UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

To All Interested Government Agencies and Public Groups: SEP 23 2011

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: Final Environmental Assessment / Final Regulatory Impact Review / Initial Regulatory Flexibility Analysis for Amendment 83 to the Fishery Management Plan for Groundfish of the Gulf of Alaska, RIN 0648-AY53

LOCATION: Exclusive economic zone off the Gulf of Alaska

SUMMARY: Amendment 83 would allocate the Western and Central Gulf of Alaska Pacific cod total allowable catch (TAC) limits among various gear and operational sectors. Sector allocations would limit the amount of Western and Central GOA Pacific cod that each sector is authorized to harvest. This action would reduce competition among sectors and support stability in the Pacific cod fishery. This amendment would also limit access to the Federal Pacific cod TAC fisheries prosecuted in State waters, commonly known as the parallel fishery, adjacent to the Western and Central GOA. This action is intended to promote community participation and provide incentives for new entrants in the jig sector. It also promotes the goals and objectives of the Magnuson-Stevens Fishery Conservation and Management Act, the fishery management plan, and other applicable laws.

RESPONSIBLE OFFICIAL: James W. Balsiger, Ph.D.
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The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A copy of the finding of no significant impact (FONSI), including the environmental assessment, is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the Responsible Official named above.

Sincerely,

Paul N. Doremus, Ph. D.
NOAA NEPA Coordinator

Enclosure

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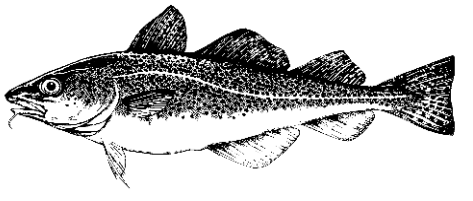
FINAL ENVIRONMENTAL ASSESSMENT / FINAL REGULATORY IMPACT REVIEW / INITIAL REGULATORY FLEXIBILITY ANALYSIS

for Amendment 83 to the Fishery Management Plan for Groundfish of the Gulf of Alaska

ALLOCATION OF PACIFIC COD AMONG SECTORS IN THE WESTERN AND CENTRAL GOA



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September 6, 2011

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EXECUTIVE SUMMARY

This Final Environmental Assessment / Final Regulatory Impact Review / Initial Regulatory Flexibility Analysis examine the environmental, economic, and socioeconomic aspects of a proposed Federal regulatory action. The North Pacific Fishery Management Council (Council) has proposed Amendment 83 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP). The preferred alternative for the proposed action would allocate the Western and Central GOA Pacific cod total allowable catches (TACs) among the hook-and-line catcher vessel (CV), hook-and-line catcher processor (CP), pot CV, pot CP, trawl CV, trawl CP, and jig sectors based on catch history or other criteria.

Competition among participants in the Western and Central GOA Pacific cod fisheries has intensified in recent years. Separate TACs are identified for Pacific cod in the Western, Central, and Eastern GOA management subareas, but the TACs are not divided among gear or operation types. This results in a derby-style race for fish and competition among the various gear types for shares of the TACs. The proposed action would divide the Western and Central GOA Pacific cod TACs among the various gear and operation types, based primarily on historical dependency and use by each sector. This action is expected to enhance stability in the fishery, reduce competition among sectors, and preserve the historical division of catch among sectors. Without sector allocations, future harvests by some sectors may increase and impinge on the historical levels of catch by other sectors.

To address these issues, the Council adopted the following problem statement:

GOA Pacific Cod Sector Split Purpose and Need Statement

The limited access derby-style management of the Western GOA and Central GOA Pacific cod fisheries has led to competition among the various gear types (trawl, hook-and-line, pot and jig) and operation types (catcher processor and catcher vessel) for shares of the total allowable catch (TAC). Competition for the GOA Pacific cod resource has increased for a variety of reasons, including increased market value of cod products, rationalization of other fisheries in the BSAI and GOA, increased participation by fishermen displaced from other fisheries, reduced Federal TACs due to the State waters cod fishery, and Steller sea lion mitigation measures including the A/B seasonal split of the GOA Pacific cod TACs. The competition among sectors in the fishery may contribute to higher rates of bycatch, discards, and out-of-season incidental catch of Pacific cod.

Participants in the fisheries who have made long-term investments and are dependent on the fisheries face uncertainty as a result of the competition for catch shares among sectors. To reduce uncertainty and contribute to stability across the sectors, and to promote sustainable fishing practices and facilitate management measures, the Western and Central GOA Pacific cod TACs should be divided among the sectors. Allocations to each sector would be based primarily on qualifying catch history, but may be adjusted to address conservation, catch monitoring, and social objectives, including considerations for small boat sectors and coastal communities. Because harvest sector allocations would supersede the inshore/offshore processing sector allocations for Pacific cod by creating harvest limits, the Council may consider regulatory changes for offshore and inshore floating processors in order to sustain the participation of fishing communities.

The timing of the Pacific cod A and B seasons may have limited the participation of jig vessels in the parallel and Federal fisheries of the GOA. Additionally, the State waters jig allocation has gone uncaught in some years, potentially due to the lack of availability of Pacific cod inside three miles. A non-historical Federal catch award, together with the provision of access in Federal waters for the State Pacific cod jig allocations, offers entry-level opportunities for the jig sector.

Currently, there are no limits on entry into the parallel waters groundfish fisheries, and no limits on the proportion of the GOA Pacific cod TAC that may be harvested in parallel waters. There is concern that participation in the GOA Pacific cod parallel waters fishery by vessels that do not hold LLP licenses may increase. The Council, in consideration of options and recommendations for the parallel fishery, will need to balance the objectives of providing stability to the long term participants in the sectors, while recognizing that new entrants who do not hold Federal permits or licenses may participate in the parallel fishery.

Alternatives, Components, and Options

This analysis considers two alternatives. **Alternative 1** (no action) would not make any changes to the existing allocations of the Western and Central GOA TACs between the inshore and offshore processing sectors. **Alternative 2** would allocate the Western and Central GOA Pacific cod TACs among the sectors, as defined by gear and operation types. These harvest allocations would supersede the existing inshore/offshore processing sector allocations. There are ten components under Alternative 2 that outline the details of the proposed action. The alternatives and components are summarized below. See Chapter 1 for the exact wording of the alternatives, components, and options under consideration.

Component 1 identifies the management areas subject to the proposed action, the Western GOA and Central GOA. The Western and Central GOA Pacific cod TACs will be allocated among the sectors, and sector definitions may differ between the management areas. The Eastern GOA Pacific cod TAC will not be allocated among the sectors, because there is not a perceived need for such an action.

Component 2 identifies the options for sector definitions in each management area. In the Central GOA, sectors could include trawl CPs, trawl CVs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide the hook-and-line CP sector by length (125 ft length overall [LOA]), the hook-and-line CV sector by length (50 ft LOA), and to combine the pot CV and pot CP sectors. In the Western GOA, sectors could include trawl CPs, trawl CVs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide several sectors by length: hook-and-line CPs (125 ft LOA), hook-and-line CVs (60 ft LOA), pot CVs (60 ft LOA); and an option to combine the pot CV and pot CP sectors. In the Western GOA, there is also an option to create a combined trawl CV and pot CV sector, either for all CVs or for vessels <60 ft LOA.

Finally, there is an option under Component 2 to require holders of CP licenses to make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement. Only CP license holders who made a minimum of one Pacific cod landing while operating as a CV under the authority of the CP license, from 2002 through 2008, would have the option to elect to receive a CV endorsement. Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA cod fishery. However, this endorsement would not preclude a license holder from operating as a CV or CP in other groundfish fisheries.

Component 3 identifies catch history that will be used to calculate sector allocations. Catch history includes all retained legal catch of Pacific cod from the Federal and parallel waters fisheries in the Western and Central GOA, calculated using Alaska Department of Fish and Game (ADF&G) Fish Tickets for CVs and NMFS Catch Accounting/Blend data for CPs. Catch history includes both directed and incidental catch of Pacific cod, which is defined as Pacific cod caught in the parallel and federal waters groundfish fisheries, when the directed Pacific cod season is closed. Under all options, incidental catch allocated to trawl CVs for the Central GOA Rockfish program (currently, 2.09% of the Central GOA Pacific cod TAC) will be deducted from the Central GOA trawl CV B season allocation. Each sector's allocation will be managed to support both incidental and directed catch of Pacific cod.

Component 4 identifies the potential sets of years that could be used to calculate sector allocations. The options for the Western and Central GOA differ. In the Central GOA, allocations could be calculated using each sector's best 3 or 5 years (identified based on each sector's annual percentage of catch) during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or based on the average of all options, or the average of the options that include the best 5 years. In the Western GOA, allocations could be calculated based on each sector's best 7 years during 1995 through 2005, or best 5 years during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or the average of these four options. The

Council also has the option to choose separate qualifying years for each sector. Allocations are then adjusted proportionally, so that they sum to 100% of the TAC. Finally, in order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, allocations could be adjusted by 3% above each sector's highest potential allocation or 3% below each sector's lowest potential allocation.

Component 4 also identifies options for recalculating Pacific cod sideboards for the Western and Central GOA management areas. The American Fisheries Act (AFA) CV Pacific cod inshore and offshore sideboards will be combined into a single sideboard in each management area. The non-AFA crab sideboards will be recalculated to establish separate CP and CV sideboard amounts for each gear type in each management area. Finally, Component 4 includes several options for establishing seasonal apportionments. Each sector's allocation could be apportioned 60%/40% between the A and B seasons, or could be apportioned based on each sector's seasonal catch history. In addition, there is an option in the Western GOA to allocate only the A season TAC among sectors.

Component 5 addresses the allocation to jig vessels. The jig allocation would be set aside from the TAC before allocations to other sectors are made, and could include an initial allocation of 1%, 1.5%, or 2% of the Central GOA Pacific cod TAC, and 1% or 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig sector allocation by 1%, if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 5%, 6%, or 7% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas would be stepped down in 1% annual increments, if 90% of the current allocation or 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during either (a) 2 consecutive years or (b) 3 consecutive years, following the stairstep increase. However, the allocation would not drop below its initial level.

There are two options in Component 5 for managing the jig allocation. **Option 1 outlines** the management measures that would take effect if, under a subsequent action, the Alaska Board of Fisheries relinquishes any portion of the state waters jig guideline harvest level (GHL). Any relinquished jig GHL would be added to the parallel/federal jig allocation, so that the jig sector is fishing from a single account. Under this scenario, there are three options for seasonally apportioning the combined state/parallel/federal jig allocation: no seasonal apportionment, 60%/40% A/B season apportionment, or 80%/20% A/B season apportionment. Under the first option, the jig season would open on January 1 and close when the allocation is reached. Under the latter two options, the fishery would open on January 1, and close when the jig A season allocation is reached. The B season would open on June 10.

Until the Board of Fisheries relinquishes any portion of the jig GHL, distinct parallel/federal and state waters fisheries will continue to exist, and the two fisheries will be managed as described under **Option 2**. The parallel/federal jig allocation would be apportioned 60%/40% into an A/B season. The A season would open on January 1 and close when the jig A season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector would open on June 10, or after the state GHL season closes, whichever occurs later.

Component 6 outlines three options for managing rollovers of unharvested sector allocations. Any portion of an allocation that NMFS determines will not be harvested by the respective sector during the remainder of the fishing year will be rolled over as follows: (1) CV allocations to CV sectors first, and CP allocations to CP sectors first, then to all sectors as needed to harvest the remaining amount of Pacific cod, (2) all allocations to CV sectors first, and then to all sectors as needed to harvest the remaining Pacific cod, and (3) all allocations to all sectors as needed to harvest the remaining Pacific cod.

Component 7 includes two options for apportioning the GOA non-demersal shelf rockfish (non-DSR) hook-and-line halibut prohibited species catch (PSC) allowance between CVs and CPs. **Option 1** would not apportion the GOA non-DSR hook-and-line PSC allowance between CVs and CPs. **Option 2** would apportion the GOA hook-and-line halibut PSC between the CP and CV sectors, in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector, as adjusted to reflect the relative size of the Pacific cod area apportionments, determined during the annual harvest specifications process. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector.

Component 8 identifies options to protect community participation and processing patterns in the GOA Pacific cod fishery that were established by the inshore/offshore regulations. For the purposes of Component 8, motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year. The Council could select one or a combination of four options. Under **Option 1**, motherships may not receive deliveries of directed Pacific cod harvests. **Option 2** allows mothership activity up to a percentage of the Pacific cod TAC to be selected by the Council (0–10% in the Central GOA; 1%–10% in the Western GOA). **Option 3** allows federally permitted vessels that do not meet the definition of a stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries within the boundaries of Western and Central GOA Community Quota Entity (CQE) communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development. A suboption to Option 3 would limit this processing activity within CQE communities to a percentage of the Pacific cod TACs in the respective management areas. **Option 4** allows federally permitted vessels to operate as a mothership or stationary floating processor at more than one geographic location in a year, provided that the vessel is operating only within the waters of the State of Alaska, and, in effect, revises the existing definition of a stationary floating processor. A suboption that may be applied to Options 2, 3, and 4 would limit weekly processing of Pacific cod landings by vessels operating as motherships to (a) 125 mt per week, (b) 200 mt per week, or (c) 300 mt per week. This limit applies to all Pacific cod landings from CVs.

Component 8 also includes several potential revisions to the existing inshore/offshore regulations. Depending on the options selected in Component 8, the current definition of a stationary floating processor could be retained, but revised as follows, so that there is no reference to the inshore component as applied to Pacific cod:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.
- A vessel cannot operate as both a stationary floating processor and a CP/mothership during the same year.

Additionally, retain limits on the ability for AFA motherships and AFA CPs that are also active in the BSAI to process any Pacific cod in the GOA as follows:

- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as an AFA mothership in the BSAI during the same year.
- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as a CP in the BSAI during the same year.

Component 9 states that the Council may adjust sector allocations to incorporate considerations that are associated with conservation, catch monitoring, equity of access, bycatch reduction, PSC avoidance, and social objectives. The potential range of adjustments (±3%) is indicated in Component 4.

Finally, **Component 10** includes potential management measures for the parallel waters Pacific cod fishery. Under **Option 1**, the Council may provide recommendations for the Alaska Board of Fisheries' consideration on the parallel fishery that could complement Council action through use of the Joint Protocol Committee, and review and comment on Board of Fisheries proposals, such as gear limits, vessel size limits, and exclusive registration. **Option 2** limits access to the parallel fishery for federal fishery participants, by requiring operators of pot, longline, or trawl vessels who hold a License Limitation Program (LLP) license or a Federal Fisheries Permit (FFP) to have the appropriate gear, area, and species endorsements on the LLP license and FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. Two suboptions to Option 2 are intended to make it more difficult for operators to circumvent the LLP requirement. **Suboption 1** requires the above federally permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations, corresponding to the sector in which the vessel operates. **Suboption 2** precludes operators with a GOA area designation, and the gear and operation type designations specified in Option 2, from removing these designations from the FFP. This suboption provides that an FFP may only be surrendered or reactivated (a) once per calendar year, (b) once every 18 months, or (c) once every 3 years.

There are elements of two of the components that apply to the entire GOA, including the Western, Central, and Eastern GOA management areas. Component 7 will apportion the non-DSR hook-and-line halibut PSC limit between CVs and CPs, based on the aggregate (Western and Central GOA) allocation of Pacific cod to each sector. The resulting CV and CP hook-and-line PSC limits will apply to the entire GOA. Halibut PSC by hook-and-line vessels operating in the Western, Central, and Eastern GOA will accrue against these PSC allowances. In Component 10, Option 2, there is a suboption to preclude holders of FFPs with a GOA area endorsement from surrendering the FFP during a specified time period. Again, this suboption applies to the entire GOA, and is discussed in detail in that section of the analysis.

Effects of the Alternatives

Alternative 1 – No Action

Under the No Action alternative, the Western and Central GOA Pacific cod TACs would not be allocated among the various sectors. The fisheries would continue to be managed as a limited access race for fish. If this alternative is selected, some sectors may increase their shares of the catch in the future and erode the historical catches of other sectors. Increased participation may result in diluting economic returns enjoyed by current participants in the fisheries. The future division of catch among the sectors, in the absence of this action, cannot be predicted, and depends on future market conditions, the size of Pacific cod TACs and other groundfish TACs, opportunities to participate in other fisheries, the future regulatory environment, and operating costs in the fisheries. Consequently, this analysis cannot provide a quantitative estimate of the potential economic impacts of the no action alternative. It does, however, treat this alternative qualitatively, employing the No Action course of action as the analytical baseline against which each of the competing alternatives is contrasted.

Current distribution of Pacific cod catch

Catch history by each of the sectors from 1995 through 2010 in the Western and Central GOA Pacific cod fisheries is summarized in Table E-1. The distribution of retained catch among the sectors has changed

substantially over time. In general, the fixed gear sectors have harvested a larger proportion of the catch during recent years, and the trawl sectors have harvested less of the catch. However, there has been substantial year-to-year variability in catches. For example, in the Western GOA, trawl CVs have harvested as little as 8.7% of the annual catch (2003), and as much as 78.1% of the catch (1997). Similarly, pot CVs have harvested as little as 4.4% of the Western GOA catch (1997), and as much as 63.4% of the catch (2004). In general, the proportion of Western and Central GOA Pacific cod harvested by trawl CVs has declined, while the proportion harvested by pot CVs has increased. This trend is particularly apparent in the Western GOA. Catch by hook-and-line vessels has also increased in recent years. Jig CVs typically harvested less than 1% of the total catch of Pacific cod in the Western and Central GOA. Jig catch has generally been increasing, since 1995. Under the no action alternative, the sectors would continue to race each other for access to the GOA Pacific cod TACs, and there will likely continue to be substantial annual variability in the distribution of catch among the sectors. The problem statement notes that participants in the fisheries who have made long-term investments, and are financially dependent on these fisheries, face uncertainty as a result of competition among the sectors. Allocation of the Western and Central GOA TACs among sectors may reduce this uncertainty and contribute to stability in the fishery and the communities that depend upon and support them.

Table E-1 Retained catch and percent of annual retained catch by each sector in the GOA Pacific cod fisheries, 1995–2010.

Western GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Trawl CP		Trawl CV	
	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total
1995	5,632	26.2%	35	0.2%	48	0.2%	104	0.5%	2,352	11.0%	587	2.7%	12,704	59.2%
1996	4,369	20.8%	193	0.9%	45	0.2%	*	*	1,689	8.0%	787	3.7%	13,921	66.2%
1997	3,837	16.1%	34	0.1%	5	0.0%	0	0.0%	1,041	4.4%	295	1.2%	18,554	78.1%
1998	3,168	15.1%	22	0.1%	1	0.0%	*	*	2,533	12.0%	276	1.3%	15,007	71.3%
1999	5,116	21.8%	70	0.3%	0	0.0%	1,424	6.1%	1,591	6.8%	623	2.7%	14,673	62.4%
2000	4,706	21.5%	54	0.2%	5	0.0%	*	*	5,107	23.3%	751	3.4%	11,113	50.7%
2001	3,969	27.3%	31	0.2%	157	1.1%	1,038	7.1%	2,538	17.5%	670	4.6%	6,135	42.2%
2002	6,411	36.9%	38	0.2%	193	1.1%	*	*	4,805	27.7%	327	1.9%	5,073	29.2%
2003	4,242	27.0%	47	0.3%	46	0.3%	*	*	9,549	60.8%	340	2.2%	1,367	8.7%
2004	2,893	18.9%	28	0.2%	183	1.2%	*	*	9,718	63.4%	539	3.5%	1,717	11.2%
2005	724	5.9%	281	2.3%	46	0.4%	*	*	6,402	52.2%	217	1.8%	4,441	36.2%
2006	2,691	19.4%	106	0.8%	*	*	0	0.0%	5,918	42.7%	218	1.6%	4,917	35.5%
2007	3,069	23.2%	390	2.9%	2	0.0%	*	*	4,646	35.1%	529	4.0%	4,281	32.4%
2008	3,072	20.9%	506	3.4%	63	0.4%	*	*	6,009	40.8%	391	2.7%	4,601	31.2%
2009	4,300	29.0%	1,905	12.8%	189	1.3%	*	*	5,915	39.9%	424	2.9%	2,100	14.2%
2010	4,932	23.8%	1,686	8.1%	323	1.6%	0	0.0%	10,520	50.7%	385	1.9%	2,915	14.0%

Central GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Trawl CP		Trawl CV	
	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total
1995	134	0.3%	4,546	10.3%	51	0.1%	0	0.0%	13,760	31.2%	2,072	4.7%	23,548	53.4%
1996	710	1.7%	4,491	10.6%	34	0.1%	0	0.0%	10,539	24.8%	2,714	6.4%	23,975	56.5%
1997	*	*	6,401	15.4%	21	0.1%	0	0.0%	8,420	20.3%	770	1.9%	25,895	62.3%
1998	175	0.4%	5,815	14.2%	50	0.1%	0	0.0%	9,208	22.5%	4,447	10.9%	21,214	51.9%
1999	313	0.7%	6,174	14.3%	24	0.1%	2,938	6.8%	12,182	28.3%	1,595	3.7%	19,881	46.1%
2000	209	0.7%	6,529	20.4%	38	0.1%	910	2.8%	11,967	37.4%	1,387	4.3%	10,971	34.3%
2001	*	*	5,684	20.9%	11	0.0%	588	2.2%	3,505	12.9%	2,241	8.2%	15,169	55.8%
2002	1,638	7.0%	6,867	29.5%	3	0.0%	131	0.6%	3,228	13.9%	835	3.6%	10,568	45.4%
2003	1,462	6.1%	3,586	15.0%	16	0.1%	*	*	3,201	13.4%	1,219	5.1%	14,405	60.3%
2004	1,453	5.5%	5,423	20.6%	118	0.4%	0	0.0%	4,916	18.7%	770	2.9%	13,669	51.9%
2005	267	1.2%	4,271	19.3%	137	0.6%	0	0.0%	8,169	36.9%	719	3.2%	8,591	38.8%
2006	897	4.0%	6,183	27.6%	96	0.4%	0	0.0%	8,420	37.6%	877	3.9%	5,922	26.4%
2007	1,376	5.5%	6,341	25.2%	36	0.1%	*	*	8,286	32.9%	590	2.3%	8,220	32.6%
2008	1,755	6.9%	6,054	23.9%	19	0.1%	0	0.0%	5,208	20.5%	632	2.5%	11,680	46.1%
2009	1,154	5.7%	5,270	26.0%	42	0.2%	0	0.0%	5,366	26.4%	1,023	5.0%	7,446	36.7%
2010	3,217	9.4%	5,379	15.7%	103	0.3%	0	0.0%	9,561	27.9%	759	2.2%	15,284	44.6%

Source: ADF&G Fish Tickets and NMFS Blend and Catch Accounting. *Confidential.

Alternative 2 – Pacific Cod Sector Allocations

This section describes the impacts of the proposed action on the distribution of the Western and Central GOA Pacific cod TACs among the various sectors that participate in the fisheries. The proposed sector allocations would divide the Western and Central GOA Pacific cod TACs among the various gear and operation types based on the historical distribution of catch. The Western and Central GOA A season TACs are fully utilized, and vessels race for shares of the TACs. Sector allocations may reduce competition among sectors for the A season TACs, but may not reduce competition among vessels within

each sector or slow down the fisheries. During recent years, the GOA Pacific cod B season TACs have not been fully harvested, particularly in the Western GOA. Trawl vessels, and to a lesser extent, hook-and-line vessels, race to catch Pacific cod at the highest possible rate during the B season, with the knowledge that halibut PSC limits could close the B season at any time. Halibut PSC limits often constrain the length of the B season for these sectors. During years when halibut PSC closures have not limited participation by trawl and hook-and-line vessels, the B season TACs have been fully harvested. Sector allocations would protect historical B season catches during these years.

The potential percent sector allocations under each of the options in Component 4 are summarized in Table E-2. In the Western GOA, the options that include earlier years (1995–2005) generally favor the trawl CV sector. In the Central GOA, the options to include catch history from 1995 through 2000 were removed. The options that only include more recent years (2000–2006, 2002–2007, or 2002–2008) generally favor the pot CV sector, and, to a lesser extent, the hook-and-line sectors. Averaging across the options or using each sector's best option, reduces the disparities among the options somewhat, but there are still strong differences among the options, depending on the range of years selected. For example, the trawl CV allocation could range from 26.1% to 46.9% of the Western GOA TAC and 41.4% to 44.2% of the Central GOA TAC. Similarly, the pot CV allocation could range from 28.0% to 46.0% of the Western GOA TAC and 25.3% to 28.2% of the Central GOA TAC.

There is a suboption to establish separate allocations for hook-and-line CPs based on vessel length (<125 ft and ≥125 ft LOA). There are also suboptions to establish separate allocations for hook-and-line and pot CVs, based on vessel length (<60 ft and ≥60 ft LOA, or <50 ft and ≥50 ft LOA for hook-and-line CVs in the Central GOA). In some cases, these divisions would result in manageable allocations (Table E-3). For example, if the pot CV allocation is split by vessel length, it would be divided relatively evenly between <60 ft and ≥60 ft LOA vessels. This division would ensure that larger pot vessels would not encroach on historical catches of smaller vessels. In other cases, these divisions result in allocations that may be too small to allow NMFS to open directed fisheries for some sectors.

Table E-2 Potential percent allocations of the Western and Central GOA Pacific cod TACs, with jig allocation taken off the top of the TAC. Note: options not in sequential order.

Western GOA	HAL CP	HAL CV	Pot CP	Pot CV	Trawl CP	Trawl CV
1995-2005: Best 7 years	19.8%	0.5%	2.2%	28.0%	2.5%	46.9%
2000-2006: Best 5 years	21.8%	0.6%	2.3%	40.7%	2.6%	32.0%
2002-2007: Best 5 years	22.7%	1.2%	1.6%	46.0%	2.4%	26.1%
2002-2008: Best 5 years	21.8%	1.7%	1.5%	44.5%	2.4%	28.1%
Each sector's best option	18.6%	1.4%	1.9%	37.6%	2.1%	38.4%
Average of Options 1-4	21.5%	1.0%	1.9%	39.8%	2.5%	33.3%

Central GOA	HAL CP	HAL CV	Pot CP	Pot CV	Trawl CP	Trawl CV
2000-2006: Best 5 years	4.2%	20.9%	1.0%	25.3%	4.4%	44.2%
2000-2006: Best 3 years	4.7%	19.5%	1.4%	28.0%	4.4%	42.0%
2002-2007: Best 5 years	5.2%	22.6%	0.4%	25.9%	3.5%	42.4%
2002-2007: Best 3 years	4.9%	21.6%	0.5%	28.2%	3.3%	41.4%
2002-2008: Best 5 years	5.5%	22.3%	0.3%	25.8%	3.3%	42.7%
2002-2008: Best 3 years	5.2%	21.5%	0.5%	28.1%	3.3%	41.4%
Each sector's best option	5.1%	21.3%	1.3%	26.5%	4.2%	41.6%
Average of Options 2, 4, and 6	5.0%	21.9%	0.6%	25.7%	3.7%	43.1%
Average of Options 1-6	4.9%	21.4%	0.7%	26.9%	3.7%	42.4%

Table E-3 Potential percent allocations of the Western and Central GOA Pacific cod TACs under suboptions to split sectors by vessel length, with jig allocation taken off the top of the TAC.

Western GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV >=50	HAL CV <60	HAL CV >=60	Pot CV <60	POT CV >=60	TRW CV <60	TRW CV >=60
1995-2005: Best 7 years	16.9%	2.9%	0.2%	0.2%	0.4%	0.1%	13.6%	14.4%	33.0%	13.9%
2000-2006: Best 5 years	18.2%	3.6%	0.3%	0.3%	0.6%	0.0%	19.0%	21.7%	24.8%	7.1%
2002-2007: Best 5 years	17.6%	5.1%	0.6%	0.6%	1.1%	0.0%	20.9%	25.1%	21.6%	4.6%
2002-2008: Best 5 years	17.2%	4.6%	0.7%	1.0%	1.4%	0.3%	21.7%	22.8%	24.0%	4.1%
Each sector's best option	14.4%	4.2%	0.6%	0.8%	1.2%	0.2%	17.1%	20.5%	27.1%	11.4%
Average of Options 1-4	17.5%	4.1%	0.5%	0.5%	0.9%	0.1%	18.8%	21.0%	25.9%	7.4%

Central GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV >=50	HAL CV <60	HAL CV >=60	Pot CV <60	POT CV >=60	TRW CV <60	TRW CV >=60
2000-2006: Best 5 years	0.6%	3.6%	14.6%	6.2%	19.1%	1.8%	10.9%	14.4%	1.7%	42.6%
2000-2006: Best 3 years	0.5%	4.2%	14.0%	5.6%	18.1%	1.4%	11.5%	16.5%	1.8%	40.3%
2002-2007: Best 5 years	0.8%	4.4%	15.5%	7.1%	20.6%	2.0%	12.2%	13.7%	1.1%	41.3%
2002-2007: Best 3 years	0.5%	4.4%	14.7%	6.9%	19.9%	1.7%	13.0%	15.2%	1.5%	39.9%
2002-2008: Best 5 years	1.1%	4.4%	14.6%	7.8%	20.3%	2.1%	12.3%	13.5%	1.2%	41.6%
2002-2008: Best 3 years	0.9%	4.3%	14.7%	6.9%	19.8%	1.7%	12.9%	15.1%	1.1%	40.3%
Each sector's best option	1.0%	4.1%	14.6%	6.7%	19.4%	1.9%	12.2%	14.3%	1.6%	40.0%
Average of Options 2, 4, and 6	0.8%	4.1%	14.9%	7.1%	20.0%	2.0%	11.8%	13.9%	1.3%	41.8%
Average of Options 1-6	0.7%	4.2%	14.7%	6.7%	19.6%	1.8%	12.1%	14.8%	1.4%	41.0%

Jig allocation

The jig allocation would be deducted from the TAC, before allocations to other sectors are made, and could include an initial allocation of 1%, 1.5%, or 2% of the Central GOA Pacific cod TAC, and 1% or 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig sector allocation by 1% if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 5%, 6%, or 7% of the respective Central and Western GOA Pacific cod TACs. There are also options for a stairstep down provision if the jig allocation is not fully harvested, but the jig allocation would not drop below its initial level. There are two options, and several suboptions, for managing the jig allocation, described above in the summary of the components and options.

Allocation adjustments

Under Component 9, the Council may adjust sector allocations to address conservation, catch monitoring, equity of access, bycatch reduction, PSC avoidance, and social objectives. Any adjustments would be applied proportionately to other sector allocations, so that allocations sum to 100% of the TAC. Conservation objectives could include Steller sea lion mitigation, bycatch reduction, and prohibited species mortality avoidance. Catch monitoring objectives could include enhancing observer coverage in the GOA Pacific cod fleet. Equity of access considerations could include adjustments to allocations when unfair circumstances (e.g., PSC overages) or differences in access to the Pacific cod fishery (e.g., different season start dates and closure dates for fixed vs. trawl gear, and access to incidental catch of Pacific cod in the trawl fisheries when the directed fishery is closed) result in different sector catch histories. Social objectives could include providing opportunities for new entry into the fishery and participation by coastal communities in the processing and harvesting of Pacific cod.

In order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, the Council's October 2009 motion expanded the range of potential annual allocations in the analysis by 3% above each sector's highest potential allocation and 3% below each sector's lowest potential allocation, except sectors with an allocation of less than 5% would retain their

current lowest potential allocation. The motion specified that the ±3% adjustments would be applied to the allocation percentages in Table E-2. The adjustments could then be applied proportionally to the allocations that are divided by vessel length (shown in Table E-3), or in the manner that the Council indicates. The potential range of allocations to each sector is shown in Table E-4. The first column shows the range of allocations based on the options for calculating catch history in Component 4. The second column shows the adjusted range when the ±3% adjustments are applied. These are compared to each sector's catch history (lowest and highest percent of retained catch) during 1995 through 2008. The objectives listed in Component 9 are discussed in detail in the analysis, as well as the potential effects of ±3% adjustments on the sectors.

Table E-4 Potential range of Western and Central GOA Pacific cod allocations.

	Range of Options		±3% adjustment		Average	Range of Catch History	
Western GOA	Low	High	Low	High	option**	Low	High
Hook-and-line CP	18.6%	22.7%	15.6%	25.7%	21.5%	5.9%	36.9%
Hook-and-line CV	0.5%	1.7%	0.5%	4.7%	1.0%	0.1%	3.4%
Pot CP	1.5%	2.3%	1.5%	5.3%	1.9%	0.0%	7.1%
Pot CV	28.0%	46.0%	25.0%	49.0%	39.8%	4.4%	63.4%
Trawl l CP	2.1%	2.6%	2.1%	5.6%	2.5%	1.2%	4.6%
Trawl l CV	26.1%	46.9%	23.1%	49.9%	33.3%	8.7%	78.1%
	Range of Options		±3% adjustment		Average	Range of Catch History	
Central GOA	Low	High	Low	High	option**	Low	High
Hook-and-line CP	4.2%	5.5%	1.2%	8.5%	4.9%	0.3%	7.0%
Hook-and-line CV	19.5%	22.6%	16.5%	25.6%	21.4%	10.3%	29.5%
Pot CP	0.3%	1.4%	0.3%	4.4%	0.7%	0.0%	6.8%
Pot CV	25.3%	28.2%	22.3%	31.2%	26.9%	12.9%	37.6%
Trawl CP	3.3%	4.4%	3.3%	7.4%	3.7%	1.9%	10.9%
Trawl CV	41.4%	44.2%	38.4%	47.2%	42.4%	26.4%	62.3%

** Average option for WGOA: Average of Options 1-4. Average option for CGOA: Average of options 1-6.

Interactions with LLP Recency Actions

In refining the alternatives and options for analysis, the Council may wish to consider interactions among the proposed GOA Pacific cod sector allocations and the trawl and fixed gear recency actions. In April 2008, the Council took final action on trawl recency. In general, that action will remove Western GOA and Central GOA area endorsements from trawl CV and trawl CP licenses that did not have at least 2 trawl groundfish landings during 2000 through 2006, in the respective management area. At its April 2009 meeting, the Council took final action on fixed gear recency. The Council's preferred alternative will add gear-specific Pacific cod endorsements to fixed gear licenses, which limit entry into the directed Pacific cod fisheries in the Western and Central GOA. Licenses may qualify for gear-specific Pacific cod endorsements, based on directed Pacific cod landings during 2002 through 2008. The minimum thresholds are 1 landing for jig gear; and for pot and hook-and-line gear, 10 mt for CV licenses with an MLOA designation of <60 ft, and 50 mt for CP licenses and CV licenses with an MLOA designation of ≥60 ft. The Pacific cod endorsements will restrict licenses to using the gear type(s) (pot, hook-and-line, and/or jig) specified on the license. The action also included an exemption from the LLP requirement for jig vessels that use up to 5 jigging machines, 1 line per machine, and 30 hooks per line. Licenses that qualify for a jig gear endorsement are not subject to these gear limits. Table E-5 shows the estimated number of trawl licenses that qualify in each area and the number of fixed gear licenses that will qualify for gear-specific Pacific cod endorsements.

Table E-5 Number of LLP licenses eligible to access the GOA Pacific cod fisheries following the LLP recency actions, by operation type and gear endorsement.

	Western GOA	Western GOA Sideboarded	Central GOA	Central GOA Sideboarded
Catcher Vvessel Licenses				
Trawl CV	76	11 AFA SB	93	15 AFA SB
Hook-and-line CV <60 ft	7		123	
Hook-and-line CV ≥60 ft	3		7	
Hook-and-line CV <50 ft	3		68	
Hook-and-line CV ≥50 ft	7		62	
Pot CV <60 ft	59		51	
Pot CV ≥60 ft	21	10 crab SB	27	10 crab SB
Jig CV	11		19	
Total Fixed Gear CV**	94		215	
Additional licenses available to CQEs				
CQE Pot CV <60 ft	21		26	
CQE Hook-and-line CV <60 ft	0		24	
Catcher Processor Licenses				
Trawl CP	20	18 Am80 SB/ * AFA SB	21	16 Am80 SB/ 4 AFA SB
Hook-and-line CP <125 ft	9	* crab SB	5	* crab SB
Hook-and-line CP ≥125 ft	7	* crab SB	7	* crab SB
Hook-and-line CP <125 ft Offshore Limited***	0	0	5	* crab SB
Hook-and-line CP ≥125 ft Offshore Limited***	3	* crab SB	7	0
Pot CP	4	* crab SB	3	* crab SB
Total Fixed Gear CP*	21	4 crab SB	27	4 crab SB

*Confidential **Total number of licenses that will receive at least one gear-specific Pacific cod endorsement. Some licenses qualify for more than one endorsement. ***Licenses that qualify for a hook-and-line CP endorsement under the exemption for participants in the voluntary PSC co-op are limited to participating in the offshore sector.

Table E-6 A comparison of the components and options included in the proposed GOA Pacific cod sector allocation action and the Council's final motion on GOA fixed gear LLP recency.

COMPARISON OF GULF OF ALASKA ACTIONS			
ACTION	**GOA Pacific Cod Sector Allocations**	**GOA Fixed Gear LLP Recency**	**GOA Trawl Recency**
PURPOSE OF ACTION	Allocate Western and Central GOA Pacific cod TACs among the gear and operation types	Add Pacific cod endorsements to GOA fixed gear LLP licenses to limit entry to the directed Pacific cod fisheries	Remove WG and CG area endorsements from trawl LLP licenses without recent groundfish landings
MANAGEMENT AREAS	Western and Central GOA	Western and Central GOA (CG endorsement also includes West Yakutat)	Western and Central GOA (CG endorsement also includes West Yakutat)
SECTORS	(1) Hook-and-line CVs Option: Hook-and-line CVs <60 and >=60 Option: Hook-and-line CVs <50 and >=50 (2) Hook-and-line CPs Option: Hook-and-line CPs <125 & >=125 (3) Pot CVs Option: Pot CVs <60 and >=60 (4) Pot CPs (5) Jig (6) Trawl CVs (7) Trawl CPs Option: Combined trawl and pot CV (WG only)	(1) Hook-and-line CVs <60 and >=60 (2) Hook-and-line CPs (3) Pot CVs <60 and >=60 (4) Pot CPs (5) Jig	(1) Trawl CVs (2) Trawl CPs
QUALIFYING CATCH	Retained catch of Pacific cod from parallel and Federal waters State waters catch is excluded	Retained catch from the directed Pacific cod fisheries in parallel and Federal waters State waters and IFQ catch is excluded	Retained catch from the groundfish fisheries in parallel and Federal waters State waters and IFQ catch is excluded
QUALIFYING YEARS	(1) 1995-2005: best 5 or 7 years (2) 2000-2006: best 3 or 5 years (3) 2002-2007: best 3 or 5 years (4) 2002-2008: best 3 or 5 years	2002 through Dec 8, 2008	2000 through 2006
LANDINGS THRESHOLDS	None	Jig - 1 landing Hook-and-line/pot CV <60 ft MLOA - 10 mt Hook-and-line/pot CV >=60 ft MLOA - 50 mt Hook-and-line CP and pot CP - 50 mt	2 landings using trawl gear
JIG	1% or 1.5% (WG) and 1% to 2% (CG) initial allocation Step up provision (1%) if allocation is 90% harvested during a given year (up to a max. of 5% to 7%) Step down provision if allocation is not 90% harvested during 3 consecutive years, but allocation will not drop below its initial level	Exempt jig vessels from the LLP requirement if they use 5 or fewer jig machines, 1 line per machine, 30 hooks per line	
OTHER COMPONENTS	Options to require Federally-permitted vessel operators to hold an LLP with the appropriate area and gear endorsements to participate in the GOA parallel waters Pacific cod fishery.	Exemption from catch thresholds for participants in hook-and-line CP informal halibut PSC coop (results in an offshore limited hook-and-line CP endorsement).	Exempt licenses that qualified for the Central GOA Rockfish Pilot Program from the landings threshold
	Options to cap amount of catch processed by motherships.	CQE communities may request pot or hook-and-line licenses for use by community residents	
	Options to allocate hook-and-line halibut PSC to CVs and CPs.		

Council Preferred Alternative

The Council recommended **Alternative 2**, which allocates the Western and Central GOA Pacific cod TACs among the sectors. Sector allocations limit the proportion of the respective Western and Central GOA Pacific cod TACs that may be harvested by each of the sectors. Within Alternative 2, the Council recommended Component 1, which applies the action to both the Western and Central GOA, but allows different sector definitions to be used in the respective management areas. In **Component 2,** the Council defined the sectors as shown in Table E-7. The Council also recommended the option to Component 2 that requires holders of CP licenses to make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement for Pacific cod, if the license holder made at least one Pacific cod landing while operating as a CV under the authority of the CP license from 2002 through 2008. The purpose of this option is to preclude CP license holders from opportunistically fishing off both the CP and CV Pacific cod sector allocations. The CP or CV Pacific cod endorsement affects catch accounting in other groundfish fisheries.

The Council recommended all of the provisions in **Component 3**. These provisions define qualifying catch for the purposes of calculating sector allocations and describe how incidental catch will be managed. In **Component 4**, the Council recommended that sector allocations be calculated using each sector's best option, but made several adjustments to the sector allocations (Table E-7). The Council recommended seasonally apportioning sector allocations between the A and B seasons, based on each sector's seasonal catch history during the qualifying years, while maintaining the overall 60%/40% apportionment of the TAC, excluding the jig sector allocation. Finally, under Component 4 the Council identified how Pacific cod sideboards for the Western and Central GOA management areas will be recalculated.

Component 5 addresses the allocation to jig vessels. The Council recommended deducting the jig allocation from the respective Pacific cod TACs, before allocations to other sectors are made, and recommended an initial jig allocation of 1% of the Central GOA Pacific cod TAC and 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig allocation by 1%, if 90% of the federal jig allocation in an area is harvested in any given year. The jig allocation will be capped at 6% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas would be stepped down in 1% annual increments, if 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during 2 consecutive years following the stairstep increase. However, the allocation would not drop below its initial level.

The Council recommended two sets of management measures for the jig allocation. The first set of management measures applies, if under a subsequent action, the Alaska Board of Fisheries relinquishes any portion of the state waters jig GHL. Any relinquished jig GHL would be added to the parallel/federal jig allocation, so that the jig sector is fishing from a single account. Under this scenario, the combined state/parallel/federal jig allocation would be seasonally apportioned 80%/20% to the A/B seasons. The A season would open on January 1, and close when the A season allocation is reached. The B season would open on June 10. If the Board of Fisheries does not relinquish any portion of the jig GHL, the parallel/federal jig allocation will be apportioned 60%/40% into an A/B season. The A season will open on January 1, and close when the A season jig allocation is reached or on March 15, whichever occurs first. The B season will open on June 10, or after the state GHL season closes, whichever occurs later.

Table E-7 Pacific cod sector allocations recommended in Council's preferred alternative.

Western GOA sector allocations with jig allocation taken off the top of the TAC

		Compare to 60/40		A season allocation	B season allocation	A season allocation	B season allocation
	Annual Allocation	A season	B season	Percent of annual allocation	Percent of annual allocation	Percent of seasonal allocation	Percent of seasonal allocation
HAL CP	19.8%	55.2%	44.8%	10.9%	8.9%	18.2%	22.2%
HAL CV	1.4%	47.2%	52.8%	0.7%	0.7%	1.1%	1.8%
Pot CV/CP	38.0%	52.0%	48.0%	19.8%	18.2%	32.9%	45.6%
Trawl CP	2.4%	37.9%	62.1%	0.9%	1.5%	1.5%	3.7%
Trawl CV	38.4%	72.3%	27.7%	27.7%	10.7%	46.2%	26.6%
Total	100.0%			60.0%*	40.0%*	100.0%*	100.0%*

Central GOA sector allocations with jig allocation taken off the top of the TAC

		Compare to 60/40		A season allocation	B season allocation	A season allocation	B season allocation
	Annual Allocation	A season	B season	Percent of annual allocation	Percent of annual allocation	Percent of seasonal allocation	Percent of seasonal allocation
HAL CP	5.1%	80.3%	19.7%	4.1%	1.0%	6.8%	2.5%
HAL CV <50	14.6%	63.9%	36.1%	9.3%	5.3%	15.5%	13.2%
HAL CV >=50	6.7%	84.0%	16.0%	5.6%	1.1%	9.4%	2.7%
Pot CV/CP	27.8%	63.9%	36.1%	17.8%	10.0%	29.7%	25.1%
Trawl CP	4.2%	48.8%	51.2%	2.0%	2.2%	3.4%	5.4%
Trawl CV	41.6%	50.8%	49.2%	21.1%	20.5%	35.2%	51.2%
Total	100.0%			60.0%*	40.0%*	100.0%*	100.0%*

*Due to rounding, percentages for each sector may not sum to totals.

In **Component 6**, the Council identified how rollovers of unharvested sector allocations will be managed. Any portion of an allocation that NMFS determines will not be harvested by the respective sectors during the remainder of the fishing year will be rolled over to CV sectors first, and then to all sectors, as needed, to harvest the remaining Pacific cod.

