

**Apportionment of BSAI Pacific Cod Sector Allocations  
Between BS and AI Areas**

**Discussion paper**

**October 2011**

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## 1.1 Introduction

Pacific cod is currently managed as one stock in the Bering Sea/Aleutian Islands (BSAI), and there are nine separate industry sector allocations established to divide the ITAC, in addition to the CDQ allocation. In 2008, the SSC has noted there may be sufficient justification for a split in the BSAI Pacific cod between the BS and AI areas, and that a precautionary approach should be taken by specifying separate ABCs for BSAI Pacific cod. In response to the SSC's recommendation, and in anticipation of further recommendations during a future harvest specifications process, the Council initiated efforts to evaluate how to divide the nine non-CDQ BSAI Pacific cod allocations between the two areas.

The proposal to establish separate Pacific cod sector allocations between the Bering Sea and Aleutian Islands management areas, in the event of an ABC/TAC split, was originally included as part of BSAI Amendment 85. This portion of the analysis was removed from the amendment package prior to final action<sup>1</sup>, to allow the Council to evaluate this complex action on a separate timeframe. At its December 2008 meeting, the Council received a discussion paper on dividing BSAI Pacific cod sector allocations between the BS and AI, based on the alternatives that were originally evaluated in BSAI Amendment 85. During discussion, it was agreed that the upcoming release of the draft 2010 Steller sea lion Biological Opinion (BiOp) could significantly affect the proposed action; therefore, the Council opted to discuss the direction of the action after the Council received the BiOp and the final reasonable and prudent alternative (RPA). With the draft BiOp released on August 2, 2010, and the final BiOp and formal RPA released in December 2010, the Council scheduled another review of the discussion paper at its February 2011 meeting.

In February, the Council reviewed a discussion paper which provided data and background information on the management implications of establishing separate Pacific cod sector allocations in the BS and AI. The paper provided a description of the problem statement and existing alternatives followed by an overview of past Council action on BSAI Pacific cod allocations. The discussion paper also included an overview of LLP area endorsements by sector, an update on the State water Aleutian Islands Pacific cod fishery, a brief description of the harvest distribution for Pacific cod between BS and AI by sector, a description of halibut PSC mortality in the BSAI Pacific cod fishery, an overview of Steller sea lion issues associated with proposed action, and finally, a description of the effects of the existing alternatives on the sectors. This paper included harvest data through 2009.

In addition, the Council reviewed the most recent cod biomass estimates from the 2010 SAFE, which indicated that the proportion of the combined BSAI biomass that the AI represents is smaller than previously estimated (i.e., 9% versus the previous estimate of 16%). Some Council members were concerned with the change in the biomass estimate, citing a revision to the assessment method in 2010 and a single new data point (i.e., the 2010 AI trawl survey). The Council was made aware that the Pacific cod stock assessment author planned to develop a separate Tier 5 assessment for AI Pacific cod in the future, and a Center for Independent Experts (CIE) review of the BSAI (and GOA) cod assessment would take place in March 2011, both of which may have implications for the assessment model in the future. The Council also recognized the dynamic nature of the AI cod fishery and the difficulty in predicting the likely outcomes of a TAC split, given that 1) all gear sectors have varied the proportion of their total cod harvest they take from the AI over time; 2) SSL protection measures reduce a large portion of the fishable area in the AI; and 3) it is unknown how sectors will change their fishing patterns and redeploy in response to the SSL protection measures.

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<sup>1</sup>Council final action was April 9, 2006. BSAI Amendment 85 was effective starting in 2008.

Upon review, the Council determined that Alternatives 3 and 4, which would establish separate BS and AI allocations to each individual sector, are not viable management alternatives, potentially creating significant winners and losers and increasing the potential for some sectors' allocations to become inaccessible. In addition, Alternative 3 may increase the prospect of triggering another ESA consultation on SSL, due to the area-specific harvest limitations in the current protection measures.

After taking into consideration the discussion paper, biomass estimates, and public testimony, the Council approved initiating a formal analysis for review, and removed Alternatives 3 and 4 from further analysis. The analysis was initiated to evaluate the impacts of Alternative 1 (status quo) and Alternative 2 from the discussion paper. The Council noted that it did not intend to force a conservation decision on this issue at a particular time, but that the intent was to have a clear default position with regard to the sector allocations, should an ABC/TAC split be determined necessary in the future.

The Council's decision was influenced by the SSC review in February 2011, which recommended that the Pacific cod stock assessment author and BSAI Plan Team develop a plan of action to determine how the BSAI cod assessment should evolve, and that there did not appear to be a pressing conservation need relative to the AI Pacific cod population at this time.

The Council scheduled initial review of a draft analysis evaluating Alternatives 1 and 2 for its October 2011 meeting. However, upon preliminary analysis, staff recognized that Alternatives 1 and 2 are, for analytical purposes, the same alternative. This is, in part, because the 'default' scenario described to the Council under Alternative 1 (i.e., NMFS' probable course of action under a BSAI Pacific cod TAC split and no further direction from the Council on how to address the non-CDQ sector allocations) at previous meetings, has changed. For the past several years, the Council has understood that NMFS' likely default scenario under a TAC split, absent further FMP or regulatory changes by the Council, would be to establish separate BS and AI Pacific cod allocations for each sector, at the same percentage of the sector's combined allocation (i.e., if a sector currently received 40% of the BSAI Pacific cod ITAC, it would receive an allocation of 40% of the BS ITAC and 40% of the AI ITAC, to be fished in the respective areas only). That alternative was not acceptable to the Council, nor was it supported by industry, as it was not based on any sector's recent history in the AI and would be extremely disruptive to the fishery. Thus, the Council was compelled to take action prior to an ABC/TAC split, in order to avoid the default scenario. However, that is no longer NMFS' current interpretation of how the existing regulations would be implemented if the Council took no action; NMFS would instead take a course of action that mirrors Alternative 2.

In sum, Alternative 1 and 2 are effectively the same action. Neither alternative proposes any changes to the existing BSAI Pacific cod allocations for the nine industry sectors, thus they do not require substantive changes to the regulations or BSAI FMP. Staff determined that the analytical issues should be outlined in a discussion paper in October 2011, in part to determine whether a formal analysis is necessary to implement the Council's stated intent, and in part to describe how NMFS would manage the existing BSAI Pacific cod allocations should an ABC/TAC split occur.

## **1.2 Problem statement and alternatives**

The original problem statement is provided below. The problem statement addresses the need to establish a methodology by which to maintain the nine existing sector allocations while recognizing that the cod gear sectors have different catch history in and dependency on the two areas. The problem statement is premised on the need for the Council to be proactive in determining area-specific allocations by sector, should the BSAI Pacific cod TAC be apportioned between the BS and AI areas during a future harvest specifications process.

## **Problem Statement: Apportionment of BSAI Pacific cod sector allocations between 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 discussion paper reviews the two alternatives proposed for this action. The original intent of the action alternative was 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 harvest specifications process. Absent this direction (no action alternative), there was concern that the time necessary to undergo an analysis and notice and comment rulemaking after the TAC is divided would cause significant disruption of the Pacific cod fisheries for several years. At the time the Council first evaluated this potential action in 2006, there were three proposed action alternatives, which were then further evaluated through a series of discussion papers. It was thought that if Council direction was not provided to NMFS, and the BSAI ABC/TAC was split, NMFS would need to determine how to enact the TAC split and the nine associated non-CDQ BSAI Pacific cod sector allocations. Thus, it was reasonable for the Council to be proactive in initiating an analysis prior to a BSAI TAC split.

However, given the analysis, and subsequent removal, of two action alternatives in February 2011, coupled with NMFS' revised interpretation of Alternative 1, it does not appear that further analytical work or Council action is necessary to implement the intent of either alternative, should separate BS and AI TACs be established in a future harvest specifications process. This is discussed in detail in Section 1.4.

The two primary alternatives under consideration, revised as of February 2011, are as follows:

**ALTERNATIVE 1:** 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.

**ALTERNATIVE 2:** 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 to fish in either sub-area (BS and AI) if the sub-area is open for directed fishing and TAC is available.

Option 2.1 Upon splitting the BSAI Pacific cod sector allocations between the Bering Sea and Aleutian Islands, separate BS and AI LLP area endorsements would be converted to BSAI area-wide endorsements for the Pacific cod fishery.

### **1.3 Stock assessment data for BS and AI Pacific cod**

Previous to 2010, Pacific cod stock assessments for the BSAI estimated the biomass at about 84% in the EBS (Eastern Bering Sea) and 16% in the AI. However, the 2010 estimate revised that distribution for 2011. The most recent AI bottom trawl survey, reported in the 2010 Pacific cod stock assessment chapter of the 2010 BSAI SAFE states the following (p. 253):

Biomass estimates for the Aleutian Islands region were derived from U.S. - Japan cooperative bottom trawl surveys conducted during the summers of 1980, 1983, and 1986, and by U.S. bottom

trawl surveys of the same area in 1991, 1994, 1997, 2000, 2002, 2004, 2006, and 2010. These surveys covered both the Aleutian management area (170 degrees east to 170 degrees west) and a portion of the Bering Sea management area (“Southern Bering Sea”) not covered by the EBS shelf bottom trawl surveys. The time series of biomass estimates from the overall Aleutian survey area are shown together with their sum below (all estimates are in t):

Year	Survey Type	Aleutian Survey Area
1980	U.S – Japan	148,272
1983	U.S. – Japan	215,755
1986	U.S. – Japan	255,072
1991	U.S.	191,049
1994	U.S.	184,068
1997	U.S.	83,416
2000	U.S.	136,028
2002	U.S.	82,970
2004	U.S.	114,161
2006	U.S.	92,526
2010	U.S.	68,161

The stock assessment continues to state (p. 253):

The 2010 estimate is the lowest in the time series. For many years, the assessments of Pacific cod in the BSAI have used a weighted average formed from EBS and AI survey biomass estimates to provide a conversion factor which is used to translate model projections of EBS catch and biomass into BSAI equivalents. Prior to the 2004 assessment, the weighted average was based on the sums of the biomass estimates from the EBS shelf and AI survey biomass time series. However, in December of 2003 the SSC requested that alternative methods of estimating relative biomass between the EBS and AI be explored. Following a presentation of some possible alternatives (Thompson and Dorn 2004), the SSC recommended that an approach based on a simple Kalman filter be used. **Applying this approach to the updated (through 2010) time series indicates that the best estimate of the current biomass distribution is 91% EBS and 9% AI, replacing the previous proportions of 84% and 16% respectively.** [emphasis added]

The 2011 BSAI Pacific cod ABC and TAC are substantially higher compared to recent years, and the 2012 ABC was estimated to be even higher (during the 2011 - 2012 specifications process). The 2011 ABC is 235,000 mt, which is 35% higher than 2010; the 2012 ABC is estimated to be 281,000 mt, which is 61% higher than 2010. The 2011 TAC is 227,950 mt, meaning the 2011 ITAC is 203,559 mt.

Using the biomass distribution estimates above, if the split was in place for 2011, one could assume that the BS ABC would be 213,850 mt, and the AI ABC would be 21,150 mt. If the State water AI Pacific cod fishery continues to be calculated as 3% of the BSAI ABC (7,050 mt), but taken wholly off the AI ABC, this means the AI TAC would be 14,100 mt (21,150 – 7,050), and the BS TAC would be 213,850 mt. Accounting for the 10.7% CDQ allocation in each area, the AI ITAC would be 12,591 mt and the BS ITAC would be 190,968 mt.

Note that in February 2011, the Council expressed concern with the change in the biomass estimate, citing a revision to the assessment method in 2010 and a single new data point (i.e., the 2010 AI trawl survey). The BSAI Plan Team minutes (November 2010) reported that the stock assessment author informed the team of his plans to develop a separate AI Pacific cod assessment based on Tier 5<sup>2</sup> calculations for 2012, the results of which may be included in the draft 2011 BSAI SAFE Report. Also in February 2011, the

<sup>2</sup>Tier 5 means little data are available; this approach uses biomass estimates and natural mortality to calculate an OFL and ABC.

SSC requested that the Pacific cod stock assessment author and BSAI Plan Team establish a plan of action to determine how the BSAI cod assessment should evolve.

In addition, a CIE review was conducted on the BSAI and Gulf of Alaska Pacific cod stock assessments in March 2011. The scope of work did not include review of or recommendations for a separate AI Pacific cod model, but the CIE responded in brief on several issues not included in the terms of reference. One reviewer stated: “The Pacific cod may have a metapopulation structure in the BSAI. This stock spatial structure may call for separate area management for the BS and AI. A separate stock assessment for BS and AI seems to be a logical way to start this process.”

In August 2011, the stock assessment author provided separate AI OFL and ABC recommendations for 2012. The stock assessment author’s recommendation, based on a Tier 5 assessment, is:  $OFL = 0.34 \times 69,800 \text{ mt} = 23,700 \text{ mt}$ , and the maximum permissible ABC would be  $0.75 \times OFL = 17,800 \text{ mt}$ . The BSAI Groundfish Plan Team and SSC are scheduled to review the Tier 5 approach compared with the previous method of apportioning BSAI biomass for the two areas in August 2011 and October 2011, respectively, and make recommendations to the Council. Thus, future biomass estimates may be a result of a separate AI assessment, meaning the biomass estimate (and harvest specifications) would no longer be designated as a percentage of the combined BSAI biomass. However, the Plan Team approach is not yet confirmed, and continued use of a combined BS and AI Pacific cod OFL and ABC may be recommended for 2012/2013.

While the Plan Team and SSC recommendations for 2012 are not yet available, note that the stock assessment author’s recommended AI OFL is lower than the actual catch in 11 out of the last 16 years, and the maximum permissible ABC is lower than the actual catch in 14 out of the last 16 years (see Table 3, Appendix 1). Recall also that the AI State water GHLL, which is 3% of the BSAI ABC, would need to be established and subtracted from the AI ABC to determine the AI TAC. At the time of the writing of this paper, the BS ABC had not yet been recommended, which is necessary to calculate the GHLL. However, it is clear that a reduction based on 3% of the BSAI (combined) Pacific cod ABC would substantially reduce the AI TAC from 17,800 mt. Note, however, that the author’s recommended 2012 AI ABC is well above the 2011 AI Pacific cod harvest to date, including harvest from the CDQ fishery and the AI State water fishery.

