harvests of Pacific cod were less than 200 thousand metric tons. However, after peaking in 1969, Atlantic cod harvests began a long and dramatic decline, falling to 850 thousand metric tons by 2003.

Beginning in the 1980s, Pacific cod harvests increased dramatically to between 350 and 450 thousand metric tons for most of the past 20 years. As a result, Pacific cod harvests, while still lower than Atlantic cod harvests, have in recent years represented about one-fourth to one-third of total world cod supply.

Figure 3

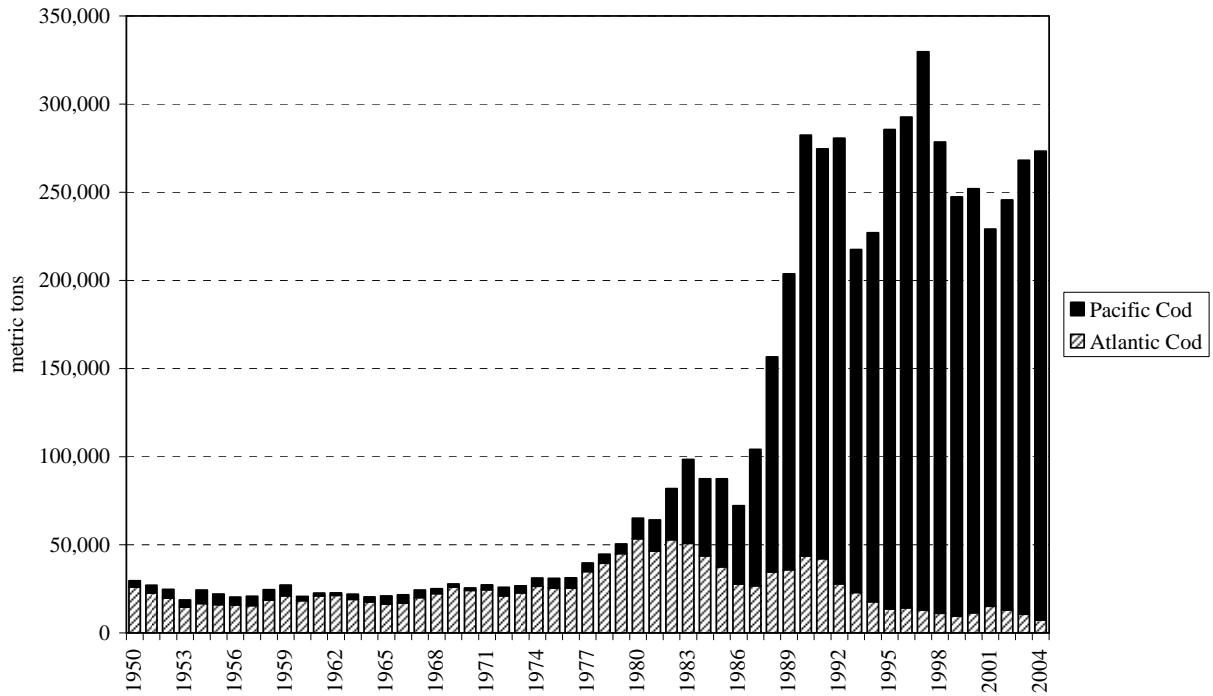
World Harvests of Atlantic and Pacific Cod



The United States has experienced an even more dramatic relative shift in harvests of Atlantic and Pacific Cod. Although historically, the United States accounted for only a small share of world Atlantic cod harvests, prior to 1980, Atlantic cod accounted for almost all of U.S. cod harvests. With the dramatic decline in U.S. Atlantic cod harvests from more than 50,000 metric tons in 1980 to less than 10,000 metric tons in 2004, and the rapid increase in Pacific Cod harvests to more than 200,000 metric tons annually since 1990, Pacific cod now dominates U.S. cod harvests, accounting for more than 95% of U.S. domestic cod harvests. More than 99% of U.S. Pacific cod harvests are from Alaska waters.¹