In **Component 7**, the Council recommended apportioning the GOA hook-and-line halibut PSC limit, between the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector, after scaling the Pacific cod allocations to reflect the relative size of the Pacific cod TAC area apportionments (Table E-8). Area apportionments are determined during the annual harvest specifications process. No later than November 1, any remaining halibut PSC mortality, not projected by NMFS to be imposed by one of the hook-and-line sectors during the remainder of the year, would be made available to the other sector.

Table E-8 Halibut PSC allocations to hook-and-line CVs and CPs under Component 7.

2009 Pacific cod ABC area apportionments:

56.5% Central GOA, 38.7% Western GOA

Period	CV Allocation	CP Allocation	CV amount (mt)	CP amount (mt)
Preferred Alternative	54.4%	45.6%	157.7	132.3

In **Component 8**, the Council recommended allowing processing of up to 2% of the Western GOA TAC by motherships operating in the Western GOA management area; and prohibiting any motherships from

processing groundfish in the Central GOA. Motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year.

The Council recommended allowing federally permitted vessels that do not meet the definition of stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries in an amount up to 3% of the Central GOA Pacific cod TAC and 3% of the Western GOA Pacific cod TAC within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development.

The Council recommended removing **Component 9**, which addressed adjustments to sector allocations, based on several criteria (conservation, catch monitoring, and social objectives) from the final motion. As a result, **Component 10**, which addresses the parallel fishery, was renumbered as Component 9 in the Council's final motion. In this component, the Council recommended limiting access to the parallel fishery by federal fishery participants. Specifically, the Council recommended requiring operators of pot, longline, or trawl vessels who hold an LLP license or an FFP to have the appropriate gear, area, and species endorsements on the LLP license and FFP, in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. In addition, federally permitted vessel operators who fish in the parallel waters will be required to adhere to federal seasonal closures of the Western and Central GOA sector allocations. In order to preclude operators from circumventing the above requirements, operators with a GOA area designation and trawl, pot, or hook-and-line gear designations, and CP or CV operation type designations will be precluded from removing these designations from the FFP, and the FFP may only be surrendered or reactivated once during the 3-year term of the permit.

Rationale for and effects of preferred alternative

The preferred alternative recommended by the Council would allocate the Western and Central GOA Pacific cod TACs, respectively, among the sectors (Table E-9). The action is intended to enhance stability in the Western and Central GOA Pacific cod fisheries, reduce competition among the sectors, and preserve the historical division of catch among sectors. The Council's recommended alternative also expands opportunities for jig vessels, by providing an initial allocation that is above the sector's historical catch in the fishery, and the opportunity for incremental increases to the jig allocation, if it is fully harvested. Any increases in the jig allocation would result in proportional reductions to the allocations to the other sectors.

The Council generally defined sectors based on gear and operation type, with several exceptions. In both the Western and Central GOA, the pot CV and pot CP sectors were combined. The rationale for combining these sectors is that the pot CP sector has historically been relatively small and would receive a small allocation. Small allocations can be difficult to manage, depending on the level of participation and effort in the sector. Moreover, the majority of vessels that have participated as pot CPs in the GOA Pacific cod fishery in recent years also have fishing history as pot CVs, and will contribute catch history to both the pot CP and CV allocations. In the Central GOA, the hook-and-line CV sector was split by vessel length (50 ft LOA). Historically, the majority of catch by hook-and-line CVs has been made by vessels <50 ft LOA, but in recent years, there has been a substantial increase in effort by hook-and-line CVs that are between 50 ft and 60 ft LOA. Dividing this sector at 50 ft LOA protects smaller boats from an influx of effort by >50 ft LOA vessels. However, it also means that vessels >50 ft LOA that are long-time participants in the fishery will share an allocation with these new entrants.

The recommended action does not preclude operators from participating in the GOA Pacific cod fishery using more than one gear type during a given season or year. For example, an operator could use both trawl and pot gear in the GOA Pacific cod fishery during a given season or year, as long as they have the required LLP license endorsements. However, the action does preclude operators from fishing off both the CP and CV allocations to hook-and-line and trawl gear. The rationale for this restriction is that CP operators could fish off the hook-and-line CP or trawl CP allocation until it is fully harvested, and then could opportunistically continue to fish as CVs, if the hook-and-line or trawl CV allocation has not yet been fully harvested. The purpose of establishing separate CP and CV allocations is to shield CVs and CPs from competing against each other for access to the Pacific cod TAC. Allowing CPs to fish off both the CP and CV allocations for their respective gear type would not meet this intent. It is important to note that pot gear is not subject to this restriction, because there is a single allocation to pot gear.

Allocations were calculated by taking each sector's "best option" from 4 options in the Western GOA and 6 options in the Central GOA for calculating catch history, and then scaling allocations so that they sum to 100%. The Western GOA allocations to the pot CV/CP, hook-and-line CP, and trawl CP sectors were then adjusted to account for differences between using each sector's best option and taking the average across the 4 options. In addition, the seasonal apportionments of the Western GOA trawl CV and pot CV/CP allocations were shifted to allow more trawl harvests during the A season, because there is little trawl effort during the B season.

In the Western GOA, the 4 options for calculating catch history included the 1995 through 2005 time period. This time period includes 6 years of catch history prior to implementation of the Steller sea lion mitigation measures in 2001. In the Western GOA, the Steller sea lion measures resulted in a dramatic shift of catch from trawl gear to pot gear, and including this earlier time period accounts for the catch history of the trawl sector prior to this shift. The options in the Central GOA do not include the 1995 through 2005 time period. While there was a reduction in trawl catch concurrent with implementation of the Steller sea lion mitigation measures in the Central GOA, the shift was less dramatic than in the Western GOA.

The Council's action includes extensive provisions addressing mothership and stationary floating processor activity in the GOA. The harvest sector allocations will supersede the current 90%/10% inshore/offshore processing allocations. The Council's action is intended to protect historical processing and community delivery patterns, established in the GOA groundfish fisheries. Motherships will be allowed to process up to 2% of the Western GOA Pacific cod TAC, but will be prohibited from processing groundfish in the Central GOA. In the Central GOA, no motherships have processed groundfish since 2000. In the Western GOA, there has been limited mothership activity. In addition, floating processors that do not harvest groundfish or act as a stationary floating processor in a given year may process up to 3% of the respective Western and Central GOA TACs, provided that they operate within the municipal boundaries of CQE communities. There is no limit on the number of CQE communities in which a processor may operate. The Council's recommended alternative provides additional mothership processing opportunities, but ties this activity to Western and Central GOA CQE communities, thus providing economic benefits to these coastal communities from any increase in mothership processing activity (e.g., local tax revenues).

Finally, the Council's action addressed potential entry by federally permitted vessels into the parallel waters fishery. If GOA Pacific cod sector allocations are established, parallel waters activity by federally permitted vessel operators who do not hold LLP licenses could erode the catches of historical participants who contributed catch history to the sector allocations and depend on the GOA Pacific cod resource. Vessels fishing in federal waters are required to hold an LLP license with the appropriate area, gear, and species endorsements, but vessels fishing in parallel state waters are not required to hold an LLP license.

The Council's action precludes federally permitted vessels that do not have LLP licenses from participating in the GOA Pacific cod parallel fishery to prevent any such encroachment.

Table E-9 The Council's recommended alternative.

COMPONENT	ALTERNATIVE 2
	Allocate Western and Central Pacific cod TACs among sectors.
Component 1: Areas included	Western GOA and Central GOA. Different options may be selected for each management area.
Component 2: Identifyy and define sectors	**Central GOA** -Trawl CPs, Trawl CVs, hook-and-line CPs, hook-and-line CVs <50 ft, hook-and-line CVs >=50 ft, combined pot CV/CP sector, jig **Western GOA** -Trawl CPs, Trawl CVs, hook-and-line CPs, hook-and-line CVs, combined pot CV/CP sector, jig
	Option: Holders of CP licenses shall make a one-time election to receive a WG and/or CG CP or CV endorsement for Pacific cod if the license holder made at least one Pacific cod landing while operating as a CV during 2002 through 2008. Catch accounting in the WG and CG Pacific cod fishery will be determined by this endorsement (i.e., licenses with CP endorsements will fish off the CP allocations).
Component 3: Qualifying catch	Qualifying catch includes retained legal catch of Pacific cod from the federaland parallel fisheries in the WG and CG.
Component 4: Sector allocations	Part A: Sector allocations selected in the preferred alternative are shown in Table E-7.
	Part B: AFA sideboards will be recalculated by combining the inshore and offshore sideboards into a single account in the respective WG and CG management areas. Non-AFA crab sideboards will be recalculated as separate CP and CV sideboards for each gear type.
	Part C: Sector allocations will be seasonally apportioned based on each sector's seasonal catch history during the qualifying years, while maintaining the overall 60/40 apportionment of the TAC.
Component 5: Jig allocation	Set aside 1% of the CG Pacific cod TAC and 1.5% of the WG Pacific cod TAC for the initial allocation to the jig sector, with a stairstep provision to increase the jig sector allocation by 1% if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 6% of the respective Central and Western GOA federal Pacific cod TACs. Subsequent to the jig allocation increasing, if 90% of the previous allocation is not met during two consecutive years, the jig allocation will be stepped down by 1% in the following year, but shall not drop below the level initially allocated. The federal jig sector allocation will be divided into an A/B season of 60%/40%. The A season will open on January 1 and close when the jig A-season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector will open on June 10 or after the state GHL season closes, whichever occurs later.
	Any state waters jig GHL could (under subsequent action by the Alaska Board of Fisheries) are added to this state parallel/federal managed jig sector allocation so that the jig sector is fishing off of a single account. If the Board of Fisheries chooses to relinquish state waters jig GHL, it would roll into the federal jig allocation. The combined state/federal jig fishery would open on January 1 and close when the jig A season sector allocation is reached. The federal B season for the jig sector would open on June 10. The jig allocation will be apportioned 80% to the A season and 20% to the B season.
Component 6: Rollovers	Any portion of a CV, CP, or jig allocation determined by NMFS to remain unharvested during the remainder of the fishery year will become available as soon as practicable to CV sectors first, and then to all sectors taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.

Table E-9 (continued) The Council's recommended alternative.

Component 7: Apportionment of hook-and-line halibut PSC	Apportion the GOA hook-and-line halibut PSC to the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector. The apportionment of halibut will be proportional to the Pacific cod area apportionment determined during the TAC setting process.
Component 8: Community protection	For the purposes of this provision, motherships include catcher processors receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year. For each management area, allow mothership activity for Pacific cod up to 2% of the WG TAC. Prohibit mothership activity for groundfish in the CG. Allow federally-permitted vessels that do not meet the definition of stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries in an amount up to 3% of the CG Pacific cod TAC and 3% of the WG Pacific cod TAC, provided that processors operate within the boundaries of Western and Central GOA CQE communities.
Component 9: Parallel fishery	• Require any pot or longline vessel with an LLP or an FFP to have the appropriate Pacific cod endorsement and area endorsement on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. • Require any Trawl vessel with an LLP or an FFP to have the appropriate gear and area endorsements on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. In addition, require the above federally-permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations corresponding to the sector in which the vessel operates. Vessels with a GOA area designation and the gear and operation type designations specified in Option 2 cannot remove these designations from the FFP and can only surrender or reactivate the FFP once every three years.

1 INTRODUCTION

The groundfish fisheries in the Exclusive Economic Zone (3 to 200 miles offshore of the baseline) of the Gulf of Alaska (GOA) are managed under the Fishery Management Plan (FMP) for Groundfish of the GOA, developed by the North Pacific Fishery Management Council (Council), under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The GOA FMP was approved by the Secretary of Commerce and became effective in 1978.

This document is an Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) for proposed sector allocations of the Western and Central GOA Pacific cod total allowable catch (TAC), which would result in an amendment to the GOA FMP. The proposed action would divide the TACs among the various sectors, based on historical catch levels. For the purposes of this action, the sectors are defined as follows: pot catcher vessels (CVs), pot catcher processors (CPs), hook-and-line CVs, hook-and-line CPs, trawl CVs, trawl CPs, and jig CVs, with options to further divide sectors by vessel length.

Executive Order 12866 requires preparation of a Regulatory Impact Review to assess the social and economic costs and benefits of available regulatory alternatives, in order to determine whether a proposed regulatory action is economically significant, as defined by the order. This analysis is included in **Chapter 2.** An Environmental Assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the proposed action will result in a significant impact on the human environment. If the action is determined not to be significant based on an analysis of the relevant considerations, the EA and finding of no significant impact would be the final environmental documents required by NEPA. An Environmental Impact Statement must be prepared for major federal actions significantly affecting the human environment.

The purpose of the EA is to analyze the environmental impacts of the proposed federal action to allocate the Western and Central GOA Pacific cod TACs among the sectors. The human environment is defined by the Council on Environmental Quality as the natural and physical environment and the relationships of people with that environment (40 CFR 1508.14). This means that economic or social effects are not intended by themselves to require preparation of an EA. However, when an EA is prepared and socio-economic and natural or physical environmental impacts are interrelated, the EA must discuss all of these impacts on the quality of the human environment. NEPA requires a description of the purpose and need for the proposed action as well as a description of alternatives which may address the problem. This information is included in **Chapter 3** of this document, as well as a description of the affected human environment and information on the impacts of the alternatives on that environment.

Chapter 4 addresses requirements of the Regulatory Flexibility Act (RFA). The RFA requires an analysis of potential adverse economic impacts to small entities that would be directly regulated by the proposed action and identification of any alternatives to the proposed action that minimize such impacts while achieving the goals of the Act (as reflected in the action). **Chapter 5** addresses other applicable laws, including the Magnuson-Stevens Act and Marine Mammal Protection Act. The references and literature cited are in **Chapter 6**, the list of preparers is in **Chapter 7**, and the list of agencies and individuals consulted is in **Chapter 8**.

1.1 Purpose and Need for the Action

1.1.1 Background

Management of the GOA groundfish fisheries has become increasingly complex as a result of Steller sea lion protection measures, increased participation by vessels displaced from other fisheries, prohibited species catch (PSC) avoidance mandates, increased retention and discard reduction requirements under the Magnuson-Stevens Act. These factors have made achieving the goals set by the National Standards in the Magnuson-Stevens Act difficult, and have had significant adverse social and economic impacts on harvesters, processors, crew, and communities that depend on the GOA fisheries. In 1999, the Council began developing a package of measures to rationalize the GOA groundfish fisheries and, in April 2003, the Council defined a set of preliminary alternatives. During 2003 through 2006, the Council worked to develop and refine these alternatives. However, in December 2006, the Council decided to delay further consideration of the comprehensive rationalization program and instead, proceed with the more discrete issue of allocating the Pacific cod resource to the various gear sectors. Simultaneously, the Council recommended limiting future entry to the GOA groundfish fisheries, by extinguishing latent License Limitation Program (LLP) groundfish licenses.

The Council began reviewing options for establishing GOA Pacific cod sector allocations in 2007. In April 2007, the Council adopted a problem statement and outlined draft components and options. The Council reviewed a preliminary draft EA/RIR/IRFA at its September 2007 meeting, and reviewed initial draft EA/RIR/IRFAs in June 2008, December 2008, and October 2009. At its October 2009 meeting, the Council released the analysis for public review, and the Council took final action at the December 2009 meeting.

The Council has taken final action on separate amendment packages to revise the LLP. In April 2008, the Council took final action to extinguish area endorsements on latent GOA and Bering Sea/Aleutian Islands (BSAI) trawl LLP licenses. Subsequently, in April 2009, the Council took final action to add gear-specific Pacific cod endorsements to fixed gear LLP licenses, which limit entry into the directed Pacific cod fisheries in the Western and Central GOA.

1.1.2 Purpose and Need Statement

The GOA Pacific cod resource is targeted by multiple gear and operation types, principally by pot, trawl, and hook-and-line CVs and CPs. Smaller amounts of cod are harvested by jig vessels and as incidental catch in other fisheries. Separate TACs are identified for Pacific cod in the Western, Central, and Eastern GOA management subareas, but the TACs are not divided among gear or operation types. This results in a derby-style race for fish and competition among the various gear types for shares of the TACs.

The proposed action will divide the Western and Central GOA Pacific cod TACs among gear and operation types, based on historical dependency and use by each sector. The action will not allocate the Eastern GOA Pacific cod TAC among sectors. Only a small proportion of the Eastern GOA Pacific cod TAC is typically harvested, and sector allocations have not been perceived to be necessary there. The proposed action may enhance stability in the Western and Central GOA Pacific cod fisheries, reduce competition among sectors, and preserve the historical distribution of catch among sectors. Without sector allocations, future harvests by some sectors may increase and impinge on the historical levels of catch by other sectors. For example, some fixed gear participants believe that the relatively high catching power of the trawl fleet has limited their ability to maintain their historical catch levels in the Pacific cod fishery. Sector allocations would stabilize the proportion of the catch taken by each sector, allowing participants to better plan their operations. Another concern expressed by some participants is that larger boats, both trawl and fixed gear, are more capable of fishing during the winter months (January/February)

of the A season. Harvest opportunities for smaller vessels may be limited, if larger vessels quickly catch much of the TAC.

The proposed action includes options to divide sectors by vessel length, to ensure that smaller boats have a stable allocation. For example, separate allocations could be established for pot CVs <60 ft length overall (LOA) and ≥60 ft LOA. Finally, some participants are concerned that CPs fishing the inshore TACs have the potential to increase their catches and impinge on CV harvests. Sector allocations would protect harvests of inshore participants by creating distinct CP and CV allocations. Although sector allocations may reduce competition among sectors and protect historical catch levels, sector allocations alone may not slow down the race for fish, reduce bycatch, increase product quality, facilitate PSC avoidance, or have A substantial effect on the number of participating vessels. However, sector allocations may be a first step toward stabilizing the GOA Pacific cod fishery, and may enable the Council to begin developing a series of management measures to address Steller sea lion issues, halibut PSC mortality, and bycatch reduction.

GOA Pacific Cod Sector Split Purpose and Need Statement

The limited access derby-style management of the Western GOA and Central GOA Pacific cod fisheries has led to competition among the various gear types (trawl, hook-and-line, pot and jig) and operation types (catcher processor and catcher vessel) for shares of the total allowable catch (TAC). Competition for the GOA Pacific cod resource has increased for a variety of reasons, including increased market value of cod products, rationalization of other fisheries in the BSAI and GOA, increased participation by fishermen displaced from other fisheries, reduced Federal TACs due to the State waters cod fishery, and Steller sea lion mitigation measures including the A/B seasonal split of the GOA Pacific cod TACs. The competition among sectors in the fishery may contribute to higher rates of bycatch, discards, and out-of-season incidental catch of Pacific cod.

Participants in the fisheries who have made long-term investments and are dependent on the fisheries face uncertainty as a result of the competition for catch shares among sectors. To reduce uncertainty and contribute to stability across the sectors, and to promote sustainable fishing practices and facilitate management measures, the Western and Central GOA Pacific cod TACs should be divided among the sectors. Allocations to each sector would be based primarily on qualifying catch history, but may be adjusted to address conservation, catch monitoring, and social objectives, including considerations for small boat sectors and coastal communities. Because harvest sector allocations would supersede the inshore/offshore processing sector allocations for Pacific cod by creating harvest limits, the Council may consider regulatory changes for offshore and inshore floating processors in order to sustain the participation of fishing communities.

The timing of the Pacific cod A and B seasons may have limited the participation of jig vessels in the parallel and Federal fisheries of the GOA. Additionally, the State waters jig allocation has gone uncaught in some years, potentially due to the lack of availability of Pacific cod inside three miles. A non-historical Federal catch award, together with the provision of access in Federal waters for the State Pacific cod jig allocations, offers entry-level opportunities for the jig sector.

Currently, there are no limits on entry into the parallel waters groundfish fisheries, and no limits on the proportion of the GOA Pacific cod TAC that may be harvested in parallel waters. There is concern that participation in the GOA Pacific cod parallel waters fishery by vessels that do not hold LLP licenses may increase. The Council, in consideration of options and recommendations for the parallel fishery, will need to balance the objectives of providing stability to the long term participants in the sectors, while recognizing that new entrants who do not hold Federal permits or licenses may participate in the parallel fishery.

Alternatives, Components, and Options

This analysis considers two alternatives. **Alternative 1** (no action) would not make any changes to the existing allocations of the Western and Central GOA TACs between the inshore and offshore processing sectors. **Alternative 2** would allocate the Western and Central GOA Pacific cod TACs among the sectors, as defined by gear and operation types. These harvest allocations would supersede the existing inshore/offshore processing sector allocations. There are ten components under Alternative 2 that outline the details of the proposed action. The full text of the Council's motion with the exact wording of the alternatives, components, and options under consideration is shown below. The alternatives and components are summarized afterward.

The full text of the Council's motion:

Component 1: Management areas

The Western and Central GOA Pacific cod TACs will be allocated among the various gear and operation types, as defined in Component 2 (the management areas could be treated differently).

Component 2: Sector definitions

The Western and Central GOA Pacific cod TACs will be allocated among the following sectors. The Council has the option to either give a single allocation to each sector, or to divide any allocation by vessel length based on the option(s) listed below.

Central GOA

- Trawl catcher processors
- Trawl catcher vessels
- Hook-and-line catcher processors
  Option: Hook-and-line catcher processors <125 ft
  Hook-and-line catcher processors ≥125 ft
- Hook-and-line catcher vessels
  Option: Hook-and-line catcher vessels <50 ft
  Hook-and-line catcher vessels ≥50 ft
- Pot catcher processors
- Pot catcher vessels
  Option: Combined CP and CV Pot sector
- Jig vessels

Western GOA

- Trawl catcher processors
- Trawl catcher vessels
- Hook-and-line catcher processors
  Option: Hook-and-line catcher processors <125 ft
  Hook-and-line catcher processors ≥125 ft
- Hook-and-line catcher vessels
  Option: Hook-and-line catcher vessels <60 ft
  Hook-and-line catcher vessels ≥60 ft
- Pot catcher processors
- Pot catcher vessels
  Option: Pot catcher vessels <60 ft

Pot catcher vessels ≥60 ft

Option: Combined CP and CV Pot sector

- Jig vessels

Option: For Western GOA only, create a single sector of combined trawl and pot catcher vessels.
Suboption: Applies only to vessels <60 ft.

Note: The Council requested that this option and suboption be analyzed in two ways: 1) establish a single pot and trawl CV allocation, 2) establish 3 separate allocations for: a) trawl only participants, b) pot only participants, and c) combined pot/trawl participants (operators who hold pot and trawl endorsed LLP licenses).

Western and Central GOA

Holders of CP licenses shall make a one-time election to receive a WGOA and/or CGOA CP or CV endorsement for Pacific cod if that CP license made a minimum of one Pacific cod landing while operating as a CV under the authority of the CP license from 2002 through 2008.

Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA cod fishery. For example, CP licenses assigned to the CP sector may not fish off of the allocation assigned to CVs in the GOA Pacific cod fishery. Future catch accounting for these vessels should be according to the sector to which those licenses are assigned.

(Note: This CP or CV endorsement would be added to the LLP license, and would apply only to the Western and Central GOA Pacific cod fisheries (directed and incidental catches); the existing operation type endorsement would remain on the LLP license and would apply to other groundfish fisheries. If a vessel holds multiple, stacked, licenses and one of those stacked LLPs is a CP LLP eligible to harvest Pacific cod in the GOA area of participation, all catch will count against the CP sector allocation.)

Component 3: Definition of qualifying catch

Qualifying catch includes all retained legal catch of Pacific cod from the Federal and parallel waters fisheries in the Western and Central GOA.

- Catch will be calculated using Fish Tickets for catcher vessels and Catch Accounting/Blend data for catcher processors.
- Under all options, incidental catch allocated to trawl catcher vessels for the Central GOA Rockfish program (currently, 2.09% of the Central GOA Pacific cod TAC) will be deducted from the Central GOA trawl catcher vessel B season allocation.
- Each sector's allocation will be managed to support incidental and directed catch needs for that sector.

Component 4: Potential Sector Allocations

Part A: Years included for purposes of determining catch history:

Central GOA

Option 1: Qualifying years 2000-2006: average of best 3 years
Option 2: Qualifying years 2000-2006: average of best 5 years
Option 3: Qualifying years 2002-2007: average of best 3 years
Option 4: Qualifying years 2002-2007: average of best 5 years
Option 5: Qualifying years 2002-2008: average of best 3 years

Option 6: Qualifying years 2002-2008: average of best 5 years
Option 7: Average of Options 1-6.
Option 8: Average of Options 2, 4, and 6.

Note: The Council has the option to choose separate qualifying years for each sector.

- In order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, the range of potential annual allocations in the analysis is increased by 3% above the sector's highest potential allocation and decreased by 3% below the sector's lowest potential allocation, except sectors with an allocation of less than 5% would retain their current lowest potential allocation.

- When sectors are divided into subsectors (e.g., by vessel length), the allocation will be calculated using the best set of years for the sector, and the sum of the subsector allocations will equal the allocation to the sector.

Western GOA
Option 1: Qualifying years 1995-2005: average of best 7 years
Option 2: Qualifying years 2000-2006: average of best 5 years
Option 3: Qualifying years 2002-2007: average of best 5 years
Option 4: Qualifying years 2002-2008: average of best 5 years
Option 5: Average of all options above.

Note: The Council has the option to choose separate qualifying years for each sector.

- In order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, the range of potential annual allocations in the analysis is increased by 3% above the sector's highest potential allocation and decreased by 3% below the sector's lowest potential allocation, except sectors with an allocation of less than 5% would retain their current lowest potential allocation.
- When sectors are divided into subsectors (e.g., by vessel length), the allocation will be calculated using the best set of years for the sector, and the sum of the subsector allocations will equal the allocation to the sector.

Part B: Western and Central GOA Sideboards
- For AFA CV sideboards: Combine the inshore and offshore AFA CV sideboard amounts into a single sideboard for each management area.
- For non-AFA crab sideboards: Recalculate the sideboards and establish separate CP and CV sideboard amounts by gear type for each management area.

Part C: Seasonal apportionment of sector allocations:

Central GOA
Option 1: Apportion each sector's annual allocation 60% to the A season and 40% to the B season.
Option 2: Apportion each sector's annual allocation based on that sector's seasonal catch history during the qualifying years, while maintaining the overall 60%/40% apportionment of the TAC.

Western GOA

Option 1: Apportion each sector's annual allocation 60% to the A season and 40% to the B season.

Option 2: Apportion each sector's annual allocation based on that sector's seasonal catch history during the qualifying years, while maintaining the overall 60%/40% apportionment of the TAC.

Option 3: For the WGOA, only the A season TAC will be apportioned among sectors; the B season TAC will not be apportioned among sectors.

Component 5: Allocation of Pacific cod to jig sector

Before allocating the TACs among the other sectors, set aside 1%, 1.5%, or 2% of the Central GOA Federal Pacific cod TAC, and 1% or 1.5% of the Western GOA Federal Pacific cod TAC, for the initial allocation to the jig vessel sector, with a stairstep provision to increase the jig sector allocation by 1% if 90% of the Federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 5%, 6%, or 7% of the Central and Western GOA Federal Pacific cod TACs.

Subsequent to the jig allocation increasing, if the harvest threshold criterion described in the options below is not met during either (a) two or (b) three consecutive years, the jig allocation will be stepped down by 1% in the following year, but shall not drop below the level initially allocated.

Option 1: 90% of the current allocation

Option 2: 90% of the previous allocation

The jig allocation will be set aside from the TAC.

The Council requests that staff continue to work with the State of Alaska and NMFS to explore considerations required to implement possible options for the jig fishery management structure (both State parallel/Federal and State) that create a workable fishery and minimize the amount of stranded quota, focusing on Option 1. Possible solutions that could be explored are:

Option 1: State parallel/Federal managed Pacific cod jig fishery

Federal allocation managed 0-200 miles through a parallel fishery structure. Any State waters jig GHL would (under subsequent action by the Alaska Board of Fisheries) be added to this State parallel/Federal managed jig sector allocation so that the jig sector is fishing off of a single account. If the Board of Fisheries chooses to relinquish State waters jig GHL, it would roll into the Federal jig allocation. The Council will make such recommendation to the Board of Fisheries. Until the Board of Fisheries changes the GHL in response to this recommendation, a State parallel/Federal jig sector allocation with a State waters GHL fishery would be invoked.

If a combined parallel/Federal fishery is created the fishery would be managed as follows:

Option 1: The fishery would open on January 1 and close when the allocation is reached. There would be no seasonal split of the combined parallel/Federal TAC.

Option 2: The fishery would open on January 1 and close when the jig A season sector allocation is reached. The Federal B season for the jig sector would open on June 10.

Suboption: (a) The jig allocation will be apportioned 60% to the A season and 40% to the B season.
(b) The jig allocation will be apportioned 80% to the A season and 20% to the B season.

Option 2: State parallel/Federal jig sector allocation with a State waters GHL fishery

Until the Board of Fisheries takes action in response to the Council recommendations or input from the public, distinct parallel/Federal and State waters fisheries continue to exist, and the two fisheries will be managed as follows:

The Federal jig sector allocation would be divided into an A/B season of 60%/40%. The A season would open on January 1 and close when the jig A-season sector allocation is reached or on March 15, whichever occurs first. The Federal B season for the jig sector would open on June 10, or after the State GHL season closes, whichever occurs later.

The Council directs staff to develop a discussion paper to consider whether a Federal parallel fishery, a "reverse parallel fishery", is a viable management structure for the jig sector during the state GHL jig season. This management structure would allow LLP-exempt jig vessels to operate in Federal waters during a state Pacific cod fishery, with harvest accruing to the state GHL.

Component 6: Management of unharvested sector allocations

Any portion of a CV, CP, or jig allocation determined by NMFS to remain unharvested during the remainder of the fishery year will become available as soon as practicable to either:

Option 1: CV sector allocations to CV sectors first, and CP sector allocations to CP sectors first, and then to all sectors taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.

Option 2: CV sectors first, and then to all sectors taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.

Option 3: All sectors.

Component 7: Apportionment of GOA-wide hook-and-line halibut PSC (other than DSR) between catcher processors and catcher vessels

Option 1: No change in current apportionments of GOA halibut PSC.

Option 2: Apportion the GOA hook-and-line halibut PSC to the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector. The apportionment of halibut will be proportional to the Pacific cod area apportionment determined during the TAC setting process.

Component 8: Community protection provisions (Western and Central GOA)

This component would protect community participation in the processing of Pacific cod and protect community delivery patterns established by the inshore/offshore regulations. For the purposes of this provision, motherships include catcher processors receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year.

For each management area, the mothership processing cap will be one or a combination of Options 1 through 4:

Option 1: Motherships may not receive deliveries of directed Pacific cod harvests.

Option 2: Allow mothership activity up to a percentage of the Pacific cod TAC to be selected by the Council (0-10% in the CGOA; 1-10% in the Western GOA).

Option 3: Allow Federally-permitted vessels that do not meet the definition of a stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development.

Suboption: Allow this processing activity up to a percentage of the Pacific cod TAC.

Option 4: Allow Federally-permitted vessels to operate as a mothership or stationary floating processor at more than one geographic location in a year provided that the vessel is operating only within the waters of the State of Alaska.

Suboption (may be applied to Options 2, 3, and 4): Limit weekly processing of Pacific cod landings from catcher vessels by vessels operating as motherships to (a) 125 mt per week, (b) 200 mt per week, or (c) 300 mt per week. This limit applies to all Pacific cod landings from catcher vessels.

Retain the current definition of a stationary floating processor, but revise as follows so that there is no reference to the inshore component as applied to Pacific cod:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.
- A stationary floating processor cannot operate as both a stationary floating processor and a CP/mothership during the same year.

Additionally, retain limits on the ability for AFA motherships and AFA CPs that are also active in the BSAI to process any Pacific cod in the GOA as follows:

- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as an AFA mothership in the BSAI during the same year.
- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as a CP in the BSAI during the same year.

Component 9

The Council may adjust sector allocations to incorporate considerations that are associated with conservation, catch monitoring, equity of access, bycatch reduction, and social objectives.

Component 10: Potential models for resolving parallel fishery issues (Western and Central GOA)

Option 1: The Council may provide recommendations for the Alaska Board of Fisheries' consideration on the parallel fishery that could complement Council action through use of the Joint Protocol Committee, and regularly review and comment on Board of Fisheries proposals, such as:

- gear limits
- vessel size limits

- exclusive registration

Option 2: Limit access to the parallel fishery for Federal fishery participants.

- Require any pot or longline vessel with an LLP or an FFP to have the appropriate Pacific cod endorsement and area endorsement on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery.

- Require any trawl vessel with an LLP or an FFP to have the appropriate gear and area endorsements on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery.

  Suboption 1: In addition, require the above Federally-permitted or licensed vessels that fish in the parallel waters to adhere to Federal seasonal closures of the Western/Central GOA sector allocations corresponding to the sector in which the vessel operates.

  Suboption 2: Vessels with a GOA area designation and the gear and operation type designations specified in Option 2 cannot remove these designations from the FFP and can only surrender or reactivate the FFP:
  a. Once per calendar year
  b. Once every eighteen months
  c. Once every three years

Summary of Components and Options

Component 1 identifies the management areas subject to the proposed action, the Western GOA and Central GOA. The Western and Central GOA Pacific cod TACs will be allocated among the sectors, and sector definitions may differ between the management areas. The Eastern GOA Pacific cod TAC will not be allocated among the sectors, because there is not a perceived need for such an action.

Component 2 identifies the options for sector definitions in each management area. In the Central GOA, sectors could include trawl CPs, trawl CPs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide the hook-and-line CP sector by length (125 ft LOA), the hook-and-line CV sector by length (50 ft LOA), and to combine the pot CV and pot CP sectors. In the Western GOA, sectors could include trawl CPs, trawl CVs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide several sectors by length: hook-and-line CPs (125 ft LOA), hook-and-line CVs (60 ft LOA), pot CVs (60 ft LOA); and an option to combine the pot CV and pot CP sectors. In the Western GOA, there is also an option to create a combined trawl CV and pot CV sector, either for all CVs or for vessels <60 ft LOA.

Finally, there is an option under Component 2 to require holders of CP licenses to make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement. Only CP license holders who made a minimum of one Pacific cod landing while operating as a CV under the authority of the CP license, from 2002 through 2008, would have the option to elect to receive a CV endorsement. Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA cod fishery. However, this endorsement would not preclude a license holder from operating as a CV or CP in other groundfish fisheries.

Component 3 identifies catch history that will be used to calculate sector allocations. Catch history includes all retained legal catch of Pacific cod from the federal and parallel waters fisheries in the Western and Central GOA, calculated using Alaska Department of Fish and Game (ADF&G) Fish Tickets for CVs and NMFS Catch Accounting/Blend data for CPs. Catch history includes both directed and incidental catch of Pacific cod, which is defined as Pacific cod caught in the parallel and federal waters groundfish fisheries, when the directed Pacific cod season is closed. Under all options, incidental catch allocated to trawl CVs for the Central GOA Rockfish program (currently, 2.09% of the Central GOA Pacific cod TAC) will be deducted from the Central GOA trawl CV B season allocation. Each sector's allocation will be managed to support both incidental and directed catch of Pacific cod.

Component 4 identifies the potential sets of years that could be used to calculate sector allocations. The options for the Western and Central GOA differ. In the Central GOA, allocations could be calculated using each sector's best 3 or 5 years (identified based on each sector's annual percentage of catch) during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or based on the average of all options, or the average of the options that include the best 5 years. In the Western GOA, allocations could be calculated based on each sector's best 7 years during 1995 through 2005, or best 5 years during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or the average of these four options. The Council also has the option to choose separate qualifying years for each sector. Allocations are then adjusted proportionally, so that they sum to 100% of the TAC. Finally, in order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, allocations could be adjusted by 3% above each sector's highest potential allocation or 3% below each sector's lowest potential allocation.

Component 4 also identifies options for recalculating Pacific cod sideboards for the Western and Central GOA management areas. The AFA CV Pacific cod inshore and offshore sideboards will be combined into a single sideboard in each management area. The non-AFA crab sideboards will be recalculated to establish separate CP and CV sideboard amounts for each gear type in each management area. Finally, Component 4 includes several options for establishing seasonal apportionments. Each sector's allocation could be apportioned 60%/40% between the A and B seasons, or could be apportioned based on each sector's seasonal catch history. In addition, there is an option in the Western GOA to allocate only the A season TAC among sectors.

Component 5 addresses the allocation to jig vessels. The jig allocation would be set aside from the TAC before allocations to other sectors are made, and could include an initial allocation of 1%, 1.5%, or 2% of the Central GOA Pacific cod TAC, and 1% or 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig sector allocation by 1%, if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 5%, 6%, or 7% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas would be stepped down in 1% annual increments, if 90% of the current allocation or 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during either (a) 2 consecutive years or (b) 3 consecutive years, following the stairstep increase. However, the allocation would not drop below its initial level.

There are two options in Component 5 for managing the jig allocation. **Option 1** outlines the management measures that would take effect if, under a subsequent action, the Alaska Board of Fisheries relinquishes any portion of the state waters jig guideline harvest level (GHL). Any relinquished jig GHL would be added to the parallel/federal jig allocation, so that the jig sector is fishing from a single account. Under this scenario, there are three options for seasonally apportioning the combined state/parallel/federal jig allocation: no seasonal apportionment, 60%/40% A/B season apportionment, or 80%/20% A/B season apportionment. Under the first option, the jig season would open on January 1 and close when the

allocation is reached. Under the latter two options, the fishery would open on January 1, and close when the jig A season allocation is reached. The B season would open on June 10.

Until the Board of Fisheries relinquishes any portion of the jig GHL, distinct parallel/federal and state waters fisheries will continue to exist, and the two fisheries will be managed as described under **Option 2**. The parallel/federal jig allocation would be apportioned 60%/40% into an A/B season. The A season would open on January 1 and close when the jig A season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector would open on June 10, or after the state GHL season closes, whichever occurs later.

Component 6 outlines three options for managing rollovers of unharvested sector allocations. Any portion of an allocation that NMFS determines will not be harvested by the respective sector during the remainder of the fishing year will be rolled over as follows: (1) CV allocations to CV sectors first, and CP allocations to CP sectors first, then to all sectors as needed to harvest the remaining amount of Pacific cod, (2) all allocations to CV sectors first, and then to all sectors as needed to harvest the remaining Pacific cod, and (3) all allocations to all sectors as needed to harvest the remaining Pacific cod.

Component 7 includes two options for apportioning the GOA non-DSR hook-and-line halibut PSC allowance between CVs and CPs. **Option 1** would not apportion the GOA non-DSR hook-and-line PSC allowance between CVs and CPs. **Option 2** would apportion the GOA hook-and-line halibut PSC between the CP and CV sectors, in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector, as adjusted to reflect the relative size of the Pacific cod area apportionments, determined during the annual harvest specifications process. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector.

Component 8 identifies options to protect community participation and processing patterns in the GOA Pacific cod fishery that were established by the inshore/offshore regulations. For the purposes of Component 8, motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year. The Council could select one or a combination of four options. Under **Option 1**, motherships may not receive deliveries of directed Pacific cod harvests. **Option 2** allows mothership activity up to a percentage of the Pacific cod TAC to be selected by the Council (0–10% in the Central GOA; 1%–10% in the Western GOA). **Option 3** allows federally permitted vessels that do not meet the definition of a stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development. A suboption to Option 3 would limit this processing activity within CQE communities to a percentage of the Pacific cod TACs in the respective management areas. **Option 4** allows federally permitted vessels to operate as a mothership or stationary floating processor at more than one geographic location in a year, provided that the vessel is operating only within the waters of the State of Alaska, and, in effect, revises the existing definition of a stationary floating processor. A suboption that may be applied to Options 2, 3, and 4 would limit weekly processing of Pacific cod landings by vessels operating as motherships to (a) 125 mt per week, (b) 200 mt per week, or (c) 300 mt per week. This limit applies to all Pacific cod landings from CVs.

Component 8 also includes several potential revisions to the existing inshore/offshore regulations. Depending on the options selected in Component 8, the current definition of a stationary floating processor could be retained, but revised as follows, so that there is no reference to the inshore component as applied to Pacific cod:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.
- A vessel cannot operate as both a stationary floating processor and a CP/mothership during the same year.

Additionally, retain limits on the ability for AFA motherships and AFA CPs that are also active in the BSAI to process any Pacific cod in the GOA as follows:

- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as an AFA mothership in the BSAI during the same year.
- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as a CP in the BSAI during the same year.

Component 9 states that the Council may adjust sector allocations to incorporate considerations that are associated with conservation, catch monitoring, equity of access, bycatch reduction, PSC avoidance, and social objectives. The potential range of adjustments (±3%) is indicated in Component 4.

Finally, **Component 10** includes potential management measures for the parallel waters Pacific cod fishery. Under **Option 1**, the Council may provide recommendations for the Alaska Board of Fisheries' consideration on the parallel fishery that could complement Council action through use of the Joint Protocol Committee, and review and comment on Board of Fisheries proposals, such as gear limits, vessel size limits, and exclusive registration. **Option 2** limits access to the parallel fishery for federal fishery participants, by requiring operators of pot, longline, or trawl vessels who hold an LLP license or a Federal Fisheries Permit (FFP) to have the appropriate gear, area, and species endorsements on the LLP license and FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. Two suboptions to Option 2 are intended to make it more difficult for operators to circumvent the LLP requirement. **Suboption 1** requires the above federally permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations, corresponding to the sector in which the vessel operates. **Suboption 2** precludes operators with a GOA area designation, and the gear and operation type designations specified in Option 2, from removing these designations from the FFP. This suboption provides that an FFP may only be surrendered or reactivated (a) once per calendar year, (b) once every 18 months, or (c) once every 3 years.

There are elements of two of the components that apply to the entire GOA, including the Western, Central, and Eastern GOA management areas. Component 7 will apportion the non-DSR hook-and-line halibut PSC limit between CVs and CPs, based on the aggregate (Western and Central GOA) allocation of Pacific cod to each sector. The resulting CV and CP hook-and-line PSC limits will apply to the entire GOA. Halibut PSC by hook-and-line vessels operating in the Western, Central, and Eastern GOA will accrue against these PSC allowances. In Component 10, Option 2, there is a suboption to preclude holders of FFPs with a GOA area endorsement from surrendering the FFP during a specified time period. Again, this suboption applies to the entire GOA, and is discussed in detail in that section of the analysis.

Options considered and rejected

Component 2: The Council considered, but rejected, options to establish separate allocations for trawl and hook-and-line CPs that have historically fished off the inshore TACs. Establishing distinct inshore CP allocations would protect harvests of smaller CPs, if combined with a provision to limit entry to the inshore processing component. Prior to removing the option to create distinct inshore CP allocations, the Council reviewed data that showed that during most years, nearly all CPs less than 125 feet (ft) in length

elected to fish inshore. Therefore, if CP allocations are based on vessel length (vessels less than and greater than 125 ft in length), these allocations would be nearly identical to allocations based on catch by the inshore and offshore processing components.

The Council considered, but rejected, dividing the trawl CP sector by vessel length (<125 ft and ≥125 ft LOA), because these percent allocations would likely be too small to support directed cod fisheries. The Council also considered, but rejected, an option to create a combined pot and hook-and-line allocation. A combined allocation may be desirable, if participants in these two sectors are likely to cross over and use the other gear type. However, the data indicate that, while some vessels have switched gear types over the years, few vessels participate in the directed Pacific cod fisheries using both pot and hook-and-line gear during a given year. Creating a combined allocation could result in opportunistic movement between gear types, and increased competition not only for the Pacific cod resource, but also for the hook-and-line halibut PSC apportionment, to the detriment of historical participants.

The Council deleted the option to split the Central GOA hook-and-line CV sector at 60 ft, because there is relatively little catch history by vessels ≥60 ft LOA (1% to 2% of the TAC). An alternative way of dividing this allocation would be a split at 50 ft LOA. The number of hook-and-line vessels between 50 ft and 60 ft LOA participating in the Pacific cod fishery in the Central GOA has increased during recent years. The majority of the hook-and-line CV fleet's catch history has been attributable to vessels <50 ft LOA. If the hook-and-line sector is split at 60 ft, this may leave the <50 ft LOA fleet vulnerable to an influx of effort. Dividing the Central GOA hook-and-line CV sector at 50 ft may help protect historical catches of the smaller vessel fleet, and may make these allocations more manageable. Similarly, the Council rejected an option to divide the Central GOA pot CV sector at 60 ft. Again, there has been an increase in the number of 50 ft to 60 ft LOA pot vessels participating in the fishery in recent years. However, there is relatively little catch history by pot vessels <50 ft LOA, and dividing the pot sector at 50 ft to protect smaller vessels from this influx of effort is not practicable. Instead, combining all pot CVs into a single sector distributes the effects of increased effort by 50 ft to 60 ft LOA vessels across the entire sector.

An option to restrict vessels <60 ft LOA that exceed a specified capacity (tonnage) from participating in the <60 ft LOA harvest sectors was removed from the motion. The hook-and-line CV sector in the Central GOA could be split at 50 ft LOA; if this option is selected, high capacity 58 ft and 59 ft LOA hook-and-line vessels would not compete with the small boat (<50 ft LOA) sector for access to a shared allocation.