#### **1.4 Analytical approach**

As currently stated, Alternatives 1 and 2, in effect, are identical. Alternative 1, the no action alternative, means that the Council would not take any action to apportion the BSAI Pacific cod allocations to the industry sectors between the BS and AI areas. Under Alternative 1, the Council would leave in place the combined BSAI Pacific cod allocations that currently exist in the BSAI FMP and regulations at 679.20(a)(7), and not provide further guidance to NMFS regarding any potential methodology to splitting the allocations between the two areas. Under Alternative 2, the Council would also make a recommendation to leave in place the combined BSAI Pacific cod allocations that currently exist in the BSAI FMP and regulations at 50 CFR 679.20(a)(7), providing NMFS explicit direction not to enact a methodology to split the allocations between the two areas. While one constitutes no action, and one constitutes action, in effect, the two alternatives are the same. Both mean that the Council would choose to retain the current BSAI-wide allocations by each (non-CDQ) industry sector, as approved under BSAI Amendments 80 and 85. If that is the case, it spurs the question as to what FMP or regulatory action is necessary to analyze and evaluate to not make a change to the current allocation structure.

Key to the analytical approach is understanding that, absent any further direction and upon a BSAI Pacific cod ABC/TAC split, NMFS would only interpret the existing regulations establishing the sector allocations at 679.20(a)(7) such that they would apply to combined BS and AI Pacific cod TACs. There is no feasible

alternative interpretation identified by NMFS at this time. Thus, in the event of a TAC split, NMFS would maintain the BSAI allocations such that they are a percentage of the combined BS and AI ITACs. Each sector would continue to receive its allocation below, and could fish it in either the BS and/or AI, depending on whether the area had TAC available. While no substantive regulatory amendments would be necessary, some small revisions to the regulatory language could help clarify that the current management structure is maintained under a TAC split, as suggested below (in bold and underlined):

679.20 (7) Pacific cod TAC, BS **and** AI.

(ii) Non-CDQ allocations.

(A) Sector allocations. The remainder of the **combined BS and AI Pacific cod TACs** after subtraction of the CDQ reserve for Pacific cod will be allocated to non-CDQ sectors as follows:

<b>Sector</b>	<b>% Allocation</b>
(1) Jig vessels	1.4
(2) Hook-and-line/pot CV <60 ft (18.3 m) LOA	2
(3) Hook-and-line CV ≥60 ft (18.3 m) LOA	0.2
(4) Hook-and-line CP	48.7
(5) Pot CV ≥60 ft (18.3 m) LOA	8.4
(6) Pot CP	1.5
(7) AFA trawl CP	2.3
(8) Amendment 80 sector	13.4
(9) Trawl CV	22.1

The remaining regulations in this section regarding the incidental catch allowance and the reallocation structure among non-CDQ sectors refer only to “Pacific cod” or the “Pacific cod TAC”. It does not appear that changes would be necessary to these sections to continue current practices under a TAC split with combined BS and AI allocations. Revisions may be necessary for clarification in places where the regulations reference “BSAI Pacific cod sector allowances” such as in the seasonal allowance regulations (679.20(7)(iv)(A)). This language could be revised to read “**combined BS and AI Pacific cod sector allowances.**” The language authorizing the ITAC allocation to the Amendment 80 sector does not appear to need revision, as it references the Pacific cod TAC, which would now be understood (from 679.20(7) above) to mean the combined BS and AI TAC or ITAC.

Similarly, no substantive changes would be necessary to the BSAI FMP language implementing the non-CDQ sector allocations under Amendments 80 and 85 (Section 3.2.3.4.3, see Appendix 4). The existing BSAI FMP would not be inconsistent with the action, but small revisions may help to clarify that the allocations remain a percentage of the BS and AI combined TAC. The language stating that “The BSAI Pacific cod TAC (excluding CDQ) shall be allocated among gear groups as follows...” could be revised to read “The BS **and** AI **combined** Pacific cod TACs (excluding CDQ) shall be allocated among gear groups as follows...”. Other sections of the FMP referencing Pacific cod do not appear to warrant revisions. Staff could include such clarifying language in a future BSAI FMP amendment package.

The decision of *whether to establish* separate OFLs, ABCs, and TACs for Pacific cod in the BS and AI subareas is part of the harvest specifications process, similar to other species groupings or splits that have been enacted in the past. Ramifications or effects of splitting the TAC are assumed to be part of the analysis supporting the harvest specifications process, which, in recent years, is in the form of a

supplemental information report to the final EIS for harvest specifications.<sup>3</sup> Splitting and combining various species groups has occurred as part of the harvest specifications process for many years, and a regulatory analysis is not part of this process.

Thus, the decision of whether to split the TAC is not at issue in this proposed action – the alternatives under consideration direct how to manage the industry sector allocations of Pacific cod once a TAC split has been implemented. Given that both Alternative 1 and Alternative 2 would maintain the current combined BSAI Pacific cod sector allocations, it does not appear there are proposed changes to analyze under either alternative, beyond any clarifying language that may help the public understand that the current allocations are maintained under a TAC split. Staff asserts that because neither alternative proposes a change to the current practice of implementing BSAI-wide allocations, only housekeeping-type revisions to the regulations may be necessary to clarify the status quo under a TAC split. This paper was developed in part to discuss the analytical issue and vet this approach through NMFS and the Council.

Because there are no substantive regulatory or FMP changes required, and thus no regulatory analysis, the Council could review this discussion paper and clarify a policy direction to NMFS in the event of an ABC/TAC split. However, no further action is necessary to implement the Council's intent, as NMFS would essentially implement Alternative 1 and 2 in the event of a TAC split, even if the Council did not provide further policy direction.

The remaining sections of this paper focus primarily on the management of the BSAI Pacific cod fishery under a TAC split. Section 1.5 discusses the CDQ Program allocation under a TAC split. Section 1.6 outlines how the TAC split would be implemented if the existing BSAI non-CDQ Pacific cod allocations were maintained under Alternative 1 or 2, including an explanation of inseason management, seasonal allocations, and consistency with the Steller sea lion protection measures. An overview of the LLP area endorsements for the sectors is provided in Section 1.7, and a summary is provided in Section 1.8.

## **1.5 CDQ Allocation**

The alternatives proposed to-date have only applied to the non-CDQ BSAI Pacific cod sectors. The Magnuson-Stevens Act (MSA) establishes the allocation under the CDQ Program for each directed fishery of the Bering Sea and Aleutian Islands (with the exception of halibut, sablefish, pollock, and crab), whether an existing allocation or a newly enacted allocation, at 10.7% of the TAC. These allocations are established in Section 305(i)(1)(B)(i) and (ii):

**(B) PROGRAM ALLOCATION.—**

**(i) IN GENERAL.—**Except as provided in clause (ii), the annual percentage of the total allowable catch, guideline harvest level, or other annual catch limit allocated to the program in each directed fishery of the Bering Sea and Aleutian Islands shall be the percentage approved by the Secretary, or established by Federal law, as of March 1, 2006, for the program. The percentage for each fishery shall be either a directed fishing allowance or include both directed fishing and nontarget needs based on existing practice with respect to the program as of March 1, 2006, for each fishery.

**(ii) EXCEPTIONS.—**Notwithstanding clause (i)—

**(I)** the allocation under the program for each directed fishery of the Bering Sea and Aleutian Islands (other than a fishery for halibut, sablefish, pollock, and crab) shall be a total allocation (directed and nontarget combined) of 10.7 percent effective January 1, 2008; and

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<sup>3</sup>National Marine Fisheries Service, Department of Commerce (Jan. 2007), Alaska Groundfish Harvest Specifications Final Environmental Impact Statement. <http://alaskafisheries.noaa.gov/analyses/specs/eis/final.pdf>

(II) the allocation under the program in any directed fishery of the Bering Sea and Aleutian Islands (other than a fishery for halibut, sablefish, pollock, and crab) established after the date of enactment of this subclause shall be a total allocation (directed and nontarget combined) of 10.7 percent. The total allocation (directed and nontarget combined) for a fishery to which subclause (I) or (II) applies may not be exceeded.

The regulations for the current CDQ reserves are at 50 CFR 679.20(b)(1)(ii). Paragraph (C) addresses the allocation of the overall CDQ groundfish reserves by TAC category for the Amendment 80 species including Pacific cod, and (E) addresses how to modify the CDQ reserves if overall TACs are split or combined during the final harvest specifications:

*(C) CDQ reserves for Amendment 80 species. An amount equal to 10.7 percent of the BSAI TACs for Atka mackerel, Aleutian Islands Pacific ocean perch, yellowfin sole, rock sole, flathead sole, and Pacific cod will be allocated to a CDQ reserve for each of these species by management area, subarea, or district.*

*(E) If the groundfish harvest specifications required by paragraph (c) of this section change a TAC category allocated to a CDQ reserve under paragraphs (b)(1)(ii)(A) through (D) of this section by combining or splitting a species, species group, or management area, then the same percentage of the TAC apportioned to a CDQ reserve in paragraphs (b)(1)(ii)(A) through (D) of this section will apply to the new TAC categories.*

Per the MSA and these regulations, if a new TAC is established, the CDQ Program receives a 10.7% allocation, unless a species is explicitly allocated at a different percentage (e.g., pollock under the AFA), or if NMFS determines that the TAC category does not constitute a “directed fishery” for purposes of the CDQ Program (e.g., Bogoslof pollock, AI Greenland turbot, other flatfish, Alaska plaice, squid, etc.). However, based on the history of allocations and CDQ fishing for Pacific cod, if the BSAI Pacific cod TAC is split into BS and AI area TACs, the CDQ Program would receive 10.7% of the BS Pacific cod TAC and 10.7% of the AI Pacific cod TAC. The CDQ groups could not be allowed to fish their separate BS and AI Pacific cod allocations as a combined allocation because of the potential to exceed the Pacific cod ABC if the entire CDQ allocation were fished in one or the other of the areas, and the limited ability NMFS has to close CDQ fisheries once allocations to CDQ groups are made.

The MSA and existing regulations are in place to address the amount allocated to the CDQ Program in the event of a BS and AI TAC split; no further action is necessary from the Council to clarify the program allocation. However, regulations at 679.20(7)(i) may need to be revised to clarify and reflect the new TAC split. Note that this is a result of the TAC split itself, and not the Council’s proposed action on the non-CDQ sector allocations. The current BSAI Pacific cod regulations governing the CDQ allocation are as follows, with suggested revisions identified that may be necessary to reflect a TAC split:

*679.20 (7) Pacific cod TAC, BS and AI.*

*(i) CDQ reserve and seasonal allowances.*

*(A) A total of 10.7 percent of each of the annual Pacific cod TACs will be allocated to the CDQ Program in the annual harvest specifications required under paragraph (c) of this section. The Pacific cod CDQ allocation will be deducted from the annual Pacific cod TAC before allocations to the non-CDQ sectors are made under paragraph (a)(7)(ii) of this section.*

*(B) The BS and AI Pacific cod CDQ gear allowances by season, as those seasons are specified under § 679.23(e)(5), are as follows:*

<b><i>Gear Type</i></b>	<b><i>A season</i></b>	<b><i>B season</i></b>	<b><i>C season</i></b>
<i>(1) Trawl</i>	60%	20%	20%
<i>(i) Trawl CV</i>	70%	10%	20%
<i>(ii) Trawl CP</i>	50%	30%	20%
<i>(2) Hook-and-line CP and hook-and-line CV <math>\geq 60</math> ft (18.3 m) LOA</i>	60%	40%	No C season
<i>(3) Jig</i>	40%	20%	40%
<i>(4) All other non-trawl gear</i>	no seasonal allowance	no seasonal allowance	no seasonal allowance

## 1.6 Inseason management under Alternatives 1 and 2

Should the Plan Team and SSC recommend separate OFLs and ABCs for Pacific cod in the BS and AI areas, and the Council approves separate TACs for each area during the harvest specifications process, Alternative 1 and 2 would have the same practical effect.

First, the AI State water GHl would be calculated (step 2 below). The GHl is calculated as 3% of the BSAI ABC; under an ABC split it would be calculated as 3% of the combined BS ABC and AI ABC. The amount resulting from that calculation would be deducted only from the AI ABC to determine the AI TAC (step 3 below). Note that this calculation could theoretically result in a situation in which the AI State water Pacific cod GHl exceeds the amount allocated to the AI as a whole (e.g., in the case that the AI ABC is ever equal to less than 3% of the combined BS and AI ABCs). One way to prevent such potential is for the State of Alaska to implement a control rule such that the GHl would be set equal to the AI ABC if the AI ABC is less than 3% of the combined BSAI ABC. Further information on the State water AI Pacific cod fishery is provided in **Appendix 2**.

After calculating the GHl and establishing the TACs, the BS and AI ITACs would be calculated by deducting 10.7% from each TAC for the CDQ allocations. Once the BS ITAC and AI ITAC are calculated, a sector's allocation would be based on the percentage of the BSAI Pacific cod ITAC they receive under Amendments 85/80, multiplied by the combined BS and AI ITACs. In effect, the catch limit of Pacific cod for each area would be determined through the Plan Team, SSC, and Council harvest specifications process, but the sector allocations would continue to be applied to a combined BSAI Pacific cod limit.