Figure 4

United States Harvests of Atlantic and Pacific Cod



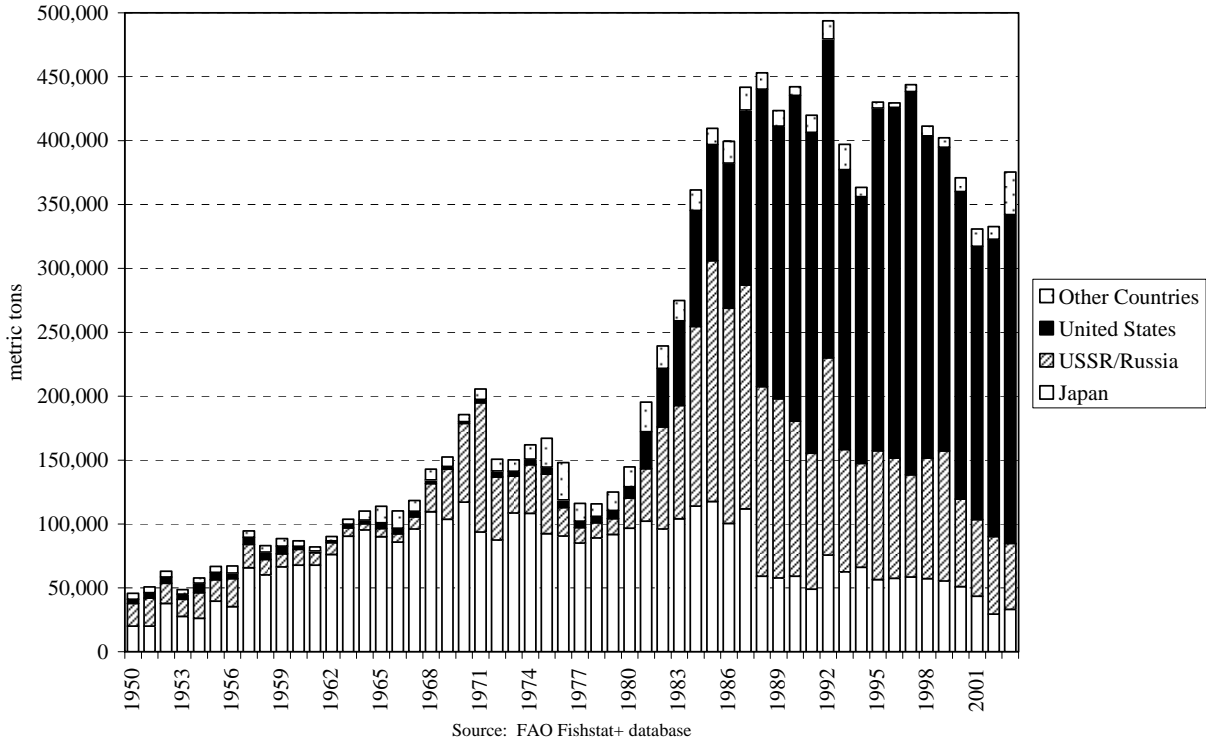
Source: NMFS Commercial Landings Data

¹ NMFS Commercial Landings data.

Until the 1980s, Japan accounted for most of the world harvests of Pacific Cod. In the 1980s harvests of both the USSR and the United States increased rapidly. Since the late 1980s harvests of both Japan and the USSR/Russia have fallen by about half, while U.S. harvests have increased. As a result, the United States now accounts for more than two-thirds of world Pacific Cod supply.

Figure 5

World Harvests of Pacific Cod, by Country



Pacific Cod Production

Headed and gutted (H&G) fish account for by far the largest share of Alaska Pacific cod production. This share has been increasing over time, from just over 50% in 1995 to more than 70% in 2004. Over the same period, the product share of skinless-boneless fillets has declined from more than 15% to about 5%.

Figure 6

Alaska Pacific Cod Production, by Product

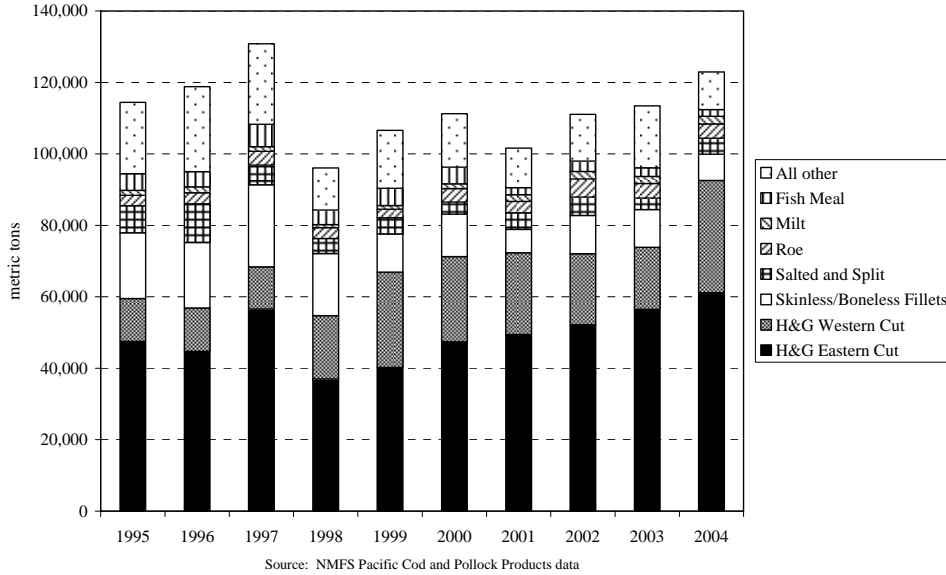
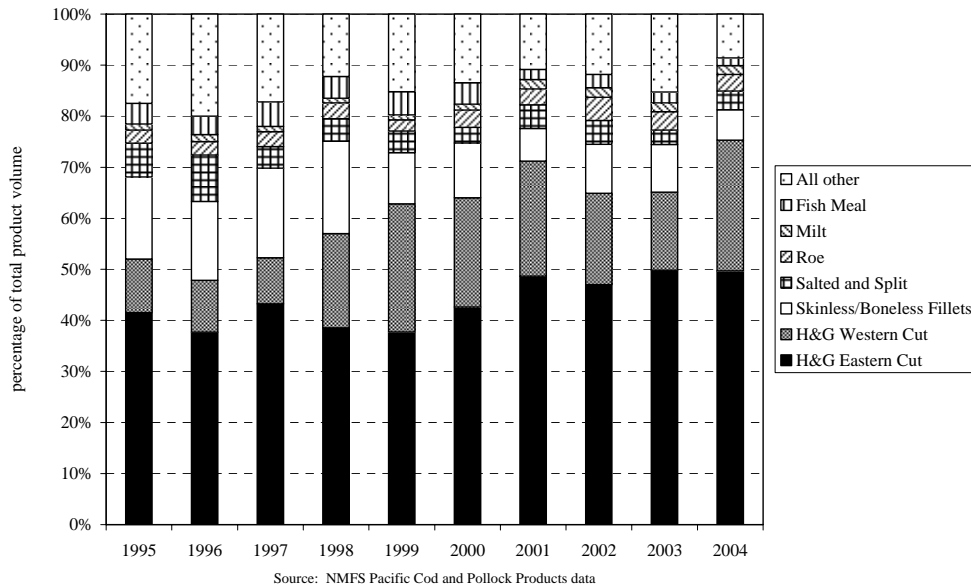


Figure 7

Share of Alaska Pacific Cod Production Volume, by Product



Description of Pacific Cod Products from Trident Seafood Website

Pacific Cod

Shatterpack Fillets are processed at Trident's strategically located shore-based or floating processing plants. Here, the cod trawler fleet delivers fish to the plant within hours of harvest. At this point the fish is headed, eviscerated, and filleted into a skinless, boneless fillet. Each fillet is inspected and "candled" to detect any visible nematodes, bruising, gaping or any other defects. The fillets are then layered into a shatterpack pan. Each fillet is separated from the next by a blue poly liner. The liner prevents fillets from bonding together. This shatterpack is then frozen in a plate freezer. A shatterpack has a net weight of 15 pounds and is preferred by some operators due to the density of the pack, which takes up less room than the IQF form.