Finally, the Council rejected an option to allow CP license holders to make an annual election to participate in the GOA Pacific cod fishery as either a CP or a CV. One objective of the sector allocations is to increase stability in the fishery, and allowing vessels to make an annual election of operation type may not be consistent with this objective.

Component 3: The option to exclude catch destined for meal production from qualifying catch was deleted. Meal has typically been excluded when a certain segment would be disadvantaged by the inclusion of meal in calculations. Specifically, small CPs without meal plants could be disadvantaged. Weekly Production Reports indicate that in the GOA, no CPs produced meal from Pacific cod during 1995 through 2006. Catch destined for meal production is a relatively minor component of harvests by CVs, and generally amounts to less than 1% of retained catch. Based on these data and public testimony, the Council rejected options to exclude meal from the definition of qualifying catch. In addition, the option to define qualifying catch as retained catch from the directed Pacific cod fishery was deleted. Sector allocations will be based on all retained Pacific cod catch, including incidental catch of Pacific cod in other directed fisheries.

Component 4: The Council rejected options for the Central GOA to calculate catch history using the best 5 or 7 years from 1995 through 2005. The rationale was that the LLP recency actions were based on catch during 2000 through 2006 (trawl recency) and 2002 through 2008 (fixed gear recency), and some participants who fished only during 1995 through 1999 no longer have access to the GOA Pacific cod fishery as a result of the recency actions. The Council rejected options for the Western GOA to use only the best 3 years in the different catch history periods, and retained options to use the best 5 years for sector allocation calculations. The rationale was that including more years was more representative of the sectors' catch history.

Component 5: The Council removed an option to delegate management authority for the GOA Pacific cod jig fishery to the State of Alaska. Under this option, Pacific cod would remain in the GOA FMP and the GOA Pacific cod jig fishery would be managed jointly by the State of Alaska and the Federal government. NOAA General Counsel indicated in a letter to the Council, in February 2008, that management authority for the GOA Pacific cod jig fisheries in federal waters could be delegated to the State of Alaska. For this to occur, state and federal management responsibilities would need to be delineated in the FMP. Additional management measures would likely be required in the jointly managed fisheries that are not required in the state waters Pacific cod fisheries. For example, vessels fishing in federal waters would need to obtain FFPs and comply with federal reporting requirements. The primary purpose of this option was to create a year-round jig fishery that could be prosecuted from 0 to 200 nm. The drawbacks to this option are that delegating authority for an FMP species is complex and may increase ADF&G management costs and burden. The option to combine the state jig GHL with the federal/parallel jig allocation accomplishes the same objective of creating a year-round fishery from 0 to 200 nm, and does not impose additional management costs or burden on the respective agencies.

Component 6: Options to roll over unused sector allocations on specific dates were deleted and replaced with the current language, which defers management of rollovers to NMFS inseason management.

Component 10: The Council removed an option to establish a parallel fishery catch cap, after reviewing information which showed that some participants rely heavily on the parallel waters Pacific cod fishery.

Management of incidental catch: The Council deleted what was formerly Component 6, which included two options for managing incidental catch under sector allocations. Instead, the Council added a provision under Component 3 which defers management of incidental catch to NMFS inseason management. In effect, the Council removed the option to set aside incidental catch allowances off the top of the TACs. Instead, incidental catch would be managed inseason (similar to the status quo) and each sector's allocation would support the incidental catch needs of all vessels using that gear and operation type.

1.2 Proposed changes to the GOA FMP

The proposed action would result in an amendment to the GOA Fisheries Management Plan (FMP) and 50 CFR 679.20(a)(11). This action would require changing language in the following sections of the FMP:

- Executive Summary
- Section 3.2.6.3.2 Pacific Cod and Pollock
- Section 3.3.1 Limited License Program
- Section 4.1.2.2 Pacific Cod
- Appendix A FMP Amendment Summaries

1.3 Consistency with the Problem Statement

The alternatives under consideration are consistent with the problem statement. Under the no action alternative, the Western and Central GOA Pacific cod fisheries will continue to be apportioned to the inshore and offshore processing components, but will not be further allocated among the harvest sectors. The problem identified is that participants who have made significant long-term investments, have extensive catch histories, and are highly dependent on the GOA Pacific cod fisheries need stability in the form of sector allocations. Without sector allocations, future harvests by some sectors may increase and impinge on historical levels of catch by other sectors. The intent of the proposed action is to establish sector allocations for each gear and operation type in the GOA Pacific cod fishery, based primarily on historical catches, as well as conservation, catch monitoring, bycatch, PSC avoidance, and social objectives, including considerations for small boat sectors and coastal communities. The problem statement notes that dividing the TAC among sectors may also facilitate the future development of management measures to address Steller Sea lion mitigation issues, bycatch reduction, and PSC mortality issues.

2 FINAL REGULATORY IMPACT REVIEW

This chapter provides information on the economic and socioeconomic impacts of the alternatives, as required by Executive Order 12866 (E.O. 12866). This chapter includes a description of the current Gulf of Alaska (GOA) Pacific cod fishery, an analysis of the potential effects of the proposed action on the fishery, identification of the individuals or groups that may be affected by the action, and a discussion of the nature of those impacts (quantifying the economic impacts where possible) and potential tradeoffs.

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

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

This section addresses the requirements of E.O. 12866 to provide adequate information to determine whether an action is "significant" under E.O. 12866. The order requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

(1) Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

2.1 Description of the GOA Pacific cod fisheries

Pacific cod is the second most dominant species (after pollock) in the commercial groundfish catch in the GOA. Of the remaining limited access fisheries in the GOA, Pacific cod is one of the most valuable species, and is the primary species targeted by the fixed gear sectors. The GOA Pacific cod resource is targeted by multiple gear and operation types, principally by pot, trawl, and hook-and-line catcher vessels (CVs), and hook-and-line catcher processors (CPs) (Table 2-1). Smaller amounts of cod are taken by other sectors, including CVs using jig gear. About 15% of the total commercial Pacific cod catch off Alaska is harvested in the GOA, with the remaining 85% harvested in the Bering Sea and Aleutian Islands.

Table 2-1 Total catch (including discards) of Pacific cod catch by gear type in the federal and state managed fisheries in the GOA (Western, Central, and Eastern GOA combined), total allowable catch (TAC), and acceptable biological catch (ABC), 1985–2010.

	Federal						State		Total catch	ABC	Percent of ABC harvested
Year	Trawl	Longline	Pot	Jig	Total	TAC	Pot	Jig			
1985	4,876	9,411	2	139	14,428	60,000	n/a	n/a	14,428	n/a	
1986	6,850	17,619	141	402	25,012	75,000	n/a	n/a	25,012	136,000	18.4%
1987	22,486	8,261	642	1,550	32,939	50,000	n/a	n/a	32,939	125,000	26.4%
1988	27,145	3,933	1,422	1,302	33,802	80,000	n/a	n/a	33,802	99,000	34.1%
1989	37,637	3,662	376	1,618	43,293	71,200	n/a	n/a	43,293	71,200	60.8%
1990	59,188	5,919	5,661	1,749	72,517	90,000	n/a	n/a	72,517	90,000	80.6%
1991	58,093	7,656	10,464	115	76,328	77,900	n/a	n/a	76,328	77,900	98.0%
1992	54,593	15,675	10,154	325	80,747	63,500	n/a	n/a	80,747	63,500	127.2%
1993	37,806	8,962	9,708	11	56,487	56,700	n/a	n/a	56,487	56,700	99.6%
1994	31,446	6,778	9,160	100	47,484	50,400	n/a	n/a	47,484	50,400	94.2%
1995	41,875	10,978	16,055	77	68,985	69,200	n/a	n/a	68,985	69,200	99.7%
1996	45,991	10,196	12,040	53	68,280	65,000	n/a	n/a	68,280	65,000	105.0%
1997	48,406	10,978	9,065	26	68,476	69,115	7,322	1,327	77,124	81,500	94.6%
1998	41,570	10,012	10,510	29	62,121	66,060	9,189	1,321	72,630	77,900	93.2%
1999	37,167	12,363	19,015	70	68,614	67,835	12,321	1,518	82,453	84,400	97.7%
2000	25,443	11,660	17,351	54	54,508	58,715	10,399	1,644	66,551	76,400	87.1%
2001	24,383	9,910	7,171	155	41,619	52,110	7,841	2,085	51,544	67,800	76.0%
2002	19,810	14,666	7,694	176	42,345	44,230	10,505	1,714	54,564	57,600	94.7%
2003	18,885	9,470	12,675	161	41,191	40,540	8,132	3,486	52,809	52,800	100.0%
2004	17,593	10,327	14,889	345	43,154	48,033	10,874	2,878	56,905	62,810	90.6%
2005	14,549	5,731	14,752	203	35,236	44,433	10,020	2,741	47,996	58,100	82.6%
2006	13,131	10,229	14,495	118	37,973	52,264	9,648	690	48,311	68,859	70.2%
2007	14,795	11,501	13,523	39	39,857	52,264	11,904 (total)		51,760	68,859	75.2%
2008	20,101	12,017	11,313	62	43,494	50,269	13,396 (total)		56,890	66,493	85.6%
2009	13,984	13,848	11,576	194	39,603	41,807	12,690 (total)		52,293	55,300	94.6%
2010	21,791	16,423	20,114	426	58,753	59,563	17,608 (total)		76,361	79,100	96.5%

Source: 2008 Groundfish SAFE Report, Pacific cod stock assessment (1985–1994 federal catch; NMFS 2007a); NMFS Blend and Catch Accounting databases (1995–2010 federal catch), and ADF&G (state waters catch).

In the GOA, trawl landings of Pacific cod peaked in 1990 and 1991, at nearly 60,000 metric tons (mt) per year, and declined to less than 20,000 mt in recent years. Since 1990, longline harvests have fluctuated between 6,000 mt and 15,000 mt per year. Vessels using pot gear began to make significant landings in the early 1990s. Pot and jig landings increased substantially when the state waters Pacific cod fishery, which only allows the use of pot or jig gear, was initiated in 1997. Since 2003, vessels using pot gear harvested a larger share of GOA Pacific cod (when state and federal harvests are combined) than the trawl or hook-and-line sectors. Total harvests of Pacific cod peaked in 1999, at nearly 82,000 mt, and were as low as 48,000 mt in each of 2005 and 2006. Total federal catch as a percentage of the federal total allowable catch (TAC) has generally declined since Steller sea lion regulations went into effect in 2001.

Fishing effort for Pacific cod is widely distributed along the shelf edge in the GOA. Trawl effort is also located near Chirikof, Cape Barnabus, Cape Chiniak, and Marmot Flats. The hook-and-line fishery primarily occurs at depths of 25 fathoms to 140 fathoms over gravel, cobble, mud, sand, and rocky bottoms. Figure 2-1 through Figure 2-12 indicate the location of Pacific cod fishing effort by hook-and-line, pot, and trawl gear, during 1995 through 2000 and 2001 through 2006, when an observer was onboard. Additional descriptions of the GOA Pacific cod fisheries are included in the Groundfish Economic Stock Assessment and Fishery Evaluation (SAFE) Report (Hiatt et al. 2010) and the Groundfish PSEIS (NMFS 2004).

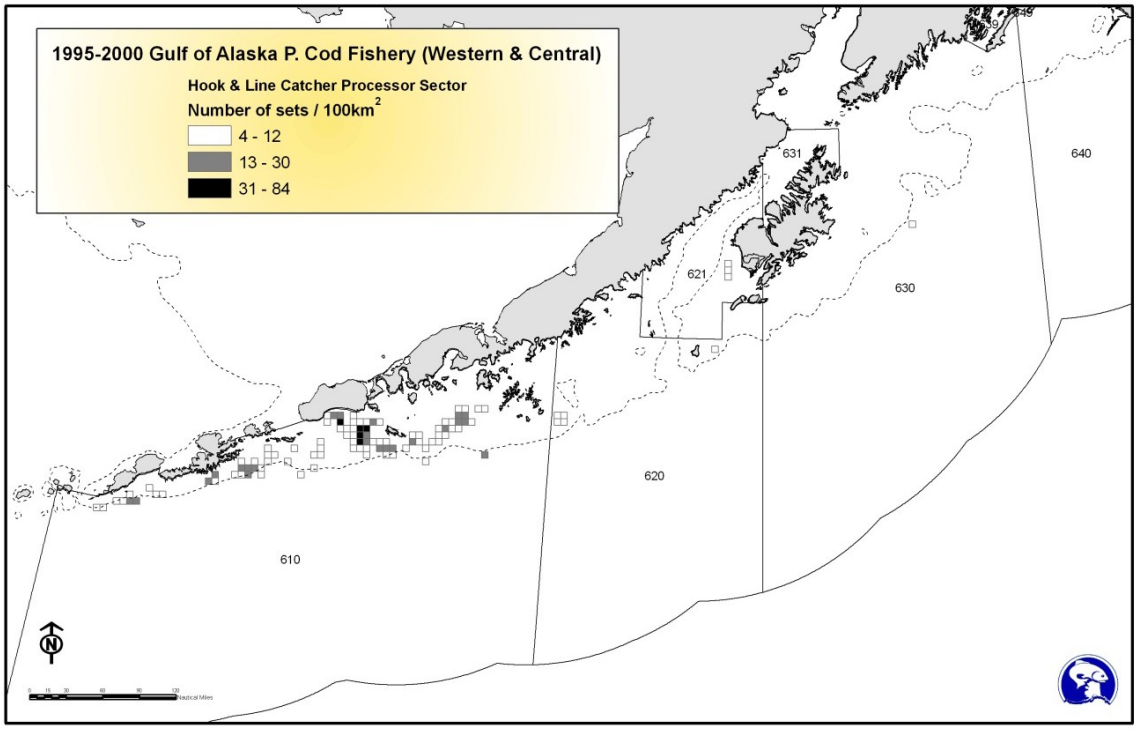

Figure 2-1 **Location of observed hook-and-line catcher processor Pacific cod fishing activity, 1995–2000.**

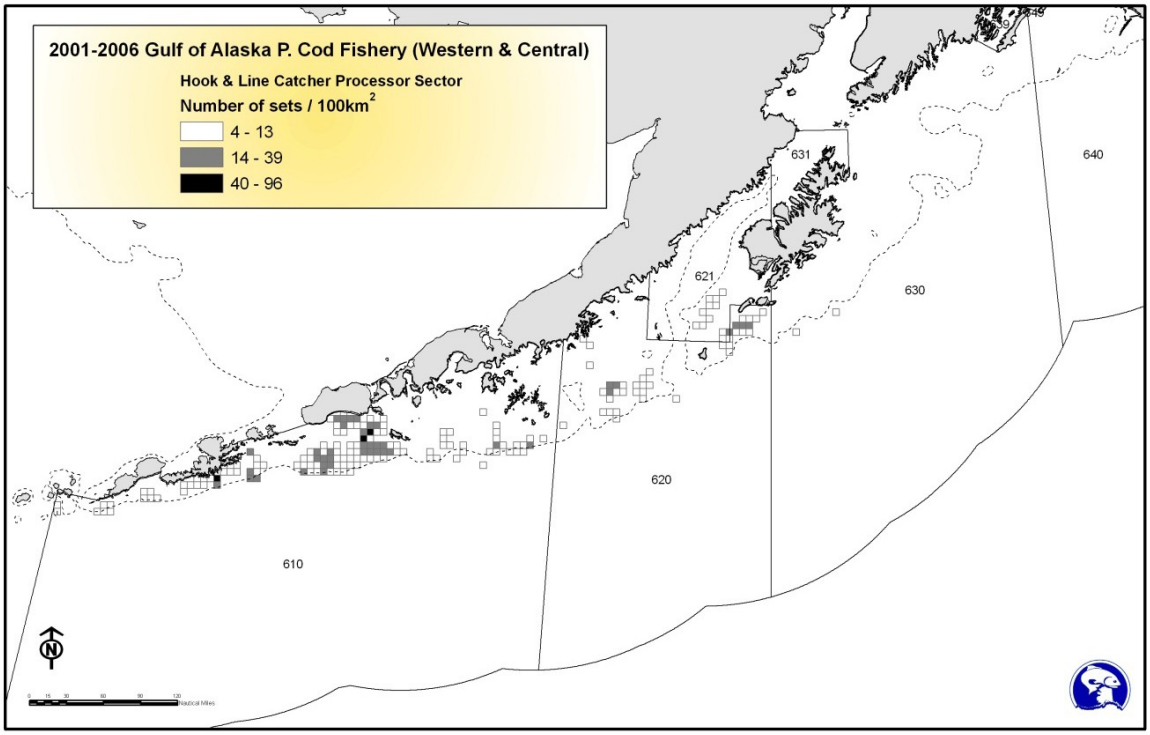

Figure 2-2 **Location of observed hook-and-line catcher processor Pacific cod fishing activity, 2001–2006.**

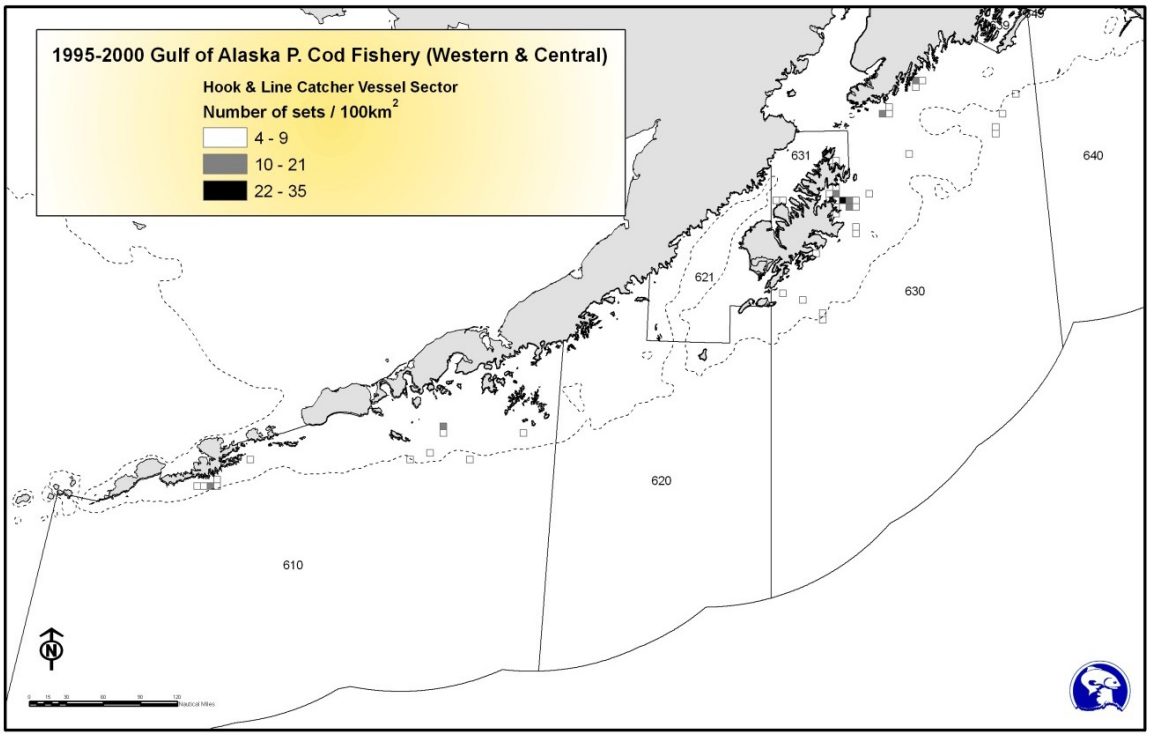

Figure 2-3 Location of observed hook-and-line catcher vessel Pacific cod fishing activity, 1995–2000.

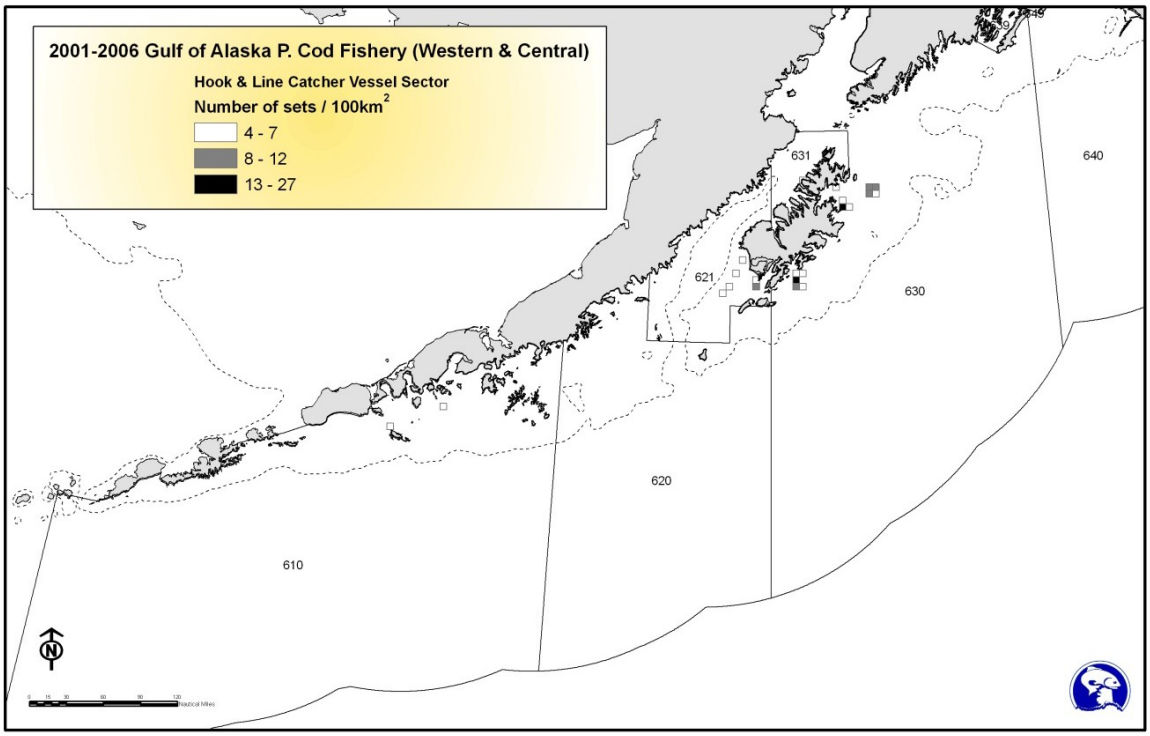

Figure 2-4 Location of observed hook-and-line catcher vessel Pacific cod fishing activity, 2001–2006.

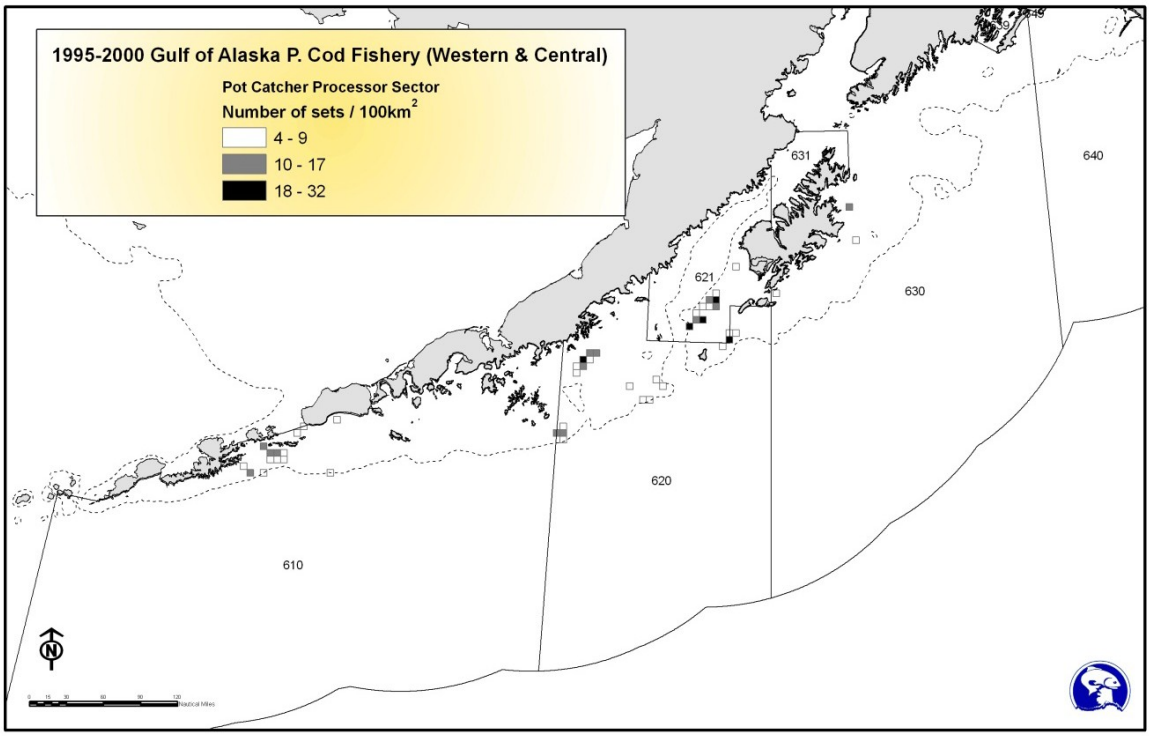

Figure 2-5 Location of observed pot catcher processor Pacific cod fishing activity, 1995–2000.

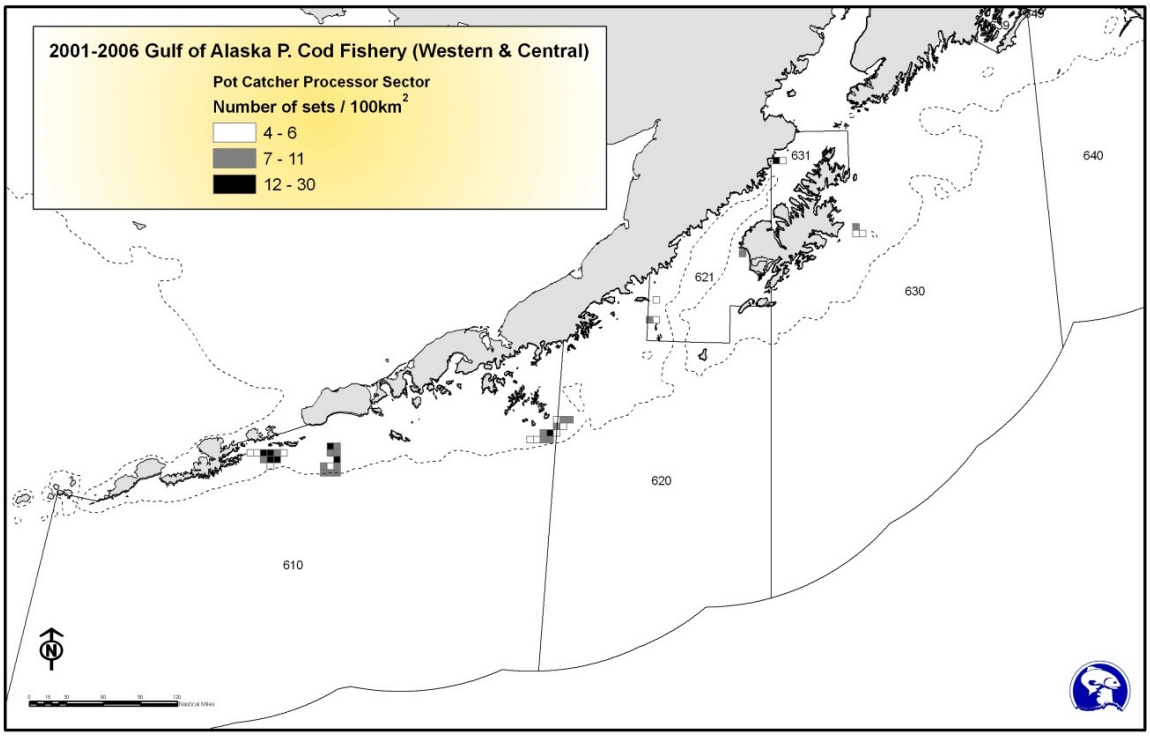

Figure 2-6 Location of observed pot catcher processor Pacific cod fishing activity, 2001–2006.

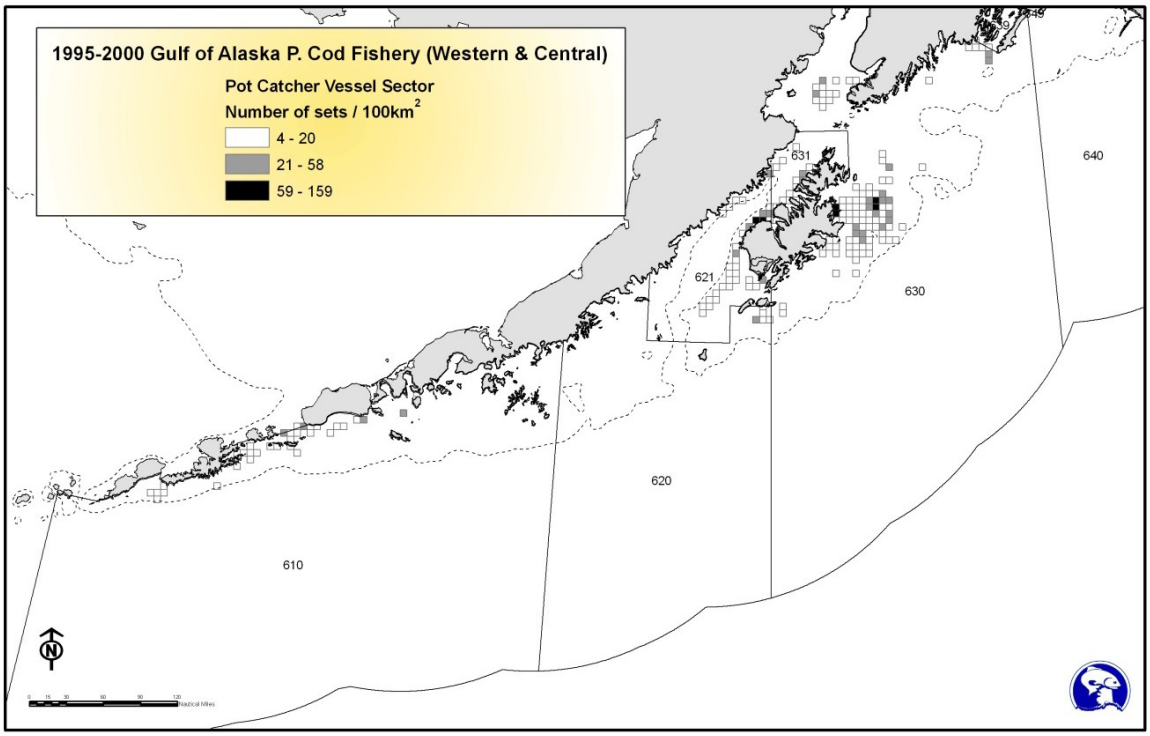

Figure 2-7 Location of observed pot catcher vessel Pacific cod fishing activity, 1995–2000.

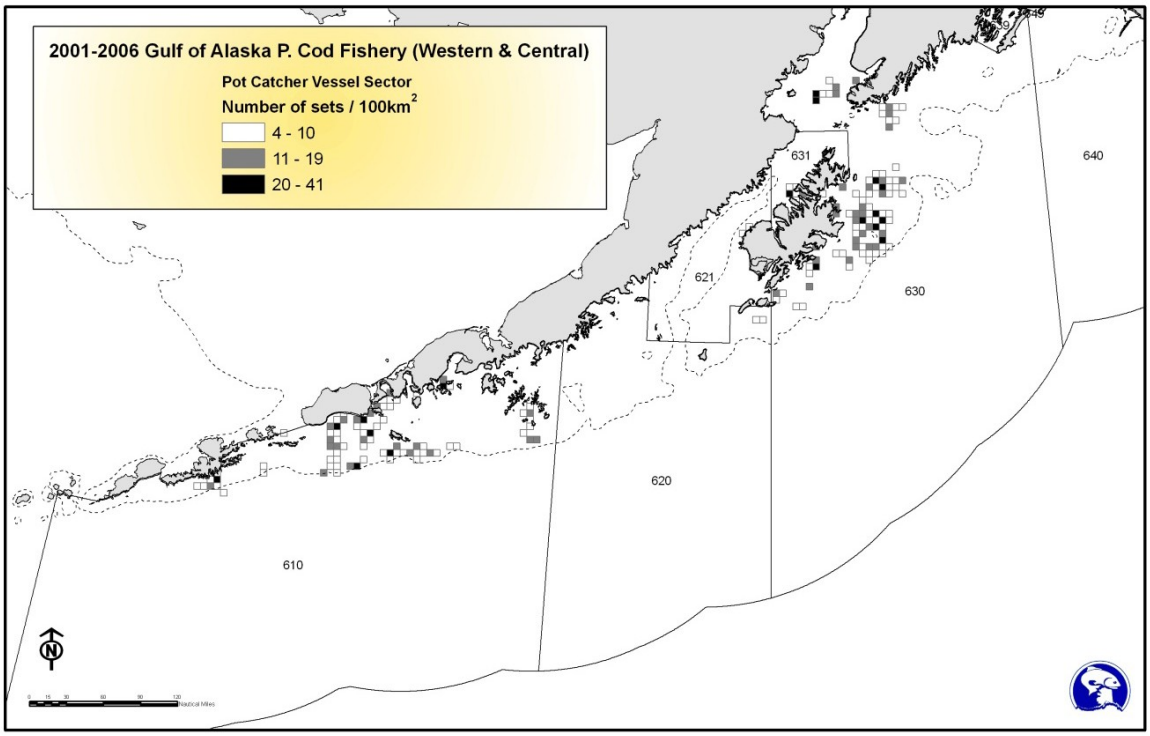

Figure 2-8 Location of observed pot catcher vessel Pacific cod fishing activity, 2001–2006.

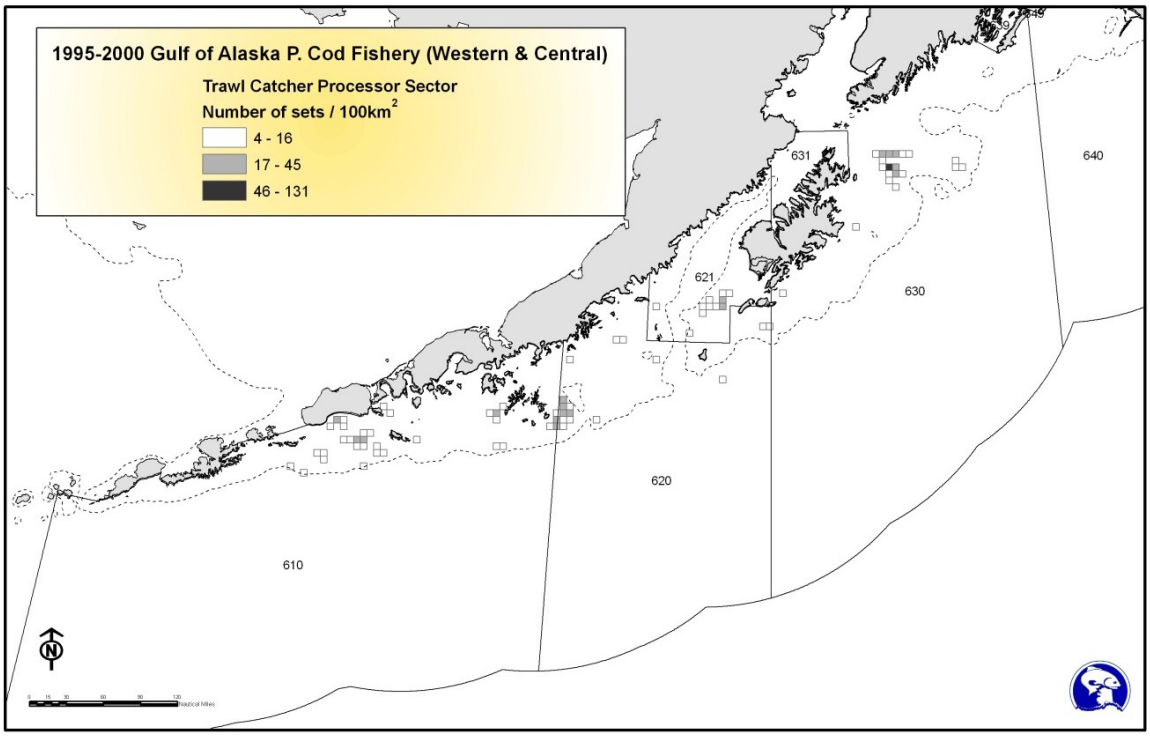

Figure 2-9 Location of observed trawl catcher processor Pacific cod fishing activity, 1995–2000.

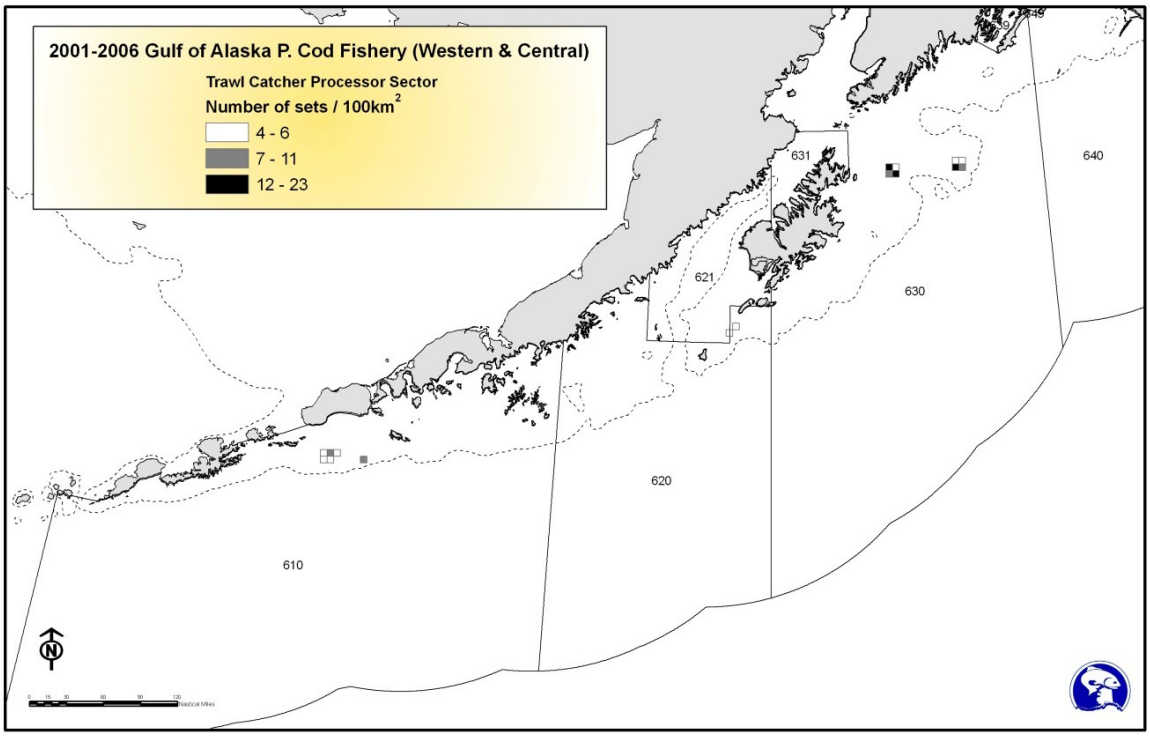

Figure 2-10 Location of observed trawl catcher processor Pacific cod fishing activity, 2001–2006.

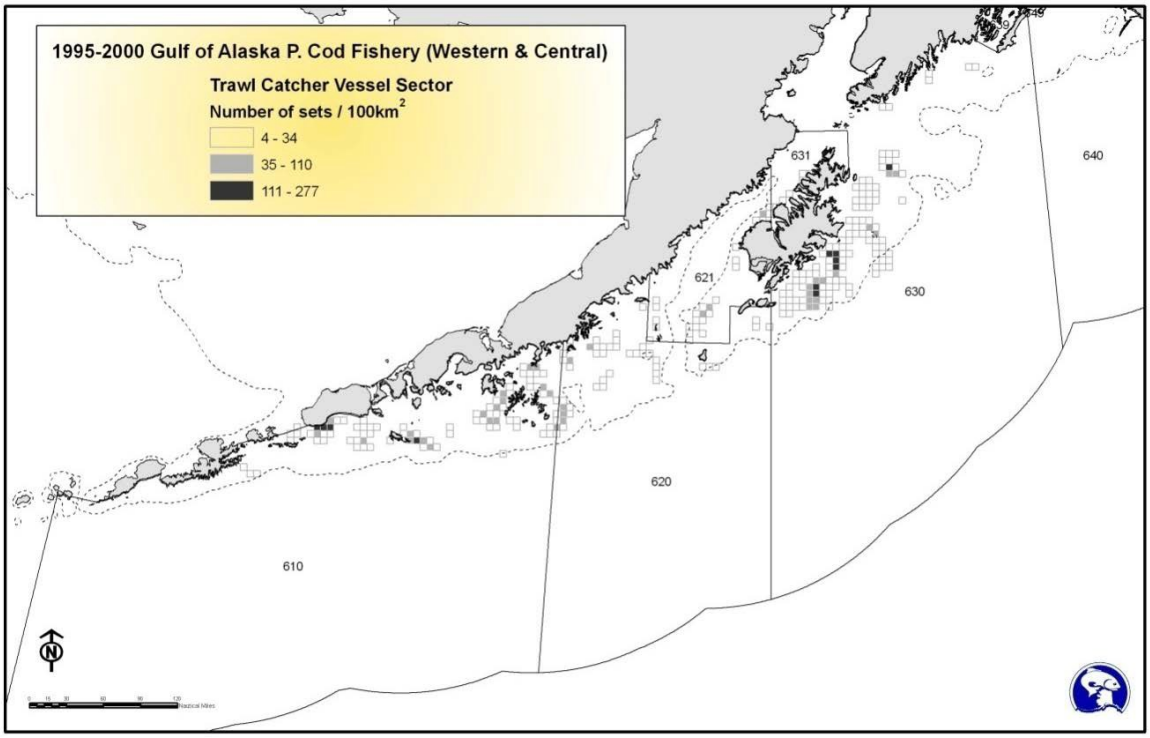

Figure 2-11 Location of observed trawl catcher vessel Pacific cod catch, 1995–2000.

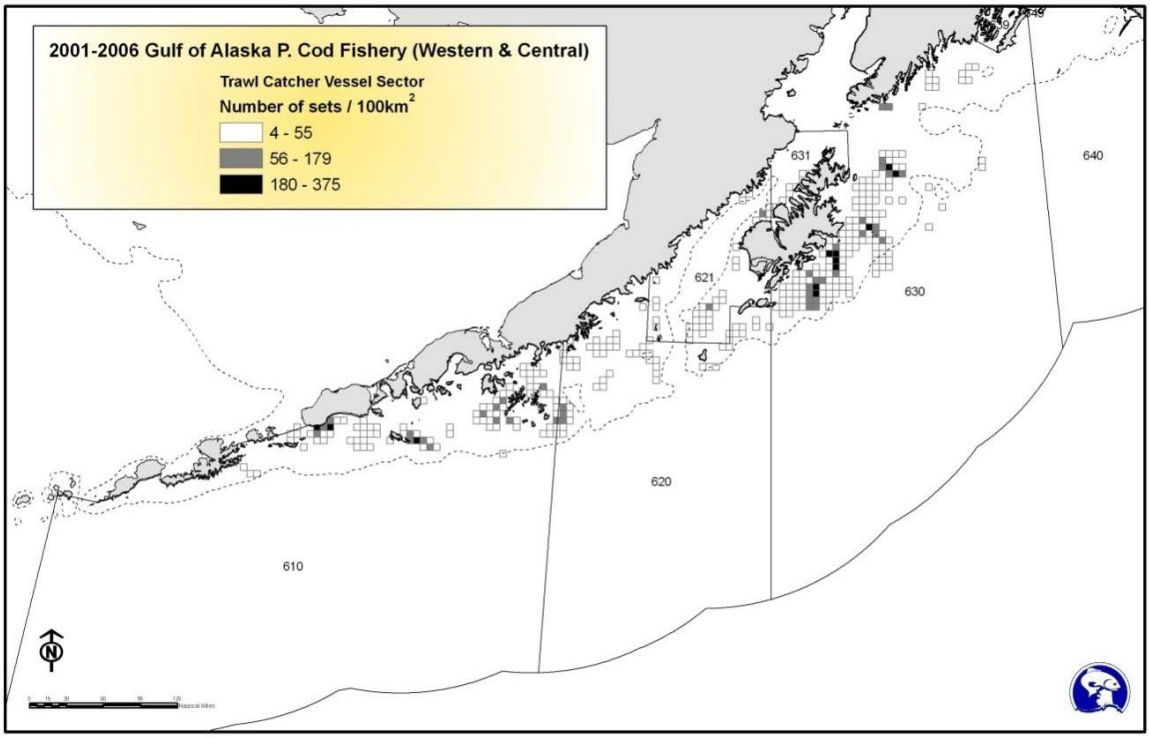

Figure 2-12 Location of observed trawl catcher vessel Pacific cod catch, 2001–2006.