1. Harvest specifications process → sets OFLs, ABCs, TACs for BS and AI Pacific cod
2. GHl calculation →  $3\% \times (\text{BS ABC} + \text{AI ABC}) = \text{AI Pacific cod GHl}$
3. TAC calculations (maximum possible) →  $\text{BS ABC} = \text{BS TAC}$   
 $\text{AI ABC} - \text{GHl} = \text{AI TAC}$
4. CDQ allocations →  $\text{BS TAC} \times 10.7\% = \text{CDQ BS allocation}$   
 $\text{AI TAC} \times 10.7\% = \text{CDQ AI allocation}$
5. Non-CDQ ITACs →  $\text{BS TAC} \times 89.3\% = \text{BS ITAC}$   
 $\text{AI TAC} \times 89.3\% = \text{AI ITAC}$
6. Non-CDQ sector allocations →  $(\text{sector allocation \% under Am.80/85}) \times (\text{BS ITAC} + \text{AI ITAC}) = \text{sector allocation of combined BS and AI ITAC}$

If an ABC/TAC split occurred, and the (combined) BSAI Pacific cod allocations were maintained under Alternative 1 or 2, NMFS would manage each area to a separate ITAC and CDQ allocation. Each non-CDQ sector would continue to receive its current BSAI Pacific cod allocation (determined under Amendment 85/80, see Section 1.4), and that allocation could be harvested anywhere in the BSAI open to Pacific cod fishing. In effect, a sector's allocation could be fished in either the BS or AI, as long as TAC was available in that area. NMFS would be responsible for monitoring each sector's overall BSAI allocation and a single catch limit for each area, using the existing tools to open and close fisheries. Once the Pacific cod ITAC for either the BS or AI was reached, NMFS would issue a closure notice and all non-CDQ sectors would be required to stop directed fishing for Pacific cod in the closed area. The sectors with remaining allocation would then only be allowed to continue directed fishing in the open area. (As discussed in Section 1.5, the CDQ Program would have a specific allocation of the TAC in each area, managed separately.)

During the annual harvest specifications process, NMFS also specifies the incidental catch allowance, meaning an amount of Pacific cod that NMFS estimates will be taken as incidental catch in directed groundfish fisheries other than Pacific cod by the hook-and-line and pot sectors. Currently, this amount is deducted from the aggregate portion of the Pacific cod TAC allocated annually to the hook-and-line and pot gear sectors. No changes to this practice or the regulations are anticipated under Alternative 1 or 2, as the incidental catch allowance would continue to be deducted from the aggregate portion of the combined BS and AI Pacific cod ITAC annually allocated to the hook-and-line and pot gear sectors.

No changes are anticipated in the process to reallocate Pacific cod among the non-CDQ sectors inseason. If, during the fishing year, NMFS determines that a non-CDQ sector will be unable to harvest the entire amount of its combined BS and AI Pacific cod allocation, NMFS would reallocate the projected unused amount to another sector, per the hierarchy for reallocations provided in current regulations (50 CFR 679.20(a)(7)(iii)). The reallocated Pacific cod could be taken in either area if open to directed fishing for Pacific cod, as long as TAC was available.

### *Seasonal allowances*

Alternatives 1 and 2 maintain all of the existing BSAI Pacific cod allocations, including the seasonal allowances applicable to  $\geq 60'$  vessels using pot gear,  $\geq 60'$  catcher vessels using hook-and-line gear, hook-and-line catcher processors, jig vessels, trawl catcher vessels, and trawl catcher processors. Because there are no sector allocations specific to each area, there would also not be any *gear specific seasonal allowances by each area*. This is because there would not be separate BS or AI allocations to apportion on a seasonal basis under Alternative 1 or 2, there would only be one BSAI Pacific cod allocation per sector. While the overall guideline for the BSAI Pacific cod fishery continues to be a 70%–30% seasonal split, the seasonal allowances vary by gear type (Table 1).

At this point, it is assumed that the seasonal allocations provided in Table 1 would remain under Alternative 1 or 2. Like status quo, each sector would continue to be subject to an overall seasonal allowance that would apply to both areas. For example, pot gear vessels would continue to be limited to harvesting 51% of their overall BSAI Pacific cod allocation in the A season, regardless of whether that harvest occurred in the BS or AI. The remainder of the pot sector's allocation would be limited to the B season.

**Table 1 BSAI Pacific cod seasonal allowances**

Pot	Jan 1 – June 10 (51%), Sept 1 – Nov 1* (49%) Pot catcher vessels <60' do not have seasonal allowances.	Trawl CV	Jan 20 – April 1 (74%), April 1 – June 10 (11%); June 10 – Nov 1 (15%)
Hook and Line	Jan 1 – June 10 (51%), June 10 – Nov 1* (49%) Hook-and-line catcher vessels <60' do not have seasonal allowances.	Trawl CP	Jan 20 – April 1 (75%), April 1 – June 10 (25%); June 10 – Nov 1 (0%)
Jig	Jan 1 – Apr 30 (60%) Apr 30 – Aug 31 (20%) Aug 31 – Nov 1* (20%)		

\*Note: The 2011 SSL RPA prohibits retention of Pacific cod by Federally permitted vessels of all gear types in Area 543 of the AI. In Areas 541 and 542, directed fishing for Pacific cod is prohibited from Nov. 1 – Jan.1. Previous to the 2011 RPA, pot, hook-and-line, and jig gear were allowed to fish Pacific cod until Dec. 31.

Absent specific sector allocations in the AI, if any gear type was allowed to fish in the AI until the TAC was taken, this approach would theoretically allow harvest of all of the AI TAC in the first half of the year (which is also possible under the status quo, on which the current Steller sea lion BiOp was developed). No guidelines currently exist for establishing AI seasonal allowances by gear type or overall, and while the 2010 Steller sea lion BiOp establishes different seasons by gear type within critical habitat areas (see Appendix 3), it does not mandate seasonal allowances by gear type in the AI. Thus, under Alternatives 1 and 2, sectors would continue to be subject to their BSAI seasonal allowances, and the seasonal restrictions within SSL critical habitat areas, which mirrors the status quo.

Recall also that the 2011 SSL RPA sets limits on the percentage of the *BSAI Pacific cod ABC* that can be harvested by non-trawl and trawl vessels in the Federal fisheries in Area 541 and 542. The harvest for non-trawl vessels cannot exceed 1.5% of the BSAI Pacific cod ABC in Area 541 or 542; the trawl harvest cannot exceed 11.5% of the BSAI Pacific cod ABC in Area 541 or 2% in Area 542. (These limits are based on the maximum annual harvest amounts from 2007 through 2009.) If any of these limits are exceeded, the BiOp requires that an ESA consultation be reinitiated. Because Alternative 1 or 2 does not establish sector-specific allocations in the AI, they do not risk that a sector would receive a higher allocation than it may be allowed to harvest without reinitiating an ESA consultation.

#### *Effects of a TAC split and Alternatives 1 and 2*

Both Alternatives 1 and 2, which were intended to mirror the status quo BSAI Pacific cod allocations, provide the greatest flexibility for sectors compared to the action alternatives evaluated previously, and may be the simplest alternatives for inseason management to monitor. NMFS would not be required to manage two separate area allocations for each of the nine sectors. NMFS would instead be responsible for monitoring each sector's overall BSAI allocation and a single catch limit for each area, using the existing tools to open and close fisheries. Alternatives 1 and 2 appear to provide flexibility to the sectors since they would be able to fish in an area as long as it remains open. Thus, regardless of historical harvest patterns, a vessel could move in and out of an area during the open season as desired, focusing its effort in the area in which it believes it can optimize its returns. Thus, while some sectors have not had substantial participation in the AI in the past, if that area becomes more advantageous due to changes in stocks or stock compositions or availability of markets, these sectors would be able to shift more of their fishing to the AI during the open season. Note, however, that only vessels with an AI endorsement on their LLP

would be eligible to fish in the AI under any of the alternatives. Endorsements are discussed in the following section.

Under the status quo allocations, each sector would attempt to fish in its preferred area first, especially if that area is likely to be constrained by TAC, which appears to be the case in the AI (understanding that this may change in response to Steller sea lion protection measures). A disadvantage of these alternatives is that they could cause participants (both within sectors and among sectors) to race for Pacific cod if racing could increase returns. This could disadvantage certain sectors and could affect a sector's ability to obtain reasonable returns from its allocation, especially if some members of the sector would realize greater returns from fishing in an area that closes due to the effort of another sector. In addition, sectors that operate under a cooperative structure (e.g., the AFA sectors, the Am. 80 sector, and the hook-and-line CP sector) manage their Pacific cod harvests through internal agreements, which may allow them to strategize directing effort in the area they expect to close first.

In recent years, the trawl sectors have increased their AI Pacific cod harvest as a percentage of their overall BSAI Pacific cod catch, while the fixed gear sectors have decreased their relative AI harvest (see Appendix 1 for harvest data). As stated above, because three of the four trawl sectors (AFA CP and CV, and Am. 80 CP sectors) and the hook-and-line CP sector operate under cooperatives, these sectors should be better positioned to manage their harvest between areas within their respective sectors. These sectors are better able to plan their fishing year and react to closures than the sectors operating under a limited access fishery. If a sector believes it can gain an advantage from increasing effort in the AI, Alternatives 1 and 2 may allow that sector to do so, to the detriment of other sectors. Since the trawl sectors generally have been increasing their harvest in the AI, this could initiate a race for fish in the AI among those sectors, which could also have consequences for fixed gear and Am. 80 vessels that have typically fished in the AI later in the year.

The risk of creating a race for fish under a TAC split is difficult to characterize; it is speculative and dynamic, depending on each sector's participation in the AI each year, the changing characteristics of the fishery, and the new potential biomass estimates for the AI. As stated previously, in August 2011, the Pacific cod stock assessment author provided a separate (interim) Tier 5 assessment for AI Pacific cod, for evaluation by the BSAI Groundfish Plan Team. This assessment resulted in the author's recommendation for the maximum permissible ABC of  $0.75 \times \text{OFL} = 17,800$  mt. The BSAI Groundfish Plan Team and SSC are scheduled to review this Tier 5 approach compared with the previous method of apportioning BSAI biomass for the two areas in August 2011 and October 2011, respectively, and make recommendations to the Council.

During the past sixteen years for which data are available (1995–2010), the AI amount of Federal BSAI Pacific cod retained harvest was almost 14%, and the BS amount was about 86%. More recently (2007 – 2010), the harvest distribution has averaged 16% in the AI and 84% in the BS. In 2010, the harvest distribution of Pacific cod was 15% in the AI and 85% in the BS. When comparing to the 2012 stock assessment author's recommendation for an AI ABC of 17,800 mt, the maximum permissible ABC is lower than the actual catch in 14 out of the last 16 years (see Appendix 1), and the TAC would have to be further reduced from the ABC to account for the AI State water GHL.

Under the long-term and short-term average harvests, one may expect that a race for fish in the AI would be inevitable. Yet other factors will impact whether sectors continue this harvest distribution between areas in future years, most notably the new Steller sea lion protection measures that were effective starting in January 2011. The Steller sea lion RPA significantly reduces the area in the AI that is open to Pacific cod fishing for all gear types; it also modifies the seasons in which SSL critical habitat is open to Pacific cod fishing in the AI. Thus far in 2011, the AI Pacific cod harvest is substantially lower relative to previous years (see Appendix 1). The distribution of Pacific cod harvest between the two areas is 6% in

the AI and 94% in the BS (including CDQ), with a total retained catch of 9,674 mt.<sup>4</sup> The author's recommended 2012 AI ABC is well above the 2011 AI Pacific cod harvest (through August 22), including harvest from the CDQ fishery and the AI State water fishery. It is premature, not yet having one full year of data, to speculate how the various sectors will react to the prohibition on retaining Pacific cod in the western AI and the new critical habitat closures in the eastern and central AI over the next several years. It could result in making the BS the limiting area, as opposed to the AI. The race for fish once anticipated in the AI under a TAC split may shift to the BS.

As of the writing of this paper (August 2011), the 2011 data do not provide much insight as to the individual sectors' response to the new RPA, as it is still early in the B season. Only general characterizations can be developed, considering a BS and AI TAC split, based on past inseason management. As of August 2011, the majority (75%) of the 2011 AI Pacific cod harvest was taken in March, while the BS Pacific cod harvest is more evenly distributed throughout the A season. Given that the current seasonal allowances vary by gear type in the BSAI, they have important implications for which sectors would first be allowed to fish in the limiting area (whether BS or AI) under Alternatives 1 and 2. While each sector would be allocated an exclusive allocation of Pacific cod, depending upon area TAC availability and seasonal restrictions, a sector may still be forced to fish in an area that it would not choose to fish in otherwise, or forego a portion of its Pacific cod allocation.

For example, the pot sectors' B seasons, which are allocated half of their total allocation, do not start until September 1, while the other sectors have B or C seasons that start on June 10 (with the exception of jig gear, which has continuous seasons). Thus, other sectors would be allowed to fish in the limiting area well prior to the pot sectors and may serve to limit the pot sectors' access to the AI. The AI effort by pot gear has historically been primarily by pot CPs that do not hold an FFP or LLP, thus, they fish inside of three miles in the AI. Pot vessels also typically prosecute the crab fisheries, which open October 15.

In the Amendment 80 sector, Pacific cod is a limiting factor in the harvest of its allocations; and unlike the other non-CDQ sectors, Pacific cod is managed as a hard cap.<sup>5</sup> In 2009 and 2010, the Amendment 80 cooperative received reallocations of Pacific cod from the trawl catcher vessel sector. The most significant concern for the Amendment 80 sector under a TAC split and combined BS and AI allocations would be that another sector's fishing would close directed fishing for Pacific cod in the AI. This would limit the retention of Pacific cod for the Amendment 80 sector to the maximum retainable amounts, but allow them to continue directed fishing for other species.<sup>6</sup> If the AI Pacific cod TAC was reached, retention would be prohibited by all sectors. About 11 of the 22 Amendment 80 CPs fish in the Aleutian Islands. Most Amendment 80 vessels have not been targeting Pacific cod, so this sector would likely benefit if AI Pacific cod was maintained on 'bycatch' status (i.e., allow for maximum retainable amounts). Recall that the 2011 RPAs also changed the starting date of the B season for Atka mackerel from September 1 to June 10, so the closure of the AI may be less of a potential issue for the Amendment 80 sector and BSAI trawl limited access sector (CVs delivering to Amendment 80 CPs).

Typically, the trawl CV sector and the one AFA trawl CP that targets Pacific cod operate in the AI in the early part of the A season (January 20 – April 1), which may allay concerns about Pacific cod availability in the B season in the AI. Concerns will depend heavily on the level of the AI TAC. The 2011 data to date show notably lower harvests in the AI compared to previous years, with no participation by the AFA trawl CP sector and about 40% less AI harvest by the trawl CV sector compared to 2010.

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<sup>4</sup>See Appendix 1. NMFS inseason management data (retained catch, including CDQ), provided August 22, 2011. This distribution changes slightly to 7% in the AI when CDQ is excluded, primarily because the Pacific cod CDQ allocation is harvested by hook-and-line CPs, which harvest a higher proportion of their Pacific cod in the BS than the AI.