Cod Loins, Center Cuts and Tails are cut from cod fillets and are graded by the ounce in 4, 5, 6, 7, 8, 9 sizes. Each particular cut is suited to specific cooking and serving applications. These portions are plate-ready.

Cod Fillet Blocks are made by taking boneless, skinless cod fillets and layering them into a 16.5 pound cardboard-lined block. This block is then frozen in a plate freezer. Most blocks will be used for further processing into products such as breaded portions or sticks.

Minced Cod Blocks are made using small boneless, skinless small fillets, or pieces of fillets that have been put through a mincing process and then formed into a 16.5 pound cardboard-lined block. This block is then frozen in a plate freezer. Most minced blocks will be used for further processing into products such as minced fish sticks or nuggets.

Source: Trident Seafoods Website: www.tridentseafoods.com

United States Cod Exports

U.S. trade data do not distinguish between Atlantic and Pacific cod. Exports of both species are coded as “Cod.” However, given the preponderance of Pacific Cod in total landings, it is likely that exports are also overwhelmingly Pacific Cod.

The only “Cod” product categories in U.S. fisheries trade data are the following:

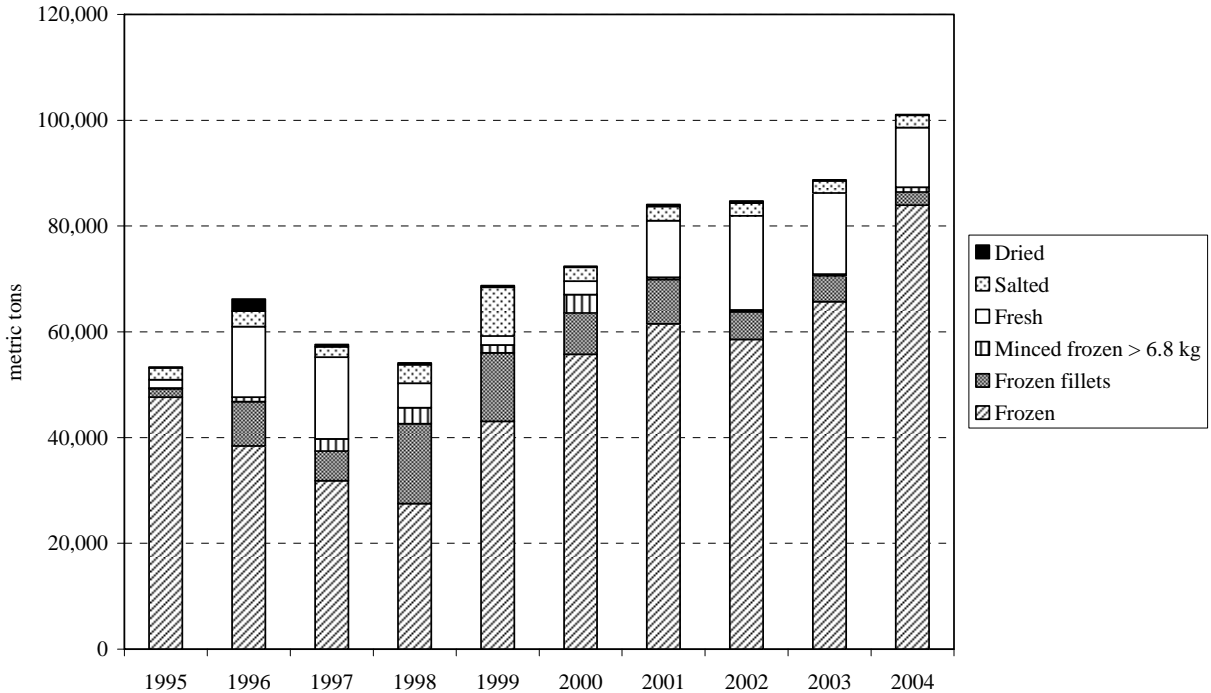
- GROUND FISH COD NSPF DRIED
- GROUND FISH COD NSPF FILLET FROZEN
- GROUND FISH COD NSPF FRESH
- GROUND FISH COD NSPF FROZEN
- GROUND FISH COD NSPF MINCED FROZEN > 6.8KG
- GROUND FISH COD NSPF SALTED

Exports are dominated by “frozen” cod (excluding frozen fillets and frozen minced). Every year since 1999, “frozen” cod has accounted for more than two-thirds of total cod exports. In 2004, “frozen” cod accounted for 90% of total cod exports.

Since 1995 United States Cod exports have experienced a long period of almost continuous growth. Total cod exports increased from less than 55,000 metric tons in 1995 to more than 100,000 metric tons in 2004. Almost all of this growth has been in exports of “frozen” cod. The next most important products by volume are fresh cod, frozen fillets, and salted cod.

Figure 8

U.S. Cod Exports, by Product



Source: NMFS Fisheries Trade data.

Export Share of Pacific Cod Production

There are several problems in analyzing the relative extent to which Pacific Cod products are exported or consumed domestically. While data are available for export volumes, there are no corresponding data for shipments of Pacific cod to the United States market. U.S. domestic consumption can only be estimated as the difference between production and exports. Such estimates, however, are complicated by several factors. Export data for Pacific cod are combined with export data for Atlantic cod. Export data for some Pacific cod products, such as roe and fish meal, are also combined with data for other, non-cod species. The fact that exports do not occur simultaneously with production, but may occur weeks or months later, means that the years in which production and exports are reported do not necessarily correspond. Finally, U.S. trade data “product” categories do not correspond directly to Alaska production data “product” categories.

The table below provides shows roughly corresponding product categories for U.S. trade dat and Alaska production data. While for some data series it is impossible to “match” the two kinds of data, it is reasonable to assume that “frozen” cod exports (other than frozen fillets and frozen minced)—which dominate cod exports, would consist primarily of headed and cutted cod, which dominates Pacific cod production.