2.1.1 Management of the GOA parallel and federal waters Pacific cod fisheries

This section describes current management of the GOA Pacific cod fishery, and highlights important regulatory changes in the management of the GOA Pacific cod fishery during 1992 through 2009. These regulatory changes are summarized in Table 2-2. Separate area TACs are identified for Pacific cod in the Western GOA, Central GOA, and Eastern GOA management subareas. Final 2008 harvest specifications apportioned 57% of the GOA TAC to the Central GOA (28,426 mt), 39% to the Western GOA (19,449 mt), and 5% to the Eastern GOA (2,394 mt). The TAC and percentage of TAC harvested in the Pacific cod fisheries in the Western, Central, and Eastern GOA are summarized in Table 2-3.

The GOA Pacific cod TACs are not divided among the gear and operation types, but are apportioned to the inshore and offshore processing sectors, with 90% allocated to the inshore component and 10% to the offshore component. The inshore/offshore apportionments were established in 1992, under GOA FMP Amendment 20. The inshore component is composed of three types of processors: (1) shoreside plants, (2) stationary floating processors, and (3) CPs and motherships less than 125 feet (ft) in length that elect to participate in the inshore component and that process less than 126 mt (round weight) per week of pollock and Pacific cod, in the aggregate. CPs and motherships make this election on an annual basis. The TACs are also apportioned seasonally: 60% of the TACs are apportioned to the A season (January 1–June 10) and 40% to the B season (September 1–December 31). The A and B season apportionments began in 2001, as a Steller sea lion protection measure. The A season begins on January 1 for fixed gear and on January 20 for trawl gear. The delayed start for trawl gear was implemented in 1993. The intent of delaying the start of the trawl season was to reduce Chinook salmon and halibut prohibited species catch (PSC) in the Bering Sea/Aleutian Islands (BSAI). In 1994, the BSAI Pacific cod TAC was allocated among the gear and operation types, based on catch history. As a result, the staggered fixed and trawl gear season opening dates did not impact the ability of the sectors to maintain their historical catches of the BSAI TAC.

The GOA Pacific cod A season ends on June 10, but NMFS usually closes the season much earlier, when the directed fishing allowance has been harvested. Managers attempt to time the A season closure to leave a sufficient portion of the A season TAC for incidental catch of Pacific cod in other directed fisheries. Incidental catch continues to count against the A season TAC, until the A season ends on June 10. Any A season overage or incidental catch between the end of the A season (June 10) and the beginning of the B season (September 1) counts against the B season TAC. The B season begins on September 1 for all gear types, and ends on November 1 for trawl vessels and on December 31 for fixed gear vessels, unless the TAC is reached earlier.

Incidental catch when the directed fisheries are closed is limited to a maximum retainable amount (MRA). The MRA limits the amount of non-directed species catch that may be retained to a percentage of directed species catch. In the GOA, the MRA for Pacific cod with respect to all directed species, with the exception of arrowtooth flounder, is 20%. The MRA for Pacific cod in the directed arrowtooth flounder fishery in the GOA is 5%. Under the Improved Retention/Improved Utilization regulations, all Pacific cod catch must be retained when the fisheries are open for directed fishing. When the directed cod fishery is closed, all catch up to the MRA must be retained, and any Pacific cod caught in excess of the MRA must be discarded.[1] There is no MRA for Pacific cod for CVs participating in the Rockfish Pilot Program. CVs participating in the Rockfish Pilot Program receive an allocation of 2.09% of the Central GOA TAC. The MRA for Pacific cod is 4% for CPs participating in the Rockfish Pilot Program.

[1] Pacific cod catch is also retained in the halibut and sablefish individual fishing quota (IFQ) program. Vessels fishing IFQ are required to retain Pacific cod up to the MRA, except if Pacific cod is on prohibited retention (PSC) status.

Table 2-2 Regulatory changes impacting management of the GOA Pacific cod fishery, 1992–2009.

1992	GOA Amendment 20 established 90% inshore & 10% offshore processing sector apportionments. CPs and motherships <125 ft length overall (LOA) may elect annually to participate in the inshore sector. Inshore vessels are limited to processing <126 mt of pollock and Pacific cod (in the aggregate) per week. Later amendments extended these apportionments.
1993	BSAI/GOA Amendment 19/24 established Jan 20 start date for trawl gear in both the BSAI and GOA. Intent was to reduce halibut and Chinook salmon bycatch.
1994	BSAI Amendment 24. Established BSAI Pacific cod sector allocations. Later amendments (Am 46, Am 68, Am 77, Am 85) modified these allocations. Allocations to trawl, pot, and hook-and-line sectors were based on catch history. The allocation to the jig sector was higher than historical catch, with the intent of increasing entry level opportunities in the fishery.
1995	BSAI/GOA Amendment 23/28 established a moratorium on new vessel entry to the groundfish fisheries. A moratorium permit was issued to any vessel that made a legal landing during a specified qualification period.
1997	The Alaska Board of Fish established the GOA state waters Pacific cod fishery with initial guideline harvest levels (GHLs) of 15% of Western GOA ABC and 15% of Central GOA ABC. The GHLs were later increased to 25% of the Western and Central GOA ABCs.
1998	BSAI/GOA Amendment 49/49. Increased Retention/Increased Utilization regulations require 100% retention of pollock and Pacific cod (beginning in 1998), and shallow water flatfish (beginning in 2003), when the directed fisheries for these species are open. When the directed fisheries are closed, all catch up to the maximum retainable amount (MRA) must be retained.
1998	The American Fisheries Act (AFA) was implemented, and AFA-permitted CPs were prohibited from participating in the GOA groundfish fisheries.
2000	Sideboards that limit the GOA groundfish catch of 94 non-exempt AFA CVs were established. 17 AFA CVs were exempted from the sideboard, because they are <125 ft LOA, have annual BSAI pollock landings of <5,100 mt, and made at least 40 landings of GOA groundfish from 1995–1997.
2000	BSAI/GOA Amendment 60/58. Groundfish License Limitation Program (LLP) implemented. Vessels must hold a groundfish LLP license with the appropriate gear (trawl or fixed gear), area (Western GOA or Central GOA), and operation type (CV or CP) endorsement to participate in the Western GOA or Central GOA groundfish fisheries in federal waters. No LLP license is required to participate in the parallel waters fisheries.
2001	The Western GOA and Central GOA Pacific cod TACs were apportioned seasonally under the Steller sea lion management measures. 60% of each TAC is apportioned to the A season (Jan 1- June 10) and 40% is apportioned to the B season (Sept 1–Dec 31). Incidental catch between the A and B seasons accrues to the B season TAC.
2006	GOA Pacific cod crab sideboards were implemented that limit the catch of 82 non-AFA vessels that qualified for initial allocations of *C. opilio* under the BSAI crab rationalization program. In addition, 137 vessels are prohibited from directed fishing for Pacific cod in the GOA.
2008	Amendment 80 sideboards implemented to limit groundfish catch by Am 80 trawl CPs in the GOA. Pacific cod sideboards are 2.2% of the Western GOA TAC and 4.0% of the Central GOA TAC.
2008	BSAI/GOA Amendment 92/82. Final action on trawl recency taken by the North Pacific Fishery Management Council (Council) in April 2008. Reduces number of trawl CV licenses to 93 Central GOA licenses (from 176) and 76 Western GOA licenses (from 160). Reduces the number of CP licenses to 21 Central GOA licenses (from 27) and 20 Western GOA licenses (from 26).
2009	GOA Amendment 86. GOA Pacific cod endorsements for fixed gear licenses final action taken by the Council in April 2009. When implemented, will reduce the number of fixed gear licenses eligible to participate in the directed Pacific cod fisheries to 94 Western GOA CV licenses (from 264) and 215 CG CV licenses (from 883); and 21 Western GOA CP licenses (from 31) and 27 Central GOA CP licenses (from 49).

Table 2-3 Total catch (including discard estimates) of Pacific cod in the federal/parallel Pacific cod fisheries in the Western GOA, Central GOA, and Eastern GOA from 1995–2010.

	Western GOA			Central GOA			Eastern GOA		
Year	Total catch	Federal TAC	Percent of TAC harvested	Total catch	Federal TAC	Percent of TAC harvested	Total catch	Federal TAC	Percent of TAC harvested
1995	22,516	20,100	112.0%	45,465	45,650	99.6%	1,002	3,450	29.0%
1996	19,763	18,850	104.8%	47,565	42,900	110.9%	952	3,250	29.3%
1997	23,941	24,225	98.8%	43,670	43,690	100.0%	865	960	90.1%
1998	19,815	23,170	85.5%	41,436	41,720	99.3%	869	1,170	74.3%
1999	23,158	23,630	98.0%	44,554	42,935	103.8%	903	1,270	71.1%
2000	21,867	20,625	106.0%	32,188	34,080	94.4%	448	4,010	11.2%
2001	14,161	18,300	77.4%	27,324	30,250	90.3%	132	3,560	3.7%
2002	17,168	16,849	101.9%	25,057	24,790	101.1%	119	2,591	4.6%
2003	16,235	15,450	105.1%	24,869	22,690	109.6%	86	2,400	3.6%
2004	15,614	16,957	92.1%	27,421	27,116	101.1%	118	3,960	3.0%
2005	12,470	15,687	79.5%	22,751	25,086	90.7%	14	3,660	0.4%
2006	14,754	20,141	73.3%	23,171	28,405	81.6%	48	3,718	1.3%
2007	13,416	20,141	66.6%	26,355	28,405	92.8%	85	3,718	2.3%
2008	14,902	19,449	74.9%	28,309	28,426	99.6%	283	2,394	11.8%
2009	15,200	16,175	94.0%	23,556	23,150	101.8%	846	1,991	42.5%
2010	20,988	20,764	101.1%	36,860	36,782	100.2%	905	2,017	44.9%

Source: NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases.

Entry to the GOA Pacific cod fisheries in federal waters has been restricted under the License Limitation Program (LLP) since 2000. Prior to implementation of the LLP, a moratorium on new vessel entry to the groundfish fisheries was established in 1995. Several management measures have limited participation by certain sectors in the GOA. When the American Fisheries Act (AFA) was implemented in 1998, AFA permitted CPs were prohibited from fishing in the GOA. In addition, groundfish harvests by several other groups of vessels are sideboarded in the GOA, including AFA CVs (beginning in 2000), non-AFA crab vessels (beginning in 2006), and Amendment 80 CPs (beginning in 2008). The LLP and the GOA sideboards are described in more detail later in this chapter.

The directed fisheries for Pacific cod in state waters (0 to 3 nm) are open concurrently with the directed fisheries in federal waters (3 nm to 200 nm). These fisheries in state waters (referred to as the "parallel fisheries") are prosecuted under virtually the same rules as the federal fisheries, with catch counted against the federal TAC.

2.1.2 Management of the GOA state waters Pacific cod fisheries

This section describes the state waters Pacific cod fisheries in the GOA, and discusses the possible interactions that may result between the state waters fisheries and the federal and parallel waters fisheries if Pacific cod sector allocations are implemented In 1997, the State of Alaska began managing its own Pacific cod fisheries inside of 3 nm (referred to as the "state waters fishery"), which are allocated a percentage of the federal GOA Pacific cod acceptable biological catch (ABC). State fisheries are managed under a guideline harvest level (GHL), which limits total catch in the fishery in a manner similar to the federal TAC. If a GHL is fully harvested, it can be increased on an annual basis up to 25% of the Pacific cod ABC in each GOA management area, the maximum level permitted by state regulation. In 1997, 15% of the Pacific cod ABC in the Central GOA and Western GOA and 25% of the Eastern GOA was allocated among the state waters fisheries. State waters allocations in the Western and Central GOA have increased to 25% of the Pacific cod ABCs and are currently at the maximum level permitted by state regulation. The Eastern GOA allocation to state waters was lowered to 10% of the ABC in 2004, because

this allocation had not been fully utilized by the fishery. However, this has now increased to 25% under stair-step provisions.

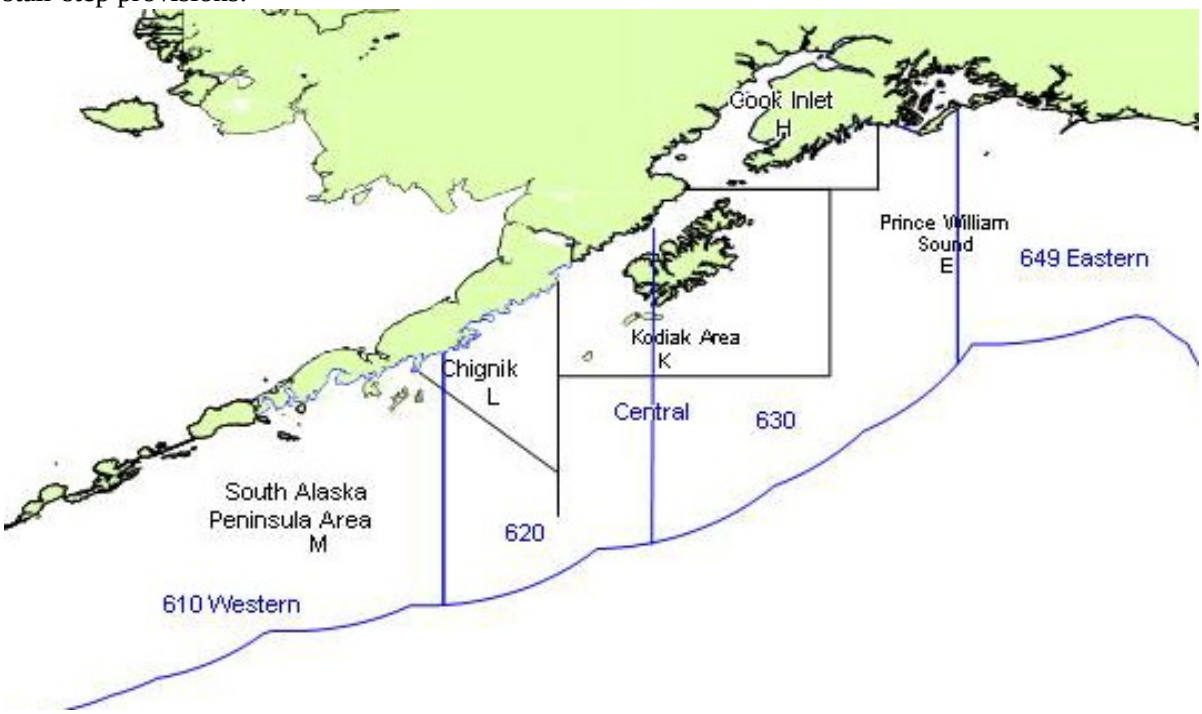

Figure 2-13 **Map of state management areas (South Alaska Peninsula, Chignik, Kodiak, Cook Inlet, and Prince William Sound) and federal management areas (Western, Central, and Eastern) in the GOA.**

Table 2-4 **Allocations of GOA state waters Pacific cod GHLs among management areas and gear types.**

Federal Management Area	State Management Area	Percent of Area ABC	Pot/Jig Allocation	Pot allocation as a percent of ABC	Jig allocation as a percent of ABC
Central GOA	Cook Inlet	3.75%	75/25	2.81%	0.94%
	Chignik	8.75%	90/10	7.88%	0.88%
	Kodiak	12.50%	50/50	6.25%	6.25%
	Total Central GOA	25%		16.94%	8.06%
Western GOA	Alaska Peninsula	25%	85/15[1]	21.25%	3.75%
Eastern GOA	Prince William Sound[2]	25%	none	n/a	n/a

[1]Pot gear is capped at 85%. [2]Longline gear was allowed in the Prince William Sound area in 2009.

Table 2-5 summarizes the GOA state waters Pacific cod fishery regulations. There is no LLP requirement in the state waters fisheries, but there are gear and vessel length restrictions. The GOA state waters Pacific cod fisheries are open only to pot and jig gear in all GOA management areas except Prince William Sound, which added longline gear in 2009. The GHLs in the other management areas are allocated between the pot and jig sectors, and vessel size restrictions limit harvests by vessels >58 ft length overall (LOA) in some areas or exclude these vessels from participating in the fisheries. Currently, the Kodiak allocation is apportioned 50% to the pot sector and 50% to the jig sector. In the Kodiak and Cook Inlet management areas, vessels greater than 58 ft LOA are capped at 25% of the GHL, prior to September 1. The Cook Inlet allocation is apportioned 75% to the pot sector and 25% to the jig sector. The Chignik allocation is apportioned 90% to the pot sector and 10% to the jig sector, and the fishery is limited to vessels ≤58 ft LOA. The South Alaska Peninsula GHL is not explicitly allocated between pot

and jig gear, but the pot sector is capped at 85% of the GHL, and the fishery is limited to vessels 58 ft LOA and under. In sum, the state waters fisheries allocate a total of 16.94% of the Central GOA ABC to the pot sector and 8.06% of the Central GOA ABC to the jig sector. In addition, the pot and jig sectors are allocated 21.25% and 3.75%, respectively, of the Western GOA ABC (see Table 2-4).

Table 2-5 Summary of GOA state waters Pacific cod fishery regulations.

Area	Pot allocation	Jig allocation	Allocation to ≤58 ft vessels	Allocation to >58 ft vessels	Super exclusive	Exclusive	Gear Limit
Kodiak	50%	50%	None	Capped at 25% prior to Sept 1	No	Yes-prior to Oct 31	60 pots/5 jigs
Cook Inlet	75%	25%	None	Capped at 25% prior to Sept 1	No	Yes-prior to Oct 31	60 pots/5 jigs
Chignik	90%	10%	100%	0%	Yes	No	60 pots/ 5 jigs
South Peninsula	Capped at 85%	none	100%	0%	No	Yes-prior to Oct 31	60 pots/ 5 jigs

Source: ADF&G, Nick Sagalkin.

In the Prince William Sound, Kodiak and South Alaska Peninsula areas, the state waters Pacific cod fisheries open 7 days after the parallel waters A seasons for the Central GOA (Prince William Sound and Kodiak) and Western GOA (South Alaska Peninsula) (Table 2-6). The Cook Inlet fishery opens 24 hours after the Central GOA inshore A season closes, and the Chignik fishery opening date is set in regulation on March 1. The state waters fisheries close when the GHL has been harvested, or on September 1, when the parallel waters Pacific cod fishery opens. The Cook Inlet fishery has a seasonal closure from May 1 to June 15. There is no overlap between the parallel and state waters seasons in the Kodiak, Prince William Sound, Cook Inlet, and South Alaska Peninsula areas. The seasons may overlap in the Chignik area, if the Central GOA parallel waters A season extends past March 1.

Table 2-6 Recent season opening dates of the GOA Pacific cod state waters fisheries.

	Kodiak	Chignik	Cook Inlet	Alaska Peninsula
Year	Jig/Pot	Jig/Pot	Jig/Pot	Jig/Pot
2003	16-Feb	1-Mar	10-Feb	24-Feb
2004	7-Feb	1-Mar	1-Feb	2-Mar
2005	2-Feb	1-Mar	27-Jan	3-Mar
2006	7-Mar	1-Mar	1-Mar	9-Mar
2007	6-Mar	1-Mar	28-Feb	15-Mar
2008*	27-Feb	1-Mar	21-Feb	7-Mar
2009	3-Feb	1-Mar	28-Jan	4-Mar
2010	7-Feb	1-Mar	1-Feb	5-Mar

*The 2008 Central GOA inshore parallel/federal season closed 20-Feb, but reopened 29-Feb for 2 days to reach the TAC.

State waters harvests from 1997 through 2010 are reported by state management area and gear type in Table 2-7. Pot allocations have generally been fully harvested in all management areas except Prince William Sound. Jig harvests were relatively high in some areas during 2003 through 2005, declined substantially in 2006 through 2008, and increased in 2009 and 2010. A combination of poor weather conditions, difficulty finding fish in state waters, and high operating costs contributed to low levels of jig effort in 2006 through 2008. Total catch was substantially below the GHLs in all four Western and Central GOA management areas in 2006 and 2007; and in Kodiak and Cook Inlet during 2008. Most unharvested state waters GHL was unused jig GHL. However, in 2009 and 2010 in the Kodiak management area, jig vessels harvested the entire jig GHL. Unharvested GHL is rolled over to other sectors on August 15 (Chignik) or September 1 (Kodiak and Cook Inlet), if it is determined that an

allocation will not be fully harvested. However, during 2005 through 2007, the parallel waters B season remained open to vessels using fixed gear from September 1 until December 31. During these years, state managers did not have the opportunity to re-open the state waters season in the fall and roll over unused jig GHL to the pot sector.

Table 2-7 Catch (mt) and percent of GHL harvested in GOA state waters Pacific cod fisheries.

Year	Jig catch (mt)	Pot catch (mt)	Total catch	GHL (mt)	Percent of GHL harvested	Jig catch (mt)	Pot catch (mt)	Total catch	GHL (mt)	Percent of GHL harvested
			KODIAK					**COOK INLET**		
1997	898	2,533	3,431	3,856	89.0%	255	128	383	1,134	34.0%
1998	959	2,896	3,856	3,674	105.0%	87	249	336	1,089	31.0%
1999	1,041	3,828	4,869	5,307	92.0%	57	631	688	1,179	58.0%
2000	1,277	2,608	3,884	5,443	71.0%	6	515	521	998	52.0%
2001	569	1,659	2,228	4,808	46.0%	9	397	406	862	47.0%
2002	630	3,373	4,003	3,946	101.0%	8	508	516	726	71.0%
2003	1,447	2,248	3,696	3,629	102.0%	195	464	659	635	104.0%
2004	1,909	2,631	4,540	4,491	101.0%	147	838	985	1,089	90.0%
2005	2,073	1,804	3,877	4,128	94.0%	47	1,011	1,058	1,225	86.0%
2006	656	2,214	2,870	4,717	61.0%	*	*	608	1,406	43.0%
2007	565	2,339	2,904	4,717	61.6%	n/a	n/a	654	1,406	46.5%
2008	895	2,462	3,357	4,736	70.9%	n/a	n/a	973	1,421	68.5%
2009	1,968	1,878	3,847	3,942	97.6%	n/a	n/a	1,086	1,158	93.8%
2010	2,951	3,203	6,154	6,128	100.4%	22	1,395	1,417	1,839	77.1%
			CHIGNIK					**ALASKA PENINSULA**		
1997	16	498	514	2,676	19.0%	158	4,162	4,320	4,264	101.0%
1998	76	2,327	2,403	2,586	93.0%	199	3,716	3,915	4,082	96.0%
1999	99	2,820	2,919	3,719	78.0%	321	5,042	5,362	5,897	91.0%
2000	17	797	814	3,039	27.0%	344	6,480	6,824	6,849	100.0%
2001	130	1,058	1,188	2,722	44.0%	1,376	4,727	6,103	6,078	100.0%
2002	147	1,771	1,918	2,223	86.0%	928	4,853	5,777	5,625	103.0%
2003	196	1,830	2,026	2,041	99.0%	1,647	3,590	5,237	5,171	101.0%
2004	64	2,537	2,601	2,631	99.0%	758	4,869	5,626	5,670	99.0%
2005	63	2,597	2,661	2,903	92.0%	558	4,608	5,165	6,713	99.0%
2006	*	*	1,560	3,311	47.0%	34	5,267	5,301	6,713	79.0%
2007	0	2,596	2,596	3,311	78.4%	109	5,641	5,750	6,713	85.7%
2008	*	*	3,035	3,316	91.5%	638	5,393	6,031	6,482	93.0%
2009	0	2,576	2,576	2,758	93.4%	443	4,738	5,181	5,393	96.1%
2010	*	*	4,152	4,291	96.8%	1,050	5,885	6,935	6,917	100.3%

Source: Kodiak, Chignik, and South Alaska Peninsula management areas (Mattes and Stichert 2008) and ADF&G preliminary catch reports online. *Confidential.

Within each state management area, the state waters pot and jig seasons currently open on the same date. If GOA Pacific cod sector allocations are established, there may be timing conflicts between the parallel/federal and state waters seasons if the parallel/federal jig and pot seasons no longer close on the same date. If one sector has to wait for the other to finish fishing its parallel/federal allocation, opening of the state waters fisheries could potentially be delayed. This is a concern because there is substantial overlap between participants in the state waters and parallel/federal Pacific cod fisheries. The majority (85% to 93%) of state waters pot catch is harvested by vessels that hold LLP licenses and also have access to the federal waters fishery (Table 2-8). There is less overlap between participants in the state waters jig fishery and the parallel/federal waters Pacific cod fishery.

The North Pacific Fishery Management Council (Council) is considering measures to ensure continuity in the parallel/federal and state waters pot and jig seasons that allow both sectors access to their allocations and minimize the amount of unharvested Pacific cod. In Component 5 of the sector split motion, there are

two options for managing the jig allocation. The options include specific recommendations to avoid timing conflicts between the state waters fisheries and the parallel/federal waters fisheries.

Table 2-8 Percent of pot vessels participating in the GOA state waters Pacific cod fisheries that had groundfish LLP licenses, and percent of state waters catch by these vessels.

		Pot	
	Year	Percent of vessels with LLP licenses	Percent of catch by vessels with LLP licenses
Western GOA	2002–2008 average	91%	93%
Central GOA	2002–2008 average	75%	85%

Source: ADF&G Fish Tickets and RAM groundfish LLP license file, December 2008.

2.1.3 Catch History in the GOA Pacific cod fisheries

The problem statement notes that one reason for allocating the Western and Central GOA Pacific cod TACs among sectors is that the fisheries are fully subscribed. Without sector allocations, future harvests by some sectors may increase and impinge on the historical levels of catch by other sectors. Currently, the Western and Central GOA Pacific cod TACs are apportioned between the inshore (90%) and offshore (10%) processing sectors. Inshore and offshore TACs are further apportioned between the A season (60%) and B season (40%). During some recent years, the GOA Pacific cod TACs have not been fully harvested. Inshore TACs have typically been fully harvested in the Central GOA, but in the Western GOA, only 68% to 75% of the inshore TAC was harvested during 2006 through 2008 (see Table 2-9).

Table 2-9 Total Pacific cod catch and percent of the TAC harvested by the inshore and offshore sectors in the Western and Central GOA, 2001–2010.

		Inshore			Offshore		
Area	Year	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested
Western GOA	2001	16,470	12,461	75.7%	1,830	1,700	92.9%
	2002	15,164	15,541	102.5%	1,685	1,627	96.6%
	2003	13,905	14,029	100.9%	1,545	2,206	142.8%
	2004	15,261	14,333	93.9%	1,696	1,281	75.5%
	2005	14,118	12,046	85.3%	1,569	424	27.0%
	2006	18,127	13,659	75.4%	2,014	1,095	54.4%
	2007	18,127	12,285	67.8%	2,014	1,132	56.2%
	2008	17,504	13,435	76.8%	1,945	1,467	75.4%
	2009	14,558	14,127	97.0%	1,618	1,073	66.3%
	2010	18,687	18,950	101.4%	2,077	2,038	98.1%
Central GOA	2001	27,255	25,259	92.7%	3,025	2,066	68.3%
	2002	22,311	22,665	101.6%	2,479	2,393	96.5%
	2003	20,421	22,629	110.8%	2,269	2,240	98.7%
	2004	24,404	25,490	104.5%	2,712	1,931	71.2%
	2005	22,577	22,390	99.2%	2,509	361	14.4%
	2006	25,565	21,768	85.1%	2,840	1,402	49.4%
	2007	25,565	25,284	98.9%	2,840	1,071	37.7%
	2008	25,583	27,048	105.7%	2,837	1,262	44.5%
	2009	20,835	21,758	104.4%	2,315	1,798	77.7%
	2010	33,104	33,218	100.3%	3,678	3,642	99.0%

Source: NMFS Catch Accounting (2003–2010) and Blend databases (2001–2002).

During recent years, a substantial proportion of the offshore TACs in both management areas have not been harvested. Inseason management has opened the offshore TACs concurrently with the inshore

TACs, but has closed the offshore TACs when the BSAI Pacific cod A season fisheries have ended, to prevent the BSAI CP fleet from directed fishing on the GOA offshore Pacific cod TACs. The reason for these closures is that the offshore TACs are relatively small and cannot support directed fishing by a large portion of the BSAI CP fleet. In 2003, the offshore A seasons were open to this fleet, and the Western GOA offshore A season TAC was overharvested (220%; see Table 2-10). As a result, the Western GOA offshore B season was not opened in 2003 (Table 2-13).

Table 2-10 Total Pacific cod catch during the A and B seasons by the inshore and offshore sectors in the Western and Central GOA, 2001–2010.

Western GOA

	Inshore						Offshore					
	A season			B season			A season			B season		
Year	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested
2001	9,882	10,902	110.3%	6,588	1,559	23.7%	1,098	1,092	99.5%	732	608	83.1%
2002	9,098	11,548	126.9%	6,066	3,993	65.8%	1,011	1,044	103.3%	674	583	86.5%
2003	8,343	10,057	120.5%	5,562	3,972	71.4%	927	2,040	220.1%	618	165	26.8%
2004	9,157	10,589	115.6%	6,104	3,744	61.3%	1,017	625	61.5%	679	656	96.6%
2005	8,471	10,296	121.5%	5,647	1,750	31.0%	941	123	13.1%	628	300	47.8%
2006	10,876	12,309	113.2%	7,251	1,351	18.6%	1,208	666	55.1%	806	429	53.2%
2007	10,876	10,836	99.6%	7,251	1,449	20.0%	1,208	643	53.2%	806	489	60.7%
2008	10,502	10,557	100.5%	7,002	2,878	41.1%	1,167	1,190	101.9%	778	277	35.6%
2009	8,735	9,366	107.2%	5,823	4,761	81.8%	971	545	56.2%	647	528	81.6%
2010	11,212	12,025	107.2%	7,475	6,925	92.6%	1,246	1,077	86.4%	831	962	115.7%

Central GOA

	Inshore						Offshore					
	A season			B season			A season			B season		
Year	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested	TAC	Catch	Percent harvested
2001	16,353	16,427	100.5%	10,902	8,832	81.0%	1,815	2,025	111.6%	1,210	40	3.3%
2002	13,387	17,881	133.6%	8,924	4,785	53.6%	1,487	1,668	112.2%	992	725	73.1%
2003	12,253	15,714	128.3%	8,168	6,915	84.7%	1,361	1,453	106.7%	908	788	86.8%
2004	14,642	15,585	106.4%	9,762	9,905	101.5%	1,627	1,347	82.8%	1,085	584	53.8%
2005	13,546	12,687	93.7%	9,031	9,704	107.5%	1,505	91	6.0%	1,004	270	26.9%
2006	15,339	15,602	101.7%	10,226	6,167	60.3%	1,704	25	1.5%	1,136	1,377	121.2%
2007	15,339	15,242	99.4%	10,226	10,042	98.2%	1,704	43	2.5%	1,136	1,028	90.5%
2008	15,350	15,996	104.2%	10,233	11,051	108.0%	1,702	1,149	67.5%	1,135	113	9.9%
2009	12,501	14,251	114.0%	8,334	7,507	90.1%	1,389	1,322	95.1%	926	477	51.5%
2010	19,862	22,291	112.2%	13,242	10,927	82.5%	2,207	2,260	102.4%	1,471	1,382	93.9%

Note: Unharvested TAC from the A season was rolled over to the B season, so the total annual TAC was not exceeded.
Source: NMFS Blend/Catch Accounting, 2001–2010.

The A and B season TACs are not utilized equally (Table 2-10). The A season TAC, which is harvested when Pacific cod are aggregated, is typically fully harvested. During recent years, A season catches have met or exceeded A season TACs in both the Western and Central GOA. Incidental catch between the A and B seasons is substantial, particularly by the inshore sector in the Central GOA. Incidental catch made between the A and B season counts against the B season TAC. During recent years, B season TACs have not been fully harvested. During some years, the trawl and hook-and-line B seasons have ended before the TAC is fully harvested, due to halibut PSC limits being attained. During 2005 through 2007, the fixed gear B seasons remained open until December 31, but inclement weather conditions, high operating costs, and difficulty finding fish limited B season harvests, particularly in the Western GOA.

Halibut PSC allowances are currently apportioned separately to the GOA trawl and hook-and-line sectors, according to the guidelines outlined in 50 CFR 679.21(d). Halibut PSC allowances are not apportioned by management subarea within the GOA. The 2009 and 2010 PSC allowances for the GOA Pacific cod trawl and hook-and-line fisheries are shown in Table 2-11. The pot and jig sectors are exempt from halibut PSC limits. The GOA-wide halibut PSC mortality allowance is 2000 mt for the trawl sector and 300 mt for the hook-and-line sector (including 10 mt set aside for the demersal shelf rockfish fishery).

The hook-and-line halibut PSC allowance is divided into three seasons: January 1 to June 10 (the A season for Pacific cod), June 10 to September 1, and September 1 to December 31 (the B season for Pacific cod). The trawl allowance is divided not only seasonally, but also between the shallow-water species complex (including the pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, and the "other species" directed fisheries) and the deep-water species complex (all other fisheries, which includes Pacific ocean perch, northern rockfish, pelagic shelf rockfish, and deep-water flatfish). Halibut PSC during the directed Pacific cod fishery is counted against the shallow-water trawl halibut PSC apportionment. This apportionment is divided into four seasons: January 20 to April 1, April 1 to July 1, July 1 to September 1, and September 1 to October 1. In addition, a separate apportionment that is not divided between the shallow-water and deep-water complexes is available for use from October 1 to December 31. Unused seasonal halibut PSC apportionments are rolled over to the following season. Halibut PSC limits often determine season closure dates for the trawl sector, and to a lesser extent, for the hook-and-line sector. The Council is considering options to distribute the hook-and-line halibut PSC apportionment to the hook-and-line CV and CP sectors. These options are discussed later in this document.

The current halibut PSC seasonal apportionments were established in 2001, when the B season for Pacific cod was implemented as part of the Steller sea lion management measures. The seasonal apportionments may be changed as part of the harvest specifications process, but if a change is made in the final specifications, it would not be effective until the fishing year is underway, and there is the potential for overages or underages in managing the apportionments. Changes to the seasonal apportionments would likely need to be made 2 years in advance to avoid management issues. The factors that are considered in establishing seasonal apportionments of halibut PSC are found in 50 CFR 679.21(d)(5), and include:

(A) Seasonal distribution of halibut.
(B) Seasonal distribution of target groundfish species relative to halibut distribution.
(C) Expected halibut bycatch needs, on a seasonal basis, relative to changes in halibut biomass and expected catches of target groundfish species.
(D) Expected variations in bycatch rates throughout the fishing year.
(E) Expected changes in directed groundfish fishing seasons.
(F) Expected start of fishing effort.
(G) Economic effects of establishing seasonal halibut allocations.

Halibut PSC usage in the GOA Pacific cod target fisheries during 1995 through 2008 is summarized in Chapter 3 (Table 3-9 and Table 3-10). The tables report PSC by CVs and CPs in each harvest sector. The pot sector is not subject to PSC limits in the GOA, and halibut PSC by pot vessels is reported for informational purposes only. PSC limits for halibut apply to the hook-and-line and trawl sectors. Inseason managers monitor halibut PSC in the Pacific cod fisheries and close the directed fisheries if halibut PSC limits are reached. After such a closure, the directed fisheries are typically reopened when the next seasonal apportionment of halibut PSC becomes available.

Table 2-11 Halibut prohibited species catch seasonal allowances in the GOA, 2009–2010.

Trawl		Hook-and-line			
		Other than Demersal Shelf Rockfish		Demersal Shelf Rockfish	
Dates	Amount (mt)	Dates	Amount (mt)	Dates	Amount
Jan 20–Apr 1	550 (27.5%)	Jan 1–Jun 10	250 (86%)	Jan 1–Dec 31	10 (100%)
Apr 1–July 1	400 (20%)	Jun 10–Sep 1	5 (2%)		
July 1–Sep 1	600 (30%)	Sep 1–Dec 31	35 (12%)		
Sep 1–Oct 1	150 (7.5%)				
Oct 1–Dec 31	300 (15%)				
Total	2000		290		10

Source: NMFS 2009-20010 harvest specifications for the groundfish fisheries in the GOA.

Table 2-12 Pacific cod A season closures for the Western and Central GOA, 2001–2010.

	Western Gulf				Central Gulf			
	Inshore		Offshore		Inshore		Offshore	
Year	Date	Reason	Date	Reason	Date	Reason	Date	Reason
2001	27-Feb	TAC	24-May	TAC	4-Mar	TAC	25-May	TAC
2002	26-Feb	TAC	9-Feb	TAC	9-Mar	TAC	25-Mar	TAC
2003	17-Feb	TAC	20-Mar	TAC	9-Feb	TAC	1-Feb	TAC
2004	24-Feb	TAC	8-Mar	TAC	31-Jan	TAC	2-Feb	TAC
2005	24-Feb	TAC	22-Feb	TAC	26-Jan	TAC	22-Feb	TAC
2006	2-Mar	TAC	19-Feb	TAC	28-Feb	TAC	19-Feb	TAC
2007	8-Mar	TAC	14-Feb	TAC	27-Feb	TAC	14-Feb	TAC
2008	29-Feb	TAC	4-Mar	TAC	1-Mar	TAC	9-Mar	TAC
2009	25-Feb	TAC	10-Jun	REG	27-Jan	TAC	19-Feb	TAC
2010	19-Feb	TAC	3-Mar	TAC	31-Jan	TAC	24-Feb	TAC

Source: NMFS Alaska region season closures summary. TAC= TAC reached. REG= regulatory closure on Jun 10.

Table 2-13 Pacific cod B season closures for all gear types in the Western and Central GOA, 2001–2010.

	Western Gulf				Central Gulf			
	Inshore		Offshore		Inshore		Offshore	
Year	Date	Reason	Date	Reason	Date	Reason	Date	Reason
2001	31-Dec	REG	31-Dec	TAC	31-Dec	REG	31-Dec	REG
2002	23-Nov	TAC	3-Oct	TAC	26-Sep	TAC	8-Oct	TAC
2003	25-Sep	TAC	not opened		3-Sep	TAC	14-Oct	TAC
2004	31-Dec	REG	31-Dec	REG	17-Nov	TAC	31-Dec	REG
2005	31-Dec	REG	31-Dec	REG	31-Dec	REG	31-Dec	REG
2006	31-Dec	REG	31-Dec	REG	31-Dec	REG	31-Dec	REG
2007	31-Dec	REG	31-Dec	REG	31-Dec	REG	31-Dec	REG
2008	31-Dec	REG	31-Dec	REG	3-Oct	TAC	31-Dec	REG
2009	31-Dec	REG	31-Dec	REG	1-Oct	TAC	31-Dec	REG
2010	13-Oct	TAC	16-Oct	TAC	13-Sep	TAC	16-Oct	TAC

Source: NMFS Alaska region season closures summary. TAC = TAC reached. REG = regulatory closure.

Short season lengths are another indication that the GOA Pacific cod fisheries are fully utilized. In the Western GOA, the A season has typically closed about one month after the trawl gear opening on January 20 (see Table 2-12). In the Central GOA, the A season closed in just 11 days, 6 days, 7 days, and 11 days, respectively, in 2004, 2005, 2009, and 2010 after the trawl season opened on January 20.

The B season closures for all gear types, either when the TAC was reached or a regulatory closure on December 31, are summarized in Table 2-13. During some years, the B season has closed to hook-and-line and trawl gear before the TAC was fully harvested, due to halibut PSC limits being exceeded (see Table 2-14). Both the trawl and hook-and-line sectors have worked with NMFS to better manage their B season halibut PSC. There is a description in the discussion of Component 7 of efforts made by the hook-

and-line CP sector to work with NMFS to voluntarily manage B season halibut PSC, which addresses proposed apportionments of the hook-and-line PSC limit to CPs and CVs.

Table 2-14 Pacific cod B season closures* for the trawl and hook-and-line sectors in the Western and Central GOA, 2001–2010.

		Inshore		Offshore		Inshore		Offshore	
		Trawl				Hook-and-line			
Area	Year	Date	Reason	Date	Reason	Date	Reason	Date	Reason
Western GOA	2001	21-Oct	**HAL**	21-Oct	**HAL**	4-Sep	**HAL**	4-Sep	**HAL**
	2002	13-Oct	**HAL****	3-Oct	TAC**	23-Nov	TAC	3-Oct	TAC
	2003	12-Sep	**HAL**	not opened	TAC	25-Sep	TAC	not opened	TAC
	2004	10-Sep	**HAL**	10-Sep	**HAL**	2-Oct	**HAL**	2-Oct	**HAL**
	2005	4-Sep	**HAL**	4-Sep	**HAL**	31-Dec	REG	31-Dec	REG
	2006	8-Oct	**HAL**	8-Oct	**HAL**	31-Dec	REG	31-Dec	REG
	2007	1-Nov	SSL reg	1-Nov	SSL reg	31-Dec	REG	31-Dec	REG
	2008	1-Nov	SSL reg	1-Nov	SSL reg	16-Oct	**HAL**	16-Oct	**HAL**
	2009	1-Nov	SSL reg	1-Nov	SSL reg	31-Dec	REG	31-Dec	**REG**
	2010	13-Oct	TAC	16-Oct	TAC	13-Oct	TAC	16-Oct	**TAC**
Central GOA	2001	21-Oct	**HAL**	21-Oct	**HAL**	4-Sep	**HAL**	4-Sep	**HAL**
	2002	1-Sep	**HAL****	8-Oct	TAC**	26-Sep	TAC	8-Oct	TAC
	2003	3-Sep	TAC	14-Oct	TAC	3-Sep	TAC	14-Oct	TAC
	2004	10-Sep	**HAL**	10-Sep	**HAL**	2-Oct	**HAL**	2-Oct	**HAL**
	2005	4-Sep	**HAL**	4-Sep	**HAL**	31-Dec	REG	31-Dec	REG
	2006	8-Oct	**HAL**	8-Oct	**HAL**	31-Dec	REG	31-Dec	REG
	2007	1-Nov	SSL reg	1-Nov	SSL reg	31-Dec	REG	31-Dec	REG
	2008	3-Oct	TAC	1-Nov	SSL reg	3-Oct	TAC	16-Oct	**HAL**
	2009	2-Sep	**HAL**	1-Nov	SSL reg	1-Oct	TAC	31-Dec	**REG**
	2010	13-Sep	TAC	16-Oct	TAC	13-Sep	TAC	16-Oct	TAC

Source: NMFS Alaska region season closures summary. HAL = halibut PSC closure. TAC = TAC reached. REG = regulations. SSL = Stellar sea lion.

* The table shows the final B season closure dates, and does not reflect the multiple, short openings of the trawl B seasons during 2006–2008. See text for details.

** In 2002, the trawl fisheries did not open on Sept 1, because the fourth season shallow water halibut PSC limit had already been reached. The Western GOA inshore and offshore trawl fisheries and the Central GOA offshore trawl fishery opened October 1, when the next halibut PSC apportionment became available. The Central GOA inshore trawl fishery did not open October 1, because the TAC had been reached.

Beginning in 2006, the trawl sector has extended its B season by working closely with NMFS inseason management to control halibut PSC, with a series of short openings during the B season. Table 2-14 shows the final B season closure dates for trawl gear, but does not show the multiple, short trawl season openings during 2006 through 2008. This approach has been successful in limiting halibut PSC and allowing the trawl season to stay open longer. In 2004 and 2005, the trawl sector exceeded the 2,000 mt annual halibut PSC mortality limit by 444 mt (2004) and 108 mt (2005), because observer data were not processed quickly enough to allow inseason management to track halibut removals. As a result, NMFS was not able to close the trawl fisheries when the halibut limit was reached.

In 2006, the trawl fisheries were managed with 12 hour openings to allow observer data to be processed in between the openings. Openings were held during daylight hours (7 am to 7 pm), because halibut PSC is lower during the day. Consequently, the trawl sector was able to avoid halibut PSC overruns and had an 8-day season in October 2006. In 2007, the trawl B season fisheries continued to be managed with 12 hour daylight openings. In addition, observers carried Rockfish Pilot Program laptop computers, when possible, and submitted data electronically to expedite processing of observer data and facilitate management of halibut PSC. The trawl season did not close due to halibut PSC, but was closed on November 1 due to Steller sea lion regulations. In 2008, the trawl fisheries were managed with 2 day openers, with voluntary nighttime stand downs. Vessels in the Central GOA Pacific cod trawl fishery

have also begun using a trawl halibut excluder device. The excluder has narrow rectangular slots that let flatfish out, including halibut, but retain cod, based on the size of the head. In 2008, the Central GOA inshore B season Pacific cod fishery closed on October 3, when the TAC was fully harvested. In 2009, the B season closed after 2 days, when the halibut PSC limit was reached. When the final trawl halibut PSC apportionment became available on Oct 1, NMFS closed the inshore Central GOA Pacific cod fishery, due to attainment of TAC. The Western GOA trawl fisheries and the Central GOA offshore trawl fisheries remained open until November 1, when they closed due to Steller sea lion regulations.