<sup>5</sup>In this context, 'hard cap' means that if the Am. 80 cooperatives reach their allocations, they cannot retain any more Pacific cod.

<sup>6</sup>In the past, the Amendment 80 sector has targeted Pacific Ocean Perch, Atka mackerel, arrowtooth flounder, and Kamchatka flounder in the AI.

The new RPAs close most of the Pacific cod fishing grounds for the hook-and-line catcher processors in the AI until March 1 (critical habitat from 0 nm – 20 nm is closed to directed fishing for Pacific cod by vessels using nontrawl gear from January 1 to March 1; 0 nm – 6 nm is closed March 1 to Nov 1.) Historically, this sector targets Pacific cod in the AI during August through November. In 2011, a couple of hook-and-line catcher processors targeted AI Pacific cod during March through May. The new voluntary cooperative for this sector, and the decision in 2011 to allocate halibut PSC during the June 10 – August 15 timeframe, allows this sector to fish for Pacific cod in the summer. NMFS inseason management reports that only half of the vessels have fished in the summer months in 2011 thus far, as there are continued concerns with higher halibut PSC rates in the summer. As this sector typically targets Pacific cod in the AI in the B season, 2011 data are unavailable at this time to determine whether there is a significant reduction in its AI harvest compared to previous years.

Note also that if some portion of the AI TAC is unharvested, it would represent foregone TAC, as the unharvested portion could not be reallocated to the BS for either the CDQ or non-CDQ sectors. While this process of reallocating AI TAC is authorized in the pollock fishery (679.20(a)(5)(iii)(B)(4)), this fishery is managed differently from Pacific cod. Only the pollock directed fishing allocations are authorized to be reallocated to the BS, and an AI incidental catch allowance supports the catch in other fisheries. Pacific cod is not allocated as a directed fishing allowance and ICA for all sectors. Also, there is typically sufficient buffer between the BS pollock TAC and ABC to allow for unharvested AI pollock TAC to be reallocated to the BS. That is not typically the case with Pacific cod; in recent years, the TAC is set very close, or equal, to the ABC.<sup>7</sup>

Overall, Alternatives 1 and 2 allow sectors to change their fishing patterns in reaction to a shift in stock, preferable fishing location, or market conditions. For the same reason, however, it may create a potential ‘race for fish’ in the more desired area. This flexibility could work to the detriment of some sectors, particularly those less able to compete with another gear type that chooses to increase effort in an area or those whose harvest is distributed later in the year. Alternatives 1 and 2 would not provide any sector with a separate allocation in either the BS or AI (except CDQ); it would retain each sector’s overall BSAI allocation as set forth in existing regulations.

## 1.7 Option 2.1: LLP area endorsements

All of the action alternatives included in the February 2011 discussion paper included an option, added in October 2006, which would change separate BS and AI LLP area endorsements into a single BSAI-wide endorsement for the Pacific cod fishery (see below). Staff is uncertain whether this option was intended to be carried forward under Alternative 2 when the Council made its motion in February 2011 to remove alternatives that did not reflect the status quo allocations, as the option clearly does not reflect status quo. **The Council should clarify whether this option was intended to remain under Alternative 2.**

Option 2.1      Upon splitting the BSAI Pacific cod sector allocations between the Bering Sea and Aleutian Islands, separate BS and AI LLP area endorsements would be converted to BSAI area-wide endorsements for the Pacific cod fishery.

If Option 2.1 is retained, it would represent a change to existing regulations that would necessitate an analysis and amendment package. Thus, the analytical approach suggested in Section 1.4, which asserts that potentially only housekeeping-type revisions to the regulations would be necessary to clarify the status quo (Alternative 1 or 2) under a TAC split, would not be possible. The remainder of this section outlines the status of the LLP endorsements for the BSAI Pacific cod fishery.

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<sup>7</sup>Since 2005, the BSAI Pacific cod TAC has been set equal to the ABC (and accounting for the 3% AI State water GHL starting in 2006).

Groundfish licenses are currently required to participate in the BSAI groundfish fisheries in Federal waters.<sup>8</sup> Groundfish licenses contain endorsements that define what the vessel using the license is allowed to do. An area endorsement defines the geographic location the license allows a vessel to fish. Under the groundfish LLP, separate BS and AI area endorsements were earned and issued based on historic fishing patterns. Thus, the existing AI endorsements are based on an individual's history in the AI. Licenses may contain endorsements for both areas (BS and AI), or one of the two areas. 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 vessels, and pot catcher vessels. Vessels fishing with jig gear in the BSAI are exempt from the LLP, provided they comply with size and gear limitations.<sup>9</sup>

Table 2 shows the number of groundfish LLPs with a Bering Sea and/or Aleutian Islands endorsement by sector, as of November 2010. 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 area TACs, only those vessels with an AI endorsement may fish in Federal waters in the AI, and only those vessels with a BS endorsement may fish in Federal waters in the BS. As of the end of 2010, 9 licenses (2%) were endorsed to fish in the AI only; 213 licenses (54%) were endorsed for the BS only; and 170 licenses (43%) were endorsed for both areas.

**Table 2 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	CP; must have harvested with trawl gear and processed no less than 150 mt of non-pollock groundfish during 1997 through 2002.	7	0	19	26 <sup>1</sup>
AFA Trawl CV	AFA CV permit; trawl LLP (CV/BSAI) <sup>2</sup>	60	0	53	113
Non-AFA Trawl CV	trawl LLP (CV/BSAI)	5	6	8	19
Hook-and-line CP	non-trawl LLP (BSAI/H&L CP cod endorsement)	2	0	35	37
Hook-and-line CV $\geq 60'$	non-trawl LLP (BSAI/H&L CV cod endorsement)	1	0	7	8
Pot CP	non-trawl LLP (BSAI/pot CP cod endorsement)	3	0	4	7
Pot CV $\geq 60'$	non-trawl LLP (BSAI/pot CV cod endorsement)	47	1	4	52
Hook-and-line/Pot $<60'$	non-trawl LLP (CV/BSAI)	87	2	21	110
Jig	LLP is not required for $<60'$ jig CV in the BSAI	N/A	N/A	N/A	N/A
<b>Total Endorsements</b>		<b>213</b>	<b>9</b>	<b>170</b>	<b>392</b>

Source: LLP file, RAM Division, NMFS. November 2010. 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 licenses is higher than the number of unique vessels, as one vessel may carry more than license or a vessel may not yet have been designated on the license.

<sup>1</sup>59 BSAI trawl CP licenses exist: 20 of which are associated with AFA CPs and 26 are associated with Am. 80 CPs. The remaining 13 trawl CP licenses currently are primarily used on AFA CVs.

<sup>2</sup>Of the 113 LLPs used on the 110 vessels with AFA permits held by this sector (in 2010), there are 101 trawl CV LLPs and 12 trawl CP LLPs.

<sup>8</sup>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 and/or in the State water AI Pacific cod fishery using specific gear types and vessel sizes.

<sup>9</sup>Vessels 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.

In the trawl CP sectors, the majority of licenses are endorsed for the BSAI, with few vessels endorsed for the BS only, and no vessels endorsed for the AI only. In the Amendment 80 (non-AFA trawl CP) sector, 7 licenses are endorsed for the BS only, and the remaining 19 licenses are endorsed for BSAI. The AFA trawl CP sector has 1 license endorsed for the BS only, while the remaining 19 are endorsed for the BSAI.<sup>10</sup> The remaining 3 CP licenses (non-Am. 80, non-AFA) are all endorsed for BSAI. These 3 LLPs are not Am. 80 or AFA qualified; therefore, these LLPs can only be used to participate in the trawl CV fishery or for groundfish species not otherwise allocated to the Am. 80 and AFA sectors.

In the trawl CV sectors, about half of the licenses are endorsed for the BS only. In the AFA trawl CV sector, more than half of the total LLPs (60) are endorsed for the BS only; the remaining licenses (53) are endorsed for the BSAI. None are endorsed for the AI only. In the non-AFA trawl CV sector, 5 licenses are endorsed for the BS only, 6 are endorsed for the AI only, and 8 are endorsed for the BSAI. In sum, about 56% of the trawl licenses are endorsed to fish Pacific cod in both the BS and AI; 41% are endorsed to fish Pacific cod in the BS only.

Recall that to participate in the BSAI Pacific cod fishery on a vessel  $\geq 60'$  with fixed gear, the license must also carry a cod endorsement. In the hook-and-line sectors, the vast majority (42 of 45) of eligible licenses (CP and  $\geq 60'$  CV) are endorsed for the BSAI, with 3 licenses endorsed in the BS only, and no licenses endorsed for the AI only. In the pot CP sector, there are 7 licenses eligible to fish BSAI Pacific cod, 4 of which are endorsed for the BSAI and 3 for the BS only. In the  $\geq 60'$  pot CV sector, the great majority (47 of 52) of licenses are endorsed for the BS only, with 4 licenses endorsed for the BSAI, and one for the AI only. In the  $< 60'$  fixed gear sector, of the 110 total licenses, 87 are endorsed for the BS only, 2 for the AI only, and 21 for the BSAI. In sum, about 33% of the fixed gear licenses are endorsed to fish Pacific cod in both the BS and AI; 65% are endorsed to fish Pacific cod in the BS only.

Note also that in April 2008, the Council took final action on BSAI FMP Amendment 92 to remove latent trawl CV and CP licenses from the BSAI groundfish fisheries, which reduced the number of eligible licenses compared to the previous discussion paper. Another component of Amendment 92 created new AI endorsements for use on existing non-AFA trawl CV licenses in the AI that met specified criteria. Upon implementation, 8 new AI endorsements were added to 8  $< 60'$  non-AFA trawl CV licenses that met the participation criteria. These endorsements are severable from the overall license, such that they could be transferred to other  $< 60'$  non-AFA trawl CV licenses. (Note that the existing LLP program does not allow an endorsement to be severed from the overall license.) In addition, 4 new AI endorsements were added to 4 licenses used on  $\geq 60'$  non-AFA trawl CV licenses. These endorsements are not severable and not transferable. The intent was to allow recent participants in the AI parallel or State waters cod fishery to qualify for an AI endorsement to participate in the new trawl limited access Atka mackerel and POP fisheries, as well as the Pacific cod fishery. The intent is to help facilitate economic development in Adak, recognizing that vessels are more likely to fish in the AI if they have a suite of Federal fisheries in which to participate. These licenses are included in Table 2 above.

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 LLPs in Table 2 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 the proposed action, only vessels with AI endorsements are, and would continue to be, allowed to fish in the AI.

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<sup>10</sup>Note that 12 trawl CP licenses are also used on AFA catcher vessels; those licenses were accounted for in the AFA CV row of Table 2.

## *Effects of Option 2.1*

Option 2.1 would give an AI endorsement to all groundfish vessels that have historically operated in, and are only eligible for, the Bering Sea. This would also give a BS endorsement to all groundfish vessels that have historically operated in, and are only eligible for, the AI. The purpose of this option is to allow sectors to fish in either area, in the event of separate BS and AI TACs. Industry was concerned with the inability to prosecute a portion of the allocation for which they do not carry the proper area endorsement. Industry participants were also concerned that with separate BS and AI TACs, the BS Pacific cod fishery could potentially close earlier than it would under a combined TAC. For Bering Sea participants that historically fish Pacific cod later in the year (B season), an early closure could potentially result in some participants foregoing some of their historical catch.

As noted above, the primary reason the Council added the new option was because of concerns that some sectors could be constrained in their ability to harvest their AI sector cod allocation under the previously proposed alternatives that established individual sector allocations in the BS and AI. However, under Alternatives 1 and 2, there would be separate TACs for the BS and AI, but allocations at the sector level would remain BSAI-wide, thus, creating new endorsements may not be as necessary. Under the status quo, only those that met the historic landings requirements would have an AI endorsement, and could continue to fish in the AI until the AI TAC is reached. If one area closes on the TAC prior to the other area, only those with the proper endorsement could continue fishing in the open area.

The most obvious effect of this option would be to increase the number of AI endorsements by 213 and the number of BS endorsements by 9 (see Table 2). The sectors estimated to receive the most new AI endorsements are: AFA trawl CV with 60 new AI endorsements; pot CV  $\geq 60'$  with 47 new AI endorsements, and  $<60'$  hook-and-line/pot CV with 87 new endorsements. An action to increase the amount of effort in the AI may be considered a departure from the fishing conditions that existed at the time of the 2010 Steller sea lion BiOp. Since the status quo Pacific cod fishery was part of a jeopardy determination, and significant restrictions in the AI were deemed necessary by NMFS to mitigate jeopardy, it is likely that any action that provides the potential for increased effort in the AI could be considered a significant change in the action that was considered in the BiOp, which may trigger a new consultation. The increased number of vessels may result in more harvest in a shorter amount of time and a greater potential for reaching the reinitiation triggers in the BiOp.

In addition, a significant number of new AI endorsements could create latent trawl AI endorsements, which is inconsistent with the Council's 2008 action to remove latent trawl gear endorsements from licenses in the BSAI and GOA unless the license met minimum landing requirements<sup>11</sup> with trawl gear (BSAI FMP Am. 92/82). This amendment was effective in 2009 (74 FR 41080, August 14, 2009), and the intent was to increase stability in the trawl sectors and protect existing participants from the possible future use of latent licenses, and thus a potential reduction in their gross revenue due to this participation. With the Council removing trawl latent licenses from the AI as part of the BSAI and GOA trawl LLP recency action, the addition of new trawl AI endorsements under this proposed action could once again result in latent licenses in the AI Pacific cod fishery.

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<sup>11</sup> Under the Council's preferred alternative, area endorsements (BS and AI) were removed from trawl CV and CP licenses unless the license had at least two trawl groundfish landings during 2000 – 2006 in the endorsement area. As part of this action, the Council also approved adding 12 AI endorsements to qualifying non-AFA trawl CV licenses. The 8 AI endorsements earned by  $<60'$  non-AFA trawl CVs are only transferable to other  $<60'$  non-AFA trawl CV licenses.