Assumed Correspondence Between Trade Data and Production Data Product Categories

Trade Data Product Categories		Production Data Summary Product Categories
Cod product categories	Groundfish Cod NSPF Frozen	Headed and Gutted
	Groundfish Cod NSPF Fillet Frozen	Fillets
	Groundfish Cod NSPF Salted	Salted and Split
	Groundfish Cod NSPF Minced Frozen > 6.8kg	Minced
	Groundfish Cod NSPF Fresh	All other products
	Groundfish Cod NSPF Dried	
Non cod-specific product categories	Other Potential Cod Products Not Specified In the Trade Data As "Cod"	
	Fish,Shellfish Meal Unfit for Human Consumption	Fish Meal
	Fish NSPF Liver & Roe Fresh	Roe, Milt
	Fish NSPF Liver & Roe Frozen	
Fish NSPF Liver & Roe Cured		

As shown in the figures below, U.S. frozen cod export volume accounts for a large and increasing share of headed and gutted Pacific cod production: more than 80% since 2001 and about 90% in 2003 and 2004. Clearly, most Pacific cod H&G production is exported and the U.S. market accounts for only a small share of H&G production.

Figure 9

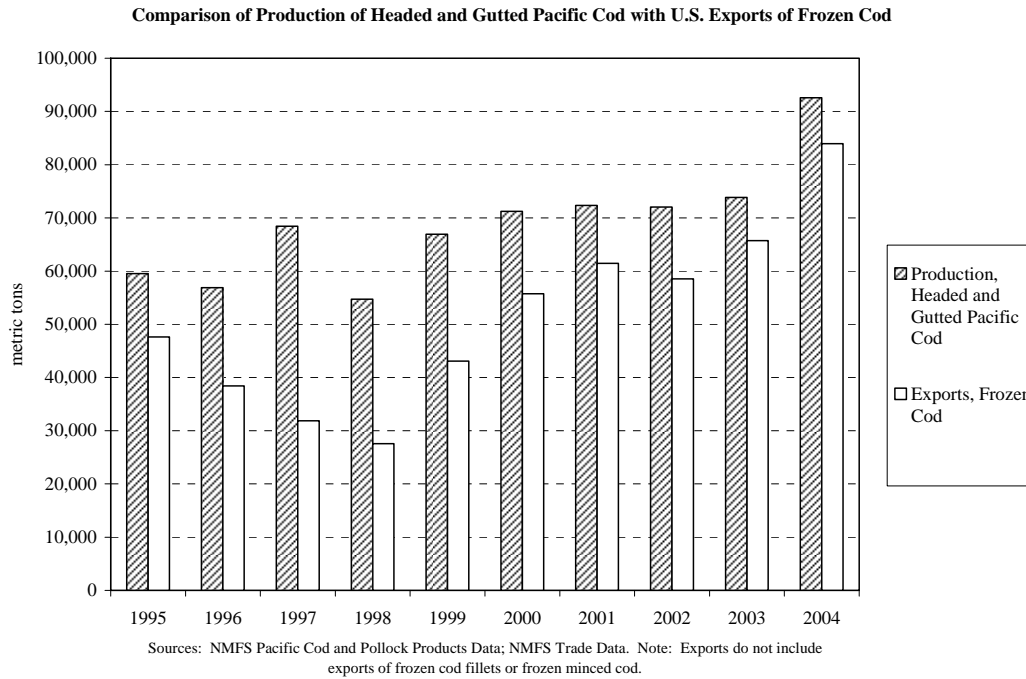
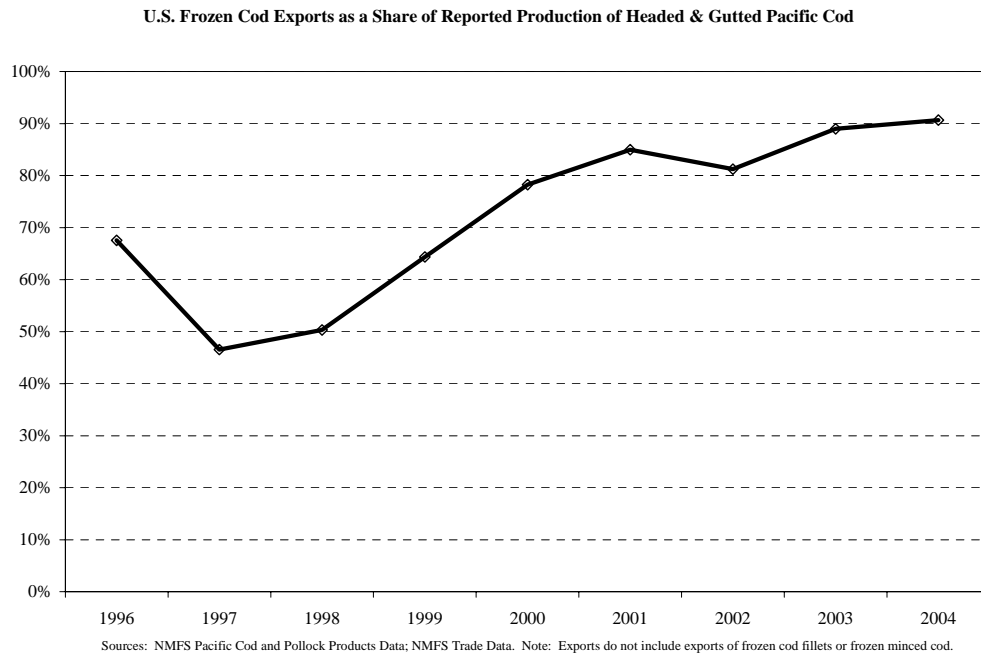


Figure 10



The only other “production” and “trade” product data categories for which there is a close correspondence are production of fillets and exports of frozen cod fillets. Both categories have declined sharply since 1998, but exports have declined relatively more sharply. Since 2002, the export volume has been less than half of reported production volume. This suggests that somewhat over half of Pacific cod fillet production is currently consumed in the U.S. domestic market.