2.1.4 Incidental Catch of Pacific cod

The Council requested additional information on incidental catch of Pacific cod in the GOA for the purpose of determining how incidental catch will be managed under sector allocations. However, it should be noted that sector allocations are calculated based on all retained catch of Pacific cod (including incidental catch). For the purposes of this action, incidental catch is defined as Pacific cod caught in the parallel and federal waters groundfish fisheries, when the directed Pacific cod season is closed. This is consistent with how inseason managers define incidental catch, and is the simplest approach to managing incidental catch. Note that in earlier versions of this document, incidental catch was defined in the tables as non-targeted catch of Pacific cod. Defining incidental catch as non-targeted catch of Pacific cod is a straightforward analytical exercise after the fishing season has ended, but is not a practicable approach for accounting for incidental catch inseason, due to the complexities of using observer data to estimate total catch (including discards) in order to determine targets. Blend/Catch Accounting data were used to calculate total incidental catch for both CVs and CPs, because these data include observer estimated discards.

Currently, inseason managers time the closure of the directed Pacific cod fisheries to leave enough of the TAC to support incidental catch in other directed groundfish fisheries. Under current regulations, 20% of the TAC of each GOA species (including Pacific cod) may be held in reserve to accommodate incidental catch during other directed fisheries. For example, inseason managers time the A season closure to leave a sufficient portion of the A season TAC available for incidental catch in other fisheries during the remainder of the season. Incidental catch of Pacific cod continues to accrue to the A season TACs until the A season ends on June 10. Any A season overage or incidental catch, between the end of the A season (June 10) and the beginning of the B season (September 1), counts against the B season TACs.

Table 2-15 summarizes directed and incidental catch of Pacific cod in the inshore and offshore sectors during 2001 through 2010. In 2007 through 2010, CV participants in the Rockfish Pilot Program were allocated 2.09% of the Central GOA inshore Pacific cod TAC. This amount is counted against the inshore B season TAC, and is accounted for separately in Table 2-15 (see RPP catch column). As noted earlier, the A season ends on June 10, but NMFS usually closes the A season much earlier, when the directed fishing allowance has been harvested. Managers attempt to time the A season closure to leave a sufficient portion of the A season Pacific cod TAC for incidental catch in other fisheries. Table 2-16 provides additional detail on how the inshore TACs are managed during the A season (January 1–June 10) and B season (September 1–December 31). The directed Pacific cod A and B seasons may be closed early to accommodate incidental catch of Pacific cod in other directed fisheries, and any incidental catch continues to accrue to the A and B season catch totals, as described above. Note that Table 2-17 does not include incidental catch by the offshore sector.

Table 2-15 Total Pacific cod catch (mt) (including discards) during the directed fishery and incidental catch of Pacific cod when the directed fishery was closed in the Central and Western GOA.

	Western GOA Inshore					Central GOA Inshore					
Year	Directed catch	Incidental catch	Total Inshore catch	Inshore TAC	Incidental catch as percent of total catch	Directed catch	Incidental catch	RPP Catch*	Total Inshore catch	Inshore TAC	Incidental catch as percent of total catch
2001	12,277	185	12,461	16,470	1.5%	21,957	3,302	--	25,259	27,255	13.1%
2002	15,452	89	15,541	15,164	0.6%	16,924	5,742	--	22,665	22,311	25.3%
2003	13,494	535	14,029	13,905	3.8%	18,002	4,627	--	22,629	20,421	20.4%
2004	14,051	282	14,333	15,261	2.0%	22,172	3,318	--	25,490	24,404	13.0%
2005	11,700	346	12,046	14,118	2.9%	19,867	2,523	--	22,390	23,207	11.3%
2006	13,527	133	13,660	18,127	1.0%	19,277	2,492	--	21,768	25,565	11.4%
2007	12,080	205	12,285	18,127	1.7%	22,514	2,499	271	25,284	25,565	9.9%
2008	13,212	191	13,404	17,504	1.4%	21,769	4,694	585	27,048	25,583	17.4%
2009	13,871	256	14,127	14,558	1.8%	15,673	5,631	454	21,758	20,835	25.9%
2010	18,513	440	18,952	18,687	2.3%	27,999	4,470	750	33,218	33,104	13.5%

	Western GOA Offshore					Central GOA Offshore				
Year	Directed catch	Incidental catch	Total offshore catch	Offshore TAC	Incidental catch as percent of total catch	Directed catch	Incidental catch	Total Offshore catch	Offshore TAC	Incidental catch as percent of total catch
2001	1,529	171	1,700	1,830	10.1%	2,002	63	2,065	3,025	3.1%
2002	1,351	276	1,627	1,685	17.0%	1,846	547	2,393	2,479	22.9%
2003	1,746	460	2,206	1,545	20.9%	1,568	673	2,240	2,149	30.0%
2004	817	464	1,281	1,696	36.2%	1,797	134	1,931	2,712	6.9%
2005	238	186	424	1,569	43.8%	83	278	361	2,417	77.0%
2006	972	123	1,095	2,014	11.2%	1,125	277	1,402	2,815	19.8%
2007	640	492	1,132	2,014	43.4%	952	119	1,071	2,840	11.1%
2008	1,118	348	1,466	1,945	23.8%	1,095	167	1,262	2,837	13.2%
2009	747	326	1,073	1,618	30.4%	1,579	219	1,798	2,315	12.2%
2010	1,645	393	2,038	2,077	19.3%	3,294	348	3,642	3,678	9.5%

*Incidental catch of Pacific cod catch by CVs participating in the Rockfish Pilot Program. Allocation is 2.09% of the Central GOA inshore B season TAC.
Source: NMFS Catch Accounting/Blend.

The amount of inshore A season TAC reserved for incidental catch during 2001 through 2010 is shown in Table 2-16. It is important to note that prior to 2004, NMFS did not reserve A season TAC for incidental catch. NMFS determined in the Supplemental Biological Opinion (NMFS 2001) that the 60%/40% A/B seasonal apportionments should be inclusive of incidental catch. In 2002 and 2003, NMFS managed for a directed A season harvest of 60% of the respective area TACs. Beginning in 2004, NMFS managed the A season so that total A season Pacific cod removals were within 60% of the TAC. In order to do this, NMFS began reserving a portion of the A season TAC for incidental catch (i.e., after the Pacific cod directed fishery closed, but during the remainder of the A season). As a result of this change in management, the proportion of B season TAC available to the directed B season fishery, starting on September 1, increased. In 2002 and 2003, much of the B season TAC had already been harvested as incidental catch, prior to the opening of the directed B season.

Incidental catch between the A and B seasons counts against the B season TAC. In addition, any A season overages count against the B season TAC. In the Western GOA, there is very little incidental catch of Pacific cod in other directed fisheries, and the inshore A season TAC is fully harvested during the directed fishery. In the Central GOA, the amount of inshore A season TAC reserved for incidental

catch has ranged up to 1,737 mt. It is difficult for inseason managers to predict the exact amount of incidental catch that will occur. In the past several years, the amount of TAC reserved for incidental catch during the A season in the Central GOA has generally been relatively close to the actual amount of incidental catch. In 2002 and 2003, the A season directed catch exceeded the A season TAC, and the overage and all incidental catch was subtracted from the B season TAC. Table 2-16 also shows the amount of B season TAC that was available on September 1, when the directed fishery opened, the amount of B season TAC harvested during the directed fishery, and the amount of B season TAC harvested as incidental catch after the directed B season closed.

Incidental catch of Pacific cod in the Western and Central GOA by trawl and hook-and-line gear is reported in Table 2-17. The pot and jig sectors have very little incidental catch of Pacific cod, and this catch is not reported by gear type. However, the total column includes incidental catch by all gear types (trawl, hook-and-line, pot, and jig). Incidental catch was 1.7% to 6.1% of total catch in the Western GOA and 9.9% to 25.1% of total catch in the Central GOA during 2001 through 2010.

Incidental catch levels are relatively low in the Western GOA, because there is only a small flatfish fishery in the Western GOA. The trawl sectors primarily fish during the directed pollock and Pacific cod seasons in the Western GOA, and incidental catch of Pacific cod during the directed pollock season is relatively low. In the Western GOA, approximately half of incidental catch occurs during the A season (prior to June 10), and nearly half occurs between the A and B seasons (June 10–September 1). There is relatively little trawl effort, and little incidental catch of Pacific cod, during the B season in the Western GOA. In the Central GOA, incidental catch levels are substantially higher than in the Western GOA, and are driven primarily by the trawl sectors. The hook-and-line sectors also have some incidental catch. Note that halibut targeted catch (including incidental catch of other groundfish species during the halibut individual fishing quota (IFQ) fishery) was not included in the Blend data (2001 to 2002), and the apparent increase in incidental catch of cod by the hook-and-line sectors, beginning in 2003, is a result of the inclusion of halibut targeted incidental catch in the Catch Accounting data (2003 to present). In the Central GOA, about 40% of incidental catch occurred during the A season and 60% occurred during the B season.

Table 2-16 Total Pacific cod catch (mt) (including discards) during the directed fishery, and incidental catch of Pacific cod when the directed fishery was closed in the Central and Western GOA during the A and B seasons. Table shows inshore TAC only.

INSHORE TAC											
	A season (Jan 1- June 10)					Between A and B season	B season (Sept 1 - Dec 31)				
Year	A season TAC	Directed catch	Reserved for incidental catch	Incidental catch	Total catch	Incidental catch	B season TAC	TAC Available on Sept 1	Directed catch	Incidental catch	Total catch
Western GOA											
2001	9,882	10,795	0	107	10,902	72	6,588	5,496	1,482	6	1,487
2002	9,098	11,513	0	34	11,548	18	6,066	3,599	3,938	37	3,975
2003	8,343	9,827	0	230	10,057	186	5,562	3,662	3,667	120	3,786
2004	9,157	10,378	0	212	10,589	54	6,104	4,618	3,673	17	3,690
2005	8,471	10,050	0	246	10,296	57	5,647	3,765	1,650	43	1,693
2006	10,876	12,217	0	92	12,309	27	7,251	5,791	1,310	14	1,324
2007	10,876	10,705	171	131	10,836	72	7,251	7,219	1,375	2	1,377
2008	10,502	10,478	24	79	10,557	106	7,002	6,841	2,757	15	2,772
2009	8,735	9,264	-529	102	9,366	124	5,823	5,068	4,608	30	4,638
2010	11,212	11,900	-688	125	12,025	148	7,475	6,515	6,612	167	6,780
Central GOA											
2001	16,353	15,035	1,318	1,392	16,427	1,830	10,902	8,998	6,922	79	7,002
2002	13,387	15,421	0	2,459	17,881	2,268	8,924	2,162	1,502	1,014	2,516
2003	12,253	13,755	0	1,960	15,714	2,456	8,168	2,251	4,247	211	4,459
2004	14,643	14,240	403	1,346	15,585	1,801	9,761	7,018	7,933	172	8,104
2005	13,547	11,810	1,737	877	12,687	1,584	9,660	8,937	8,058	62	8,120
2006	15,339	14,623	716	978	15,602	1,267	10,226	8,696	4,653	246	4,899
2007*	15,339	14,139	1,200	1,103	15,242	1,151	10,226	9,172	8,375	245	8,620
2008*	15,350	14,454	896	1,336	15,790	1,998	10,233	7,795	7,316	1,360	8,676
2009	12,501	11,343	1,158	2,908	14,251	1,104	8,334	5,480	4,330	1,619	5,949
2010	19,862	19,699	163	2,592	22,291	652	13,242	10,161	8,300	1,225	9,525

Source: NMFS Catch Accounting/Blend.
Note: Incidental catch of Pacific cod by CVs participating in the Rockfish Pilot Program is not included in this table.

Table 2-17 Incidental catch (mt) (including discards) of Pacific cod when the directed fishery was closed in the Western and Central GOA during the A (January 1–June 10) and B (June 10–December 31) seasons, 2001–2010. Table shows inshore and offshore catch.

Western GOA

	HAL CP		HAL CV		Trawl CP		Trawl CV		Total (all gear types)	Incidental catch as percent of total catch
Year	A	B	A	B	A	B	A	B		
2001	49	4	7	17	175	66	28	9	356	2.5%
2002	*	*	2	2	117	156	*	0	365	2.1%
2003	85	47	31	72	263	249	89	103	995	6.1%
2004	157	22	12	22	186	209	117	22	747	4.8%
2005	*	*	33	54	195	61	28	46	532	4.3%
2006	*	*	27	28	63	62	12	13	255	1.7%
2007	*	*	79	58	287	149	19	2	696	5.2%
2008	*	*	11	91	156	150	26	17	549	3.7%
2009	*	*	35	55	*	*	37	77	582	3.8%
2010	*	*	12	64	53	401	112	148	790	3.9%

Central GOA

	HAL CP		HAL CV		Trawl CP		Trawl CV		Total (all gear types)	Incidental catch as percent of total catch
Year	A	B	A	B	A	B	A	B		
2001	0	*	75	70	234	107	1,103	1,769	3,358	12.3%
2002	*	*	80	67	302	454	2,223	3,140	6,288	25.1%
2003	*	*	180	130	483	569	1,327	2,225	5,300	21.3%
2004	*	0	82	67	93	236	1,075	1,784	3,339	12.2%
2005	*	*	52	32	147	410	694	1,393	2,801	12.3%
2006	18	0	104	82	116	560	665	1,124	2,769	12.0%
2007	*	*	94	108	124	137	905	1,227	2,618	9.9%
2008	13	6	116	176	215	252	1,066	3,016	4,860	17.2%
2009	17	0	182	365	318	367	2,504	2,090	5,850	24.8%
2010	*	*	119	247	302	413	2,243	1,403	4,817	13.1%

Source: Blend (2001–2002) and Catch Accounting (2003–2010).
*Confidential.
Note: Incidental catch of Pacific cod by CVs participating in the Rockfish Pilot Program is not included in this table.

The majority of incidental catch of Pacific cod occurs in fisheries primarily or exclusively prosecuted by the trawl sector. In the Western GOA, the target fisheries with the most non-targeted catch of Pacific cod during 2001 through 2008, include arrowtooth flounder (21%), flathead sole (14%), midwater pollock (12%), halibut (14%), and rockfish (14%). In the Central GOA, the fisheries with the most non-targeted catch of Pacific cod during 2001 through 2008, include shallow water flatfish (43%), rockfish (21%), and arrowtooth flounder (15%). Allowing incidental catch of Pacific cod to be retained increases the overall benefits from other directed fisheries that cannot avoid incidental catch of cod. Allowing vessels to retain Pacific cod also provides harvesters with incentives to participate in several lower-valued fisheries that might otherwise go unharvested if harvesters could not retain higher valued incidentally caught cod.

2.1.5 Discards of Pacific cod

In 1998, Pacific cod and pollock were designated as Improved Retention/Improved Utilization (IR/IU) Species under Amendment 49 to the GOA FMP. Under IR/IU regulations, all catch of Pacific cod and pollock must be retained when the directed fisheries are open, and all catch up to the MRA must be retained when the fishery is closed to directed fishing. No economic discards of Pacific cod are allowed, but regulatory discards may occur for three reasons. First, Pacific cod must be discarded when catch of Pacific cod during other directed fisheries exceeds the MRA. The MRA limits the amount of non-directed species catch that may be retained to a percent of directed species catch. For Pacific cod, the MRA with respect to all directed species, with the exception of arrowtooth flounder, is 20%. The MRA

for Pacific cod in the directed arrowtooth flounder fishery in the GOA is 5%. When Pacific cod is not open for directed fishing, a vessel must retain Pacific cod up to the amount of the MRA.[2] Any cod caught in excess of the MRA must be discarded. Second, discards are required if Pacific cod has been put on PSC status, which typically occurs when total catch approaches the overfishing limit. In the GOA, Pacific cod has occasionally been placed on PSC status (Table 2-18). During years when cod was placed on PSC status, the percentage of incidental catch that was discarded was often higher than normal. Inseason managers avoid placing cod on PSC status by closing the directed A season when there is still sufficient TAC remaining to accommodate the incidental catch needs in other directed fisheries during the remainder of the A season. Third, discards of previously caught fish and decomposed fish are allowed.

Discarded catch of Pacific cod is reported by sector in Table 2-18. The table shows the amount (mt) of Pacific cod discarded and the discard rate for each sector. The discard rate is the percent of total catch, by each sector, that was discarded. Discards of both directed and incidentally caught Pacific cod are shown. The previous version of this document only reported discarded catch in other (non-Pacific cod target fisheries. As noted above, discards of decomposed or previously caught fish are allowed during the directed Pacific cod fishery. The discard estimates reported here are from the NMFS Catch Accounting and Blend databases. Total catch was calculated as the sum of retained and discarded catch, using the retained catch estimates from the Catch Accounting and Blend databases for CPs and Alaska Department of Fish and Game (ADF&G) Fish Tickets for CVs. These are the same retained catch estimates that are used to calculate the Pacific cod sector allocations (reported in Appendix A).

Discard rates have generally declined since IR/IU regulations went into effect in 1998, with some exceptions. In 2008 and 2009, the discard rate for trawl CVs in the Central GOA increased to 19.9% and 38.1% of total catch by the sector. Total discards (mt) have generally decreased in both the Western and Central GOA, with the exception of 2008 and 2009, in the Central GOA. The percent of total catch that was discarded has generally stayed about the same (approximately 2% to 3% in the Western GOA and 6% to 7% in the Central GOA), because TACs (and total catch) have decreased in recent years.

[2] Pacific cod catch is also retained in the halibut and sablefish IFQ program. Vessels fishing IFQ are required to retain Pacific cod up to the MRA, except if Pacific cod is on "prohibited" status.

Table 2-18 Discards (mt) of Pacific cod and percent of total Pacific cod catch discarded (discard rate) by each sector.**

Western GOA

	Hook-and-line CP		Hook-and-line CV		Pot CP		Pot CV		Trawl CP		Trawl CV		All sectors	
Year	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Total discards	Discard rate
1995	382	6.4%	12	25.1%	*	*	71	2.9%	378	39.2%	408	3.1%	1,251	5.9%
1996	140	3.1%	15	7.1%	*	*	2	0.1%	442	36.0%	262	1.8%	861	4.1%
1997	168	4.2%	23	40.3%	0	0.0%	21	2.0%	341	53.6%	163	0.9%	717	3.0%
1998	24	0.7%	42	65.9%	*	*	5	0.2%	68	19.8%	91	0.6%	230	1.1%
1999	48	0.9%	31	30.5%	0	0.0%	32	2.0%	30	4.6%	171	1.2%	311	1.4%
2000	49	1.0%	3	5.3%	*	*	16	0.3%	87	10.4%	31	0.3%	186	0.9%
2001	64	1.6%	6	16.0%	0	0.0%	15	0.6%	44	6.2%	84	1.4%	214	1.6%
2002	70	1.1%	7	15.1%	*	*	80	1.6%	82	20.0%	129	2.5%	368	2.2%
2003	109	2.5%	54	53.4%	*	*	24	0.3%	304	47.2%	24	1.7%	515	3.3%
2004	151	5.0%	4	11.6%	*	*	84	0.9%	48	8.1%	56	3.1%	342	2.3%
2005	71	8.9%	48	14.5%	*	*	61	0.9%	44	16.9%	*	*	224	1.9%
2006	19	0.7%	15	12.6%	0	0.0%	187	3.1%	13	5.8%	759	13.4%	994	7.2%
2007	19	0.6%	39	9.0%	*	*	62	1.3%	47	8.2%	*	*	166	1.3%
2008	90	2.9%	22	4.2%	*	*	10	0.2%	73	15.8%	*	*	196	1.3%
2009	69	1.6%	79	4.1%	*	*	74	1.3%	42	9.9%	1	0.1%	265	1.8%
2010	88	2.1%	53	3.1%	0	0.0%	1	0.0%	68	17.8%	19	0.7%	230	1.1%

Central GOA

	Hook-and-line CP		Hook-and-line CV		Pot CP		Pot CV		Trawl CP		Trawl CV		All sectors	
Year	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Discards (mt)	Discard rate	Total discards	Discard rate
1995	2	1.6%	55	1.2%	0	0.0%	24	0.2%	1,052	33.7%	1,067	4.3%	2,201	5.0%
1996	32	4.4%	148	3.2%	0	0.0%	43	0.4%	2,059	43.1%	3,782	13.6%	6,064	14.3%
1997	*	*	296	4.4%	0	0.0%	97	1.1%	676	46.7%	2,914	10.1%	3,983	9.6%
1998	4	2.0%	162	2.7%	0	0.0%	18	0.2%	192	4.1%	1,014	4.6%	1,390	3.4%
1999	*	*	169	2.7%	0	0.0%	226	1.8%	73	4.4%	762	3.7%	1,230	2.9%
2000	0	0.0%	23	0.4%	0	0.0%	2	0.0%	129	8.5%	985	8.2%	1,139	3.6%
2001	*	*	114	2.0%	0	0.0%	113	3.1%	59	2.6%	1,380	8.3%	1,665	6.1%
2002	24	1.5%	13	0.2%	*	*	0	0.0%	133	13.7%	3,164	23.0%	3,335	14.3%
2003	35	2.3%	111	3.0%	*	*	1	0.0%	350	22.3%	1,350	8.6%	1,846	7.7%
2004	98	6.3%	68	1.2%	0	0.0%	14	0.3%	62	7.4%	744	5.2%	985	3.8%
2005	34	11.4%	4	0.1%	0	0.0%	21	0.3%	158	18.0%	556	6.1%	773	3.5%
2006	39	4.2%	105	1.7%	0	0.0%	38	0.4%	152	14.8%	480	7.5%	814	3.6%
2007	32	2.2%	127	2.0%	*	*	26	0.3%	50	7.8%	1,055	11.4%	1,290	5.2%
2008	31	1.7%	159	2.6%	0	0.0%	2	0.0%	19	2.9%	2,893	19.9%	3,104	12.3%
2009	41	3.5%	410	7.8%	0	0.0%	32	0.6%	87	8.5%	2,838	38.1%	3,408	16.8%
2010	67	2.1%	117	2.2%	0	0.0%	13	0.1%	70	9.2%	2,291	15.0%	2,558	7.5%

*Confidential. **Jig gear is not shown, because jig vessels are not observed and NMFS does not estimate discards for jig gear.
Note: Pacific cod was placed on prohibited status in 1995, 1996, 1997, and 2000 in the Western GOA; and in 1995, 1996, and 2003 in the Central GOA, and regulatory discards were required.
Source: Blend (1995–2002) and Catch Accounting (2003–2010) and ADF&G Fish Tickets.

2.1.6 Participation in the GOA Pacific cod fisheries

The number of vessels participating in the directed Pacific cod fisheries in the Western and Central GOA during 1995 through 2010 is reported in Table 2-19. This table includes vessels that made at least one landing of Pacific cod while the directed fishery was open. There has been a general trend toward fleet consolidation. Participation by trawl vessels has dropped substantially in both the Central and Western GOA, and has been decreasing since the BSAI pollock fisheries were rationalized under the AFA. The 20 CPs listed in the AFA are restricted from harvesting any groundfish in the GOA, and the 9 CPs that were bought out by the AFA are no longer eligible to participate in Alaska fisheries. Since 2008, groundfish harvests by Amendment 80 vessels have been sideboarded in the GOA. Pacific cod harvests by Amendment 80 vessels are sideboarded at 4.4% of the Central GOA TAC and 2.0% of the Western GOA TAC. Most of the trawl CPs that have participated in the Central GOA Pacific cod fisheries in recent years are Amendment 80 vessels, and if these vessels harvest the sideboard cooperatively the number of trawl CPS fishing in the GOA may decline. Pacific cod harvests by AFA CVs are also sideboarded in the

GOA, with the exception of 17 vessels that are exempt from the sideboards. The number of trawl CVs fishing in the Central GOA dropped from 123 vessels in 1998 to 38 vessels in 2010. In the Western GOA, trawl CV participation dropped from 86 vessels in 1995 to 29 vessels in 2010.

Overall, participation in the fixed gear sectors has declined somewhat since 1995. However, in the past several years there have been notable increases in participation in several of the fixed gear sectors. In the Central GOA, participation by pot and hook-and-line CVs <60 ft LOA increased in 2006, 2007, and 2008. In the Western GOA, participation by hook-and-line CVs <60 ft LOA also increased in recent years. In the Central GOA, the number of pot CVs ≥60 ft LOA participating in the directed Pacific cod fisheries increased during the past several years, after several years of low participation in 2002 through 2004. Increased participation in these fixed gear sectors in recent years may have been the result of high ex-vessel Pacific cod prices and vessels fishing for catch history, since fixed gear recency was under consideration by the Council during this period. In the Western GOA, pot CV participation by pot CVs ≥60 ft LOA declined somewhat during the past several years. In 2006, sideboards went into effect that limit Pacific cod harvests by recipients of initial allocations of BSAI *C. opilio* crab quota. These sideboard provisions limit participation by some pot vessels that historically fished in the GOA. Specifically, the sideboards prohibit 137 vessels from directed fishing for GOA Pacific cod, and limit Pacific cod harvests by 82 additional vessels to a sideboard limit. In addition to these sideboarded vessels, 37 groundfish LLP licenses are subject to the Pacific cod sideboards (26 sideboarded licenses qualify for at least one Western GOA and/or Central GOA gear endorsement under the fixed gear recency action), and 11 licenses are prohibited from directed fishing for Pacific cod in the GOA. Participation by hook-and-line CPs in the GOA Pacific cod fisheries varies annually, and depends in part on when the BSAI B season closes and the availability of halibut PSC during the B season. There was an increase in participation by the <125 ft LOA hook-and-line CP sector in the Western GOA in the past several years. Jig CV participation has fluctuated in recent years in the Central GOA, with as many as 30 vessels participating in the fishery. In the Western GOA, jig participation increased to 30 vessels in 2010 after several years of relatively low participation levels.

Table 2-19 Number of vessels with retained catch of Pacific cod from the directed Pacific cod fisheries.*

Western GOA

Year	HAL CP	HAL CP	HAL CV	HAL CV	Jig	POT	Pot CV	Pot CV	Trawl	TRW CP	TRW CP
1995	12	4	4	0	10	2	35	23	86	3	5
1996	12	3	7	3	7	0	34	4	54	3	12
1997	9	4	2	0	2	0	18	2	78	4	13
1998	4	0	1	0	2	0	32	21	66	4	0
1999	9	10	2	0	0	6	30	4	65	4	1
2000	10	2	2	1	2	2	37	44	51	3	1
2001	10	3	6	0	16	3	31	11	55	2	6
2002	7	4	10	3	26	2	33	15	44	2	4
2003	6	8	6	2	11	1	42	18	35	3	0
2004	3	5	11	3	22	1	53	28	31	3	1
2005	2	3	25	2	8	1	39	19	35	2	0
2006	7	5	17	3	1	0	33	18	36	3	1
2007	8	3	24	3	4	1	30	18	38	3	2
2008	10	2	30	3	9	1	43	16	28	2	2
2009	9	6	37	3	11	2	36	3	29	1	1
2010	9	3	26	9	30	0	38	8	29	0	0

Central GOA

Year	HAL CP <125	HAL CP ≥125	HAL CV <60	HAL CV ≥60	Jig CV	POT CP	Pot CV <60	Pot CV ≥60	Trawl CV	TRW CP <125	TRW CP ≥125
1995	3	0	116	4	15	0	62	58	101	5	16
1996	4	0	135	5	13	0	46	41	108	4	8
1997	1	0	161	12	8	0	39	22	120	4	2
1998	0	2	133	7	16	0	38	22	123	4	13
1999	3	2	164	22	10	10	44	40	92	3	11
2000	3	2	143	5	16	1	55	59	53	3	6
2001	1	0	118	4	14	3	34	28	70	3	2
2002	0	4	90	10	7	3	28	17	52	2	1
2003	2	2	70	4	7	0	22	13	52	2	5
2004	1	2	76	16	30	0	22	13	49	3	2
2005	1	1	93	14	26	0	25	22	44	3	1
2006	2	4	116	15	24	0	36	23	39	5	3
2007	3	2	128	23	18	1	40	23	36	1	2
2008	4	3	135	19	10	0	39	19	42	4	0
2009	2	3	115	15	13	0	29	21	37	3	1
2010	3	4	103	16	22	0	31	16	38	1	1

*Includes vessels with retained catch of Pacific cod when the directed Pacific cod fishery is open.
Source: NMFS Catch Accounting/Blend and ADF&G fish tickets, 1995–2010.

2.1.7 Pacific cod harvests in state, parallel, and federal waters

Western and Central GOA Pacific cod harvests in the state, parallel, and federal waters fisheries during 1995 through 2009 are reported in Tables 2-20 and 2-21. The tables include CV and CP harvests. In general, CP harvests comprised only a small proportion of parallel waters catch. In most years, fewer than three CPs participated in the parallel fishery in each management area, and CP catches in the parallel fishery cannot be reported separately from CV catches. Most state waters in the GOA are closed to bottom trawling, with the exception of portions of the Alaska Peninsula management area. Parallel waters catches are, therefore, predominantly made with pot and hook-and-line gear. Trawl vessels harvested the majority of federal waters catch, prior to the seasonal apportionment of the TACs in 2001. In recent years, vessels using fixed gear have harvested the majority of federal waters cod catch.

Table 2-20 Retained Pacific cod catch (mt) from the parallel, state, and federal waters* fisheries in the Western and Central GOA.

Western GOA	State waters		Parallel waters		Federal waters	
Year	Catch (mt)	Percent of total	Catch (mt)	Percent of total	Catch (mt)	Percent of total
1995	--	--	3,883	18%	17,392	82%
1996	--	--	5,386	28%	13,516	72%
1997	4,320	16%	4,476	16%	18,750	68%
1998	3,915	17%	3,837	16%	15,942	68%
1999	5,362	19%	3,800	13%	19,047	68%
2000	6,824	24%	5,776	20%	15,899	56%
2001	6,103	30%	2,744	14%	11,231	56%
2002	5,777	26%	3,297	15%	13,524	60%
2003	5,237	25%	6,124	29%	9,592	46%
2004	5,626	27%	6,489	31%	8,785	42%
2005	5,165	30%	4,450	26%	7,790	45%
2006	5,301	28%	7,209	38%	6,550	34%
2007	5,750	30%	4,285	23%	8,965	47%
2008	6,031	29%	3,645	18%	11,080	53%
2009	5,181	25%	5,288	26%	9,912	49%
Central GOA					**Federal waters**	
Year	Catch (mt)	Percent of total	Catch (mt)	Percent of total	Catch (mt)	Percent of total
1995	--	--	9,859	23%	33,415	77%
1996	--	--	7,555	18%	33,973	82%
1997	4,328	10%	6,857	16%	32,836	75%
1998	6,595	14%	5,067	11%	35,013	75%
1999	8,476	16%	7,204	14%	36,104	70%
2000	5,219	14%	4,655	13%	26,394	73%
2001	3,822	13%	2,754	9%	22,893	78%
2002	6,437	23%	2,267	8%	19,454	69%
2003	6,381	22%	3,104	11%	19,819	67%
2004	8,126	24%	3,375	10%	23,012	67%
2005	7,596	26%	3,760	13%	18,203	62%
2006	5,038	18%	5,017	18%	17,313	63%
2007	5,500	18%	4,255	14%	20,802	68%
2008	7,365	22%	2,794	9%	22,634	69%
2009	7,509	24%	2,929	9%	20,627	66%

Note: Federal waters catch is calculated as total retained federal/parallel catch of Pacific cod from the Blend/Catch Accounting database, minus catch in parallel waters from ADF&G Fish Tickets.
Source: ADF&G Fish Tickets (parallel and state waters), and NMFS Blend/Catch Accounting data (federal waters).

The percentage of Pacific cod harvested in the state, parallel, and federal waters fisheries varies annually. This variation is likely due to several factors. The state waters GHLs were initially set at 15% of the Western and Central GOA area ABCs, but have increased to 25% of each area ABC. The TACs are not apportioned between the federal and parallel waters fisheries. The shifts in the location of catches may reflect changes in the distribution of cod, as well as changes in the location of fishing effort. In the Western GOA, the percentage of Pacific cod harvested from the parallel and state waters fisheries (combined) increased from 20% to 30% of total catch in the mid-1990s, to more than 50% of the catch during recent years, peaking at 66% in 2006 (Figure 2-14). The percentage of cod harvested from the Western GOA parallel waters fishery also increased in recent years and peaked at 38% in 2006. During the same time period, the amount (mt) of cod harvested from the Western GOA parallel and state waters fisheries increased slightly (Figure 2-15). Federal waters catches have decreased dramatically over this time period, and have been as low as 6,550 mt (in 2006).

Table 2-21 **Retained Pacific cod catch (mt), reported by gear type, from the parallel, state, and federal waters fisheries in the Western and Central GOA.**

Western GOA								
	State Waters Catch (mt)		Parallel Waters Catch (mt)			Federal Waters Catch (mt)		
Year	Jig	Pot	HAL	Pot	Trawl	HAL	Pot	Trawl
1995	--	--	37	1,793	2,006	5,614	671	11,108
1996	--	--	102	1,611	3,628	4,400	52	9,065
1997	158	4,162	16	939	3,516	3,865	53	14,831
1998	199	3,716	237	1,863	1,754	3,044	n/a	12,898
1999	321	5,042	15	1,377	2,408	5,138	1,359	12,550
2000	344	6,480	107	2,603	3,061	4,665	2,260	8,974
2001	1,376	4,727	21	1,494	1,074	3,974	1,514	5,740
2002	928	4,853	12	2,777	322	6,407	2,078	5,031
2003	1,647	3,590	26	5,915	141	4,293	3,679	1,621
2004	758	4,869	11	5,838	460	2,922	4,085	1,777
2005	558	4,608	252	2,828	1,324	767	3,744	3,279
2006	34	5,267	100	4,221	2,888	2,720	1,686	2,144
2007	109	5,641	191	2,965	1,127	3,281	2,003	3,681
2008	638	5,393	273	2,912	392	3,361	3,124	4,595
2009	1,050	5,885	1,062	3,730	307	5,282	2,403	2,260

Central GOA								
	State Waters Catch (mt)		Parallel Waters Catch (mt)			Federal Waters Catch (mt)		
Year	Jig	Pot	HAL	Pot	Trawl	HAL	Pot	Trawl
1995	--	--	2,046	7,155	619	2,567	5,807	25,029
1996	--	--	1,831	4,702	1,007	3,312	5,474	25,167
1997	1,168	3,160	1,832	4,573	435	4,365	2,990	25,476
1998	1,122	5,472	1,842	2,657	537	4,188	6,033	24,773
1999	1,197	7,279	2,167	4,437	577	4,299	11,280	20,525
2000	1,300	3,919	1,996	2,510	112	4,555	9,823	12,015
2001	708	3,114	1,166	1,476	102	4,448	2,555	15,889
2002	785	5,651	850	1,281	133	7,212	1,428	10,815
2003	1,839	4,543	1,272	1,631	195	3,484	1,425	14,902
2004	2,120	6,006	1,753	1,285	226	5,210	3,583	14,213
2005	2,183	5,412	1,596	1,841	188	2,945	6,258	9,000
2006	5038 (total)		2,480	2,263	184	4,703	6,099	6,511
2007	6154 (total)		1,711	2,447	68	6,019	6,020	8,763
2008	7365 (total)		1,011	1,632	134	6,882	3,578	12,174
2009	7509 (total)		1,522	1,315	59	5,167	4,105	11,351

Note: Federal waters catch is estimated as total retained catch of Pacific cod by each gear type from the Blend/Catch Accounting database, minus parallel waters catch from ADF&G Fish Tickets. This estimation method does not work well for jig gear due to differences in federal and state data sources.
Source: ADF&G state waters catch reports, ADF&G Fish Tickets (parallel waters catch), and NMFS Blend/Catch Accounting data (federal waters catch).

In the Central GOA, the percentage of catch from the parallel and state waters fisheries combined increased from 20% to 25% of total catch in the mid-1990s to more than 30% in recent years, peaking at 39% in 2005 (Figure 2-16). Parallel waters catches in the Central GOA have generally fluctuated between 10% and 20% of total catch. During the same time period, the amount (mt) of catch from the Central GOA parallel and state waters fisheries remained fairly stable (Figure 2-17). In recent years, federal waters catches in the Central GOA decreased to as little as half of catch levels in the mid-1990s.

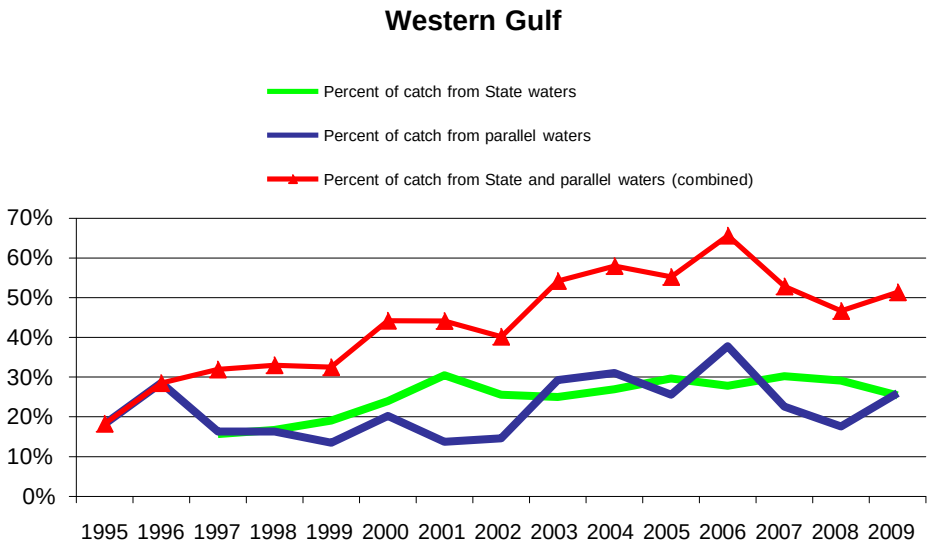

Figure 2-14 Percent of Western GOA Pacific cod catch from state and parallel waters.

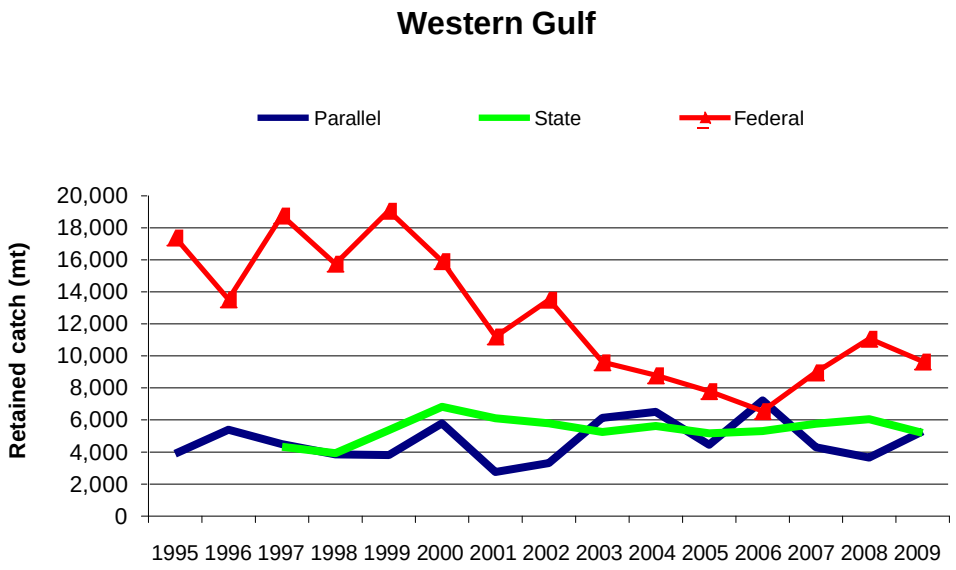

Figure 2-15 Amount (mt) of Western GOA Pacific cod catch from state, parallel, and federal waters.

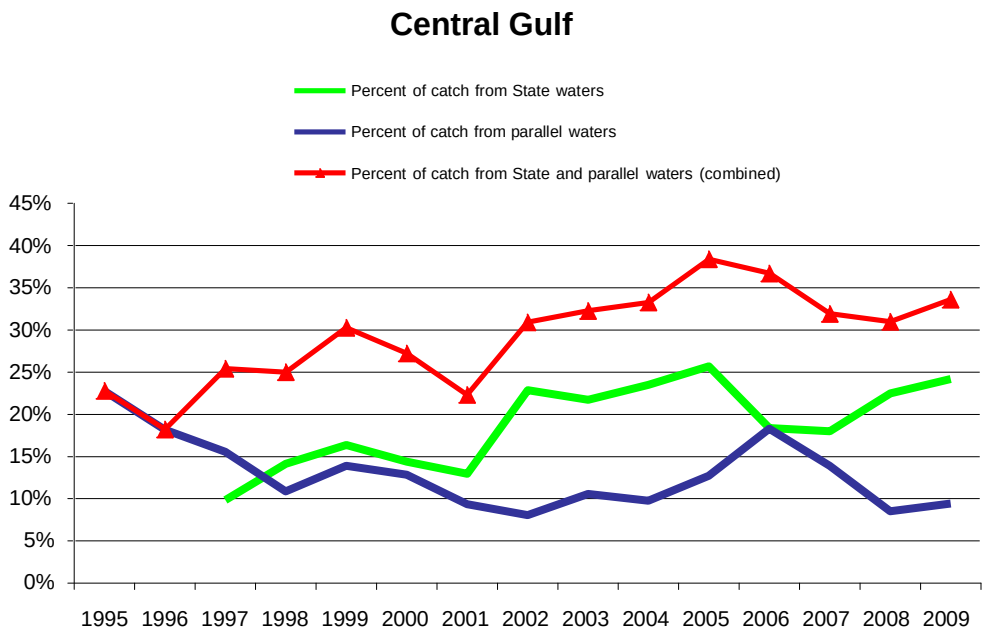

Figure 2-16 Percent of Central GOA Pacific cod catch from state and parallel waters.

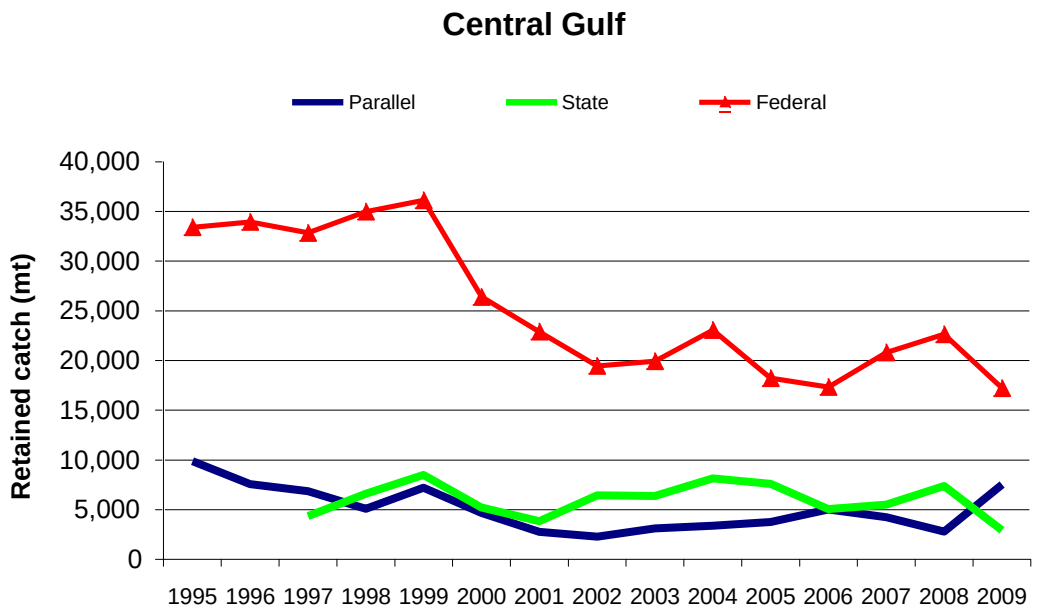

Figure 2-17 Amount (mt) of Central GOA Pacific cod catch from state, parallel, and federal waters.

The following section reviews catches in the parallel and federal fisheries, and excludes catch in the state waters fisheries. In several sectors, the majority of Pacific cod catches are made in parallel waters. For example, jig vessels and pot vessels <50 ft LOA make 75% to 95% of catches in the parallel fishery (Figure 2-18). Annual catches (mt) by these sectors are relatively small (Figure 2-19). In the Western GOA, pot vessels 50 to 60 ft LOA make nearly 90% of catches in the parallel fishery, and this sector catches more than 1,700 mt per year in the parallel fishery. Several other sectors have substantial catches in the parallel fishery (Central GOA pot 50 ft to 60 ft LOA, Central GOA hook-and-line <50 ft LOA, and Western GOA trawl <60 ft LOA), but these parallel waters catches comprise less than 50% of the annual catches by these sectors.