## 1.8 Summary

In sum, the decision of whether to establish separate OFLs and ABCs for BS and AI Pacific cod is not at issue in this proposed action – the alternatives under consideration are appropriately limited to directing how to manage the industry sector allocations of Pacific cod once a TAC split has been implemented. The BSAI Pacific cod ABC/TAC split would be determined in an annual harvest specifications process. While the Council scheduled initial review of a draft analysis evaluating Alternatives 1 and 2 for October 2011, upon preliminary analysis and an evaluation of how NMFS would interpret the current regulations in the event of a TAC split, staff recognized that Alternatives 1 and 2 are, for analytical purposes, the same alternative. Neither alternative proposes any changes to the existing BSAI Pacific cod allocations for the nine (non-CDQ) industry sectors. The process to revise the CDQ allocations (e.g., establishing separate BS and AI Pacific cod CDQ allocations) in the event of a TAC split or grouping are already addressed in Federal regulations and the MSA, and have been implemented for other species in the past.

Given that both Alternative 1 and Alternative 2 would maintain the current combined BSAI Pacific cod sector allocations, it does not appear there are proposed FMP or regulatory changes to analyze under either alternative. Staff asserts that because neither alternative proposes a change to the current practice of implementing BSAI-wide allocations, only housekeeping-type revisions to the regulations may be helpful to clarify the status quo under a TAC split. These housekeeping revisions could be included in a future BSAI regulatory package after a TAC split has been approved in the harvest specifications process. Because there are no regulatory or FMP changes required, and thus no proposed action requiring a regulatory analysis, staff believes that no further action is necessary by the Council to implement its stated intent.

Upon review of this discussion paper and its review of previous analyses of various alternatives, the Council could clarify its policy direction to NMFS, in effect, to maintain the current BSAI Pacific cod allocations in the FMP and Federal regulations in the event of a BSAI Pacific cod ABC/TAC split. However, specific action by the Council to make this clarification is not necessary. If the Council splits the BSAI Pacific cod TAC into separate BS and AI TACs and does not revise 50 CFR 679.20, NMFS will interpret that the sector allocations currently in effect will continue to apply at the BSAI-wide level. This interpretation is consistent with the Council's intent about the sector allocations under Amendment 85.

One could anticipate that the SSC would be in a position to recommend separate OFLs and ABCs for BS and AI Pacific cod at such a time that the stock assessments are developed sufficiently to do so, and the Council could recommend separate area TACs based on those assessments. The stock assessment for AI Pacific cod (Tier 5 assessment) is scheduled for evaluation at the August BSAI Groundfish Plan Team meeting and October Council meeting, and the Council can expect recommendations from the Groundfish Plan Team and SSC regarding the 2012/2013 assessments and a plan of action for future BSAI Pacific cod assessments in October 2011.

## Appendix 1 Harvest distribution between BS and AI by sector

The background data provided are retained harvests from 1995 through 2010, which includes Pacific cod destined for meal production.<sup>12</sup> Sector data through August 22, 2011, are also provided. Retained harvest data for CPs are from NMFS Weekly Production Reports; retained harvest data for CVs are from ADF&G electronic fish tickets. The 2010 and 2011 data are from the NMFS catch accounting system.

Generally, in the past several years, the Pacific cod TAC has ranged from about 170,000 mt to over 200,000 mt. The 2010 TAC was 168,780 mt, and accounting for the 10.7% CDQ allocation, the amount of the TAC remaining for the non-CDQ sectors (ITAC) was 150,721 mt. However, as described in Section 1.3, the 2011 BSAI Pacific cod ABC and TAC are substantially higher compared to recent years, and the 2012 ABC is estimated to be even higher. The 2011 ABC is 235,000 mt, which is 35% higher than 2010; the 2012 ABC is estimated to be 281,000 mt, which is 61% higher than 2010. The 2011 TAC was set at 227,950 mt, meaning the 2011 ITAC is 203,559 mt.

Table 3 shows the amount and proportion of retained catch between the BS and AI areas in the Federal Pacific cod fishery during 1995–2010, including cod destined for meal production, and including CDQ harvest. The data in Table 3 show that retained catch from the AI was relatively low and fluctuated from 1995 through 1997, and then from 1999 through 2004 it varied between 14% and 20% of the combined BSAI retained catch. In 2005 and 2006, retained catch from the AI declined to about 11% each year. During the 2007 through 2010 period, retained catch in the AI relative to the total BSAI increased to a range of 15% to almost 17%. (The effect of including meal in the catch statistics increases the overall BS history by up to half of a percent in some years, while decreasing the overall AI history by the same half a percentage point.)

Overall during 1995 – 2010, harvests from the AI have averaged 13.6% of the total BSAI Pacific cod harvest. Most recently (2007 – 2010), harvests from the AI have accounted for 16% of the total Federal BSAI Pacific cod harvest. In 2010 alone, harvest from the AI accounted for 15% of the total Federal BSAI Pacific cod harvest. As of August 22, 2011, harvest from the AI accounted for 6% of the total. Adding the AI State water Pacific cod fishery, which started in 2006 and is set at a maximum of 3% of the BSAI Pacific cod ABC, would increase the amount harvested from the AI by 3% (if the full 3% was harvested).

In previous stock assessments, the AI biomass was projected to be about 16% of the BSAI biomass, but the 2010 stock assessment estimated the AI biomass as 9% of the BSAI (see Section 1.3). The BSAI Pacific cod stock assessment author has recently developed a Tier 5 assessment for AI Pacific cod (see Section 1.3), which provides separate AI OFL and ABC recommendations for 2012. The stock assessment author's recommendation, based on a Tier 5 assessment, is:  $OFL = 0.34 \times 69,800 \text{ mt} = 23,700 \text{ mt}$ , and the maximum permissible ABC would be  $0.75 \times OFL = 17,800 \text{ mt}$ . Note that the above recommended OFL is lower than the actual catch in 11 out of the last 16 years reported in Table 3, and the maximum permissible ABC is lower than the actual catch in 14 out of the last 16 years. The BSAI Groundfish Plan Team and SSC are scheduled to review this Tier 5 approach compared with the previous method of apportioning BSAI biomass for the two areas in August 2011 and October 2011, respectively. Thus, future biomass estimates may be a result of a separate AI assessment, meaning the biomass estimate (and harvest specifications) would no longer be designated as a percentage of the combined BSAI biomass.

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<sup>12</sup> Among the CP sectors, the inclusion/exclusion of Pacific cod meal products affects the AFA trawl CP sector, as a large portion of the Pacific cod harvested by this sector is taken incidentally in the BSAI pollock fishery. Only a portion of the AFA CP sector processes meal, as the processing infrastructure (and space on board) required for this type of product is substantial. None of the non-AFA trawl CPs have meal plants onboard.

**Table 3 Pacific cod retained catch in the Aleutian Islands and Bering Sea from 1995 through 2010 (in metric tons and percent of total)**

Year	AI (mt)	AI as % of BSAI	BS (mt)	BS as % of BSAI	BSAI (mt)
1995	10,123	5.6%	171,482	94.4%	181,605
1996	21,608	11.1%	172,598	88.9%	194,205
1997	13,170	6.1%	201,090	93.9%	214,260
1998	25,536	14.9%	146,154	85.1%	171,691
1999	24,646	15.6%	133,766	84.4%	158,412
2000	34,480	19.6%	141,361	80.4%	175,841
2001	31,340	19.0%	133,589	81.0%	164,929
2002	28,313	15.5%	154,584	84.5%	182,897
2003	29,628	15.0%	167,237	85.0%	196,865
2004	26,905	13.0%	179,573	87.0%	206,477
2005	20,660	10.6%	173,614	89.4%	194,274
2006	19,669	10.9%	160,300	89.1%	179,969
2007	26,167	16.2%	135,601	83.8%	161,768
2008	26,619	16.7%	133,186	83.3%	159,805
2009	27,299	16.2%	140,730	83.8%	168,029
2010	24,919	15.1%	140,376	84.9%	165,295
1995 - 2010	391,079	13.6%	2,485,241	86.4%	2,876,320

Source: WPR and fish ticket data, 1995 – 2009, including cod destined for meal production. 2010 data are from the NMFS catch accounting system. Includes CDQ harvest.

Table 4 shows the average annual retained catch in each area and the BSAI combined, the percent of the sector’s catch from each area, and the number of unique vessels with Pacific cod catch in each area and the BSAI as a whole for time periods, 1995–1999 and 2000–2009. The two time periods were selected to protect confidential data. In general, all sectors have some Pacific cod history in both the Bering Sea and Aleutian Islands subareas. For the AFA trawl CP sector, retained catch data is not shown for the period 2000 - 2009 because of confidentiality limitations. Table 4 data exclude CDQ harvests of BSAI Pacific cod, primarily because the original objective of this table was to show the non-CDQ sectors’ distribution of catch between the BS and AI, recognizing that a future CDQ allocation in the AI would come off the top of the AI TAC, and that the CDQ Pacific cod allocation has only been harvested by hook-and-line CPs in the past. Note that CDQ data are provided later in Table 5 for 2010 and 2011.

Table 4 shows annual average BSAI Pacific cod harvest by the AFA trawl CP and trawl CV sectors decreased in the 2000 – 2009 period compared to 1995 - 1999, but the trawl CV sector substantially increased its average annual AI Pacific cod catch, and its proportion of catch harvested in the AI, during 2000 - 2009. The non-AFA trawl CP sector has a higher average annual BSAI Pacific cod harvest in 2000 – 2009 compared to 1995 – 1999, and almost doubled its average annual catch in the AI in the latter time period. In addition, the proportion of catch harvested in the AI during 2000 – 2009 increased substantially.

Annual Pacific cod harvest by the hook-and-line CP sector and the  $\geq 60'$  pot CV sector are stable and largely from the BS in both time periods. Pacific cod harvest by the jig sector and  $\geq 60'$  hook-and-line CV sector are relatively small in both areas, with most of the catch coming from 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 4 Average 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 2000–2009**

Sector	Area	1995-1999			2000-2009		
		Average annual catch (mt)	Percent of sector BSAI catch	Unique vessels	Average annual catch (mt)	Percent of sector BSAI catch	Unique vessels
Hook and line and Pot CVs <60'	AI	24	8.2%	18	54	1.9%	44
	BS	269	91.8%	71	2,759	98.1%	157
	BSAI	293		80	2,813		166
Longline CVs ≥60'	AI	10	5.9%	13	22	11.1%	24
	BS	159	94.1%	27	176	88.9%	40
	BSAI	169		34	198		48
Jig	AI	15	4.7%	6	26	21.7%	22
	BS	304	95.3%	70	94	78.3%	64
	BSAI	319		76	120		83
Pot CPs	AI	1,283	26.9%	12	652	21.1%	13
	BS	3,491	73.1%	22	2,432	78.9%	11
	BSAI	4,774		24	3,084		17
Pot CVs ≥60'	AI	833	5.7%	42	298	2.4%	37
	BS	13,721	94.3%	183	12,297	97.6%	127
	BSAI	14,555		189	12,596		141
Trawl CVs	AI	2,627	5.6%	42	11,823	33.9%	76
	BS	44,004	94.4%	139	23,063	66.1%	140
	BSAI	46,632		140	34,886		151
Hook and Line CPs	AI	5,955	6.9%	33	4,584	5.6%	35
	BS	80,329	93.1%	55	77,017	94.4%	51
	BSAI	86,285		56	81,601		53
Non-AFA Trawl CPs	AI	3,527	18.8%	18	7,375	27.3%	16
	BS	15,194	81.2%	28	19,653	72.7%	24
	BSAI	18,721		28	27,029		24
AFA Trawl CPs	AI	2,607	51.2%	10	*	*	2
	BS	2,486	48.8%	25	*	*	17
	BSAI	5,093		25	2,977		17

Source: WPR and fish ticket data, including cod destined for meal production. \*Not shown due to confidential data. Excludes CDQ.

Table 5 shows 2010 and 2011 (through August 22) retained Pacific cod harvest data by sector and area, both including and excluding CDQ harvest. Much of these data are not provided due to confidentiality; other data are masked to protect confidential data that would otherwise be evident due to simple subtraction. The 2010 data show that while the great majority of the sectors' harvest is from the BS, there continue to be several sectors with a notable portion of catch from the AI, whether directed harvest or incidental harvest in other target fisheries. Including CDQ, the hook-and-line CP sector (7,464 mt) and non-AFA trawl CP sector (3,538 mt) harvested 9% and 14% of their total retained BSAI Pacific cod harvest from the AI in 2010, respectively. The trawl CV sector had the most Pacific cod harvest from the AI in terms of metric tons and percentage, 12,754 mt were harvested in the AI in 2010, which comprised 45% of their BSAI harvest. While the pot CP sector has a much lower total annual harvest (and allocation) than the trawl CV sector, it also typically harvests a significant portion of its BSAI Pacific cod in the AI. This harvest cannot be reported due to confidentiality.

While past trends are important to consider, all sectors Pacific cod fishing in the AI must comply with the new 2011 RPAs, which substantially change Pacific cod operations in the AI starting in 2011. While a full year of data are not yet available, the harvests in the AI as of August 22 are relatively low for all sectors compared to previous years. The overall harvest distribution between the two areas, including CDQ, is 6% in the AI and 94% in the BS. Almost 9,700 mt of Pacific cod has been harvested in the AI through August 22, 2011. While this does not capture the entire fishing year, the majority of the AI harvest in the past has been in the A season (February/March). For example, in 2010, 80% of the total AI

harvest occurred by August 22. (If a similar temporal distribution of catch occurs in 2011, the total catch in the AI could be projected to be about 12,000 mt.)

Recall that the stock assessment author's ABC recommendation for 2012 is 17,800 mt. The AI State water GHLL, which is 3% of the BSAI ABC, would need to be established and subtracted from the AI ABC to determine the AI TAC. At this time, the BSAI ABC, or a combined BS ABC and AI ABC, has not yet been recommended by the Plan Team and SSC in order to calculate the GHLL, but it would substantially reduce the AI TAC from 17,800 mt.

Several sectors report little to no Pacific cod landings in the AI in 2011, primarily the fixed gear sectors and the AFA trawl CP sector. The hook-and-line CP sector also has significantly reduced harvests in the AI thus far in 2011. For two trawl sectors that have reported the most AI Pacific cod harvest thus far (the non-AFA trawl CP sector and the trawl CV sector), both have harvested about half as much Pacific cod from the AI as they did in 2010.