Figure 11

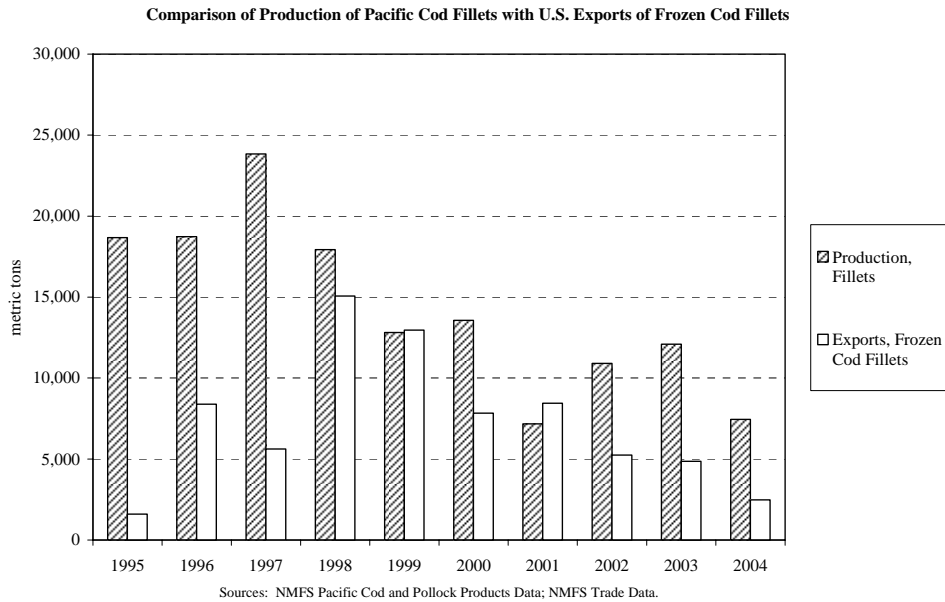
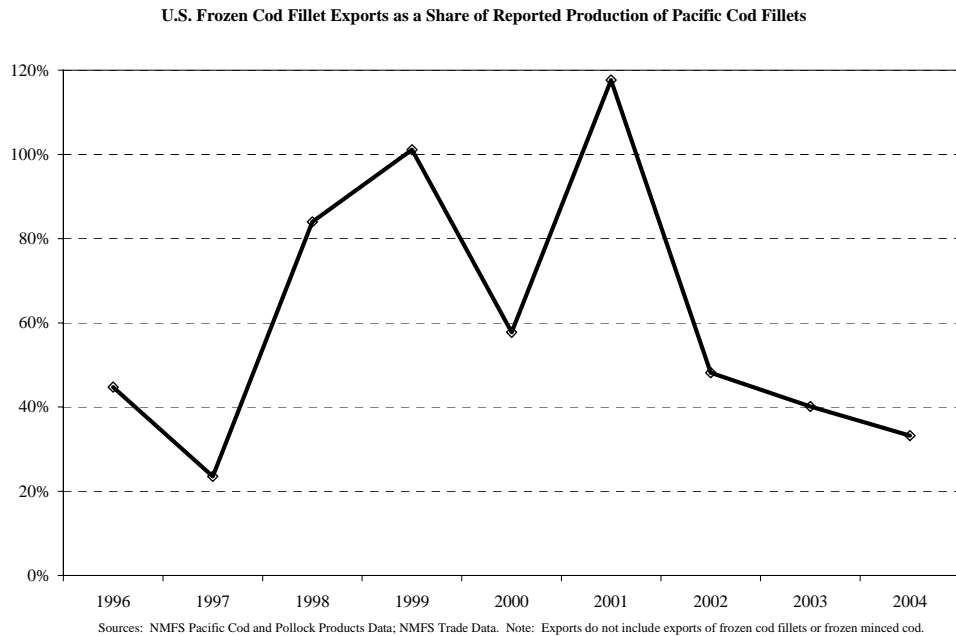


Figure 12



Japan accounts for the largest share of U.S. frozen cod exports. However, the Japanese share of frozen exports has been declining, from more than 60% in 1995 to just over 30% in 2003 and 2004. The actual volume of exports to Japan—while varying from year to year—has been relatively steady. In contrast, in recent years, exports of frozen Pacific cod to China have increased rapidly, as have exports to the traditional Atlantic-cod consuming nations of Portugal and Spain.