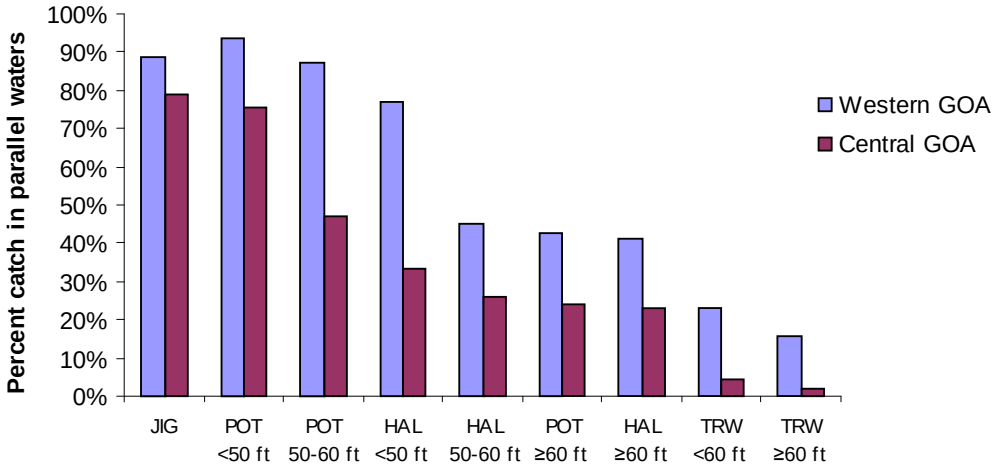

Figure 2-18 Percent of total annual catch by each sector harvested in the Western and Central GOA parallel waters fisheries, averaged from 1995 through 2008 (excludes state waters catch).

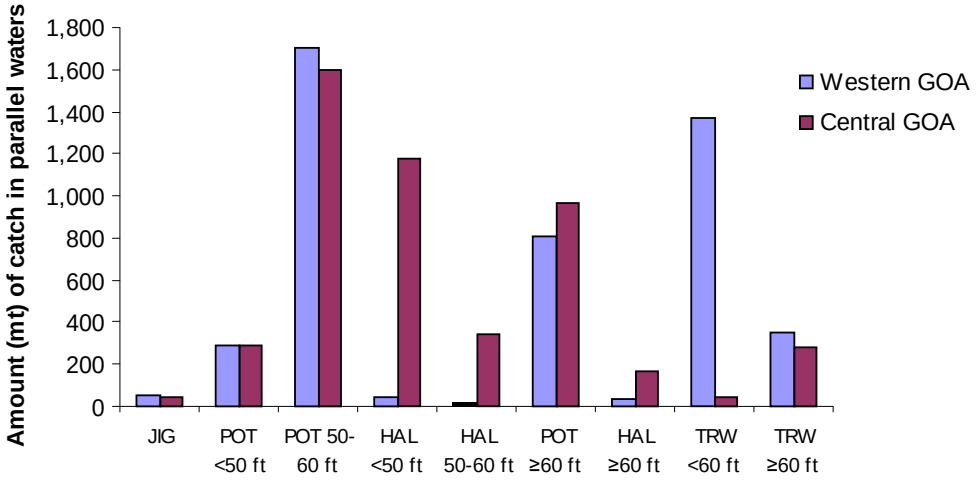

Figure 2-19 Amount of catch (mt) by each sector harvested in the Western and Central GOA parallel waters fisheries, averaged from 1995 through 2008 (excludes state waters catch).

Figures 2-20 and 2-21 show the percentage of total catch in the Western and Central GOA, made by vessels that fished only in the parallel waters fishery. Catch by vessels that fished only in the parallel fishery has generally been a larger component of the Western GOA fishery than the Central GOA fishery. In the Western GOA, vessels fishing only in the parallel fishery typically harvested more than 30% of the parallel waters catch and as much as 20% of the total parallel/federal catch. In the Central GOA, vessels fishing only in parallel waters typically harvested 20% to 30% of the parallel waters catch, but this catch generally comprised less than 5% of the total parallel/federal catch.

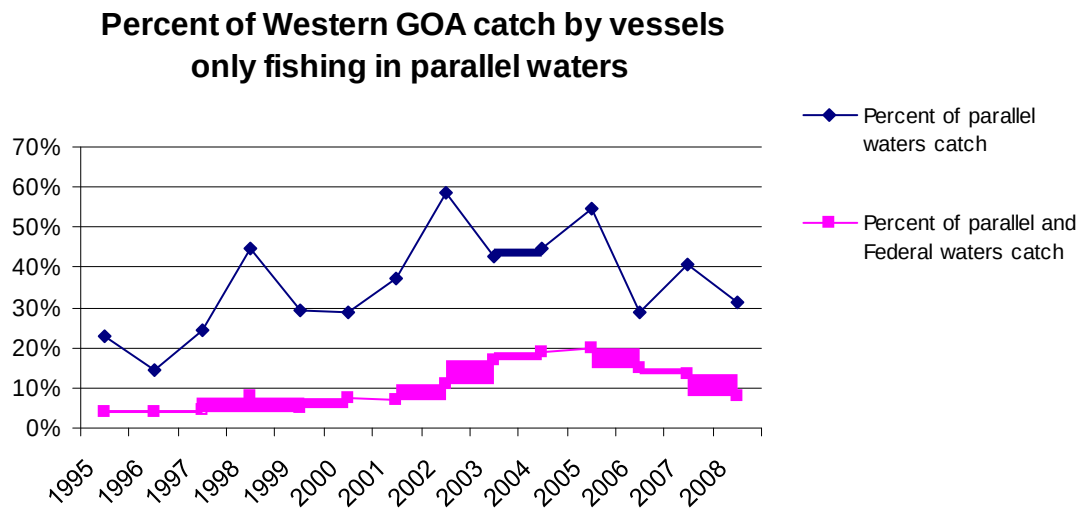

Figure 2-20 **Percentage of the Western GOA Pacific cod catch by vessels that fished only in the parallel waters fishery (excludes state waters catch).**

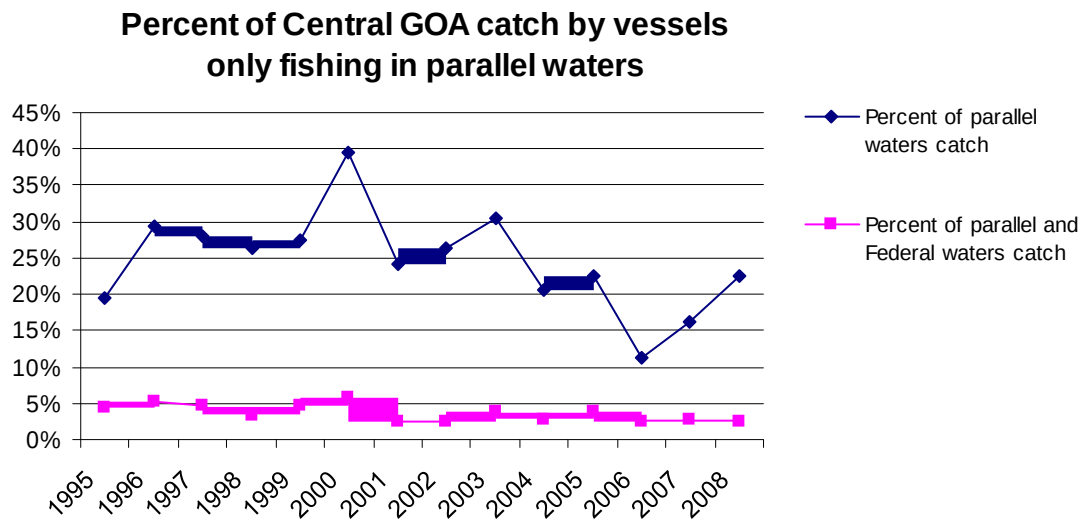

Figure 2-21 **Percentage of the Central GOA Pacific cod catch by vessels that fished only in the parallel waters fishery (excludes state waters catch).**

2.1.8 Steller Sea Lion protection measures and distribution of Pacific cod catch between A and B seasons

In November 2000, NMFS determined that the pollock, Pacific cod, and Atka mackerel fisheries in the BSAI and GOA were likely to jeopardize the continued existence of the western population of Steller sea lions. NMFS completed a Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement (SEIS) in November 2001 (NMFS 2001). Protection measures were implemented in 2001, including measures to temporally disperse fishing effort for Pacific cod. In the GOA, the Pacific cod fishing season was divided into two periods: 60% of the TAC was apportioned to the A season (January 1 through June 10 for fixed gear, January 20 through June 10 for trawl gear) and 40% to the B season (September 1 through December 31 for fixed gear, September 1 through November 1 for trawl gear). Incidental catch of Pacific cod between the A and B seasons accrues to the B season TAC. The objective of seasonal apportionments was to limit the total amount of Pacific cod harvested during the first half of the year.

One of the concerns noted during the development of the Steller sea lion SEIS was that management measures to protect Steller sea lions may impose a heavier burden on CVs than on CPs. The CV fleet is comprised mostly of <60 ft LOA vessels, and fishing during the early months of the A season (January/February) may be more difficult for smaller vessels, due to inclement weather conditions. All gear sectors typically harvest the majority of their catch during the A season (January 1 through June 10), when Pacific cod are aggregated and catch per unit effort is higher.

Table 2-22 shows the percentage of Pacific cod catch landed by each sector before June 10. During 1995 through 2000, most sectors harvested 80% to 100% of their total annual Pacific cod catch prior to June 10. Since 2001, nearly all sectors land a substantially smaller proportion of their annual catch prior to June 10, with a few exceptions. Trawl CVs in the Western GOA continue to catch more than 95% of their total annual catch during the A season. Most trawl CVs only fish during the A season in the Western GOA, when Pacific cod are aggregated and catch rates are high. In contrast, in the Central GOA trawl CVs >60 ft LOA have harvested approximately 60% of their annual catch during the A season and 40% during the B season during recent years.

If sector allocations are implemented, allocations would likely be apportioned between the A and B seasons, except, perhaps, for the jig sector. If each sector receives an annual allocation, and that allocation is apportioned 60% to the A season and 40% to the B season, sectors that have historically harvested most of their catch during the A season would need to change their annual fishing operations in order to fully harvest their B season allocations. An alternative approach would be to calculate sector allocations based on catch history during the A and B seasons. This approach is discussed in detail later in this chapter. Harvest data by year, sector, and season is reported in Appendix A.

Table 2-22 Percentage of Pacific cod caught before June 10 by each sector in the Western and Central GOA.

Western GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV 50-60	HAL CV >=60	Jig CV	Pot CP	POT CV <50	POT CV 50-60	POT CV >=60	Trawl CP	TRW CV <60	TRW CV >=60
Average 1995-2000	100%	99%	96%	73%	85%	93%	91%	99%	99%	90%	87%	100%	100%
Average 2001-2008	79%	73%	81%	56%	35%	25%	54%	86%	80%	67%	52%	97%	95%

Central GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV 50-60	HAL CV >=60	Jig CV	Pot CP	POT CV <50	POT CV 50-60	POT CV >=60	Trawl CP	TRW CV <60	TRW CV >=60
Average 1995-2000	99%	93%	98%	97%	96%	94%	22%	99%	99%	95%	56%	98%	83%
Average 2001-2008	83%	73%	72%	86%	92%	69%	56%	93%	80%	68%	45%	77%	56%

Source: ADF&G Fish Tickets (CVs) and NMFS Catch Accounting/Blend data (CPs), 1995–2008.

2.1.9 Sideboards on Pacific cod harvests

In developing the BSAI crab rationalization program, the Council imposed sideboards on Pacific cod harvests by crab vessels in the GOA fisheries. Pot vessels generally participate in only the crab and Pacific cod fisheries. As a result, the only perceived increase in opportunity arising from the crab rationalization program was thought to be in the Pacific cod fisheries in the GOA that are prosecuted in January, when the Bering Sea *C. opilio* fishery is typically prosecuted. Only recipients of initial allocations[3] in the Bering Sea *C. opilio* fishery are subject to the sideboards. The sideboards limit vessels to their historical share of retained catch of GOA Pacific cod (and other GOA groundfish, excluding catch of fixed gear sablefish) from 1996 to 2000. Vessels with limited history in the GOA groundfish fisheries—less than 50 mt of catch from 1996 through 2000—are prohibited from directed fishing for Pacific cod in the GOA. Vessels that landed less than 100,000 pounds of Bering Sea *C. opilio* and more than 500 mt of Pacific cod in the GOA, from 1996 through 2000, are exempt from the sideboards. Both vessels and LLP groundfish licenses associated with sideboarded vessels at the time sideboards were implemented are subject to the sideboards. If a sideboarded license is transferred to a non-sideboarded vessel, and that vessel has no other groundfish license, that vessel is then subject to the Pacific cod sideboards. Currently, there are 82 sideboarded vessels, 37 sideboarded licenses, and 137 vessels and 11 licenses prohibited from directed fishing for Pacific cod.

Sideboards also limit harvests of GOA groundfish by AFA CVs, with the exception of 17 AFA vessels that are exempt from the GOA sideboards. Vessels are exempt from the sideboard if they are less than 125 ft in length, landed less than 1,700 mt of BSAI pollock, on average, during 1995 through 1997, and made at least 40 GOA groundfish landings during 1995 through 1997. The rationale for the exemption was that these vessels had a high economic dependence on GOA groundfish fisheries. The Pacific cod sideboards limit 94 non-exempt AFA vessels to their historical share of catch of GOA Pacific cod from 1995 through 1997. Halibut PSC by non-exempt AFA vessels is also capped at the historical percentage of halibut PSC relative to total catch of non-pollock groundfish species. Table 2-23 shows the percentage of the Western and Central GOA Pacific cod TACs available to vessels subject to the crab and AFA sideboards, and the amount (mt) of these sideboards in 2009. Sideboards on Pacific cod harvests by AFA vessels went into effect in 2000; sideboards on harvests by BSAI crab vessels went into effect in 2006. Pacific cod harvests by sideboarded vessels are credited to the respective sectors, for purposes of calculating sector allocations. If sector allocations are implemented, catch by sideboarded vessels would accrue to the respective sector allocations and would also be capped at the sideboard amounts.

[3] Since allocations in the program are based on catch history associated with a license, the sideboard is constructed to limit catch using the license. This is done by sideboarding any vessel with catch that led to a share allocation and sideboarding any vessel named on the license that arose from the catch history of the vessel that led to that allocation.

Table 2-23 2009 Pacific cod sideboards for non-exempt AFA catcher vessels and non-AFA crab vessels.

				AFA Sideboard		Non-AFA Crab Sideboard	
			TAC	Percent of TAC	Amount (mt)	Percent of TAC	Amount (mt)
Western Gulf	A season	Inshore	8,735	13.65%	1,192	9.02%	788
		Offshore	970	10.26%	100	20.46%	198
Central Gulf	A season	Inshore	12,767	6.89%	880	3.83%	489
		Offshore	1,418	7.21%	102	20.74%	294
Western Gulf	B season	Inshore	5,823	13.65%	795	9.02%	525
		Offshore	647	10.26%	66	20.46%	132
Central Gulf	B season	Inshore	8,510	6.89%	553	3.83%	326
		Offshore	946	7.21%	68	20.74%	196

Source: NMFS 2009–2010 Harvest Specifications

Table 2-24 Non-AFA crab sideboard harvests (mt) of Pacific cod in 2008.

	A season			B season			Total		
Sideboard	Vessel count	Catch	Sideboard amount (mt)	Vessel count	Catch	Sideboard amount (mt)	Vessel count	Total catch	Sideboard amount (mt)
Central GOA Inshore	11	695	588	11	354	392	16	1,049	980
Central GOA Offshore	4	453	354	0	0	236	4	453	590
Western GOA Inshore	13	1,160	947	6	581	632	17	1,741	1,579
Western GOA Offshore	2	*	239	0	0	159	2	*	398

Source: NMFS Catch Accounting. *Confidential.

Finally, Amendment 80 CPs are subject to Pacific cod sideboards in the GOA. Catch of Pacific cod is limited to the proportion of the Western and Central GOA TACs caught by Amendment 80 vessels during 1998 through 2004.[4] Pacific cod harvests by Amendment 80 vessels are capped at 4.4% of the Central GOA TAC and 2.0% of the Western GOA TAC. Most of the trawl CPs that have fished in the GOA during recent years are Amendment 80 vessels. The Western and Central GOA trawl CP allocations could potentially be set lower than the Amendment 80 sideboard amounts. Sideboards limit the amount of catch by a sector, but do not guarantee that sector access to a specific amount of TAC (i.e., sideboards are not allocations). Even if the trawl CP allocations are set at or less than the Amendment 80 sideboard percentages, the sideboards serve a purpose, by limiting total Pacific cod catch (using any gear/operation type) by Amendment 80 vessels.

Currently, there are distinct inshore and offshore sideboards that apply to (1) AFA CVs and (2) non-AFA vessels that qualified for an initial allocation of *C. opilio* in the BSAI crab rationalization program (hereafter referred to as non-AFA crab vessels). The sideboards were originally calculated based on qualifying inshore and offshore catch by sideboarded vessels. The Council has indicated that, if GOA Pacific cod sector allocations are established, sector allocations would supersede the 90%/10% allocations of the Western and Central GOA TACs to the inshore and offshore processing components. The Council has specified how inshore and offshore sideboards for AFA CVs and non-AFA crab vessels will be recalculated, if sector allocations are established, as part of Component 4. These sideboards are discussed further in the analysis of Component 4.

[4] The Amendment 80 sideboards were calculated using NMFS Weekly Production Reports (as were the Amendment 80 BSAI allocations), and the sideboard percentages differ slightly from the sector's catch history based on Catch Accounting data.

2.1.10 License Limitation Program

Entry to the Pacific cod fisheries in federal waters has been restricted under the License Limitation Program (LLP) since 2000. All sectors that would receive Pacific cod allocations under the proposed action are subject to the LLP requirement when participating in the GOA Pacific cod fisheries in federal waters. Vessels <26 ft LOA and vessels fishing exclusively in the parallel waters fisheries are not required to have an LLP license. In addition, the Council recently recommended that vessels using jig gear be excluded from the LLP requirement in the GOA, subject to gear limits, as part of its preferred alternative for the fixed gear recency action. All vessels subject to the LLP requirement must have a Western or Central GOA area endorsement and the appropriate operation type designation (CV or CP) and gear designation (trawl or non-trawl) to participate in the GOA Pacific cod fisheries.

The estimated number of LLP licenses that will be eligible to access the Western GOA and Central GOA directed Pacific cod fisheries after the Council's trawl and fixed gear recency actions are implemented are reported in Table 2-25. In April 2008, the Council took final action on trawl recency, which extinguishes area endorsements from trawl licenses that do not have recent catch history in the GOA and BSAI groundfish fisheries. In general, this action will remove Western GOA and Central GOA area endorsements from trawl CV and trawl CP licenses that did not have at least two trawl groundfish landings during 2000 through 2006, in the respective management area. There was an exemption from the Central GOA landings thresholds for licenses that qualified for the Rockfish Pilot Program. As a result of this action, the number of trawl CV and trawl CP licenses eligible to participate in the GOA Pacific cod fisheries will decrease substantially. In the Western GOA, 48% (76 of 160) of CV licenses and 77% (20 of 26) of CP licenses are estimated to qualify. In the Central GOA, 53% (93 of 176) of CV licenses and 78% (21 of 27) of CP licenses qualify.

In April 2009, the Council took final action to add gear-specific (pot, hook-and-line, and jig) Pacific cod endorsements to GOA fixed gear licenses. Licenses will be required to carry gear-specific Pacific cod endorsements, in addition to the appropriate area endorsements, to participate in the directed Pacific cod fisheries in federal waters of the GOA. Licenses may qualify for gear-specific Pacific cod endorsements based on directed Pacific cod landings during 2002 through 2008. The minimum thresholds are 1 landing for jig gear; for pot and hook-and-line gear, 10 mt for CV licenses with a maximum LOA (MLOA) designation of <60 ft; and 50 mt for CP licenses and CV licenses with an MLOA designation of ≥60 ft. There was an exemption for CP licenses that participated in the informal halibut PSC co-op, during 2006, 2007, or 2008. These licenses will receive a hook-and-line CP endorsement, but will be restricted to participating in the offshore sector. The action also included an exemption from the LLP requirement for jig vessels that use up to 5 jigging machines, 1 line per machine, and 30 hooks per line. Licenses that qualify for a jig gear endorsement are not subject to these gear limits. Some licenses have catch history using more than one fixed gear type and will qualify for more than one gear-specific Pacific cod endorsement.

Under the Council's recommended alternative, 36% (94 of 264) of Western GOA CV licenses and 24% (215 of 883) of Central GOA fixed gear CV licenses will receive at least one gear-specific Pacific cod endorsement. In addition, 68% (21 of 31) of Western GOA and 55% (27 of 49) Central GOA fixed gear CP licenses will receive at least one gear-specific Pacific cod endorsement. Table 2-26 also shows the number of licenses that qualify for Pacific cod endorsements, by gear and operation type, and the MLOA designation on the license. As part of the fixed gear recency action, a total of 21 pot CV licenses may be requested by Western GOA Community Quota Entities (CQEs), and 50 CV licenses (26 pot and 24 hook-and-line) by Central GOA CQEs. All of these CQE licenses will have an MLOA designation of less than 60 ft. Finally, the hook-and-line CP licenses that qualify under the halibut PSC co-op exemption are limited to participating in the offshore sector, including 3 Western GOA and 12 Central GOA CP licenses.

Sideboards limit the amount of Pacific cod that may be harvested in the GOA by AFA CV licenses, Amendment 80 CP licenses, and non-AFA crab CV and CP licenses. Table 2-26 indicates the number of licenses that qualify under the recency actions, but are subject to the sideboards. A substantial number of the CV licenses that will receive pot endorsements and have an MLOA of greater than 60 ft are subject to the non-AFA crab vessel sideboards (10 of 21 Western GOA and 10 of 27 Central GOA licenses). In addition, there are 4 Western GOA and 4 Central GOA fixed gear CP licenses that qualify for a pot and/or hook-and-line Pacific cod endorsement that are subject to the sideboards. Most of the trawl CP licenses that are projected to qualify under the trawl recency action are subject to the Amendment 80 sideboards (18 of 20 Western GOA and 16 of 21 Central GOA trawl CP licenses). In addition, there are 4 Central GOA trawl CP licenses and fewer than 3 Western GOA trawl CP licenses that are subject to the AFA CV sideboards. Finally, 11 of 76 Western GOA and 15 of 93 Central GOA trawl CV licenses are subject to the AFA CV sideboards.

Table 2-25 Estimated number of LLP licenses eligible to access the Pacific cod fisheries following the LLP recency actions in the Western and Central GOA, by operation type and gear endorsement, and number of licenses subject to GOA sideboards.

	Western GOA	Western GOA Sideboarded	Central GOA	Central GOA Sideboarded
Catcher Vvessel Licenses				
Trawl CV	76	11 AFA SB	93	15 AFA SB
Hook-and-line CV <60 ft	7		123	
Hook-and-line CV ≥60 ft	3		7	
Hook-and-line CV <50 ft	3		68	
Hook-and-line CV ≥50 ft	7		62	
Pot CV <60 ft	59		51	
Pot CV ≥60 ft	21	10 crab SB	27	10 crab SB
Jig CV	11		19	
Total Fixed Gear CV**	94		215	
Additional licenses available to CQEs				
CQE Pot CV <60 ft	21		26	
CQE Hook-and-line CV <60 ft	0		24	
Catcher Processor Licenses				
Trawl CP	20	18 Am80 SB/ * AFA SB	21	16 Am80 SB/ 4 AFA SB
Hook-and-line CP <125 ft	9	* crab SB	5	* crab SB
Hook-and-line CP ≥125 ft	7	* crab SB	7	* crab SB
Hook-and-line CP <125 ft Offshore Limited***	0	0	5	* crab SB
Hook-and-line CP ≥125 ft Offshore Limited***	3	* crab SB	7	0
Pot CP	4	* crab SB	3	* crab SB
Total Fixed Gear CP*	21	4 crab SB	27	4 crab SB

*Confidential **Total number of licenses that will receive at least one gear-specific Pacific cod endorsement. Some licenses qualify for more than one endorsement. ***Licenses that qualify for a hook-and-line CP endorsement under the exemption for participants in the voluntary PSC co-op are limited to participating in the offshore sector.

2.1.11 The processing sector

The number of shorebased processors, motherships, and CPs that processed Pacific cod from the Western and Central GOA Pacific cod fisheries are reported in Table 2-26. The table does not include state waters Pacific cod landings. The number of CPs participating in the GOA Pacific cod fisheries has declined, substantially, since 1995. The 20 CPs listed in the AFA are precluded from harvesting any groundfish in

the GOA, and the 9 CPs that were bought out by the AFA are no longer eligible to participate in Alaska fisheries. Beginning in 2008, groundfish harvests by Amendment 80 vessels are sideboarded in the GOA.

CVs deliver almost all Western and Central GOA Pacific cod catch to shorebased processors. The number of shorebased processors receiving landings of Western and Central GOA Pacific cod has declined, somewhat, since 1995. Table 2-26 shows the number of shoreside processors receiving landings of Pacific cod, and the number of plants receiving landings from the directed Pacific cod fishery, for comparison. Mothership activity has declined substantially. No motherships have been active in the Central GOA Pacific cod fisheries since 2000. Similarly, in the Western GOA, no motherships had been active since 2000, but in 2006 and 2007, one mothership processed Pacific cod in the Western GOA, and in 2008, 3 motherships processed Pacific cod there. Total landings of federal and parallel waters Pacific cod received by GOA processors has declined as federal TACs have declined, and as state waters GHLs have increased as a proportion of the ABCs.

Table 2-26 Total catch (mt) (including discards) of Pacific cod by processing sector, 1995–2010.

Western GOA										
	Shoreside				Motherships			Catcher Processors		
Year	Processor count (total catch)	Processor count (directed catch)	Total catch (mt)	Percent of Pacific cod catch	Processor count	Total catch (mt)	Percent of Pacific cod catch	Processor count	Total catch (mt)	Percent of Pacific cod catch
1995	20	14	13,112	58.2%	6	2,318	10.3%	49	7,087	31.5%
1996	21	7	13,929	70.5%	7	132	0.7%	47	5,702	28.9%
1997	22	15	18,914	79.0%	4	394	1.6%	38	4,633	19.4%
1998	21	10	*	*	1	*	*	24	3,562	18.0%
1999	23	12	*	*	2	*	*	38	7,241	31.3%
2000	23	13	15,780	72.2%	3	301	1.4%	30	5,786	26.5%
2001	20	9	8,374	59.1%	0	0	0.0%	31	5,787	40.9%
2002	13	9	9,762	56.9%	0	0	0.0%	31	7,406	43.1%
2003	19	10	11,137	68.6%	0	0	0.0%	36	5,098	31.4%
2004	23	15	11,739	75.2%	0	0	0.0%	27	3,875	24.8%
2005	19	13	11,259	90.3%	0	0	0.0%	24	1,211	9.7%
2006	24	11	*	*	1	*	*	25	2,941	19.9%
2007	19	8	*	*	1	*	*	26	3,979	29.7%
2008	17	11	10,830	72.7%	3	357	2.4%	26	3,715	24.9%
2009	20	13	10,222	67.2%	0	0	0.0%	32	4,979	32.8%
2010	19	n/a	15,495	73.8%	0	0	0.0%	28	5,493	26.2%
Central GOA										
1995	43	24	40,704	89.5%	5	1,500	3.3%	36	3,260	7.2%
1996	40	25	40,049	84.2%	8	2,022	4.3%	34	5,494	11.6%
1997	39	27	*	*	1	*	*	29	1,514	3.5%
1998	39	30	36,227	87.4%	4	387	0.9%	26	4,819	11.6%
1999	46	37	*	*	1	*	*	37	4,922	11.0%
2000	46	33	*	*	1	*	*	22	2,635	8.2%
2001	36	24	24,427	89.4%	0	0	0.0%	16	2,897	10.6%
2002	33	25	22,296	89.0%	0	0	0.0%	19	2,761	11.0%
2003	31	23	21,798	87.7%	0	0	0.0%	22	3,071	12.3%
2004	27	18	25,039	91.3%	0	0	0.0%	15	2,382	8.7%
2005	25	16	21,574	94.8%	0	0	0.0%	19	1,178	5.2%
2006	36	19	21,206	91.5%	0	0	0.0%	23	1,965	8.5%
2007	35	18	23,967	90.9%	0	0	0.0%	18	2,388	9.1%
2008	34	17	25,872	91.4%	0	0	0.0%	22	2,437	8.6%
2009	34	25	21,251	90.2%	0	0	0.0%	22	2,305	9.8%
2010	30	n/a	32,747	88.8%	0	0	0.0%	19	4,113	11.2%

Source: NMFS Catch Accounting/Blend data. *Confidential.

Under current inshore/offshore regulations, CPs and motherships participating in the offshore processing component are limited to processing 10% of the Western and Central GOA TACs. CPs and motherships may elect to participate in the inshore processing sector, if they are <125 ft LOA and process less than 126 mt of pollock and Pacific cod, in the aggregate, per week. Most motherships have participated in the offshore processing component. When CPs and motherships participating in the inshore processing component are taken into consideration, the proportion of landings to at-sea processors has often been substantially greater than 10% of total catch. In the Western GOA, the total proportion of landings made to at-sea processors has often been more than 30% of total landings, and has been as high as 43%. In the Central GOA, at sea processing has typically been 10% or less of total catch.

2.1.12 Revenues from the GOA Pacific cod fisheries

Ex-vessel prices in the GOA Pacific cod fisheries increased substantially during 2007 and 2008, then dropped by about 50% in 2009 (Table 2-27). Gross revenues for all CV landings of GOA Pacific cod totaled nearly $42 million in 2008, an 18% increase from 2007, despite a decline in the TAC (Table 2-28). Participants in the 2008 GOA Pacific cod fisheries reported prices of up to $0.68 per pound during the A season, including bonuses. During the 2008 B season and 2009, poor market conditions worldwide resulted in price declines. Extensive information on economic conditions in the GOA Pacific cod fisheries can be found in the Economic SAFE Report (Hiatt et al. 2010).

Table 2-27 Ex-vessel prices (dollars) per pound in the GOA Pacific cod fisheries.

Year	Hook-and-line	Jig	Pot	Trawl
2001	0.33	0.28	0.27	0.25
2002	0.29	0.23	0.23	0.21
2003	0.33	0.29	0.28	0.29
2004	0.30	0.28	0.25	0.25
2005	0.31	0.31	0.30	0.27
2006	0.41	0.43	0.40	0.36
2007	0.51	0.53	0.50	0.46
2008	0.60	0.59	0.58	0.52
2009	0.31	0.25	0.29	0.26

Source: ADF&G Fish Tickets and CFEC gross revenues data.

Table 2-28 Ex-vessel gross revenues to catcher vessels from the GOA Pacific cod fisheries.

Year	Hook-and-line	Jig	Pot	Trawl	Total
2001	$4,203,992	$105,945	$3,655,640	$11,818,193	$19,783,770
2002	$4,400,832	$99,775	$4,014,132	$7,177,933	$15,692,672
2003	$2,662,558	$38,996	$7,732,846	$9,975,817	$20,410,216
2004	$3,636,106	$182,982	$8,221,030	$8,416,899	$20,457,018
2005	$3,170,261	$123,557	$9,667,534	$7,647,345	$20,608,696
2006	$5,718,567	$92,271	$12,559,301	$8,673,813	$27,043,952
2007	$7,586,514	$44,393	$14,105,806	$12,766,689	$34,503,403
2008	$9,181,647	$93,271	$14,139,952	$18,765,796	$42,180,666
2009	$5,330,550	$128,338	$7,283,619	$5,505,271	$18,247,778

Source: ADF&G Fish Tickets and CFEC gross revenues data.

First wholesale prices for Pacific cod products increased substantially in 2006 through 2008, and then dropped in 2009 (Table 2-29). The “all products” price is a weighted average of the prices for all product forms produced from Pacific cod. Table 2-30 shows the product mix from Pacific cod harvested in the GOA, and includes production by both at-sea processors and shore-based plants. CPs produce mostly eastern and western cut headed and gutted products and several ancillary products. Shore-based

processors produce fillets and headed and gutted products, along with A wide variety of ancillary products. Headed and gutted fish comprised the majority of products for at-sea processors, while fillets made up a larger fraction of the product mix for shore-based processors (Hiatt et al. 2010).

Table 2-29 First wholesale price (dollars per pound) of Pacific cod products by processing sector.

	Whole fish		Head & gut		Fillets		Other products		All products	
Year	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside	At-sea	Shoreside
2001	0.46	0.51	1.09	0.87	1.49	1.86	1.39	1.04	1.11	1.24
2002	0.29	0.41	0.97	0.99	1.58	2.28	1.03	0.79	0.98	1.31
2003	0.41	0.56	1.13	0.97	2.29	2.18	0.89	0.56	1.14	1.29
2004	0.43	0.54	1.09	1.04	2.20	2.13	1.02	0.80	1.09	1.26
2005	0.56	0.58	1.29	1.50	2.07	2.72	1.32	0.81	1.29	1.65
2006	0.65	0.79	1.67	1.38	3.35	3.12	1.21	0.94	1.66	1.76
2007	0.66	0.92	1.86	1.64	2.74	3.63	1.30	0.96	1.84	1.81
2008	0.56	0.65	1.91	1.69	4.05	3.99	0.92	0.75	1.87	1.89
2009	0.54	0.61	1.22	0.91	2.91	2.62	0.76	0.83	1.20	1.44

Source: Economic SAFE Report (Hiatt et al. 2008, 2010).

Table 2-30 Products produced from Pacific cod harvested in the GOA (thousands of mt).

	Whole fish		Head & gut		Fillets		Other products		Total
Year	Mt	Percentage	Mt	Percentage	Mt	Percentage	Mt	Percentage	Mt
2005	0.8	4.1%	6.9	37.2%	5.4	29.2%	5.5	29.5%	18.7
2006	0.4	2.2%	7.6	38.1%	5.3	26.5%	6.6	33.3%	19.9
2007	0.6	2.6%	12.2	51.4%	5.1	21.5%	5.8	24.6%	23.7
2008	0.9	3.6%	12.1	46.8%	5.9	22.7%	7.0	26.9%	25.9
2009	1.1	5.6%	7.1	34.7%	6.7	33.2%	5.4	26.5%	20.3

Source: 2009 Economic SAFE Report (Hiatt et al. 2010).

Economic dependence on Pacific cod

The relative economic dependence of participants in each of the harvest sectors on Pacific cod is reported in three ways in this section. Average and median catches (mt) and gross revenues for CVs that participated in the directed Pacific cod fisheries in the Central and Western GOA are reported in Tables 2-31 and 2-32. The tables only include vessels that had at least one directed landing of Pacific cod in a given year, but they include all landings of Pacific cod (both directed and incidental) by those vessels in order to show overall annual dependence on the Pacific cod fishery. Vessels that did not have a directed landing of Pacific cod are excluded from these calculations so that the sector averages are not diluted, and to provide a more accurate depiction of dependence on the Pacific cod fishery. Average and median catches and revenues for CPs were also calculated using this method (Table 2-33 and 2-34). Median catch and revenues are reported in addition to average catch and revenues, because median values provide an indication of the distribution of catch and revenues within a sector. For example, if the median catch is much lower than the average catch, this indicates that a large number of participants have only small amounts of catch. In the hook-and-line CV <60 ft LOA sector, the average Central GOA catch in 2008 was 39 mt, and the median catch was only 9 mt, indicating that a large number of participants in this sector had only small catches.

The second set of tables report annual participation, average annual revenues, and annual economic dependence on the GOA Pacific cod fisheries, by vessels that participated in the directed cod fisheries (Tables 2-35, 2-36, and 2-39). The data is reported based on the sector that a vessel participated in during a given year in the Central or Western GOA directed Pacific cod fisheries. The sectors are reported in a slightly different way from the previous set of tables, to provide some perspective on the distinctions between AFA and non-AFA trawl CVs, and pot CVs that qualified for allocations under the BSAI crab

rationalization program and non-crab qualified pot CVs. The tables report average annual revenues per vessel and percent dependence on the Central GOA, Western GOA, and state waters GOA Pacific cod fisheries. For CVs and CPs, there are separate tables showing revenues and economic dependence of vessels that participated in the Central GOA fishery and the Western GOA fishery.

Finally, the third set of tables report total participation, total revenues, and total economic dependence on the GOA Pacific cod fisheries, versus other Alaska fisheries (Tables 2-37, 2-38, 2-40, and 2-41). The tables include total participation and revenues by all vessels that participated in the directed cod fisheries during 1995 through 2000 or 2001 through 2008. The data are reported based on the sector that a vessel participated in during a given year in the Central or Western GOA directed Pacific cod fisheries. In the Central GOA, non-AFA trawl CVs had the highest percentage of revenues from the GOA Pacific cod fisheries, compared to the other sectors during 2001 through 2008 (24.7%). However, this sector was more dependent on other (non-cod) GOA groundfish fisheries (50.9% of revenues). AFA trawl CVS earned 11.8% of revenues from the GOA Pacific cod fisheries, and most of the remainder from BSAI groundfish (52.7%) and other GOA groundfish (31.3%). Pot vessels that did not qualify for BSAI crab allocations also earned a substantial portion of revenues from the parallel and federal GOA Pacific cod fisheries (19.0% of revenues), and the state GOA Pacific cod fisheries (11.5%); IFQ halibut accounted for 35.9% of gross revenues. Crab-qualified pot CVs earned 9.2% of revenues from GOA Pacific cod, and 65.0% of revenues from shellfish. Hook-and-line CVs earned 8.9% of revenues from GOA Pacific cod, and 57.6% from halibut IFQ. Finally, jig vessels earned only 3.7% of gross revenues from the Central GOA Pacific cod fisheries, but also earned an additional 24.0% of revenues from the state GOA Pacific cod fisheries; salmon accounted for 29.6% of gross revenues earned by jig vessels.

In the Western GOA, the relative dependence of each sector on the Pacific cod fishery was somewhat different than in the Central GOA. Non-AFA trawl CVs earned 15.6% of revenues from the GOA Pacific cod fisheries during 2001 through 2008. AFA trawl CVs earned only 2.0% of revenues from the GOA Pacific cod. Pot vessels that did not qualify for BSAI crab allocations also earned a substantial portion of revenues from the parallel and federal GOA Pacific cod fisheries (14.5% of revenues), and the state GOA Pacific cod fisheries (13.4%), and 20.5% from IFQ halibut. Crab-qualified pot CVs earned 12.4% of revenues from GOA Pacific cod, and 68.5% of revenues from shellfish. Hook-and-line CVs earned 4.2% of revenues from GOA Pacific cod, and 58.8% from IFQ halibut. Finally, jig vessels earned 7.2% of gross revenues from the GOA Pacific cod fisheries, and an additional 11.6% of revenues from the state GOA Pacific cod fisheries. Salmon (38.8%) and IFQ halibut (33.8%) accounted for the majority of gross revenues earned by jig vessels.

First wholesale gross revenues for CPs that participated in the directed GOA Pacific cod fisheries are summarized in Table 2-40 and Table 2-41. For trawl CPs that participated in the Western GOA, revenues from GOA Pacific cod comprised 3.3% of first wholesale revenues during 2001 through 2008. Trawl CPs that participated in the Central GOA earned 4.8% of gross revenues from GOA Pacific cod during this period. Hook-and-line CPs that participated in the Western GOA Pacific cod fishery earned the majority of revenues from the BSAI Pacific cod fishery (73.7%), and GOA Pacific cod and GOA sablefish comprised 11.6% and 9.0%, respectively, of first wholesale gross revenues. Hook-and-line CPs that participated in the Central GOA Pacific cod fishery also earned the majority of revenues from the BSAI Pacific cod fishery (80.2%), and GOA Pacific cod and GOA sablefish comprised 12.1% and 2.3%, respectively, of first wholesale revenues. Relatively few pot CPs participate in the GOA Pacific cod fisheries. During 2001 through 2008, pot CPs that participated in the Western GOA Pacific cod fisheries earned the majority of first wholesale gross revenues from BSAI Pacific cod (68.3%), and GOA Pacific cod (27.2%). Central GOA pot CPs that participated in the directed Pacific cod fisheries earned the majority of these first wholesale revenues from GOA Pacific cod (53.1%), and BSAI Pacific cod (44.4%).

Table 2-31 Average and median catch (mt) per vessel in the Western and Central GOA Pacific cod fisheries.

Western GOA

	HAL CV <60		HAL CV >=60		Jig CV		Pot CV<60		Pot CV >=60		Trawl CV <60		Trawl CV>=60	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	5	3	0	0	5	1	35	24	49	22	142	126	152	115
1996	*	*	*	*	6	4	41	29	73	45	273	241	213	126
1997	*	*	0	0	*	*	*	*	*	*	318	317	149	74
1998	*	*	0	0	*	*	54	23	39	28	271	262	150	84
1999	*	*	0	0	0	0	46	26	50	46	251	246	179	98
2000	*	*	*	*	*	*	30	15	91	54	214	230	223	205
2001	3	3	0	0	10	3	43	38	98	87	129	116	76	10
2002	*	*	*	*	7	4	91	74	120	83	109	93	129	61
2003	*	*	*	*	4	3	143	133	196	131	35	7	43	28
2004	*	*	*	*	8	5	89	68	178	97	76	62	17	0
2005	*	*	*	*	6	2	49	37	237	190	154	137	68	1
2006	*	*	0	0	*	*	55	34	227	235	170	139	56	2
2007	*	*	*	*	*	*	78	60	128	101	157	169	27	1
2008	*	*	*	*	7	2	99	65	111	71	184	186	3	3

Central GOA

	HAL CV <60		HAL CV >=60		Jig CV		Pot CV<60		Pot CV >=60		Trawl CV <60		Trawl CV>=60	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	31	18	193	145	3	1	114	69	114	64	117	102	320	243
1996	31	21	68	37	3	0	117	81	126	57	170	164	271	199
1997	38	29	18	1	2	0	123	87	166	147	105	84	309	232
1998	40	22	63	6	3	1	114	84	222	155	98	86	214	172
1999	34	12	21	1	2	2	139	129	152	105	55	7	306	297
2000	41	20	120	120	2	1	76	55	132	108	91	69	234	217
2001	45	37	67	45	1	0	61	50	51	28	66	16	261	199
2002	73	47	24	2	0	1	56	27	98	55	52	39	241	148
2003	46	44	79	9	2	2	75	46	120	96	64	26	321	294
2004	62	55	41	3	4	2	114	63	186	155	39	19	302	297
2005	42	34	25	1	5	3	133	50	220	111	1	1	209	178
2006	46	4	51	2	4	2	111	53	192	148	8	1	167	147
2007	45	16	21	1	2	1	104	65	179	156	*	*	*	*
2008	39	9	31	2	2	2	70	55	130	113	76	60	294	234

Note: Only includes vessels that participated in the directed Pacific cod fishery in a given year, but includes all Pacific cod catch (directed and incidental) by these vessels.
Source: ADF&G Fish Tickets and CFEC gross revenues data. *Confidential.

Table 2-32 Average and median gross revenues per vessel ($) in the Western and Central GOA Pacific cod fisheries.

Western GOA

	HAL CV <60		HAL CV >=60		Jig CV		Pot CV<60		Pot CV >=60		Trawl CV <60		Trawl CV>=60	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	2,149	1,166	0	0	1,812	506	14,625	11,604	20,526	8,824	54,105	47,900	56,120	40,115
1996	*	*	*	*	1,895	1,445	16,229	12,613	30,044	19,937	88,574	77,384	68,840	41,299
1997	*	*	0	0	*	*	*	*	*	*	115,740	114,979	54,983	25,162
1998	*	*	0	0	*	*	21,274	11,810	16,797	12,249	86,278	82,862	50,087	27,378
1999	*	*	0	0	0	0	26,671	16,235	31,090	32,701	123,489	119,866	89,077	52,990
2000	*	*	*	*	*	*	19,797	9,743	60,394	36,441	140,683	153,620	147,956	135,177
2001	2,272	1,380	0	0	6,092	2,214	23,159	21,175	53,542	47,450	60,931	55,176	37,384	4,776
2002	*	*	*	*	3,662	1,832	42,468	34,952	57,083	38,669	49,057	42,097	59,164	28,393
2003	*	*	*	*	2,462	1,711	81,717	76,423	113,059	73,821	21,222	2,932	24,731	16,750
2004	*	*	*	*	4,529	2,474	46,788	35,141	94,219	52,279	37,865	29,327	8,442	29
2005	*	*	*	*	3,157	897	27,405	20,927	145,456	113,000	83,947	74,553	37,924	179
2006	*	*	*	*	*	*	43,443	27,081	201,028	207,917	136,704	110,839	46,096	401
2007	*	*	*	*	*	*	79,502	60,106	135,582	105,820	160,491	172,968	27,062	227
2008	*	*	*	*	8,788	2,405	122,909	79,914	138,335	88,978	223,885	221,883	1,298	1,482

Central GOA

	HAL CV <60		HAL CV >=60		Jig CV		Pot CV<60		Pot CV >=60		Trawl CV <60		Trawl CV>=60	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	16,796	9,696	104,385	78,209	1,782	880	60,442	36,117	60,642	33,756	48,639	40,372	141,531	113,035
1996	16,473	11,927	33,475	18,987	2,100	258	56,973	39,356	61,803	31,074	62,169	54,685	106,414	73,848
1997	20,298	14,994	9,803	487	2,186	68	62,184	45,355	84,974	75,825	42,710	31,093	137,646	105,883
1998	18,449	10,547	28,794	2,703	1,631	425	51,832	45,000	101,425	72,146	32,839	27,569	76,449	63,443
1999	24,597	8,434	14,637	843	2,236	1,491	95,262	86,685	103,733	70,180	33,376	3,457	190,164	176,775
2000	35,876	17,893	105,458	106,090	2,108	843	58,620	43,084	102,181	84,256	63,058	45,752	162,365	151,919
2001	33,181	27,599	49,052	33,137	569	200	39,887	31,842	32,947	17,120	38,385	9,661	153,247	117,488
2002	46,453	29,462	14,975	1,272	310	368	31,587	18,101	51,294	36,092	24,225	18,579	111,406	70,057
2003	33,522	32,109	58,410	6,683	1,641	1,779	52,484	35,570	85,465	71,445	40,199	15,491	204,186	190,867
2004	41,248	37,678	27,357	1,800	2,719	1,347	71,790	37,975	117,218	98,101	21,669	10,303	167,112	164,599
2005	29,118	23,844	17,796	786	3,771	1,808	94,747	35,339	157,473	79,267	485	552	127,149	108,383
2006	41,919	3,004	46,351	1,656	3,698	2,368	99,608	47,255	170,249	131,816	6,941	1,199	133,160	120,204
2007	50,806	17,957	23,167	980	2,388	1,335	116,907	72,684	200,587	174,936	*	*	*	*
2008	52,309	12,182	40,585	2,921	2,464	2,053	91,058	71,429	167,716	146,846	77,644	65,348	323,028	254,319

Note: Only includes vessels that participated in the directed Pacific cod fishery in a given year, but includes all Pacific cod catch (directed and incidental) by these vessels.
Source: ADF&G Fish Tickets and CFEC gross revenues data. *Confidential.