**Table 5 Retained Pacific cod catch in the Bering Sea and Aleutian Islands areas, by sector, 2010 and 2011**

<b>2011 (through August 22)</b>					
Sector	AI	BS	AI	BS	Total BSAI (with CDQ)
	Without CDQ		With CDQ		
BSAI Pcod HAL CP	771	59,049	771	71,613	72,383
BSAI Pcod HAL CV ≥60	0	conf	0	conf	conf
BSAI Pcod HAL/Pot CV <60 ft	29	7,412	**	**	8,367
BSAI Pcod Jig	0	**	0	**	**
BSAI Pcod Pot CP	conf	1,486	conf	**	1,517
BSAI Pcod Pot CV ≥60	0	9,677	0	9,677	9,677
BSAI Pcod AFA Trawl CP	**	4,960	0	5,782	5,782
BSAI Pcod Non-AFA Trawl CP	1,065	14,623	1,131	15,261	16,392
BSAI Pcod Trawl CV	7,710	29,346	7,711	29,389	37,101
Total	9,606	127,038	9,674	142,031	151,705
Total by percentage	7%	93%	6%	94%	100%
<b>2010</b>					
Sector	AI	BS	AI	BS	Total BSAI (with CDQ)
	Without CDQ		With CDQ		
BSAI Pcod HAL CP	4,601	67,244	7,464	80,116	87,580
BSAI Pcod HAL CV ≥60	0	conf	0	conf	conf
BSAI Pcod HAL/Pot CV <60 ft	18	5,535	18	5,765	5,783
BSAI Pcod Jig	0	conf	0	conf	conf
BSAI Pcod Pot CP	conf	2,699	conf	2,699	**
BSAI Pcod Pot CV ≥60	0	11,558	0	11,558	11,558
BSAI Pcod AFA Trawl CP	conf	3,604	conf	4,150	**
BSAI Pcod Non-AFA Trawl CP	3,303	19,629	3,538	20,462	23,999
BSAI Pcod Trawl CV	12,724	15,280	12,754	15,280	28,034
Total	21,791	125,896	24,919	140,376	165,295
Total by percentage	15%	85%	15%	85%	100%

Source: NMFS catch accounting database, August 22, 2011. Includes retained Pacific cod harvest from all targets.

Notes: '0' means no catch or <1 mt was reported. Confidential data (conf) are not provided. Some data are not confidential but must be masked (\*\*)

## **Appendix 2 State water Aleutian Islands Pacific cod fishery**

Prior to 2006, the BSAI Pacific cod fishery in State waters was managed as a parallel fishery to the Federal fishery; the Federal government managed all harvests (inside or outside State waters) against the Federal BSAI Pacific cod TAC and allocations, opened and closed seasons, and established gear restrictions. In February 2006, the Alaska Board of Fisheries (Board) created a new regulation establishing a State waters Pacific cod fishery in the AI. The management plan governs the harvest of Pacific cod in the AI west of 170° W. longitude, and it establishes the guideline harvest level (GHL) for the state waters fishery as 3% of the Federal BSAI Pacific cod ABC. The plan also specified that the future calculation (the ‘source’ of the GHL) will be the Council’s decision should the BSAI ABC be split into separate BS and AI ABCs in a future TAC harvest specifications process, but that the State water AI fishery would remain the equivalent of 3% of the combined BS and AI ABC.

The plan establishes a parallel Pacific cod season within State waters in the AI, which coincides with the Federal A season in the BSAI. The commissioner of ADF&G opens and closes, by emergency order, the parallel season during which the use of the same gear allowed in the Federal BSAI Pacific cod season is permitted, unless that gear is prohibited under State regulations. Since 2006, ADF&G has opened the State waters AI Pacific cod season 4 days after the Federal A season for the BSAI trawl CV fishery is closed. (All parallel seasons are closed during the State waters season.) New regulations governing the State waters A season have recently been approved by the Board of Fisheries, effective in 2012, and are outlined below. The State regulations authorizing the State water AI fishery and its primary elements are also included at the end of this appendix.

The intent of the State action was to allow additional harvests by specified sectors in AI State waters, which also results in 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, and from ports east of 170° W to those vessels that fish in the State water AI fishery. In effect, all sectors, including the CDQ fishery, realized a proportional reduction of 3% of their current Federal BSAI allocations starting in 2006. There may be a disproportionate negative effect on those participants that do not desire to fish in State waters in the AI, or are not allowed to participate by the State, compared to those participants that have harvested and want to continue to harvest Pacific cod in the Aleutians and within State waters.

### *Seasons and Gear Types*<sup>13</sup>

The State waters Pacific cod GHL is split between an A and B season, where the A season is allocated 70% of the GHL and the B season 30%. Should there be GHL remaining at the conclusion of the A season, the unharvested amount may be rolled over to the B season, however, the total GHL available during the B season may not exceed 70% of the entire GHL.

During the State waters A season legal gear types are trawl, pot, longline, and jig. Trawl vessels may not exceed 100 feet, pot vessels 125 feet, longline vessels 58 feet and jig vessels 58 feet. During the state-waters B season no vessel participating in the Aleutian Islands State waters Pacific cod fishery may be more than 60 feet from June 10 through July 31. Beginning August 1, pot vessels 125 feet or less may enter the fishery, but all other gear types may not be more than 60 feet.

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<sup>13</sup>This section is directly from a document entitled: “Overview of Aleutian Islands State Waters Pacific Cod Management and Regulations”, Trent Hartill, ADF&G, Division of Commercial Fisheries, Dutch Harbor.

## A Season

The State waters A season opening date is based on the closure of the Federal catcher vessel A season trawl sector. The State waters A season opens four days after the catcher vessel A season trawl sector closes. However, if the Federal fishery has not closed by March 14, the parallel season will close, by emergency order, and a State waters fishery will open on March 15. If the State waters A season GHL has not been taken by April 1, when the Federal catcher vessel trawl B season opens, the State waters A season will close and a parallel fishery will immediately open. If State waters A season GHL remains when the Federal B season closes, the State waters A season will re-open.

There is one caveat regarding the timing and area of the State waters A season. Within State waters between 175° W. longitude to 178° W. longitude, the opening of the State waters A season is not tied to the Federal catcher vessel trawl fishery nor has a fixed opening date of March 15. Instead, in this area, the State waters season will open January 1 to vessels 60 feet in length or less using trawl, pot, and jig gear, and vessels 58 feet or less using longline gear. Once the remaining portion of the State waters opens for the A season (the area outside of 175° W. long. to 178° W. long.), the vessel length restrictions within 175° W. long to 178° W. long will revert to those previously described (i.e. trawl vessels ≤100', pot vessels ≤125', longline vessels ≤58', and jig vessels ≤58'). The aforementioned pattern is repeated when/if the A season closes for the Federal B season opening on April 1.

In summary, if State waters A season GHL is available and there is a parallel Pacific cod fishery in the Aleutian Island District, the State waters Pacific cod fishery between 175° W. longitude to 178° W. longitude will be open to trawl, pot, and jig vessels 60 feet or less and longline vessels 58 feet or less.

## B Season

The State waters B season opens June 10. As previously mentioned, from June 10 through July 31 no vessel may be larger than 60 feet in length. From August 1 through December 31 pot vessels may not be more than 125 feet in length if operating pot gear and not more than 60 feet in length for all other gear types. The vessel length and gear restrictions in the area from 175° W. longitude to 178° W. longitude during the A season, do not apply to the State waters B season.

If the B season GHL has not been harvested by September 1, when the Federal catcher vessel pot fishery for vessels over 60 feet opens, the State waters season will close and a parallel fishery will immediately open. Upon completion of the Federal fishery, if an adequate amount of GHL remains, the State waters B season will reopen for pot vessels less than 125 feet and not more than 60 feet in length for all other gear types.

### *Harvest data*

Table 6 shows harvest of Pacific cod in the AI State water fishery during 2006 – 2010. The GHL for this fishery has ranged from about 11.5 million to 12.8 million pounds, with the majority of the harvest taken in the A season (70% is allocated prior to June 10). With the exception of 2009, Table 6 shows that the fleet has harvested almost the entire A season GHL each year, with the remainder reallocated to the B season. The number of participating vessels has been declining since 2009, compared to previous years, possibly due to limited shoreside processing opportunities in those years, as the processor in Adak was not operating. Overall, the majority of the GHL has been harvested by vessels using trawl and pot gear (see Table 7).

The 2011 GHL is 15,542,430 pounds. The 2011 state waters A season harvest information is confidential and not provided in Table 6. However, ADF&G reports three vessels participated in the A season, the A

season GHL was not fully harvested, and the maximum amount of GHL was rolled over to the B season (i.e. the revised B season GHL is 10,879,701 lbs, or 70% of the entire GHL). As of late August, about 58,000 pounds of Pacific cod has been harvested during the B season.<sup>14</sup>

Since the fishery was initiated, Pacific cod harvested in the fishery has been delivered to shore-based plants, floating processors, and catcher processors. While the majority of the processing data are confidential due to a low number of processors, a few general trends can be discussed. A much higher percentage of the fishery was delivered shoreside in 2007 compared to the other processing sectors. After 2007, the percentage decreased and was the lowest in 2010. On average, deliveries to shoreside processors account for more than a quarter of the total harvest in this fishery (average 2006 - 2010).

Deliveries to floating processors were highest in 2006, with little activity in 2009, but increased significantly in 2010. On average, floating processor activity accounts for over one-third of the processing activity in the AI fishery overall (average 2006 – 2010). The first years of the fishery had low levels of catcher processor activity compared to more recent years. Catcher processor activity was highest in 2009 when CPs accounted for the majority of the processing activity, and lowest in 2007, when it accounted for less than 20% of the total harvest. Catcher processor activity comprises over one-third of the processing activity overall (average 2006 - 2010).<sup>15</sup>

The 2011 BSAI Pacific cod ABC is 235,000 mt, thus, the 2011 State water AI Pacific cod fishery GHL is 7,050 mt. If the BS and AI split had been in place in 2011 and the GHL was calculated as 3% of the BSAI Pacific cod ABC, the GHL would equal one-third of the entire AI ABC (7,050 mt/21,150 mt).<sup>16</sup>

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<sup>14</sup>Trent Hartill, ADF&G, personal communication, August 19, 2011.

<sup>15</sup>Heather Fitch, ADF&G, personal communication, November 19, 2010.

<sup>16</sup>This also assumes the AI ABC = 9% of the BSAI ABC, which is the most recent available estimate from the BSAI Plan Team (as of February 2011). Section 1.3 discusses the plan team's approach for a separate, Tier 5 assessment for AI Pacific cod for 2012.

**Table 6 Aleutian Islands Pacific cod harvest from State-water fishery by season, 2006 – 2010**

Year	Season	Initial GHL <sup>b</sup>	Season Dates		Season Length <sup>a</sup>	Harvest <sup>b</sup>	Number of	
			Opened	Closed			Vessels	Deliveries
2006	A season	8,981,540	15-March	24-March	9	conf.	26	68
	B season	3,849,232 <sup>c</sup>	10-June	1-Sep	83	conf.	5	24
	TOTAL	12,830,772			92	8,860,665	29 <sup>g</sup>	92
2007	A season	8,148,202	16-March	23-March	7	8,229,931	29	97
	B season	3,492,086 <sup>d</sup>	10-June	1-Sep	83	2,143,310	10	92
			1-Oct	3-Dec	63	1,265,760	5	14
	TOTAL	11,640,288			153	11,639,001	41 <sup>g</sup>	203
2008	A season	8,148,202	10-March	18-March	8	7,477,507	30	116
	B season	3,492,086 <sup>e</sup>	10-June	9-July	29	4,241,692	18	77
	TOTAL	11,640,288			37	11,719,199	45 <sup>g</sup>	193
2009	A season	8,425,981	25-March	1-April	7	1,737,434	19 <sup>g</sup>	35
			7-April	9-June	64	4,032,415	8	15
	B season	3,611,135 <sup>f</sup>	10-June	1-Sep	83	conf.	5	conf.
TOTAL	12,037,116							
2010	A season	8,055,608	3-March	4-June	93	7,959,515	16 <sup>g</sup>	84
	B season	3,452,404 <sup>h</sup>	10-June	1-Sep	83	conf.	2	conf.
			15-Nov					
TOTAL	11,508,012							

<sup>a</sup>In days.<sup>b</sup>In whole pounds.<sup>c</sup>ADF&G made 3.5 million pounds of the GHL available to National Marine Fisheries effective on September 1.<sup>d</sup>81,729 pounds were deducted from the B season due to an overage during the A season. As a result the GHL at the opening of the B season was 3,410,357 pounds.<sup>e</sup>669,288 pounds remained from the A season and was rolled into the B season. As a result the GHL at the opening of the B season was 4,161,374 pounds.<sup>f</sup>2,656,132 pounds rolled over into the B season, for a GHL of 6,267,267 pounds.<sup>g</sup>Some vessels participated in both seasons.<sup>h</sup>96,094 pounds rolled over into the B season for a GHL of 3,548,498 pounds.

Source: Alaska Department of Fish and Game, November 2010. Conf = confidential data.

**Table 7 State AI Pacific Cod Fishery by Gear Type, 2006 - 2010**

2006 Total	Gear Type	Round lbs	Percent	Number	Number
				of Vessels	of landings
	Trawl	7,053,035	80%	20	58
	Longline	**	**	11	19
	Pot	conf.	conf.	2	14
		8,860,665	100%		
<b>2007 Total</b>	Trawl	6,998,224	60%	20	78
	Jig	conf.	conf.	1	2
	Longline	**	**	7	80
	Pot	3,614,870	31%	12	43
		11,639,000	100%		
<b>2008 Total</b>	Trawl	6,130,284	52%	22	94
	Jig	92,572	1%	5	18
	Longline	509,296	4%	9	25
	Pot	4,980,784	43%	11	56
		11,712,936	100%		
<b>2009 Total</b>	Trawl	1,295,595	22%	16	35
	Jig	conf.	conf.	2	conf.
	Longline	conf.	conf.	6	conf.
	Pot	4,111,699	71%	3	9
		conf.	100%		
<b>2010</b>	Trawl	4,899,783	62%	13	76
<b>A season*</b>	Jig	0	0%	0	0
	Longline	0	0%	0	0
	Pot	3,059,732	38%	3	8
		7,959,515	100%		

Source: ADF&G, November 2010. Conf = confidential data. \*\* = masked to protect confidential data.