Figure 13

U.S. Frozen Cod Exports, by Country

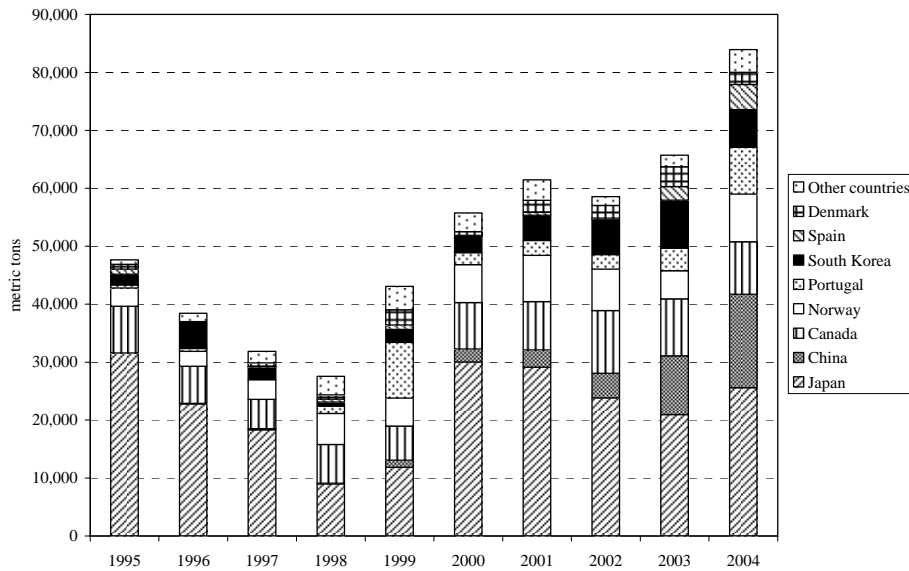
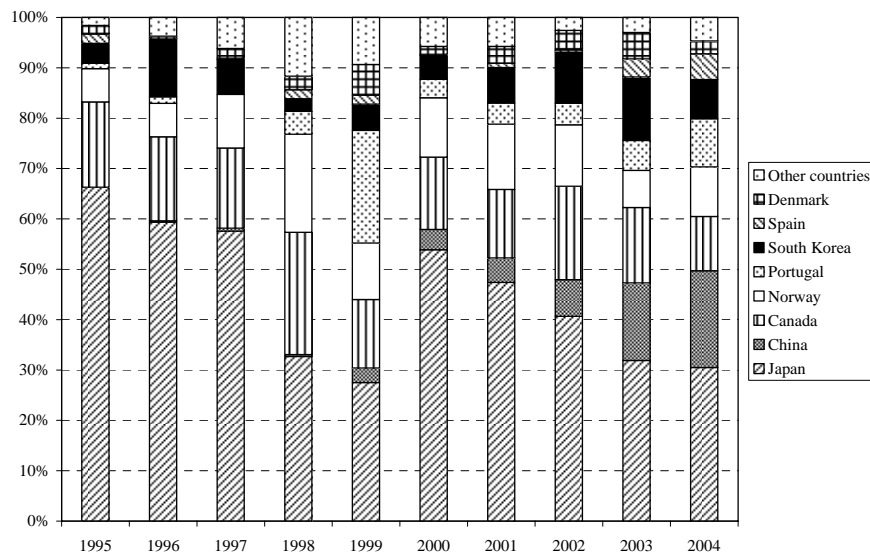


Figure 14

Share of U.S. Frozen Cod Exports, by Country



Comparison of Average Annual Frozen Cod Export Prices for Major Export Markets

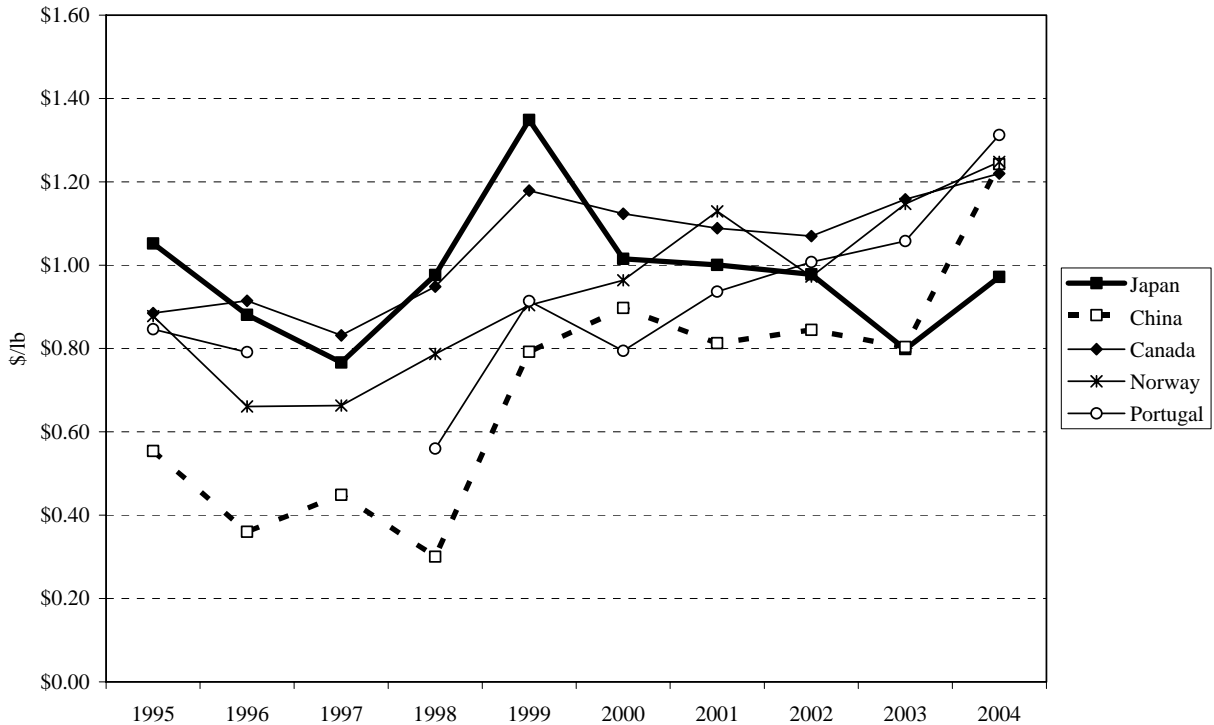
A broad range of product forms are potentially included in “frozen cod” exports. One potential indicator of the extent to which there are significant differences in the mix of product forms sent to different export markets is whether average export prices are similar between markets (and whether they exhibit similar trends over time).

Figure 15 compares average annual export prices (total value divided by total volume) for “frozen cod” exports to the five largest export markets.

The average prices for Canada, Norway and Portugal show relatively similar trends—especially for the years 2001-2004—suggesting that a relatively similar mix of “frozen cod” exports go to these countries. In contrast, Japan and China show significantly different price trends from these three countries and from each other—suggesting that a different mix of “frozen cod” product forms are exported to these countries. Note that the average export price to China, relative to the other countries, has increased significantly—suggesting that the “relative” quality of the product mix has increased over time.