Table 2-33 Average and median catch (mt) per vessel in the Western and Central GOA Pacific cod fisheries.

Western GOA

	HAL CP <125		HAL CP >=125		Pot CP		Trawl CP <125		Trawl CP >=125	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	414	353	163	53	*	*	13	13	107	125
1996	320	182	175	39	0	0	14	16	57	55
1997	405	296	47	23	0	0	39	45	11	8
1998	783	798	0	0	0	0	46	49	0	0
1999	446	409	109	105	237	176	*	*	*	*
2000	*	*	*	*	*	*	*	*	*	*
2001	390	187	21	21	346	150	*	*	*	*
2002	780	536	226	76	*	*	*	*	*	*
2003	445	272	184	142	*	*	87	106	0	0
2004	720	879	144	145	*	*	*	*	*	*
2005	*	*	*	*	*	*	*	*	*	*
2006	281	257	144	114	0	0	*	*	*	*
2007	338	357	120	62	*	*	*	*	*	*
2008	*	*	*	*	*	*	*	*	*	*

Central GOA

	HAL CP <125		HAL CP >=125		Pot CP		Trawl CP <125		Trawl CP >=125	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	42	14	0	0	0	0	42	31	109	8
1996	178	166	0	0	0	0	39	30	292	212
1997	*	*	0	0	0	0	*	*	*	*
1998	0	0	*	*	0	0	97	76	312	60
1999	*	*	*	*	246	95	127	116	107	25
2000	*	*	*	*	*	*	87	44	169	5
2001	*	*	0	0	196	251	*	*	*	*
2002	0	0	*	*	44	2	*	*	*	*
2003	*	*	*	*	0	0	*	*	*	*
2004	*	*	*	*	0	0	*	*	*	*
2005	*	*	*	*	0	0	*	*	*	*
2006	*	*	*	*	0	0	109	66	91	86
2007	*	*	*	*	*	*	*	*	*	*
2008	145	116	387	531	0	0	126	99	0	0

Note: Only includes vessels that participated in the directed Pacific cod fishery in a given year, but includes all Pacific cod catch (directed and incidental) by these vessels.
Source: Retained catch data from Catch Accounting/Blend database, 1995–2008. *Confidential.

Table 2-34 **Average and median gross revenues per vessel ($) in the Western and Central GOA Pacific cod fisheries.**

Western GOA

	HAL CP <125		HAL CP >=125		Pot CP		Trawl CP <125		Trawl CP >=125	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	265,353	225,821	104,287	34,215	*	*	8,617	8,508	68,601	80,325
1996	227,311	129,355	124,585	27,377	0	0	9,656	11,672	40,785	39,031
1997	318,072	232,495	36,838	18,323	0	0	30,742	35,124	8,339	6,241
1998	626,939	638,291	0	0	0	0	36,832	38,879	0	0
1999	572,420	524,628	140,425	135,246	304,379	226,230	*	*	*	*
2000	*	*	*	*	*	*	*	*	*	*
2001	466,918	223,885	25,574	25,499	413,872	179,687	*	*	*	*
2002	816,394	561,663	236,148	80,085	*	*	*	*	*	*
2003	520,067	317,539	215,469	165,363	*	*	101,769	124,013	0	0
2004	865,282	1,056,453	173,212	174,461	*	*	*	*	*	*
2005	*	*	*	*	*	*	*	*	0	0
2006	475,389	435,643	244,340	193,488	0	0	*	*	*	*
2007	662,588	699,745	234,448	121,729	*	*	*	*	*	*
2008	*	*	*	*	*	*	*	*	*	*

Central GOA

	HAL CP <125		HAL CP >=125		Pot CP		Trawl CP <125		Trawl CP >=125	
Year	Average	Median	Average	Median	Average	Median	Average	Median	Average	Median
1995	26,677	8,726	0	0	0	0	26,960	19,801	69,489	5,163
1996	126,055	117,544	0	0	0	0	27,723	21,583	207,246	150,267
1997	*	*	0	0	0	0	*	*	*	*
1998	0	0	*	*	0	0	77,989	60,819	249,788	48,066
1999	*	*	*	*	315,830	121,738	163,323	149,093	136,681	32,325
2000	*	*	*	*	*	*	109,736	55,174	213,658	6,225
2001	*	*	0	0	234,448	299,634	*	*	*	*
2002	0	0	*	*	*	*	*	*	*	*
2003	*	*	*	*	0	0	*	*	*	*
2004	*	*	*	*	0	0	*	*	*	*
2005	*	*	*	*	0	0	*	*	*	*
2006	*	*	*	*	0	0	184,642	111,228	153,569	145,583
2007	*	*	*	*	*	*	*	*	*	*
2008	333,627	267,638	890,455	1,221,713	0	0	290,429	227,139	0	0

Note: Only includes vessels that participated in the directed Pacific cod fishery in a given year, but includes all Pacific cod catch (directed and incidental) by these vessels.
Source: Retained catch data from Catch Accounting/Blend database, 1995–2008. *Confidential.

Table 2-35 **Annual participation, annual dependence, and average annual gross revenues from GOA Pacific cod fisheries. Includes vessels that participated in the Western GOA directed Pacific cod fishery in a given year.**

Western GOA

		WG Pacific Cod			State GOA Pcod			CG Pacific Cod			Total	
	Year	Vessel count	Percent of total revenues	Annual revenues per vessel	Vessel count	Percent of total revenues	Annual revenues per vessel	Vessel count	Percent of total revenues	Annual revenues per vessel	Percent of total revenues	Annual revenues per vessel
HAL CV	2001	6	1.1%	2,272	2	*	*	1	*	*	*	*
	2002	13	0.1%	498	2	*	*	5	0.3%	1,732	*	*
	2003	8	0.3%	2,090	2	*	*	2	*	*	*	*
	2004	14	0.1%	383	4	1.7%	10,321	6	1.7%	10,687	3.5%	21,391
	2005	27	1.2%	5,554	9	2.5%	11,436	14	4.7%	20,981	8.4%	37,971
	2006	20	0.5%	4,347	2	*	*	8	2.9%	25,344	*	*
	2007	27	2.1%	14,235	6	3.6%	24,490	13	4.8%	32,815	10.6%	71,540
	2008	33	2.2%	18,078	9	2.7%	22,063	17	2.5%	20,110	7.4%	60,251
Jig CV	2001	16	10.4%	6,092	10	12.7%	7,463	2	*	*	*	*
	2002	26	6.3%	3,662	17	9.3%	5,387	3	*	*	*	*
	2003	11	5.5%	2,462	8	24.5%	10,905	0	0.0%	0	30.0%	13,367
	2004	22	6.1%	4,529	19	10.9%	8,125	2	*	*	*	*
	2005	8	3.7%	3,157	6	*	*	0	0.0%	0	13.4%	11,583
	2006	1	*	*	0	0.0%	0	0	0.0%	0	*	*
	2007	4	*	*	2	*	*	1	*	*	*	*
	2008	9	12.8%	8,788	4	10.5%	7,235	0	0.0%	0	23.3%	16,023
Crab Pot CV	2001	6	9.9%	41,996	1	*	*	1	*	*	*	*
	2002	7	11.1%	72,619	1	*	*	1	*	*	*	*
	2003	11	14.6%	118,057	1	*	*	1	*	*	*	*
	2004	13	12.5%	93,629	2	*	*	1	*	*	*	*
	2005	11	15.2%	159,126	0	0.0%	0	2	*	*	*	*
	2006	11	21.2%	239,567	0	0.0%	0	1	*	*	*	*
	2007	12	10.7%	154,407	1	*	*	1	*	*	*	*
	2008	13	6.3%	143,805	0	0.0%	0	3	*	*	*	*
Non Crab Pot CV	2001	36	15.3%	29,303	31	16.6%	31,835	4	0.5%	919	32.4%	62,057
	2002	41	13.8%	42,667	35	14.0%	43,241	6	1.8%	5,582	29.6%	91,490
	2003	49	21.4%	85,072	36	12.7%	50,658	9	3.4%	13,717	37.5%	149,447
	2004	68	12.8%	57,363	51	10.6%	47,536	14	2.4%	10,806	25.9%	115,706
	2005	47	9.2%	44,299	37	12.5%	59,749	4	*	*	*	*
	2006	40	12.1%	60,422	34	15.9%	79,602	3	*	*	*	*
	2007	36	12.1%	82,574	31	15.7%	107,469	4	1.7%	11,898	29.5%	201,942
	2008	46	12.0%	122,369	38	13.1%	133,280	12	0.5%	4,943	25.5%	260,592
AFA Trawl CV	2001	10	3.4%	30,215	0	0.0%	0	3	*	*	*	*
	2002	7	4.2%	40,170	0	0.0%	0	5	1.7%	15,845	5.9%	56,015
	2003	6	0.8%	8,646	0	0.0%	0	1	*	*	*	*
	2004	8	0.2%	2,647	0	0.0%	0	2	*	*	*	*
	2005	7	2.6%	34,903	0	0.0%	0	4	1.2%	15,697	3.8%	50,599
	2006	7	*	*	0	0.0%	0	1	*	*	*	*
	2007	9	1.1%	19,174	0	0.0%	0	2	*	*	*	*
	2008	3	*	*	0	0.0%	0	0	0.0%	0	*	*
Non-AFA Trawl CV	2001	45	14.3%	58,338	25	7.4%	30,033	12	0.2%	828	21.9%	89,198
	2002	37	13.6%	54,563	23	8.1%	32,670	18	4.8%	19,471	26.5%	106,704
	2003	29	5.0%	25,155	15	7.2%	36,395	8	2.3%	11,596	14.4%	73,146
	2004	23	5.5%	36,043	15	6.8%	44,974	9	3.4%	22,599	15.8%	103,616
	2005	28	9.7%	78,127	17	5.8%	46,499	8	2.4%	18,989	17.9%	143,616
	2006	29	16.6%	134,717	19	9.7%	79,039	8	1.2%	10,124	27.5%	223,879
	2007	29	14.5%	144,535	18	9.5%	95,246	6	3.8%	37,889	27.8%	277,669
	2008	25	21.0%	223,885	16	11.7%	124,386	5	0.0%	500	32.7%	348,770

Source: ADF&G Fish Tickets and CFEC gross revenues data. *Confidential.

Table 2-36 **Annual participation, annual dependence, and average annual gross revenues from GOA Pacific cod fisheries. Includes vessels that participated in the Central GOA directed Pacific cod fishery in a given year.**

Central GOA

		CG Pacific Cod			State GOA Pcod			WG Pacific Cod			Total	
	Year	Vessel count	Percent of total revenues	Annual revenues per vessel	Vessel count	Percent of total revenues	Annual revenues per vessel	Vessel count	Percent of total revenues	Annual revenues per vessel	Percent of total revenues	Annual revenues per vessel
HAL CV	2001	122	15.7%	33,701	12	0.6%	1,316	5	0.0%	31	16.3%	35,048
	2002	100	13.2%	43,306	12	0.5%	1,600	5	0.0%	17	13.7%	44,923
	2003	74	10.1%	34,868	8	0.5%	1,666	4	0.0%	26	10.6%	36,560
	2004	92	9.9%	38,832	28	1.7%	6,554	7	0.1%	232	11.7%	45,618
	2005	107	6.3%	27,636	30	1.3%	5,662	18	0.4%	1,609	8.0%	34,907
	2006	131	7.4%	42,426	31	1.0%	5,595	15	0.1%	414	8.4%	48,435
	2007	151	7.4%	46,596	27	2.1%	13,182	18	0.5%	3,051	10.0%	62,828
	2008	156	7.4%	50,881	34	2.8%	19,502	29	0.6%	4,304	10.8%	74,687
Jig CV	2001	14	1.2%	569	11	10.5%	4,914	1	*	*	*	*
	2002	7	1.0%	310	6	34.8%	11,207	0	0.0%	0	35.8%	11,517
	2003	7	2.8%	1,641	6	21.3%	12,405	0	0.0%	0	24.1%	14,046
	2004	30	3.4%	2,719	27	17.8%	14,368	2	*	*	*	*
	2005	26	5.3%	3,771	25	29.1%	20,748	0	0.0%	0	34.4%	24,519
	2006	24	4.2%	3,698	21	13.5%	11,856	0	0.0%	0	17.7%	15,553
	2007	18	3.8%	2,388	16	27.7%	17,340	0	0.0%	0	31.5%	19,727
	2008	10	3.2%	2,464	10	63.7%	49,433	0	0.0%	0	66.8%	51,897
Crab Pot CV	2001	5	3.4%	18,394	1	*	*	1	*	*	*	*
	2002	3	*	*	1	*	*	1	*	*	*	*
	2003	1	*	*	0	0.0%	0	0	0.0%	0	*	*
	2004	2	*	*	2	*	*	1	*	*	*	*
	2005	4	12.8%	96,531	1	*	*	2	*	*	*	*
	2006	6	8.8%	123,291	2	*	*	1	*	*	*	*
	2007	4	6.4%	113,020	1	*	*	1	*	*	*	*
	2008	3	*	*	0	0.0%	0	1	*	*	*	*
Non Crab Pot CV	2001	57	10.6%	38,363	35	7.6%	27,620	7	1.3%	4,689	19.5%	70,672
	2002	42	9.9%	39,330	32	11.3%	44,861	7	1.3%	4,981	22.5%	89,172
	2003	34	13.1%	66,458	29	10.9%	55,139	6	2.5%	12,512	26.4%	134,109
	2004	33	15.6%	87,469	30	10.3%	57,534	8	3.4%	19,001	29.3%	164,004
	2005	43	23.9%	126,674	36	5.9%	31,125	6	*	*	*	*
	2006	53	20.4%	127,582	36	7.5%	47,139	3	*	*	*	*
	2007	59	22.0%	149,791	48	12.6%	85,655	6	1.3%	8,811	35.8%	244,257
	2008	55	16.3%	116,825	49	20.0%	143,643	5	2.3%	16,407	38.5%	276,875
AFA Trawl CV	2001	23	11.0%	124,793	0	0.0%	0	3	*	*	*	*
	2002	15	10.4%	102,164	0	0.0%	0	3	*	*	*	*
	2003	18	15.9%	201,741	0	0.0%	0	2	*	*	*	*
	2004	19	13.3%	161,865	0	0.0%	0	2	*	*	*	*
	2005	19	7.8%	110,473	0	0.0%	0	3	*	*	*	*
	2006	15	9.6%	126,229	0	0.0%	0	1	*	*	*	*
	2007	16	7.1%	106,665	0	0.0%	0	2	*	*	*	*
	2008	18	16.8%	248,966	0	0.0%	0	0	0.0%	0	16.8%	248,966
Non-AFA Trawl CV	2001	47	24.5%	128,069	6	1.4%	7,065	12	2.0%	10,300	27.9%	145,435
	2002	37	20.1%	89,234	7	1.7%	7,682	9	2.5%	10,919	24.2%	107,835
	2003	34	27.4%	162,072	4	0.8%	4,736	8	0.8%	4,624	28.9%	171,432
	2004	30	22.1%	146,195	3	*	*	8	*	*	24.7%	163,743
	2005	25	14.3%	124,623	1	*	*	8	*	*	17.0%	148,056
	2006	24	12.0%	116,455	1	*	*	8	*	*	16.1%	155,589
	2007	20	29.8%	333,244	1	*	*	5	*	*	30.7%	343,434
	2008	24	30.3%	347,901	1	*	*	1	*	*	*	*

Source: ADF&G Fish Tickets and CFEC gross revenues data. *Confidential.

Table 2-37 Total participation, total gross revenues, and percent dependence on GOA Pacific cod and other fisheries. Only includes vessels that participated in the Western GOA directed Pacific cod fishery during the period from 1995 through 2000 or 2001 through 2008.

Western GOA		1995-2000			2001-2008		
	Fishery	Vessels	Total revenues 1995-2000	Percent	Vessels	Total revenues 2001-2008	Percent
Hook-and-line CVs	**WG Pacific Cod**	**19**	**174,747**	**7.1%**	**91**	**1,259,991**	**1.3%**
	CG Pacific Cod	**1**	*****	*****	**49**	**2,802,906**	**2.9%**
	State GOA Pacific Cod	3	*	*	24	2,486,120	2.6%
	BSAI Other Groundfish	6	392,565	15.9%	40	3,726,810	3.8%
	BSAI Pacific Cod	9	315,778	12.8%	39	4,540,697	4.7%
	GOA Other Groundfish	2	*	*	33	2,635,598	2.7%
	IFQ Halibut	12	479,676	19.4%	83	57,061,223	58.8%
	IFQ Sablefish	1	*	*	41	11,912,005	12.3%
	Other	3	*	*	53	717,441	0.7%
	Salmon	9	600,389	24.3%	35	5,682,787	5.9%
	Shellfish	1	*	*	18	4,233,598	4.4%
Jig CVs	**WG Pacific Cod**	**17**	**35,461**	**1.8%**	**68**	**426,787**	**7.1%**
	CG Pacific Cod	**3**	*****	*****	**7**	**3,381**	**0.1%**
	State GOA Pacific Cod	2	*	*	46	701,769	11.6%
	BSAI Other Groundfish	3	*	*	9	4,857	0.1%
	BSAI Pacific Cod	10	110,960	5.8%	16	369,813	6.1%
	GOA Other Groundfish	7	16,551	0.9%	7	3,203	0.1%
	IFQ Halibut	8	92,149	4.8%	28	2,043,164	33.8%
	Other	3	*	*	22	90,267	1.5%
	Salmon	10	1,586,751	82.6%	46	2,350,503	38.8%
	Shellfish	1	*	*	8	57,052	0.9%
Crab Pot CVs	**WG Pacific Cod**	**27**	**2,062,654**	**7.0%**	**26**	**11,384,079**	**11.8%**
	CG Pacific Cod	**4**	**100,608**	**0.3%**	**6**	**536,363**	**0.6%**
	State GOA Pacific Cod	0	0	0.0%	2	*	*
	BSAI Other Groundfish	13	14,665	0.0%	21	581,837	0.6%
	BSAI Pacific Cod	25	2,320,206	7.9%	24	13,851,602	14.3%
	GOA Other Groundfish	9	2,301	0.0%	14	3,504	0.0%
	IFQ Halibut	3	*	*	3	*	*
	IFQ Sablefish	1	*	*	1	*	*
	Other	4	2,014	0.0%	20	90,536	0.1%
	Salmon	0	0	0.0%	1	*	*
	Shellfish	27	23,744,961	80.8%	26	66,280,741	68.5%
Non-Crab Pot CVs	**WG Pacific Cod**	**114**	**5,520,829**	**7.4%**	**121**	**23,974,135**	**13.1%**
	CG Pacific Cod	**31**	**2,077,791**	**2.8%**	**35**	**2,596,848**	**1.4%**
	State GOA Pacific Cod	56	5,027,529	6.8%	87	24,625,632	13.4%
	BSAI Other Groundfish	15	1,121,144	1.5%	37	2,158,253	1.2%
	BSAI Pacific Cod	49	2,881,192	3.9%	51	9,431,170	5.1%
	GOA Other Groundfish	34	2,686,971	3.6%	78	12,205,969	6.7%
	IFQ Halibut	38	5,245,726	7.1%	53	37,561,958	20.5%
	IFQ Sablefish	2	*	*	14	7,572,472	4.1%
	Other	42	*	*	89	1,026,668	0.6%
	Salmon	62	17,834,992	24.1%	60	36,272,849	19.8%
	Shellfish	53	30,433,333	41.0%	85	26,121,209	14.2%
All Trawl CVs (1995-2000)	**WG Pacific Cod**	**130**	**28,054,989**	**11.7%**	**54**	**22,085,477**	**13.4%**
	CG Pacific Cod	**90**	**10,026,471**	**4.2%**	**30**	**3,550,292**	**2.2%**
	State GOA Pacific Cod	44	4,122,426	1.7%	34	14,115,968	8.6%
	BSAI Other Groundfish	81	96,146,913	39.9%	22	887,905	0.5%
	BSAI Pacific Cod	87	20,256,921	8.4%	29	10,288,787	6.2%
	GOA Other Groundfish	115	29,940,743	12.4%	51	44,433,976	27.0%
Non-AFA Trawl CVs (2001-2008)	IFQ Halibut	36	7,750,337	3.2%	23	22,543,114	13.7%
	IFQ Sablefish	15	5,374,949	2.2%	7	10,816,609	6.6%
	Other	63	2,101,477	0.9%	38	2,615,311	1.6%
	Salmon	43	26,907,177	11.2%	37	30,957,627	18.8%
	Shellfish	55	10,113,599	4.2%	39	2,405,409	1.5%
AFA Trawl CVs	**WG Pacific Cod**				**25**	**1,095,059**	**1.5%**
	CG Pacific Cod				**11**	**392,634**	**0.5%**
	BSAI Other Groundfish				25	28,820,951	38.6%
	BSAI Pacific Cod				25	31,576,671	42.2%
	GOA Other Groundfish				24	11,175,782	15.0%
	IFQ Halibut				2	*	*
	Other				17	*	*
	Shellfish				5	1,076,675	1.4%

Source: ADF&G Fish Tickets and CFEC gross revenues data. *Confidential.

Table 2-38 Annual participation, gross revenues, and percent dependence on GOA Pacific cod and other fisheries. Only includes vessels that participated in the Central GOA directed Pacific cod fishery from 1995 through 2000 or 2001 through 2008.

Central GOA		1995-2000			2001-2008		
	Fishery	Vessels	Total revenues 1995-2000	Percent	Vessels	Total revenues 2001-2008	Percent
Hook-and-line CVs	**CG Pacific Cod**	**374**	**20,811,711**	**12.4%**	**342**	**38,083,169**	**8.6%**
	WG Pacific Cod	**22**	**294,776**	**0.2%**	**65**	**1,387,221**	**0.3%**
	State GOA Pacific Cod	101	2,213,459	1.3%	95	7,418,325	1.7%
	BSAI Other Groundfish	42	3,817,892	2.3%	65	9,865,773	2.2%
	BSAI Pacific Cod	32	854,727	0.5%	64	4,960,521	1.1%
	GOA Other Groundfish	249	1,763,295	1.1%	202	8,615,088	1.9%
	IFQ Halibut	288	71,711,306	42.7%	294	256,412,372	57.6%
	IFQ Sablefish	185	22,149,224	13.2%	159	63,150,743	14.2%
	Other	274	3,775,901	2.3%	246	2,482,597	0.6%
	Salmon	241	30,990,068	18.5%	165	29,875,598	6.7%
	Shellfish	46	9,374,724	5.6%	85	22,571,929	5.1%
Jig CVs	**CG Pacific Cod**	**64**	**153,888**	**3.0%**	**74**	**357,606**	**3.7%**
	WG Pacific Cod	**4**	**3,532**	**0.1%**	**3**	*****	*****
	State GOA Pacific Cod	32	422,881	8.3%	64	2,295,541	24.0%
	BSAI Other Groundfish	3	*	*	3	*	*
	BSAI Pacific Cod	4	*	*	5	134,130	1.4%
	GOA Other Groundfish	40	282,901	5.5%	36	133,744	1.4%
	IFQ Halibut	32	1,258,161	24.7%	18	2,694,654	28.1%
	IFQ Sablefish	13	175,468	3.4%	4	*	*
	Other	46	561,559	11.0%	39	335,770	3.5%
	Salmon	34	1,986,232	38.9%	31	2,835,135	29.6%
	Shellfish	6	101,313	2.0%	18	602,031	6.3%
Crab Pot CVs	**CG Pacific Cod**	**17**	**1,950,923**	**6.4%**	**11**	**2,309,845**	**7.1%**
	WG Pacific Cod	**5**	**391,445**	**1.3%**	**4**	**694,544**	**2.1%**
	State GOA Pacific Cod	3	*	*	3	*	*
	BSAI Other Groundfish	2	*	*	5	*	*
	BSAI Pacific Cod	10	1,038,358	3.4%	5	1,442,440	4.4%
	GOA Other Groundfish	3	*	*	4	167	0.0%
	IFQ Halibut	8	3,477,542	11.3%	5	5,968,429	18.4%
	IFQ Sablefish	3	*	*	1	*	*
	Other	7	2,316	0.0%	8	51,365	0.2%
	Salmon	0	0	0.0%	1	*	*
	Shellfish	17	23,495,675	76.5%	11	21,078,227	65.0%
Non Crab Pot CV	**CG Pacific Cod**	**199**	**36,557,623**	**19.7%**	**113**	**36,456,473**	**17.5%**
	WG Pacific Cod	**13**	**1,010,536**	**0.5%**	**27**	**3,125,860**	**1.5%**
	State GOA Pacific Cod	104	8,300,244	4.5%	90	24,022,620	11.5%
	BSAI Other Groundfish	20	2,341,281	1.3%	21	1,360,966	0.7%
	BSAI Pacific Cod	35	3,646,003	2.0%	27	9,768,514	4.7%
	GOA Other Groundfish	68	4,902,572	2.6%	67	2,854,102	1.4%
	IFQ Halibut	109	44,451,839	24.0%	61	74,851,452	35.9%
	IFQ Sablefish	55	16,272,964	8.8%	30	13,720,124	6.6%
	Other	149	6,798,455	3.7%	100	4,292,787	2.1%
	Salmon	78	17,160,452	9.3%	40	17,215,211	8.2%
	Shellfish	80	43,711,574	23.6%	63	21,006,281	10.1%
All Trawl CVs (1995-2000)	**CG Pacific Cod**	**166**	**50,232,864**	**15.5%**	**57**	**40,142,204**	**22.8%**
	WG Pacific Cod	**93**	**22,389,897**	**6.9%**	**27**	**3,415,143**	**1.9%**
	State GOA Pacific Cod	54	3,614,625	1.1%	13	1,279,849	0.7%
	BSAI Other Groundfish	79	78,408,183	24.3%	18	1,265,198	0.7%
	BSAI Pacific Cod	84	13,049,446	4.0%	21	7,807,782	4.4%
	GOA Other Groundfish	160	86,501,720	26.8%	57	89,548,743	50.9%
Non-AFA Trawl CVs (2001-2008)	IFQ Halibut	61	21,466,630	6.6%	27	22,374,269	12.7%
	IFQ Sablefish	28	8,095,766	2.5%	14	2,216,668	1.3%
	Other	124	5,031,267	1.6%	50	2,809,541	1.6%
	Salmon	51	25,537,510	7.9%	15	3,816,462	2.2%
	Shellfish	58	8,899,482	2.8%	30	1,332,738	0.8%
AFA Trawl CVs	**CG Pacific Cod**				**27**	**21,289,951**	**11.6%**
	WG Pacific Cod				**12**	**289,607**	**0.2%**
	State GOA Pacific Cod				0	0	0.0%
	BSAI Other Groundfish				27	85,024,843	46.2%
	BSAI Pacific Cod				27	11,880,176	6.5%
	GOA Other Groundfish				27	57,532,467	31.3%
	IFQ Halibut				5	5,717,157	3.1%
	Other				24	*	*
	Salmon				2	*	*
	Shellfish				13	1,912,331	1.0%

Table 2-39 **Annual participation, annual dependence, and average annual gross revenues from GOA Pacific cod fisheries. Includes vessels that participated in the Western GOA (upper table) or Central GOA (lower table) directed Pacific cod fisheries in a given year.**

Western GOA

		Western GOA Pacific cod fishery			Central GOA Pacific cod fishery			Total GOA Pacific Cod	
	Year	Vessels	Annual revenues per vessel	Percent of revenues	Vessels	Annual revenues per vessel	Percent of revenues	Annual revenues per vessel	Percent of revenues
Hook-and-line CP	2001	13	386,831	13.1%	2	*	*	*	*
	2002	11	605,395	20.0%	4	50,364	1.7%	655,759	21.6%
	2003	15	326,219	9.1%	4	96,920	2.7%	423,139	11.8%
	2004	8	432,738	9.9%	2	*	*	*	*
	2005	5	177,674	3.7%	3	3,433	0.1%	181,107	3.8%
	2006	12	379,118	7.4%	5	35,326	0.7%	414,444	8.0%
	2007	11	545,823	9.3%	2	*	*	*	*
	2008	12	588,077	12.8%	5	16,919	0.4%	604,996	13.2%
Pot CP	2001	3	429,663	17.3%	2	*	*	*	*
	2002	2	*	*	1	*	*	*	*
	2003	1	*	*	1	*	*	*	*
	2004	1	*	*	0	0	0.0%	*	*
	2005	1	*	*	0	0	0.0%	*	*
	2006	0	0	0.0%	0	0	0.0%	0	0.0%
	2007	1	*	*	1	*	*	*	*
	2008	1	*	*	0	0	0.0%	*	*
Trawl CP	2001	8	98,867	1.5%	5	276,576	4.2%	375,444	5.6%
	2002	6	49,404	0.7%	5	98,264	1.5%	147,669	2.2%
	2003	3	*	*	2	*	*	*	*
	2004	4	79,789	1.8%	3	62,529	1.4%	142,317	3.2%
	2005	2	*	*	2	*	*	*	*
	2006	4	59,905	0.8%	3	106,369	1.5%	166,275	2.4%
	2007	6	151,212	1.6%	4	63,232	0.7%	214,443	2.3%
	2008	4	188,500	1.5%	4	148,327	1.1%	336,827	2.6%

Central GOA

		Central GOA Pacific cod fishery			Western GOA Pacific cod fishery			Total GOA Pacific Cod	
	Year	Vessels	Annual revenues per vessel	Percent of revenues	Vessels	Annual revenues per vessel	Percent of revenues	Annual revenues per vessel	Percent of revenues
Hook-and-line CP	2001	1	*	*	1	*	*	*	*
	2002	4	424,624	13.3%	1	*	*	*	*
	2003	4	416,088	20.7%	3	211,665	10.5%	627,753	31.2%
	2004	3	581,365	20.2%	1	*	*	*	*
	2005	2	*	*	1	*	*	*	*
	2006	6	250,885	4.4%	3	257,359	4.5%	508,244	8.8%
	2007	5	534,467	9.5%	2	*	*	*	*
	2008	7	572,268	8.4%	2	*	*	*	*
Pot CP	2001	3	234,448	15.4%	2	*	*	*	*
	2002	3	*	*	1	*	*	*	*
	2003	0	0	0.0%	0	0	0.0%	0	0.0%
	2004	0	0	0.0%	0	0	0.0%	0	0.0%
	2005	0	0	0.0%	0	0	0.0%	0	0.0%
	2006	0	0	0.0%	0	0	0.0%	0	0.0%
	2007	1	*	*	1	*	*	*	*
	2008	0	0	0.0%	0	0	0.0%	0	0.0%
Trawl CP	2001	5	524,982	11.1%	4	89,499	1.9%	614,481	13.0%
	2002	3	150,192	4.5%	2	*	*	*	*
	2003	7	185,011	2.5%	4	9,965	0.1%	194,977	2.7%
	2004	5	156,631	3.3%	4	70,613	1.5%	227,243	4.7%
	2005	4	200,932	4.1%	3	40,514	0.8%	241,446	4.9%
	2006	8	172,990	2.1%	5	34,659	0.4%	207,649	2.5%
	2007	3	353,714	3.2%	2	*	*	*	*
	2008	4	290,429	7.0%	2	*	*	*	*

Table 2-40 Total participation, total gross revenues, and percent dependence on GOA Pacific cod and other fisheries from 1995 through 2000 and 2001 through 2008. Only includes vessels that participated in the Western GOA directed Pacific cod fishery during the given time periods.

Western GOA

			1995-2000			2001-2008		
			Vessels	Total revenues	Percent of revenues	Vessels	Total revenues	Percent of revenues
Hook-and-line CP	BSAI	Pacific Cod	34	122,060,168	65.7%	30	269,639,443	73.7%
		Atka Mackerel	6	2,110	0.0%	8	7,360	0.0%
		Flatfish	34	6,275,598	3.4%	29	3,128,387	0.9%
		Other Species	22	550,016	0.3%	27	2,731,334	0.7%
		Pollock	24	1,541,913	0.8%	29	5,637,375	1.5%
		Rockfish	33	339,002	0.2%	27	278,126	0.1%
		Sablefish	27	8,459,481	4.6%	19	6,885,338	1.9%
	BSAI Total			139,228,290	75.0%		288,307,364	78.8%
	GOA	**WG Pacific Cod**	**36**	**24,770,542**	**13.3%**	**32**	**38,542,126**	**10.5%**
		CG Pacific Cod	**12**	**796,535**	**0.4%**	**17**	**3,945,257**	**1.1%**
		Atka Mackerel	0	0	0.0%	4	1,167	0.0%
		Flatfish	13	47,010	0.0%	18	301,403	0.1%
		Other Species	7	8,905	0.0%	25	427,142	0.1%
		Pollock	13	6,562	0.0%	26	62,629	0.0%
		Rockfish	21	461,554	0.2%	23	696,087	0.2%
		Sablefish	16	20,330,322	11.0%	15	33,084,710	9.0%
	GOA Total			46,421,925	25.0%		77,060,520	21.1%
Pot CP	BSAI	Pacific Cod	9	7,884,948	62.2%	4	11,235,980	68.3%
		Atka Mackerel	1	*	*	1	*	*
		Flatfish	3	218,866	1.7%	2	*	*
		Other Species	6	6,865	0.1%	4	56,779	0.3%
		Pollock	4	84,862	0.7%	3	434,838	2.6%
		Rockfish	3	1,904	0.0%	2	*	*
		Sablefish	2	*	*	2	*	*
	BSAI Total			8,221,410	64.9%		11,906,932	72.4%
	GOA	**WG Pacific Cod**	**9**	**2,182,451**	**17.2%**	**4**	**3,258,581**	**19.8%**
		CG Pacific Cod	**7**	**2,253,852**	**17.8%**	**3**	**1,211,553**	**7.4%**
		Atka Mackerel	0	0	0.0%	2	*	*
		Flatfish	1	*	*	0	0	0.0%
		Other Species	5	5,397	0.0%	3	27,918	0.2%
		Pollock	2	*	*	1	*	*
		Rockfish	1	*	*	1	*	*
		Sablefish	0	0	0.0%	1	*	*
	GOA Total			4,446,064	35.1%		4,546,494	27.6%
Trawl CP	BSAI	Pacific Cod	29	30,899,999	10.2%	11	62,343,700	23.9%
		Atka Mackerel	19	32,143,077	10.6%	11	14,608,966	5.6%
		Flatfish	27	103,763,594	34.2%	11	93,220,251	35.7%
		Other Species	19	88,283	0.0%	10	1,097,448	0.4%
		Pollock	27	70,205,451	23.1%	11	17,737,677	6.8%
		Rockfish	25	5,739,492	1.9%	10	4,546,806	1.7%
		Sablefish	17	1,174,082	0.4%	10	2,026,880	0.8%
	BSAI Total			244,013,978	80.4%		195,581,728	74.9%
	GOA	**WG Pacific Cod**	**29**	**2,643,228**	**0.9%**	**11**	**3,792,451**	**1.5%**
		CG Pacific Cod	**25**	**4,370,874**	**1.4%**	**7**	**4,813,397**	**1.8%**
		Atka Mackerel	17	300,744	0.1%	8	888,949	0.3%
		Flatfish	24	32,861,278	10.8%	11	34,126,622	13.1%
		Other Species	7	28,638	0.0%	10	452,421	0.2%
		Pollock	19	207,733	0.1%	11	402,248	0.2%
		Rockfish	25	12,320,650	4.1%	10	15,889,360	6.1%
		Sablefish	23	6,656,570	2.2%	10	5,186,742	2.0%
	GOA Total			59,397,422	19.6%		65,558,562	25.1%

Source: Retained catch data from Catch Accounting/Blend database, 1995–2008. *Confidential.

Table 2-41 Total participation, total gross revenues, and percent dependence on GOA Pacific cod and other fisheries from 1995 through 2000 and 2001 through 2008. Only includes vessels that participated in the Central GOA directed Pacific cod fishery during the given time periods.

Central GOA

			1995-2000			2001-2008		
			Vessels	Total revenues	Percent of revenues	Vessels	Total revenues	Percent of revenues
Hook-and-line CP	BSAI	Pacific Cod	15	40,905,931	73.8%	18	121,850,078	80.2%
		Atka Mackerel	2	*	*	2	*	*
		Flatfish	15	1,303,537	2.4%	16	603,209	0.4%
		Other Species	8	*	*	15	*	*
		Pollock	8	645,275	1.2%	18	2,917,666	1.9%
		Rockfish	15	64,003	0.1%	13	108,333	0.1%
		Sablefish	15	1,948,005	3.5%	7	2,874,131	1.9%
	BSAI Total				82.9%			85.3%
	GOA	**CG Pacific Cod**	**17**	**1,419,549**	**2.6%**	**17**	**13,604,465**	**9.0%**
		WG Pacific Cod	**9**	**2,290,653**	**4.1%**	**10**	**4,643,099**	**3.1%**
		Atka Mackerel	0	0	0.0%	1	*	*
		Flatfish	7	5,976	0.0%	10	128,076	0.1%
		Other Species	3	*	*	16	*	*
		Pollock	2	*	*	13	15,318	0.0%
		Rockfish	15	137,512	0.2%	12	80,822	0.1%
		Sablefish	14	5,641,493	10.2%	8	3,534,729	2.3%
	GOA Total				17.1%			14.7%
Pot CP	BSAI	Pacific Cod	10	10,503,510	64.2%	3	3,119,806	44.4%
		Atka Mackerel	2	*	*	1	*	*
		Flatfish	4	270,170	1.7%	1	*	*
		Other Species	9	9,438	0.1%	3	1,040	0.0%
		Pollock	4	118,744	0.7%	2	*	*
		Rockfish	4	2,290	0.0%	1	*	*
		Sablefish	2	*	*	1	*	*
	BSAI Total			10,928,137	66.8%		3,226,436	45.9%
	GOA	**CG Pacific Cod**	**11**	**3,546,391**	**21.7%**	**5**	**1,507,194**	**21.5%**
		WG Pacific Cod	**6**	**1,873,365**	**11.5%**	**3**	**2,221,761**	**31.6%**
		Atka Mackerel	0	0	0.0%	1	*	*
		Other Species	6	*	*	3	16,705	0.2%
		Pollock	1	*	*	0	0	0.0%
		Rockfish	0	0	0.0%	1	*	*
		Sablefish	0	0	0.0%	1	*	*
	GOA Total			5,424,072	33.2%		3,796,626	54.1%
Trawl CP	BSAI	Pacific Cod	34	57,370,584	12.2%	11	60,453,701	24.6%
		Atka Mackerel	22	51,329,810	10.9%	10	5,777,929	2.4%
		Flatfish	32	136,943,047	29.1%	11	80,203,611	32.6%
		Other Species	21	237,470	0.1%	10	668,251	0.3%
		Pollock	32	100,424,777	21.3%	11	12,211,559	5.0%
		Rockfish	29	16,898,377	3.6%	9	656,189	0.3%
		Sablefish	25	1,261,090	0.3%	9	1,577,664	0.6%
	BSAI Total			364,465,154	77.4%		161,548,904	65.8%
	GOA	**CG Pacific Cod**	**34**	**10,715,950**	**2.3%**	**12**	**9,564,219**	**3.9%**
		WG Pacific Cod	**26**	**1,919,785**	**0.4%**	**7**	**2,088,493**	**0.9%**
		Atka Mackerel	15	755,908	0.2%	10	461,184	0.2%
		Flatfish	29	47,125,761	10.0%	12	44,448,646	18.1%
		Other Species	13	38,688	0.0%	8	888,906	0.4%
		Pollock	24	229,374	0.0%	11	667,210	0.3%
		Rockfish	30	31,496,295	6.7%	11	18,900,905	7.7%
		Sablefish	28	13,767,587	2.9%	10	7,114,421	2.9%
	GOA Total			106,126,784	22.6%		84,134,305	34.2%

Source: Retained catch data from Catch Accounting/Blend database, 1995–2008. *Confidential.

2.2 Analysis of the Alternatives, Components, and Options

This section provides an overview of the expected economic, socioeconomic, operational, and management effects of the proposed Pacific cod sector allocations. Data are presented to show the range of potential sector allocations, based on the components and options currently under consideration. Following this overview is a discussion of the potential economic and socioeconomic effects that may occur as a result of allocating the GOA Pacific cod TACs among the harvest sectors. This discussion also addresses the potential interactions of this action with the Council's recent actions on trawl and fixed gear recency. Finally, effects on harvesters, processors, and communities are analyzed, followed by a description of the cumulative effects of the proposed amendment and other recent actions, and an analysis of the net benefit to the Nation.

Alternative 1 – No Action

Under the no action alternative, the Western and Central GOA Pacific cod TACs would not be allocated among the various sectors. The fisheries would continue to be managed as a limited access race for fish. If this alternative is selected, some sectors may increase their shares of the catch in the future and erode the historical catch shares of other sectors. Increased participation may result in negative economic impacts on current participants in the fisheries. The future distribution of catch shares among the sectors in the absence of this action cannot be predicted, and depends on future market conditions, the size of Pacific cod TACs and other groundfish TACs, opportunities to participate in other fisheries, the future regulatory environment, and operating costs in the fisheries. Consequently, this analysis does not provide a comprehensive quantitative estimate of the potential economic impacts of the no action alternative. It does, however, provide quantitative estimates of costs and benefits, to the extent that they can be usefully derived, and qualitative estimates for all other relevant impacts, consistent with the provisions of E.O. 12866 and other applicable law.

Current distribution of Pacific cod catch

Retained catch of Pacific cod by the various sectors during 1995 through 2010, is reported in Appendix A. The tables report (1) all retained catch of Pacific cod in parallel and federal waters, and (2) retained catch in the directed Pacific cod fisheries in parallel and federal waters. Catch is reported by vessel length, for hook-and-line, pot, and trawl CVs, and hook-and-line CPs. Catch and participation in the inshore and offshore processing components is also reported.

Catch history by each of the sectors, from 1995 through 2010, in the Western and Central GOA Pacific cod fisheries is summarized in Table 2-42. The table shows that the distribution of retained catch among the sectors has changed, substantially, over time. In general, the fixed gear sectors have harvested a larger proportion of the catch during recent years, and the trawl sectors have harvested less of the catch. However, there has been substantial year-to-year variability in catches. For example, in the Western GOA, trawl CVs have harvested as little as 8.7% of the annual catch (2003), and as much as 78.1% of the catch (1997). Similarly, pot CVs have harvested as little as 4.4% of the Western GOA catch (1997), and as much as 63.4% of the catch (2004). In general, the proportion of Western and Central GOA Pacific cod harvested by trawl CVs has declined, while the proportion harvested by pot CVs has increased. This trend is particularly apparent in the Western GOA. Catch by hook-and-line vessels has also increased in recent years. Jig CVs typically harvested less than 1% of the total catch of Pacific cod in the Western and Central GOA. Jig catch has generally been increasing since 1995. Under the no action alternative, the sectors would continue to race each other for access to the GOA Pacific cod TACs, and there will likely continue to be substantial annual variability in the distribution of catch among the sectors. The problem statement notes that participants in the fisheries who have made long-term investments, and are dependent

on the fisheries, face uncertainty as a result of the competition for catch shares among sectors. Allocation of the catch among sectors may reduce this uncertainty and contribute to stability in the fishery.