### *Provisions of the State water AI Pacific cod fishery*

The current provisions (as of August 2011) of the ADF&G Aleutian Islands District Pacific cod Management Plan at 5 AAC 28.647 are provided below.

#### 5 AAC 28.647. Aleutian Islands District Pacific Cod Management Plan

(a) This management plan governs the harvest of Pacific cod in the Aleutian Islands District west of 170° W. long.

(b) Each year, the commissioner shall open and close, by emergency order, a parallel season in the Aleutian Islands District west of 170° W. long., except in the waters between 175° W. long. and 178° W. long., to coincide with the initial federal season in the Bering Sea-Aleutian Islands Area. The commissioner shall open and close, by emergency order, the parallel season during which the use of the same gear allowed in the federal Bering Sea-Aleutian Islands Area Pacific cod season is permitted, unless that gear is prohibited under 5 AAC 28.050 or 5 AAC 28.629.

(c) The commissioner shall open, by emergency order, a state waters season in the Aleutian Islands District as follows:

- (1) the season in the waters between 175° W. long. and 178° W. long. shall open January 1;
- (2) in the waters not specified in (1) of this subsection

- (A) that are west of 170° W. long., the season shall open four days after the Bering Sea-Aleutian Islands parallel A season for the catcher-vessel trawl fishery is closed; or
  - (B) if the federal catcher-vessel trawl fishery has not closed by March 14, the commissioner will close, by emergency order, the parallel season for the catcher-vessel trawl fishery at 12:00 noon, March 14, and open by emergency order, the state waters season at 12:00 noon, on March 15;
  - (3) the commissioner shall close, by emergency order, the state waters season opened under (1) and (2) of this subsection when the guideline harvest level is taken or on December 31, whichever occurs first; except as otherwise specified in this chapter, all parallel Pacific cod seasons are closed during the state waters season.
- (d) During a state waters season,
- (1) the guideline harvest level for Pacific cod in the Aleutian Islands District west of 170° W. long. is three percent of the estimated total allowable harvest of Pacific cod for the federal Bering Sea-Aleutian Islands Area; the guideline harvest level will be available for harvest as follows:
    - (A) a maximum of 70 percent of the guideline harvest level will be available for harvest in the state waters A season before June 10 as follows:
      - (i) if the state waters A season guideline harvest level has not been taken by April 1, when the federal catcher-vessel trawl fishery B season opens, the commissioner will close, by emergency order, the state waters A season in the waters specified in (c)(2) of this section and immediately reopen a parallel season;
      - (ii) if the commissioner determines that an adequate state waters season A guideline harvest level is available after the federal catcher-vessel trawl fishery B season closes, and before June 10, the commissioner may reopen, by emergency order, the state waters A season in the waters specified in (c)(2) of this section;
    - (B) a total of 30 percent of the guideline harvest level plus any unharvested amount from the state waters A season under (1)(A) of this subsection, up to a maximum of 70 percent, will be rolled over on June 10 and available for harvest in the state waters B season; the guideline harvest level will be available as follows:
      - (i) if the state waters B season guideline harvest level has not been taken by September 1, when the federal catcher-vessel pot fishery B season for vessels over 60 feet in overall length opens, the commissioner will close, by emergency order, the state waters B season and immediately reopen a parallel season;
      - (ii) if the commissioner determines that an adequate state waters B season guideline harvest level is available after the federal catcher-vessel pot fishery B season for vessels over 60 feet in overall length closes, the commissioner may reopen, by emergency order the state waters B season;
  - (2) Pacific cod may be taken only with groundfish pots, mechanical jigging machines, longline, non-pelagic trawl, and hand troll gear; groundfish pots may be longlined; each end of the groundfish pot longline must have a buoy attached and each buoy must be marked with the permanent ADF&G vessel plate number of the vessel operating the groundfish longlined pot gear and the letters "GFL" to designate the gear as longlined groundfish pot gear; the numbers and letters must be marked on the top one-half of the buoy in numbers and letters that are at least four inches high, one-half inch

wide, and in a color that contrasts with the color of the buoy; the buoy markings must be visible on the buoy above the water surface when the buoy is attached to the longlined pot gear; for the purposes of this paragraph, "longlined" means more than one groundfish pot is attached to a stationary, buoyed, and anchored line;

- (3) a vessel used to harvest Pacific cod during the
  - (A) state waters 'A' season when the
    - (i) waters specified in (c)(1) of this section are open, with non-pelagic trawl, mechanical jigging machine, or pot gear, may not be more than 60 feet in overall length, except as specified in (ii) of this paragraph; a vessel using longline gear may not be more than 58 feet in overall length;
    - (ii) combined areas of (c)(1) and (2) are open, with non-pelagic trawl gear may not be more than 100 feet in overall length; a vessel using mechanical jigging machines and longline gear may not be more than 58 feet in overall length; a vessel using pot gear may not be more than 125 feet in overall length;
  - (B) state waters 'B' season, from
    - (i) June 10 through July 31, may not be more than 60 feet in overall length for any gear type;
    - (ii) August 1 through December 31, may not be more than 125 feet in overall length if operating pot gear and not more than 60 feet in overall length for all other allowable gear types;
- (4) a vessel operator may be concurrently registered to harvest Pacific cod with mechanical jigging machines and longline gear, but may not be concurrently registered to harvest Pacific cod with any other gear types;
- (5) a vessel's gear registration may be changed during a state waters season to a different gear registration if the owner, or owner's agent, submits a written request for a change in registration by mail, facsimile, or in person, to the department office in Dutch Harbor, or other locations specified by the department for validation, and that registration has been validated by the department; a vessel may not fish outside of the designated registration area; a vessel may not change registration while unprocessed fish are on board the vessel;
- (6) the provisions of 5 AAC [28.629\(d\)](#) and (e) and 5 AAC [28.690](#) do not apply;
- (7) a vessel may harvest up to 150,000 pounds of Pacific cod per day and may not have more than 150,000 pounds of unprocessed Pacific cod on board the vessel at any time; a vessel may not have on board the vessel more processed fish than the round weight equivalent of the fish reported on ADF&G fish tickets during the seasons specified in (1)(A) and (B) of this section; a validly registered vessel must report daily to the department the pounds of Pacific cod taken and on board the vessel;
- (8) all Pacific cod taken must be retained; any overage of a limit specified in (7) of this subsection must be immediately reported to the department by the vessel operator; all proceeds from the sale of Pacific cod in excess of a limit specified in (7) of this subsection shall be immediately surrendered to the state.

(e) The Aleutian Islands District is a nonexclusive registration area for Pacific cod during a state waters season.

(f) The commissioner may, by emergency order, impose bycatch limitations and retention requirements based on conservation of the resource, to avoid waste of a bycatch species, to prevent over harvest of bycatch species, or to facilitate consistency of the regulations in an area where state and federal jurisdictions overlap.

(g) During the state waters season,

- (1) all closure areas specified in the parallel season shall apply as specified by gear group in 50 C.F.R. 679, revised as of October 1, 2005, as modified by 71 Federal Register 36,694 - 36,714 (July 28, 2006); and
- (2) all waters within three nautical miles of the Steller sea lion site on Kanaga Island/Ship Rock at 51° 46.70' N. lat., 177° 20.72' W. long. are closed to the taking of Pacific cod.

(h) For the purposes of this section,

- (1) "overall length" means the straight line length between the extremities of the vessel, excluding anchor rollers;
- (2) "state waters 'A' season" means the state waters season conducted from January 1 through June 9;
- (3) "state waters 'B' season" means the state waters season conducted from June 10 through December 31.

(i) The board intends that a vessel operator generally harvest less than the vessel's allowable harvest limit, possess less than the vessel's allowable possession limit, and limit the vessel's fishing activities if there is a possibility of exceeding those limits. A vessel operator of a vessel harvesting more than an allowable harvest limit or that is in possession of more than the allowable possession limit is considered to have engaged in improper operation of gear. Nothing in this section is intended to preclude or discourage additional enforcement action under [AS 16.05.722](#) , [AS 16.05.723](#) , or any other applicable law for any violation of this section.

### Appendix 3 Overview of 2011 Steller sea lion protection measures

Following the 2000 FMP-level Biological Opinion, a new biological opinion specifically on the newly-adopted Steller sea lion protection measures was issued in 2001. The 2001 Biological Opinion 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 allowances. Pacific cod is one of the three most important groundfish 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). Since 2001, 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 apportionment for the BSAI Pacific cod fishery of 70% in the first season (January 1–June 10) and 30% in the second season (June 10–December 31).<sup>17</sup> Note that Amendment 85 modified the seasonal allowances by gear sector that were established in the Biological Opinion, but retained the overall target of 70% in the first half of the year, and 30% in the second half.<sup>18</sup>

The anticipation of a new BiOp delayed consideration of the BS/AI Pacific cod split, since it was recognized that the agency may come to different conclusions in terms of jeopardy or necessary protection measures to prevent jeopardy, than the existing (2001 and 2003 Supplement) Biological Opinion. This made it very difficult to simultaneously propose changes to the way Pacific cod is managed, especially considering that the seasonal distribution of Pacific cod catch in the AI may be a primary issue.

The new draft BiOp was released by NMFS in August 2010, and concludes that the status quo BSAI Pacific cod and Atka mackerel fisheries jeopardize the continued existence of the endangered western population of Steller sea lions and adversely modify its critical habitat. The Council reviewed the draft BiOp and the proposed RPA in August, and did not support the proposed RPA, which would close the Atka mackerel and Pacific cod fisheries in the Western Aleutian Islands (Area 543), further restrict the Atka mackerel and Pacific cod fisheries in the Central Aleutian Islands (Area 542), and further restrict the Pacific cod fishery in the Eastern Aleutian Islands (Area 541). In October, NMFS provided the Council with an update on the BiOp and presented a revised draft RPA. The Council received a report on the final BiOp and final RPA, for implementation in January 2011, at the December Council meeting.

The spatial and temporal dispersion measures in place for the BSAI Pacific cod fishery in January 2011, as a result of the 2010 BiOp, are outlined in Figure 1 and are graphically represented in Figure 2 through Figure 4. In effect, the new protection measures significantly restrict Pacific cod fishing in the AI, prohibiting retention of Pacific cod in the western AI area (Area 543). The measures also limit the amount of Pacific cod that can be harvested in Area 541 and 542 by trawl and non-trawl gear, without reinitiating another Endangered Species Act consultation.

The RPA implemented in 2011 clearly has implications for the Pacific cod fishery in the AI. The BiOp estimates that the trawl CP sectors' Pacific cod production in the AI is estimated to drop to about 50 percent of its status quo level. The EA/RIR supporting the RPA states that: "The sector is expected to respond by shifting fishing activity into the rock sole, yellowfin sole, and Pacific cod fisheries in the Bering Sea. Its success in those fisheries is expected to be mixed. Halibut PSC rates are much higher in the Bering Sea than they are in the Aleutian Islands, and this is likely to constrain the sector's ability to

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<sup>17</sup> Table 5.4, p. 153 of the 2001 Biological Opinion, NMFS. October 2001.

<sup>18</sup> NMFS Protected Resources informally consulted on the revisions to the seasonal apportionments and found that they met the target provided in the Biological Opinion.

increase its harvests of those species.”<sup>19</sup> In addition, more vessels shifting from the Aleutian Islands to the Bering Sea would increase competition with vessels already active in the Bering Sea for the TAC available there, reducing average harvests (i.e., effectively, the status quo condition). Pacific cod fishing operations may also become more highly concentrated in the eastern Aleutian Islands, if fishing operations attempt to maintain their historical amount of AI harvest in this more limited area (pp. 10-64 – 10-65).

The EA/RIR also estimates that the fixed gear CP sectors will shift harvest of Pacific cod to the Bering Sea. The RIR estimates that the fixed gear CP sectors’ Pacific cod production in the AI is estimated to drop to about 44 percent of its status quo level. The EA/RIR states (p. xii): “While this sector is more likely than the trawler fleets to be able to fully offset its Aleutian Islands losses in volume terms, industry sources indicate that Bering Sea Pacific cod are smaller, have a lower product recovery rate, and enter different market channels. These factors make them less valuable, and as a result, the revenues from any given volume of production are likely to be less.” The analysis also notes that fixed gear CPs that are active in the AI also have a history of activity in the Bering Sea. Pacific cod fixed gear CPs could also shift fishing effort to places and periods in Aleutian Islands Areas 541 and 542, which are still open to fishing for Pacific cod. However, due to the footprint that fixed gear CPs require to effectively fish an area, and due to the limited amount of Pacific cod habitat available in the AI under the RPA, increased effort in those areas would be limited. The prime Pacific cod fishing locations are found within critical habitat (p.10-73).

All catcher vessel sectors operate in the AI: trawl, hook-and-line, pot, and jig, although the majority of the catcher vessel harvest is by trawl gear. The RIR supporting the BiOp estimates that the catcher vessel sectors that deliver shoreside or to motherships will reduce their Pacific cod production in the AI to 60% of status quo levels. Based on the average harvest, the median decline in catch would have been about 5,600 metric tons if the RPA had been in place during 2004 - 2009. The catcher vessel sectors are also expected to shift towards more Pacific cod production in the Bering Sea, however, it is also recognized that these sectors may not be able to fully offset their lost harvest. Halibut PSC rates for these sectors are also higher in the BS compared to the AI. The analysis recognizes that as operations shift more effort to the Bering Sea to make up for foregone revenues in the AI, they may impact other vessels that are already operating in the Bering Sea fisheries. Interactions may be complex, and may include increased congestion, reduced market prices for some species, and competition for PSC allowances. It is also possible that trawl catcher vessels from the Aleutian Islands could shift to the GOA and increase catcher vessel effort devoted to flatfish fishing; there has not been significant activity by these vessels in the GOA flatfish fishery in the past.