Figure 15

Average U.S. Frozen Cod Export Prices, by Country

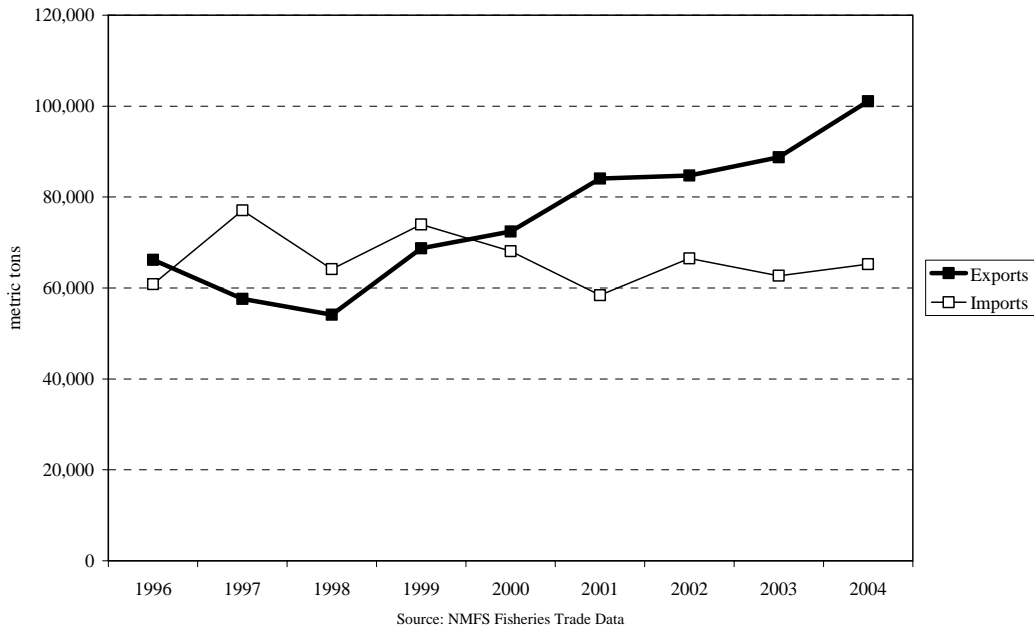


United States Cod Imports

Since 2000 the United States has imported between 60,000 and 70,000 metric tons of cod annually. In the late 1990s imports slightly exceeded exports. With the rise in exports since 2000, by 2004 U.S. cod exports were about 50% greater than U.S. cod imports.

Figure 16

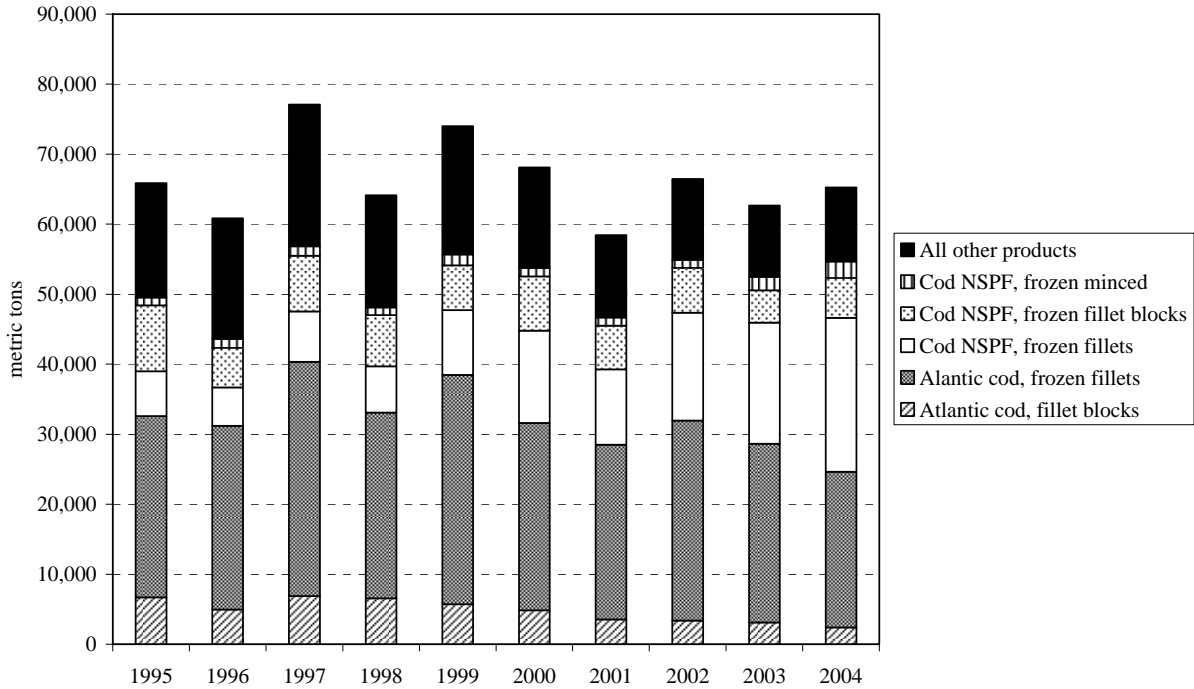
United States Cod Exports and Imports, All "Cod" Product Categories



Frozen fillets and fillet blocks of Atlantic cod account for a little less than half of total U.S. cod imports. Their combined share of total imports has declined since the late 1990s. Over the same period the total imports of “nonspecified” (Pacific) frozen fillets and fillet blocks has increased.