Slight modifications to the RPA after October 2010 allow fixed gear catcher vessels and catcher processors, to (a) fish for Pacific cod in critical habitat in Area 541 from 10 to 20 miles from March 1 through June 10, and (b), for non-trawl vessels catcher vessels and catcher processors  $\geq 60'$ , to fish in critical habitat in Area 542 between 6 and 20 miles, from March 1 through June 10. Hook-and-line catcher vessels and catcher processors took an average of about 11% of their Area 541 harvests, and little or none of their Area 542 harvests, from the critical habitat zones between these dates, during the period evaluated (2004 – 2009). (Confidentiality limitations prevent the RIR from reporting specific volumes.) Thus, the reductions in harvest cited above for both fixed gear catcher vessels and catcher processors should be slightly reduced as a result of these modifications to the RPA.<sup>20</sup>

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<sup>19</sup>EA/RIR for Revisions to the Steller Sea Lion Protection Measures for the BSAI Management Area Groundfish Fisheries, NMFS, November 2010. p. xii.

<sup>20</sup>EA/RIR errata, updated 12/8/10, p.1.

In addition, while the RPA does not include a limit on the amount of the BSAI Pacific cod TAC that can be harvested in the AI, it sets a maximum harvest level that can be taken in Area 541 and 542 by trawl and non-trawl gear *without* reinitiating an ESA consultation. Essentially, the harvest by non-trawl vessels cannot exceed 1.5% of the BSAI Pacific cod ABC in Area 541 or 542; the trawl harvest cannot exceed 11.5% of the BSAI Pacific cod ABC in Area 541 or 2% in Area 542. These limits are based on maximum annual harvest by each gear group in 2007 – 2009. If any of these limits are exceeded, the BiOp requires that a consultation must be reinitiated.

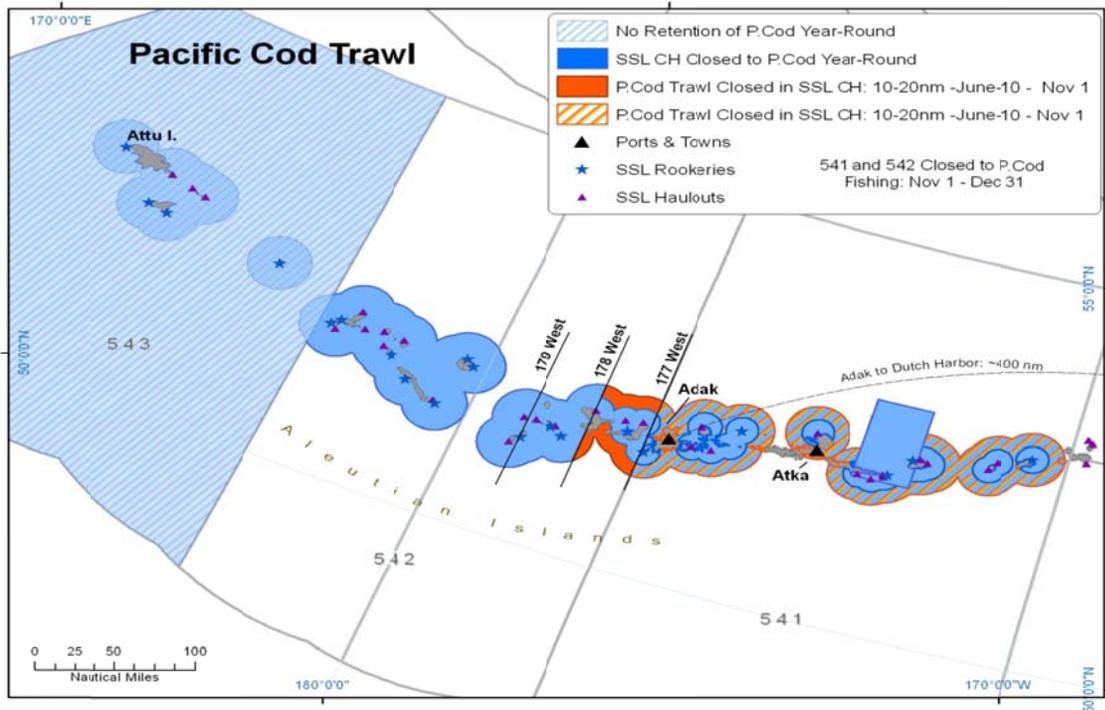
**Figure 1 Spatial and temporal dispersion measures for the protection of Steller sea lions which apply to the Pacific cod fishery (as of January 2011)**

<p><b>Area 543:</b></p> <ul style="list-style-type: none"> <li>• Prohibit retention of Atka mackerel and Pacific cod by all federally permitted vessels.</li> </ul> <p><b>Area 542:</b></p> <p><u>Groundfish</u></p> <ul style="list-style-type: none"> <li>• Close waters from 0–3 nm around Kanaga Island/Ship Rock to directed fishing for groundfish by federally permitted vessels.</li> </ul> <p><u>Non-trawl Pacific cod</u></p> <ul style="list-style-type: none"> <li>• Close 0–6 nm zone of critical habitat year round to directed fishing for Pacific cod by federally permitted vessels using nontrawl gear. For vessels 60 ft or greater, close critical habitat from 6–20 nm January 1 to March 1, to directed fishing for Pacific cod using nontrawl gear by federally permitted vessels.</li> </ul> <p><u>Trawl Pacific cod</u></p> <ul style="list-style-type: none"> <li>• Between 177° E to 178° W longitude, close critical habitat from 0–20 nm year round to directed fishing for Pacific cod by federally permitted vessels using trawl gear.</li> <li>• Between 178° W to 177° W longitude: 1) close critical habitat from 0–10 nm year round to directed fishing by federally permitted vessels using trawl gear; and 2) close critical habitat 10–20 nm June 10 to November 1, to directed fishing for Pacific cod using trawl gear by federally permitted vessels.</li> </ul> <p><u>Non-trawl &amp; Trawl Pacific cod</u></p> <ul style="list-style-type: none"> <li>• Prohibit directed fishing for Pacific cod by all federally permitted vessels from November 1 to January 1. (This extends the existing trawl gear restriction to non-trawl gear.)</li> <li>• Reinitiate ESA consultation if the non-trawl harvest of Pacific cod exceeds 1.5 percent of the BSAI Pacific cod ABC (equivalent to the Area 542 maximum annual harvest amount from 2007 through 2009). Similarly, reinitiate ESA consultation if the trawl harvest of Pacific cod exceeds 2 percent of the BSAI Pacific cod ABC (equivalent to the Area 542 maximum annual harvest amount from 2007 through 2009).</li> </ul> <p><b>Area 541:</b></p> <ul style="list-style-type: none"> <li>• Close 0–10 nm of critical habitat year round to directed fishing for Pacific cod by all federally permitted vessels.</li> <li>• Limit the amount of catch that can be taken in the 10 nm–20 nm area of critical habitat based on gear type used:</li> </ul> <p><u>Non-trawl</u> - Close critical habitat 10–20 nm January 1 to March 1, to directed fishing for Pacific cod using nontrawl gear by federally permitted vessels.</p> <p><u>Trawl</u> – Close critical habitat 10–20 nm June 10 to November 1, to directed fishing by for Pacific cod using trawl gear by federally permitted vessels.</p> <p><u>Non-trawl &amp; Trawl Pacific cod</u></p> <ul style="list-style-type: none"> <li>• Prohibit directed fishing for Pacific cod by all federally permitted vessels from November 1 to January 1. (This extends the existing trawl gear restriction to non-trawl gear.)</li> <li>• Reinitiate ESA consultation if the non-trawl harvest of Pacific cod exceeds 1.5 percent of the BSAI Pacific cod ABC (equivalent to the Area 541 maximum annual harvest amount from 2007 through 2009). Similarly, reinitiate ESA consultation if the trawl harvest of Pacific cod exceeds 11.5 percent of the BSAI Pacific cod ABC (equivalent to the Area 541 maximum annual harvest amount from 2007 through 2009).</li> </ul>
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	543	542			541			
Atka mackerel		Limit TAC to 47% of ABC, Change A season to Jan. 20-Jun. 10; change B season to Jun. 10-Nov. 1.			Change A season to Jan. 20-Jun. 10. Change B season to Jun. 10-Nov. 1.			
								<ul style="list-style-type: none"> <li>← Outside CH</li> <li>← 0 - 3 nm CH</li> <li>← 0 - 10 nm CH</li> <li>← 10 - 20 nm CH</li> </ul>
P. Cod		Non-trawl		Trawl				
		Vessels < 60'	Vessels ≥ 60'	177°E - 178°W	178°W - 177°W	Non-trawl	Trawl	<div style="border: 1px solid black; padding: 2px; width: fit-content;">Trawl: Jan 20 – Jun 10; Nontrawl Jan 1 – Mar 1</div> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin-top: 5px;">Trawl: Jun 10 – Jan 20; Nontrawl: Mar 1 – Nov 1</div>
All Gear: P. Cod closure Nov. 1 – Dec. 31		All Gear: P. Cod closure Nov. 1 – Dec. 31		All Gear: P. Cod closure Nov. 1 – Dec. 31				
		Reinitiate consult if catch exceeds 1.5% BSAI P. cod ABC.		Reinitiate consult if catch exceeds 2% BSAI P. cod ABC.		Reinitiate consult if catch exceeds 1.5% BSAI P. cod ABC.	Reinitiate consult if catch exceeds 11.25% BSAI P. cod ABC.	
Other	Status Quo	Close groundfish fishing from 0-3 nm around Kanaga/Ship Rock Rookery			Close the EBS subarea to directed fishing for Atka mackerel year-round.			

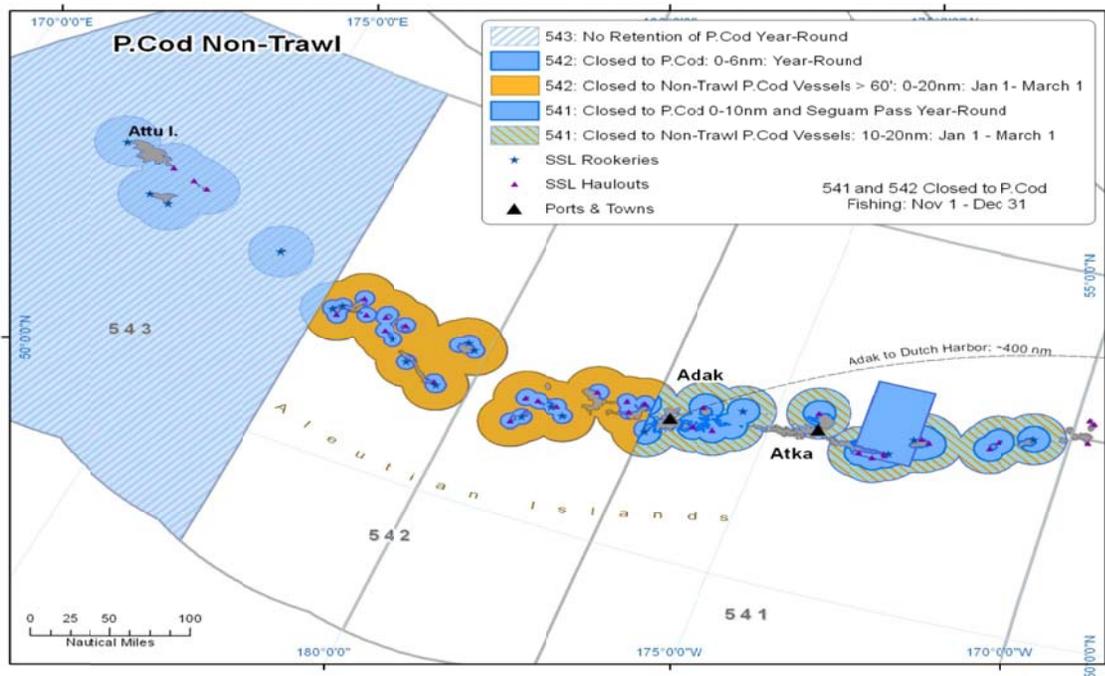
**Figure 2 Summary of the Reasonable and Prudent Alternative (RPA) for Areas 543, 542, and 541**

Source: Figure 8.1 of the Final Bering Sea and Aleutian Islands and Gulf of Alaska Groundfish Fisheries Section 7 Consultation – Biological Opinion, December 2010.



**Figure 3 Map of the RPA for the Pacific cod trawl fisheries in Areas 543, 542, and 541**

Source: Figure 8.4 of the Final Bering Sea and Aleutian Islands and Gulf of Alaska Groundfish Fisheries Section 7 Consultation – Biological Opinion, December 2010.



**Figure 4 Map of the RPA for the Pacific cod non-trawl fisheries in Areas 543, 542, and 541**

Source: Figure 8.5 of the Final Bering Sea and Aleutian Islands and Gulf of Alaska Groundfish Fisheries Section 7 Consultation – Biological Opinion, December 2010.

## **Appendix 4 BSAI FMP language for BSAI Pacific cod allocations**

### **3.2.3.4.3 Apportionment of Total Allowable Catch**

#### 3) Pacific cod

##### A) Gear Allocations

###### a) Initial Allocations

The BSAI Pacific cod TAC (excluding CDQ) shall be allocated among gear groups as follows:

1. 48.7 percent to catcher/processors using hook-and-line gear;
2. 0.2 percent to catcher vessels equal to or greater than 60 ft length overall using hook-and-line gear;
3. 1.5 percent to catcher/processors using pot gear;
4. 8.4 percent to catcher vessels equal to or greater than 60 ft length overall using pot gear;
5. 2.0 percent to catcher vessels less than 60 ft length overall that use either hook-and-line gear or pot gear;
6. 1.4 percent to vessels using jig gear;
7. 2.3 percent to catcher processors using trawl gear and listed in Section 208(e)(1) through (20) of the American Fisheries Act;
8. 13.4 percent to catcher processors using trawl gear as defined in Section 219(a)(7) of the Consolidated Appropriations Act, 2005 (P.L. 108-447);
9. 22.1 percent to catcher vessels using trawl gear.

###### b) Inseason Reallocations

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

###### c) Incidental Catch Allowances

The Regional Administrator annually will estimate the amount of Pacific cod taken as incidental catch in directed fisheries for groundfish other than Pacific cod. For vessels using hook-and-line or pot gear, the incidental catch allowance will be deducted from the aggregate amount of Pacific cod TAC annually allocated to hook-and-line and pot gear sectors combined.

##### C) Seasonal Allocations

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