Figure 17

U.S. Cod Imports, by Product



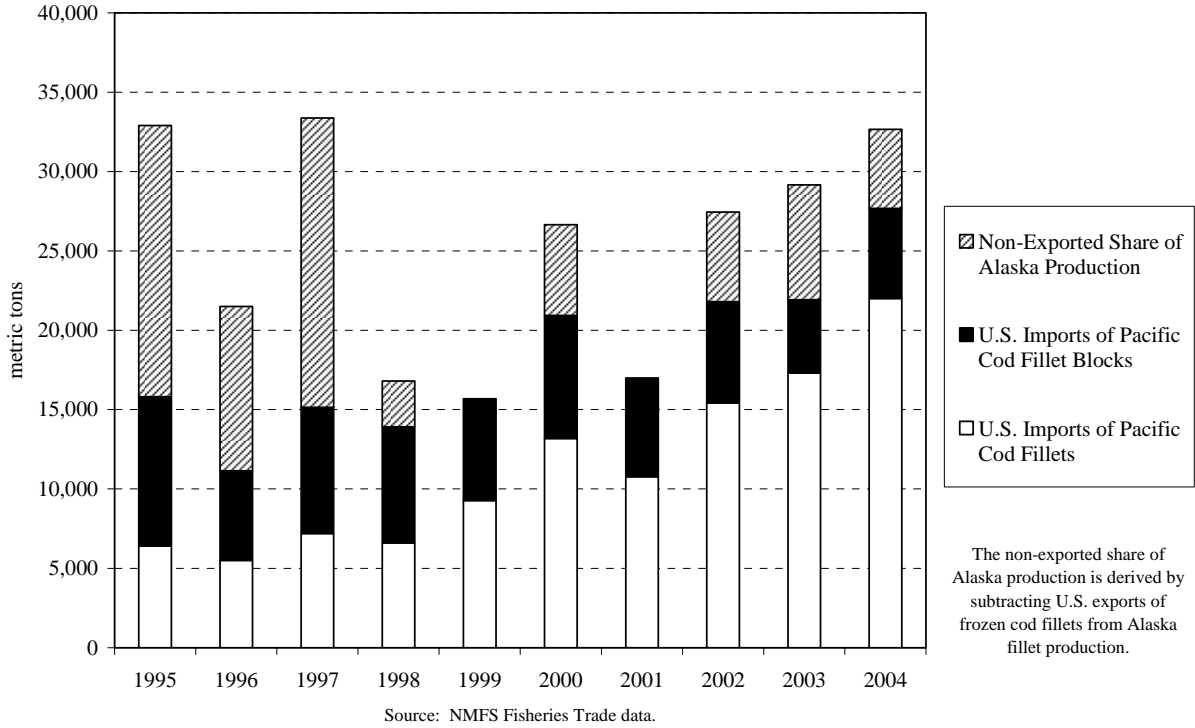
Source: NMFS Fisheries Trade data.

U.S. Consumption of Pacific Cod Fillets

Figure 18 provides a rough estimate of U.S. consumption of Pacific Cod fillets. The estimates suggest that total consumption has been about 30,000 metric tons for the past decade, but imports are replacing Alaska production in total U.S. consumption.

Figure 18

Approximate U.S. Consumption of Pacific Cod Fillets

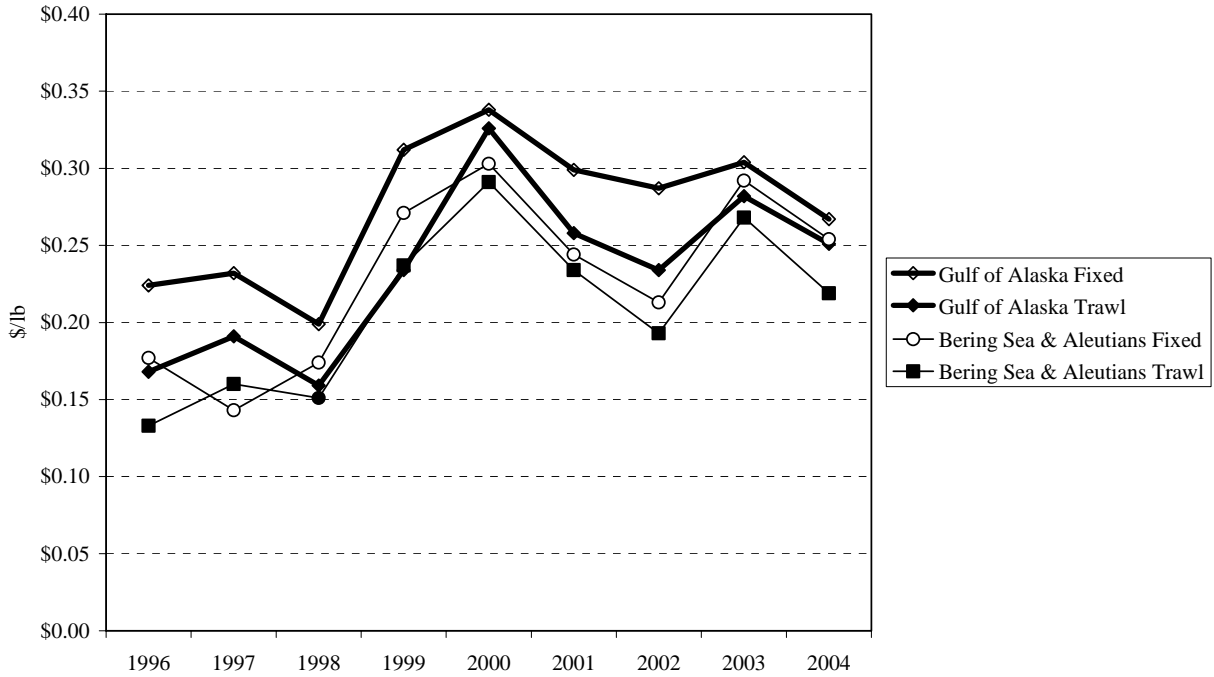


Ex-Vessel Prices

Since 2000, estimated average ex-vessel prices for Pacific Cod have ranged between \$.19/lb and \$.34/lb, depending on year, area and gear type. Ex-vessel prices have consistently been higher for Gulf of Alaska fisheries than for BSAI fisheries, and higher for fixed gear than for trawl fisheries. Prices fluctuate significantly from year to year. Prices increased sharply between 1998 and 1999, peaked in 2000, and have since trended downwards.

Figure 19

Estimated Pacific Cod Ex-Vessel Prices, by Area and Gear



Source: 2000-2004 data from 2004 "Economic Status of the Groundfish Fisheries off Alaska" Report; earlier data provided by Terry Hiatt, NMFS Alaska Fisheries Science Center.