Table 2-42 Retained catch and percent of annual retained catch by each sector in the GOA Pacific cod fisheries, 1995–2010.

Western GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Trawl CP		Trawl CV	
	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total
1995	5,632	26.2%	35	0.2%	48	0.2%	104	0.5%	2,352	11.0%	587	2.7%	12,704	59.2%
1996	4,369	20.8%	193	0.9%	45	0.2%	*	*	1,689	8.0%	787	3.7%	13,921	66.2%
1997	3,837	16.1%	34	0.1%	5	0.0%	0	0.0%	1,041	4.4%	295	1.2%	18,554	78.1%
1998	3,168	15.1%	22	0.1%	1	0.0%	*	*	2,533	12.0%	276	1.3%	15,007	71.3%
1999	5,116	21.8%	70	0.3%	0	0.0%	1,424	6.1%	1,591	6.8%	623	2.7%	14,673	62.4%
2000	4,706	21.5%	54	0.2%	5	0.0%	*	*	5,107	23.3%	751	3.4%	11,113	50.7%
2001	3,969	27.3%	31	0.2%	157	1.1%	1,038	7.1%	2,538	17.5%	670	4.6%	6,135	42.2%
2002	6,411	36.9%	38	0.2%	193	1.1%	*	*	4,805	27.7%	327	1.9%	5,073	29.2%
2003	4,242	27.0%	47	0.3%	46	0.3%	*	*	9,549	60.8%	340	2.2%	1,367	8.7%
2004	2,893	18.9%	28	0.2%	183	1.2%	*	*	9,718	63.4%	539	3.5%	1,717	11.2%
2005	724	5.9%	281	2.3%	46	0.4%	*	*	6,402	52.2%	217	1.8%	4,441	36.2%
2006	2,691	19.4%	106	0.8%	*	*	0	0.0%	5,918	42.7%	218	1.6%	4,917	35.5%
2007	3,069	23.2%	390	2.9%	2	0.0%	*	*	4,646	35.1%	529	4.0%	4,281	32.4%
2008	3,072	20.9%	506	3.4%	63	0.4%	*	*	6,009	40.8%	391	2.7%	4,601	31.2%
2009	4,300	29.0%	1,905	12.8%	189	1.3%	*	*	5,915	39.9%	424	2.9%	2,100	14.2%
2010	4,932	23.8%	1,686	8.1%	323	1.6%	0	0.0%	10,520	50.7%	385	1.9%	2,915	14.0%

Central GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Trawl CP		Trawl CV	
	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total	Catch	Percent of total
1995	134	0.3%	4,546	10.3%	51	0.1%	0	0.0%	13,760	31.2%	2,072	4.7%	23,548	53.4%
1996	710	1.7%	4,491	10.6%	34	0.1%	0	0.0%	10,539	24.8%	2,714	6.4%	23,975	56.5%
1997	*	*	6,401	15.4%	21	0.1%	0	0.0%	8,420	20.3%	770	1.9%	25,895	62.3%
1998	175	0.4%	5,815	14.2%	50	0.1%	0	0.0%	9,208	22.5%	4,447	10.9%	21,214	51.9%
1999	313	0.7%	6,174	14.3%	24	0.1%	2,938	6.8%	12,182	28.3%	1,595	3.7%	19,881	46.1%
2000	209	0.7%	6,529	20.4%	38	0.1%	910	2.8%	11,967	37.4%	1,387	4.3%	10,971	34.3%
2001	*	*	5,684	20.9%	11	0.0%	588	2.2%	3,505	12.9%	2,241	8.2%	15,169	55.8%
2002	1,638	7.0%	6,867	29.5%	3	0.0%	131	0.6%	3,228	13.9%	835	3.6%	10,568	45.4%
2003	1,462	6.1%	3,586	15.0%	16	0.1%	*	*	3,201	13.4%	1,219	5.1%	14,405	60.3%
2004	1,453	5.5%	5,423	20.6%	118	0.4%	0	0.0%	4,916	18.7%	770	2.9%	13,669	51.9%
2005	267	1.2%	4,271	19.3%	137	0.6%	0	0.0%	8,169	36.9%	719	3.2%	8,591	38.8%
2006	897	4.0%	6,183	27.6%	96	0.4%	0	0.0%	8,420	37.6%	877	3.9%	5,922	26.4%
2007	1,376	5.5%	6,341	25.2%	36	0.1%	*	*	8,286	32.9%	590	2.3%	8,220	32.6%
2008	1,755	6.9%	6,054	23.9%	19	0.1%	0	0.0%	5,208	20.5%	632	2.5%	11,680	46.1%
2009	1,154	5.7%	5,270	26.0%	42	0.2%	0	0.0%	5,366	26.4%	1,023	5.0%	7,446	36.7%
2010	3,217	9.4%	5,379	15.7%	103	0.3%	0	0.0%	9,561	27.9%	759	2.2%	15,284	44.6%

Source: ADF&G Fish Tickets and NMFS Blend and Catch Accounting. *Confidential.

Alternative 2 – Pacific Cod Sector Allocations

This section describes the impacts of the proposed action on the distribution of the Western and Central GOA Pacific cod TACs among the various sectors that participate in the fisheries. The proposed sector allocations would divide the Western and Central GOA Pacific cod TACs among the various gear and operation types, based on the historical distribution of catch. The Western and Central GOA A season

TACs are fully utilized, and vessels race for shares of the TACs. Sector allocations may reduce competition among sectors for the A season TACs, but may not reduce competition among vessels within each sector, nor slow down the fisheries' prosecution. During recent years, the GOA Pacific cod B season TACs have not been fully harvested, particularly in the Western GOA. Trawl vessels (in the Central GOA), and to a lesser extent hook-and-line vessels (GOA-wide), race to catch Pacific cod at the highest possible rate during the B season, with the knowledge that halibut PSC limits could close the B season at any time. Halibut PSC limits often constrain the length of the B season for these sectors. During years when halibut PSC closures have not limited participation by trawl and hook-and-line vessels, the B season TACs have been fully harvested. Sector allocations would protect historical B season catches during these years, but would not be expected to directly impact halibut PSC removals.

The Eastern GOA TAC will not be allocated among sectors as a result of this action, because there is not a perceived need for such an action. In recent years, only a small proportion of the Eastern GOA TAC has been harvested (see Table 2-3), although effort and catch increased in 2009. The potential exists for the absence of any sector allocations in the Eastern GOA to provide an incentive for increased effort in that fishery.

There are elements of two of the components that apply to the entire GOA, including the Western, Central, and Eastern GOA management areas. Component 7 will allocate the non-DSR portion of the hook-and-line halibut PSC limit between CVs and CPs, based on the aggregate (Western and Central GOA) allocation of Pacific cod to each sector. The resulting CV and CP hook-and-line PSC limits will apply to the entire GOA. Halibut PSC by hook-and-line vessels operating in the Western, Central, and Eastern GOA will accrue against these PSC limits. In Component 10, Option 2, there is a suboption to preclude holders of Federal Fisheries Permits (FFPs) with a GOA area endorsement from surrendering the FFP during a specified time period. Again, this suboption applies to the entire GOA, and is discussed in detail within that section of the analysis.

2.2.1 Component 1 – Management Areas

The proposed GOA Pacific cod sector allocations could apply to the Western GOA and Central GOA, or the management areas could be treated differently within Component 2. This gives the Council the option to define sectors in different ways in each management area when participation patterns differ between the management areas. For example, in the Central GOA the hook-and-line CV sector is relatively large, and separate allocations could be established for hook-and-line CVs based on vessel length (i.e., <50 ft LOA and ≥50 ft LOA). In the Western GOA, the hook-and-line CV sector has historically harvested a small percentage of the TAC, and this sector's allocation would not support a directed fishery, if divided by vessel length.

2.2.2 Component 2 – Options for Sector Definitions

Under Component 2, there are different options for defining sectors in the Western and Central GOA:

<u>Western GOA</u>

- Trawl catcher processors
- Trawl catcher vessels
- Hook-and-line catcher processors
  <u>Option</u>: Hook-and-line catcher processors <125 ft
  Hook-and-line catcher processors ≥125 ft
- Hook-and-line catcher vessels
  <u>Option</u>: Hook-and-line catcher vessels <60 ft

Hook-and-line catcher vessels ≥60 ft

- Pot catcher processors
- Pot catcher vessels

  Option: Pot catcher vessels <60 ft

  Pot catcher vessels ≥60 ft

  Option: Combined CP and CV Pot sector
- Jig vessels

Option: For Western GOA only, create a single sector of combined trawl and pot catcher vessels.

Suboption: Applies only to vessels <60 ft.

Central GOA

- Trawl catcher processors
- Trawl catcher vessels
- Hook-and-line catcher processors

  Option: Hook-and-line catcher processors <125 ft

  Hook-and-line catcher processors ≥125 ft
- Hook-and-line catcher vessels

  Option: Hook-and-line catcher vessels <50 ft

  Hook-and-line catcher vessels ≥50 ft
- Pot catcher processors
- Pot catcher vessels

  Option: Combined CP and CV Pot sector
- Jig vessels

In both management areas, sector allocations could be made to hook-and-line CVs, hook-and-line CPs, pot CVs, pot CPs, trawl CVs, trawl CPs, and jig vessels. In addition, there are options to divide sectors by vessel length for hook-and-line CPs (<125 ft and ≥125 ft LOA), pot CVs (Western GOA only; <60 ft and ≥60 ft LOA), and hook-and-line CVs (<60 ft and ≥60 ft LOA [Western GOA only] and <50 ft and ≥50 ft LOA [Central GOA only]). There are also options to combine the pot CV and pot CP allocations in each of the management areas. Finally, there is an option to create a combined pot and trawl CV allocation in the Western GOA, either for all pot and trawl CVs, or for pot and trawl CVs <60 ft LOA. The Council could choose any of these individual options to divide sectors by vessel length, or could establish a single allocation for any of the sectors.

In some cases, these sector divisions would result in manageable allocations. For example, if the Western GOA pot CV allocation is split by vessel length, it would be divided fairly evenly between <60 ft and ≥60 ft LOA vessels. This division would ensure that larger pot vessels would not encroach on historical catch shares of smaller pot vessels. In other cases, these divisions result in allocations that may be too small to allow NMFS to open directed fisheries for some sectors. These divisions are described in more detail under Component 4, in the discussion of potential allocations to the sectors.

Option to combine pot CV and pot CP allocations

There are options to combine the pot CV and pot CP sectors in each of the management areas. In both management areas, the allocation to the pot CP sector, if based on catch history, would be relatively small (up to 2.3% of the Western GOA TAC and up to 1.4% of the Central GOA TAC). Only 4 Western GOA and 3 Central GOA CP licenses are estimated to qualify for a pot gear endorsement under the fixed gear recency action. CP licenses may qualify for a pot gear endorsement with either CP or CV landings, as long as the aggregate landings meet the 50 mt threshold. Only two CP licenses in each of the respective management areas had pot CP landings during the fixed gear recency qualifying period, and three CP

licenses had pot CV landings (Table 2-43). Thus, the group of CP licenses that qualify for pot CP endorsements will contribute catch history to both the pot CV and pot CP allocations, considering landings from 2002 through 2008. Combining the pot CP and pot CV allocations would facilitate inseason management of the pot allocations. Depending on the number of vessels interested in participating as pot CPs (including any non-federally permitted vessels that do not have an LLP license and wish to fish only in parallel waters), the potential allocation to the pot CP sector may not support a directed fishery. Combining pot CPs with pot CVs would ensure that pot CPs may participate in the directed Pacific cod fishery.

Table 2-43 Fixed gear CP licenses estimated to qualify for a pot gear endorsement under fixed gear recency, and Pacific cod landings by these CP licenses in the Western and Central GOA Pacific cod fisheries, 2002 through 2008.**

		Licenses with pot CP landings		Licenses with pot CV landings	
	Licenses qualifying	Licenses	Catch (mt)	Licenses	Catch (mt)
Western GOA	4	2	*	3	*
Central GOA	3	2	*	3	*

*Confidential.
**Note CP licenses may qualify with 50 mt of directed Pacific cod catch, while operating as either CPs or CVs.

Option for combined trawl and pot allocation in the Western GOA

There is an option in Component 2 to establish a combined pot and trawl CV allocation for the Western GOA, and a suboption to establish such an allocation only for vessels <60 ft LOA. **One rationale for establishing a combined pot and trawl allocation was that the Council, in a previous motion, considered options that would limit vessels to using only one gear type in the Pacific cod fishery. These options are no longer in the motion.** There are a number of vessels that regularly participate in the Pacific cod fishery using both pot and trawl gear during the same fishing year. This harvest strategy is part of the annual fishing operations of these vessels. These vessels typically begin fishing for Pacific cod on January 1 with pot gear when the fixed gear season opens, and switch to trawl gear on January 20. After the A season ends, the vessels participate in the state waters Pacific cod fishery using pot gear, and use trawl gear again when the B season opens on September 1. The Pacific cod B season often closes to trawl gear in early October, when the final trawl halibut PSC apportionment has been used, and if this occurs, some vessels switch back to pot gear and continue fishing late into the year. In recent years, the GOA Pacific cod B season has remained open to vessels using pot gear until December 31. This fishing strategy allows these vessels to maximize the number of fishing days during both the A and B seasons. Approximately 10 to 15 vessels per year use this fishing strategy in the Western GOA. This strategy is much less common in the Central GOA (<3 vessels per year). Most of the trawl vessels operating in the Central GOA are >60 ft LOA and participate exclusively as trawl vessels in the Pacific cod fishery.

When the trawl and fixed gear LLP recency actions are implemented, an estimated 30 of the 59 Western GOA CV licenses (<60 ft MLOA) that will receive a pot endorsement will also be eligible to use trawl gear (Table 2-45). An estimated 30 of 40 Western GOA CV licenses (<60 ft MLOA) that qualify under trawl recency also will receive a pot endorsement. Only 10 trawl licenses and 29 pot licenses with an MLOA of less than 60 ft will only be eligible to use one gear type (either trawl or pot). Fewer than 3 Western GOA CV licenses with an MLOA of ≥60 ft will be eligible to use both pot and trawl gear.

The Council asked that the option for a Western GOA combined pot CV and trawl CV allocation be analyzed in two ways:

(1) <u>Combine pot CV and trawl CV allocations into a single pot-trawl CV allocation</u>

The first approach is to simply add the pot CV and trawl CV allocations together to create a single pot and trawl CV allocation. The suboption would combine only the <60 ft pot CV and <60 ft trawl CV allocations. Management of this combined allocation would be straightforward. Catch by pot CVs and trawl CVs would accrue to this combined allocation. A combined pot and trawl allocation would give pot CVs and trawl CVs access to all of the catch history contributed by both gear types.

Combining the pot CV and trawl CV allocations into a single allocation could have several effects. Vessel operators who hold pot-endorsed licenses could begin fishing the combined pot and trawl allocation on January 1, and would have a head start on vessel operators who only hold trawl licenses. When the trawl A season opens on January 20, vessel operators who hold trawl licenses are likely to use trawl gear, and the combined pot and trawl allocation could be harvested fairly quickly. Operators who hold both pot and trawl licenses would be able to take advantage of the January 1 start date for pot gear, and switch to higher catch per unit effort trawl gear on January 20. On September 1, the B season would open to all gear types. Vessel operators who only hold pot endorsed licenses would likely be at a disadvantage to operators who hold trawl licenses. However, trawl effort during the Western GOA B season has been very limited in recent years.

A combined pot and trawl allocation may be most advantageous to dual gear pot and trawl license holders, who can take advantage of the staggered A season start dates and participate with both gear types, while fishing off a larger combined allocation. One potential consequence of establishing a combined pot-trawl allocation is that more of the allocation could be harvested with trawl gear than has been historically harvested by trawl vessels. **If separate pot and trawl allocations are established, operators who hold both pot and trawl endorsed license could continue to use both gear types during the fishing year.** Separate allocations to pot and trawl gear may preclude one gear type from pre-empting the other in a race for fish, particularly during the A season, which is one of the purported key motivations, identified in the Council's Problem Statement, for this action.

(2) <u>Establish 3 separate allocations for (a) trawl CV only participants, (b) pot CV only participants, and (c) combined pot/trawl participants (operators who hold pot and trawl endorsed LLP licenses).</u>

The second approach to the option for a combined pot CV and trawl CV allocation is to establish three separate allocations for pot CVs and trawl CVs. One allocation would be established based on the catch history of licenses that qualified for both pot and trawl endorsements in the Western GOA under the fixed and trawl recency actions. Separate allocations would be established for pot CVs and trawl CVs for participants who do not hold a dual pot and trawl gear endorsed license. Again, a suboption would establish these three allocations for <60 ft LOA CVs only.

Management of the sector allocations that would be established under this second approach could be complicated in several respects. In order to account for pot CV and trawl CV catch in the Western GOA, NMFS would need to track catch by LLP license. Pot CV or trawl CV catch, by vessels assigned to a dual pot/trawl gear endorsed license, would accrue to the combined pot/trawl allocation; all other pot CV and trawl CV catch would accrue to the separate allocations to the respective sectors. Currently, licenses may be transferred once per calendar year. If a vessel owner held both a dual gear (pot/trawl) endorsed license and a separate pot or trawl LLP license, that vessel owner could potentially fish off the combined pot/trawl allocation, then transfer the license off the vessel, or delist the vessel from that license and continue fishing off either of the separate pot CV or trawl CV allocations. Effectively, the vessel owner would be able to fish off of a sector's allocation that the vessel's catch history did not contribute to. Similarly, any vessel that receives a pot/trawl CV LLP license by transfer would have its catch deducted from the combined gear allocation regardless of the catch history of that vessel. If a dual pot/trawl license

is transferred to a vessel with substantially greater fishing capacity than the vessel currently assigned to the license, harvesting capacity and competition within the pot/trawl sector could increase.

Currently, NMFS does not track catch by LLP license. Catch is tracked by vessel, based on the eLandings reports. Catch from a vessel can be assigned to an LLP license, based on records maintained by NMFS Restricted Access Management Program (RAM), provided that the vessel is assigned only one LLP license at a time. NMFS cannot assign catch to a specific LLP license on a vessel with stacked LLP licenses (e.g., a pot/trawl and a trawl LLP license assigned to the same vessel), unless the vessel operator specifies the license to which the catch is assigned at the time of landing. NMFS would need this information from all vessels harvesting Pacific cod in the Western GOA, because LLP licenses can be stacked on any vessel. Assigning catch to an LLP license at the time of landing would require extensive and costly revisions to the eLandings system.

The number of CV licenses that are projected to qualify for a Pacific cod pot gear endorsement and a trawl endorsement in the Western GOA are shown in Table 2-44. Fewer than three licenses with an MLOA designation of ≥60 ft are estimated to qualify for both gear endorsements in the Western GOA. Thirty Western GOA licenses with an MLOA of <60 ft are projected to qualify for both pot and trawl gear endorsements.

Table 2-44 Number of groundfish CV licenses eligible to participate in the Western GOA using pot gear, trawl gear, and both pot and trawl gear, following implementation of recency actions.

Gear type	<60 ft MLOA	≥60 ft MLOA
Pot gear only*	29	*
Trawl gear only**	10	*
Pot and Trawl gear***	30	*
Total pot (including dual gear licenses)***	59	21
Total Trawl (including dual gear licenses)***	40	36

* Confidential
**The number of ≥60 ft MLOA combination pot and trawl licenses is confidential, so the number of pot only and trawl only licenses cannot be shown either. The total number of pot and trawl ≥60 ft MLOA licenses are shown.
Source: RAM LLP license file and ADF&G Fish Tickets.

Pot CV and trawl CV catch history by dual gear pot-trawl CV licenses is shown in Table 2-45. Any pot CV or trawl CV catch not associated with a dual gear pot-trawl CV license is shown as "other pot catch" and "other trawl catch" in the table. Table 2-45 shows catch history of all pot and trawl CVs. **It was not possible to show catch by <60 ft LOA trawl and pot CVs separately, because there are fewer than three dual gear pot-trawl CV licenses with an MLOA ≥60 ft, projected to qualify under the recency actions. If the Council would like to establish a combined pot-trawl CV allocation for pot and trawl CVs <60 ft, it will need to determine how much to allocate to that sector.** Non-dual gear licenses have made the majority of pot CV landings. Trawl CV history is split fairly evenly between dual gear licenses and all other trawl catch.

Table 2-46 shows the potential sector allocations under each of the options for the Western GOA. All of the allocations are large enough to support a directed fishery. Under most options, trawl gear contributed the majority of catch history to the dual gear pot-trawl CV allocation. Again, one potential consequence of establishing a combined pot-trawl allocation is that more of the allocation could be harvested with trawl gear than has been historically harvested by trawl vessels.

The allocations shown are based on the same set of years used to calculate catch history for the pot CV and trawl CV sectors, as a whole. The allocations were proportionally split between dual gear licenses and all other pot or trawl catch, based on catch history during the same set of years used to calculate the

overall pot CV and trawl CV sector allocations. As a result, the three allocations (combined pot-trawl, pot only, and trawl only) sum to same percent allocation as the sum of the pot CV and trawl CV allocations. Similarly, the combined pot-trawl allocation, pot only allocation, and trawl only allocation could be seasonally apportioned based on the same set of years used to calculate the sector allocations for the overall pot CV and trawl CV allocations.

It is important to note that the catch history, allocations, and seasonal apportionments were calculated, based on the catch history of the licenses shown in Table 2-44. It is possible that when the recency actions are implemented, additional licenses may qualify for dual pot and trawl gear endorsements. It is also possible that some of the licenses whose catch history is shown here may not qualify, when the official license transfer and catch records are examined, upon implementation of the recency actions. If the Council chooses this suboption as part of its preferred alternative for the sector split action, the catch history shown here, which is an estimate of the actual catch history of the dual gear pot-trawl CV licenses, will need to be used to determine allocations to these sectors.

Table 2-45 Catch of Pacific cod in the Western GOA by pot CVs and trawl CVs assigned to LLP licenses projected to qualify for a trawl and a pot Pacific cod endorsement under the trawl and fixed gear recency actions (dual gear licenses), and all other Western GOA pot CV and trawl CV catch not associated with these dual gear licenses.

	Pot gear					Trawl gear				
	Dual gear licenses		All other pot catch		Total pot	Dual gear licenses		All other trawl catch		Total trawl
Year	Vessel count	Catch (mt)	Vessel count	Catch (mt)		Vessel count	Catch (mt)	Vessel count	Catch (mt)	
1995	42	1,507	16	846	2,352	75	8,588	29	4,116	12,704
1996	21	842	17	847	1,689	33	6,985	29	6,936	13,921
1997	15	817	5	223	1,041	61	9,322	29	9,232	18,554
1998	43	2,184	10	349	2,533	71	7,483	27	7,524	15,007
1999	25	1,225	9	366	1,591	51	7,566	27	7,107	14,673
2000	68	4,812	13	295	5,107	29	5,420	28	5,693	11,113
2001	37	2,115	9	423	2,538	30	2,610	25	3,524	6,135
2002	35	3,479	14	1,325	4,805	26	2,390	22	2,684	5,073
2003	37	5,283	24	4,265	9,549	26	848	14	519	1,367
2004	56	6,757	28	2,961	9,718	21	598	14	1,119	1,717
2005	39	5,300	22	1,102	6,402	22	1,753	17	2,688	4,441
2006	38	4,913	14	1,005	5,918	22	2,253	17	2,664	4,917
2007	35	3,770	14	876	4,646	23	1,542	18	2,739	4,281
2008	42	4,923	19	1,085	6,009	14	1,914	16	2,688	4,602

Note: Total pot CV and total trawl CV catch is equal to the catch histories of each sector (see Appendix A, Table A-1). Vessel counts may be slightly higher than in Table A-1, because some vessels hold stacked licenses (i.e., both a dual gear license and a pot only or trawl only license). Catch by vessels with stacked licenses was split evenly between licenses, and vessels were counted in both columns. Catch during 1995–2002 was assigned to the original qualifying vessel. Catch during 2003–2008 was assigned to the current vessel assigned to the license.
Source: ADF&G Fish Tickets and NMFS RAM license file.

Table 2-46 Potential sector allocations to combined pot-trawl CV sector, pot CV only sector, and trawl CV only sector in the Western GOA.

Western GOA: 1.0% jig allocation	Dual gear-pot CV	Dual gear-Trawl CV	Total pot-Trawl CV	Other Pot CV	Other Trawl CV	Total Pot CV	Total Trawl CV
1995-2005: Best 7 years	7.5%	22.4%	29.9%	20.3%	24.1%	27.8%	46.5%
2000-2006: Best 5 years	11.5%	17.4%	28.9%	28.8%	14.2%	40.3%	31.7%
2002-2007: Best 5 years	12.4%	15.1%	27.5%	33.1%	10.7%	45.5%	25.9%
2002-2008: Best 5 years	11.9%	16.2%	28.1%	32.1%	11.7%	44.0%	27.9%
Each sector's best option	10.2%	18.3%	28.5%	27.1%	19.7%	37.3%	38.1%
Average of Options 1-4	10.8%	17.8%	28.6%	28.6%	15.2%	39.4%	33.0%

Option to restrict operation type of licenses

Finally, there is an option in Component 2 to preclude vessel operators who hold CP licenses from participating as both CPs and CVs in the GOA Pacific cod fishery. Currently, a vessel operator who holds a CP license may operate as either a CP or CV in the groundfish fisheries. If sector allocations are established, this means that operators who hold CP licenses could fish opportunistically off both the CP and CV allocations. For example, A vessel operator who holds A CP license and A Pacific cod endorsement for pot gear could fish as a pot CP until that sector allocation is fully harvested, and then if the pot CV allocation has not been fully harvested, the operator could continue fishing as a pot CV. This fishing strategy would unfairly disadvantage vessel operators that hold CV licenses, because they would not have the option to opportunistically fish off the CP allocations. There is an option in Component 2 to address this issue in both the Western GOA and Central GOA:

> Option: Holders of CP licenses shall make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement for Pacific cod, if that CP license made a minimum of one Pacific cod landing, while operating as a CV under the authority of the CP license from 2002 through 2008.
>
> Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA cod fishery. For example, CP licenses assigned to the CP sector may not fish off of the allocation assigned to CVs in the GOA Pacific cod fishery. Future catch accounting for these vessels should be according to the sector to which those licenses are assigned.
>
> (Note: This CP or CV endorsement would be added to the LLP license, and would apply only to the Western and Central GOA Pacific cod fisheries (directed and incidental catches); the existing operation type endorsement would remain on the LLP license and would apply to other groundfish fisheries. If a vessel holds multiple, stacked, licenses and one of those stacked LLP licenses is a CP LLP license eligible to harvest Pacific cod in the GOA area of participation, all catch will count against the CP sector allocation.)

Note that if the Council does not select this option, the status quo is to account for catch by a vessel's mode of operation: catch by vessels operating as CPs would accrue to the CP allocations, and catch by vessels operating as CVs would accrue to the CV allocations.

Previously, the Council also considered an option that would limit CP license holders to participating as CPs in the Western and Central GOA Pacific cod fisheries. Under this option, any Western or Central GOA Pacific cod catch by a vessel operator who holds a CP license would count against the CP sector allocation for the respective gear type. This approach would preclude vessel operators who hold CP licenses from opportunistically fishing off both the CV and CP sector allocations, but it would also mean

that vessel operators who hold a CP license, but have historically operated as CVs in the Pacific cod fishery, could only participate as CPs in the Pacific cod fishery. The Council heard public testimony indicating that these CP license holders would like to continue to participate as CVs in the GOA Pacific cod fishery. In addition, some of the vessels assigned to CP licenses have contributed history to the CV allocations, and not to the CP allocations, and allowing them to continue to participate in the GOA Pacific cod fishery as CVs would reflect their contribution to the sector allocations.

The current option allows Western and Central GOA CP license holders to make a permanent, one-time election to operate as a CV in the Western and Central GOA Pacific cod fisheries, if the CP license made a minimum of one Pacific cod landing while operating as a CV under the authority of the CP license from 2002 through 2008. All CP licenses with Western or Central GOA area endorsements would receive an additional endorsement on the LLP license, indicating whether the license holder may participate as either a CP or CV in the GOA Pacific cod fishery. This additional endorsement would not affect the license's existing operation type endorsement. The license would continue to be eligible to participate as a CP in all other GOA and BSAI groundfish fisheries. Allowing license holders to choose to participate as either CPs or CVs in the GOA Pacific cod fishery could mean that some CP license holders that have both CP and CV fishing history in the GOA Pacific cod fishery would be limited to only one operation type in the future in that fishery.

The estimated number of CP licenses that would be eligible to make this one-time election to participate as either a CP or a CV is shown in Table 2-47. The table shows the number of licenses that qualify under the trawl or fixed gear recency actions, and that have at least one CV Pacific cod landing (using the gear type shown in the table) in the GOA during 2002 through 2008. It is important to note that NMFS cannot require (or enforce) that a vessel process its catch on board. Consequently, the option states that catch in the Western and Central GOA Pacific cod fisheries by licenses that elect to receive a CP Western or Central GOA endorsement would accrue to the CP allocations. The result is that licenses that elect to receive a CP Pacific cod endorsement could operate as either a CP or CV, but their catch would accrue only to the CP allocation for their respective gear type.

Requiring vessels to make a one-time election to operate as either a CP or CV in the GOA Pacific cod fishery simplifies the administration of this licensing restriction, and meets the Council's objective of preventing CP license holders from opportunistically fishing off of both the CP and CV Pacific cod sector allocations. An alternative approach would be to allow CP license holders to make an annual election to participate in the GOA Pacific cod fisheries. This approach could be problematic for the agency, and could also create instability in the fishery. For example, an annual election could result in substantial shifts in fishing effort within a given section that would need to be known in advance of season openings to allow for adequate management of the fishery. However, it also means that the licenses at issue would not have the option in the future to fish off another sector allocation. For example, there is a group of CP licenses that have similar amounts of catch history in the GOA Pacific cod fishery as CPs and CVs. If these licenses elect to receive a CP Pacific cod endorsement, they could continue to operate as either a CP or CV, but their GOA Pacific cod catch would <u>only</u> accrue to the respective CP allocations, regardless of their mode of operation. If these license holders elect to receive a CV Pacific cod endorsement, they could no longer participate as a CP in the Western or Central GOA directed Pacific cod fisheries, and their catch would <u>only</u> accrue to the respective CV allocations. NMFS would need to attribute catch from a specific CP license to the appropriate sector allocation.

Finally, this option would not preclude a vessel operator from operating as both a CP and CV in the GOA Pacific cod parallel waters fishery, unless the Council also selects Component 10, Option 2 as part of its preferred alternative. This latter option requires federally permitted vessels to hold a groundfish LLP license with the appropriate endorsements in order to participate in the GOA parallel waters Pacific cod

fishery. Under this option, the CV/CP operation restriction would also apply to federally permitted vessels participating in the GOA Pacific cod parallel fishery.

Table 2-47 Number of CP licenses with CV history in the GOA Pacific cod fisheries during 2002 through 2008 that are projected to qualify under the trawl recency or fixed gear recency actions (and be eligible to use the gear type listed).

Gear type	Western GOA	Central GOA
Pot	3	3
Hook-and-line	*	*
Trawl	3	3
Total number of unique licenses*	*	*

*One license has more than one gear endorsement.

2.2.3 Component 3 – Definition of Qualifying Catch

The Council has defined qualifying catch as all retained catch of Pacific cod from the federal and parallel waters fisheries. Each sector's allocation would support its own directed and incidental catch needs. Currently, trawl CVs participating in the Central GOA Rockfish program are allocated 2.09% of the Central GOA Pacific cod TAC to support incidental catch of Pacific cod in the rockfish fisheries. This amount will be deducted from the Central GOA trawl CV B season allocation. The tables in Appendix A report annual catches by each sector in the Western and Central GOA Pacific cod fisheries during 1995 through 2008. Retained catches in the directed Pacific cod fisheries are also reported. Note that some vessels have catch history in more than one sector. The tables also show each sector's annual harvest as a percent of the total retained catch by all sectors.

Comparison of catch history using different data sets

In developing catch history estimates for recent sector allocations, the Council at times has elected to exclude meal from estimates of catch history. Meal has typically been excluded when a certain segment would be disadvantaged by the inclusion of meal in calculations. Specifically, small CPs without meal plants could be disadvantaged. However, Weekly Production Reports (WPR) indicate that in the GOA no CPs produced meal from Pacific cod during 1995 through 2008. Pacific cod is a relatively high value product, and the majority of cod is processed into headed and gutted products or fillets. Fish Tickets may designate catch as "destined for meal production," but this estimate is not particularly reliable and may underestimate the amount of catch that is actually used for meal production. Catch destined for meal production is a relatively minor component of the total retained catch by CVs. For example, in the Central GOA, approximately 1.0% of retained catch by trawl CVs was destined for meal production between 1995 and 2005. From 2000 through 2006, approximately 1.7% of Central GOA trawl CV catch was destined for meal production. In general, catch destined for meal production comprised less than 1% of total retained catch for other CV sectors. Based on these data and public testimony, the Council rejected options to exclude catch destined for meal production from the definition of qualifying catch.

In recent sector allocation actions, the Council has typically used ADF&G Fish Tickets for CVs and NMFS WPRs for CPs. An alternative data source is the NMFS Blend (1995 through 2002) and Catch Accounting (2003 through present) databases. The Blend data is comprised of WPRs and Observer data, and the Catch Accounting data is comprised of WPRs, Fish Tickets, and Observer data, according to the rules shown in Appendix B. NMFS uses the Blend and Catch Accounting databases to manage the fishery inseason, and these databases comprise the official catch record. Fish Ticket information prior to 2008 was not available quickly enough for NMFS' inseason management purposes. NMFS inseason management requires prompt reporting of catch to successfully manage the fisheries to stay within the

established TACs and PSC limits. Data from non-electronic WPRs and Fish Tickets take time to compile. With the advent of eLandings, NMFS Catch Accounting database and the ADF&G Fish Ticket database are in close agreement for retained catch estimates.

The Council elected to calculate catch history based on ADF&G Fish Tickets for CVs. For CVs, Fish Tickets are a more comprehensive record of catch than the Blend (1995 through 2002) database. As a result, catch estimates based on Fish Tickets are generally higher than those from the Blend database. Again, Blend catch estimates are based on WPRs and Observer data. Catch Accounting estimates for CVs are based on Fish Tickets for vessels that deliver shoreside and use eLandings, and retained catch estimates are very similar between the Catch Accounting database and the Fish Ticket database.

The Council elected to calculate catch history based on Blend and Catch Accounting data for CPs. Catch Accounting data for CPs uses WPRs for 30% observed vessels and Observer data for 100% observed vessels. Discrepancies between WPRs and Blend/Catch Accounting databases may be the result of underreporting on WPRs compared to observer data, the use of product recovery rates to back-calculate round weights for catch recorded on WPRs, and the increased use of observer estimates for CPs and motherships in Blend/Catch Accounting data. The advantage of using WPRs for allocations is that certain product types, such as meal, can be excluded from catch estimates. The Blend and Catch Accounting databases do not contain a record of products produced. However, in the GOA, WPRs indicated that no CPs produced meal from Pacific cod during 1995 through 2008. For this reason, the Council elected to use Blend and Catch Accounting data rather than WPRs to calculate qualifying catch for CPs. Appendix B includes tables that compare total retained catch, based on the Blend and Catch Accounting data, to catch estimates based on Fish Tickets and WPRs, and a description of the reasons for the differences between data sets.

2.2.4 Component 4 – Potential Sector Allocations

There are distinct sets of options for calculating sector allocations for the Western and Central GOA:

<u>Western GOA</u>

1) Qualifying years 1995 through 2005: average of best 7 years
2) Qualifying years 2000 through 2006: average of best 5 years
3) Qualifying years 2002 through 2007: average of best 5 years
4) Qualifying years 2002 through 2008: average of best 5 years
5) Average of all options above

<u>Central GOA</u>

1) Qualifying years 2000 through 2006: average of best 3 years
2) Qualifying years 2000 through 2006: average of best 5 years
3) Qualifying years 2002 through 2007: average of best 3 years
4) Qualifying years 2002 through 2007: average of best 5 years
5) Qualifying years 2002 through 2008: average of best 3 years
6) Qualifying years 2002 through 2008: average of best 5 years
7) Average of Options 1 through 6
8) Average of Options 2, 4, and 6

The potential percent sector allocations under each of the options in Component 4 are summarized in Table 2-48. In the Western GOA, the options that include earlier years (1995 through 2005) generally favor the trawl CV sector. In the Central GOA, the options to include catch history from 1995 through 2000 were removed. The options that only include more recent years (2000 through 2008) generally favor the pot CV sector, and, to a lesser extent, the hook-and-line sectors. Averaging across the options or using each sector's best option reduces the disparities among the options somewhat, but there are still

strong differences among the options, depending on the range of years selected. For example, the trawl CV allocation could range from 26.1% to 46.9% of the Western GOA TAC and 41.4% to 44.2% of the Central GOA TAC. Similarly, the pot CV allocation could range from 28.0% to 46.0% of the Western GOA TAC and 25.3% to 28.2% of the Central GOA TAC.

The Council has indicated its intent to reduce the Central GOA trawl CV B season allocation by the amount of the Pacific cod TAC allocated to vessels participating in the Central GOA Rockfish Pilot Program. A fixed percentage of the Central GOA Pacific cod TAC is currently allocated to CVs participating in the Rockfish Pilot Program to meet incidental catch needs. This allocation is 2.09% of the Central GOA Pacific cod TAC, and is taken off the B season TAC. If sector allocations are established, the percent allocation to the trawl CV sector would simply be reduced by the percent allocation to the CVs participating in the Rockfish Pilot Program, during the tenure of that program.

There is a suboption to establish separate allocations for hook-and-line CPs, based on vessel length (<125 ft and ≥125 ft LOA). There are also suboptions to establish separate allocations for hook-and-line and pot CVs, based on vessel length (<60 ft and ≥60 ft LOA, or <50 ft and ≥50 ft LOA for hook-and-line CVs in the Central GOA). In some cases, these divisions would result in manageable allocations (Table 2-49). For example, if the pot CV allocation is split by vessel length, it would be divided fairly evenly between <60 ft and ≥60 ft LOA vessels. This division would ensure that larger pot vessels would not encroach on historical catches of smaller vessels.

In other cases, these divisions result in allocations that may be too small to allow NMFS to open directed fisheries for some sectors. The Council removed the option to establish separate allocations for trawl CPs <125 ft and ≥125 ft LOA, because dividing the trawl CP allocations by vessel length may make managing them impracticable, and may preclude NMFS from opening directed fisheries for the sectors. Most of the trawl CPs that have fished in the GOA during recent years are Amendment 80 vessels. Amendment 80 vessels are subject to Pacific cod sideboards in the GOA. Catch of Pacific cod is limited to the proportion of the Western and Central GOA TACs caught by Amendment 80 vessels during 1998 through 2004. In the Central GOA, Amendment 80 vessels are capped at 4.4% of the TAC, and in the Western GOA, Amendment 80 vessels may catch up to 2.0% of the TAC. The Western and Central GOA trawl CP allocations could potentially be set lower than the Amendment 80 sideboard amounts. Sideboards limit the amount of catch by a sector, but do not guarantee that sector a specific amount of TAC (i.e., sideboards are not allocations).

Dividing the Western GOA hook-and-line CP sector by vessel length would likely result in manageable allocations. The majority of hook-and-line CP catch in the Western GOA has been by vessels <125 ft LOA, but the allocation to vessels ≥125 ft LOA would likely be sufficient (approximately 3% to 5% of the TAC) to support a directed fishery. In the Central GOA, hook-and-line CPs <125 ft LOA would receive 1.1% or less of the TAC, and large CPs would receive 3.5% to 4.4% of the TAC. These allocations are quite small. Smaller allocations mean that inseason management needs to be more conservative to ensure that each sector stays within its allocation.

In both the Western and Central GOA, hook-and-line CVs <60 ft LOA have historically harvested a higher proportion of the catch than larger vessels. However, in the Western GOA, the entire hook-and-line CV allocation would amount to 1.7% or less of the TAC, and dividing this sector by vessel length would likely mean that NMFS would not open a directed fishery for the ≥60 ft LOA sector. In the Central GOA, hook-and-line CVs <60 ft in length would receive approximately 18% to 20% of the TAC, but ≥60 ft LOA vessels would receive only 1% to 2% of the TAC. An alternative way of dividing this allocation would be a split between vessels <50 ft LOA and ≥50 ft LOA. The number of vessels between 50 ft and 60 ft LOA participating in the Pacific cod fishery in the Central GOA has increased during recent years (see Appendix A), and there is potential for more growth in this sector, because vessels <60

ft LOA are not required to carry federal observers. In the Central GOA, the majority of the hook-and-line fleet's catch history has been harvested by vessels <50 ft LOA. If the hook-and-line sector is split at 60 ft, this may leave the <50 ft LOA fleet vulnerable to an influx of effort. Dividing the Central GOA hook-and-line CV sector at 50 ft, rather than at 60 ft, may help protect historical catches of the smaller vessel fleet. Also, this division may make these allocations more manageable. Vessels ≥50 ft LOA would receive an allocation of approximately 5% to 8% of the Central GOA TAC, rather than the 1% to 2% that would be allocated to vessels ≥60 ft LOA.

Using each sector's best option tends to increase the percent allocations to sectors with a best option that is substantially higher than that sector's average option, and decrease allocations to sectors with a best option closer to that sector's average option. For example, Western GOA trawl CVs have a best option of 46.9%, which is substantially greater than the sector's average option of 33.3%. As a result, under each sector's best option, trawl CVs would receive 38.4% of the TAC, which is significantly higher than this sector's average option. Other sectors (hook-and-line CP, pot CV, and trawl CP) would receive a Western GOA allocation under the "best option" that is less than each of the respective sectors' average option.

Table 2-48 Potential percent allocations of the Western and Central GOA Pacific cod TACs, with the jig allocation taken off the top of the TAC.

Western GOA	HAL CP	HAL CV	Pot CP	Pot CV	Trawl CP	Trawl CV
1995–2005: Best 7 years	19.8%	0.5%	2.2%	28.0%	2.5%	46.9%
2000–2006: Best 5 years	21.8%	0.6%	2.3%	40.7%	2.6%	32.0%
2002–2007: Best 5 years	22.7%	1.2%	1.6%	46.0%	2.4%	26.1%
2002–2008: Best 5 years	21.8%	1.7%	1.5%	44.5%	2.4%	28.1%
Each sector's best option	18.6%	1.4%	1.9%	37.6%	2.1%	38.4%
Average of Options 1–4	21.5%	1.0%	1.9%	39.8%	2.5%	33.3%

Central GOA	HAL CP	HAL CV	Pot CP	Pot CV	Trawl CP	Trawl CV
2000–2006: Best 5 years	4.2%	20.9%	1.0%	25.3%	4.4%	44.2%
2000–2006: Best 3 years	4.7%	19.5%	1.4%	28.0%	4.4%	42.0%
2002–2007: Best 5 years	5.2%	22.6%	0.4%	25.9%	3.5%	42.4%
2002–2007: Best 3 years	4.9%	21.6%	0.5%	28.2%	3.3%	41.4%
2002–2008: Best 5 years	5.5%	22.3%	0.3%	25.8%	3.3%	42.7%
2002–2008: Best 3 years	5.2%	21.5%	0.5%	28.1%	3.3%	41.4%
Each sector's best option	5.1%	21.3%	1.3%	26.5%	4.2%	41.6%
Average of Options 2, 4, and 6	5.0%	21.9%	0.6%	25.7%	3.7%	43.1%
Average of Options 1–6	4.9%	21.4%	0.7%	26.9%	3.7%	42.4%

Table 2-49 Potential percent allocations of the Western and Central GOA Pacific cod TACs under suboptions to split sectors by vessel length (LOA), with the jig allocation taken off the top of the TAC.

Western GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV >=50	HAL CV <60	HAL CV >=60	Pot CV <60	POT CV >=60	TRW CV <60	TRW CV >=60
1995-2005: Best 7 years	16.9%	2.9%	0.2%	0.2%	0.4%	0.1%	13.6%	14.4%	33.0%	13.9%
2000-2006: Best 5 years	18.2%	3.6%	0.3%	0.3%	0.6%	0.0%	19.0%	21.7%	24.8%	7.1%
2002-2007: Best 5 years	17.6%	5.1%	0.6%	0.6%	1.1%	0.0%	20.9%	25.1%	21.6%	4.6%
2002-2008: Best 5 years	17.2%	4.6%	0.7%	1.0%	1.4%	0.3%	21.7%	22.8%	24.0%	4.1%
Each sector's best option	14.4%	4.2%	0.6%	0.8%	1.2%	0.2%	17.1%	20.5%	27.1%	11.4%
Average of Options 1-4	17.5%	4.1%	0.5%	0.5%	0.9%	0.1%	18.8%	21.0%	25.9%	7.4%

Central GOA	HAL CP <125	HAL CP >=125	HAL CV <50	HAL CV >=50	HAL CV <60	HAL CV >=60	Pot CV <60	POT CV >=60	TRW CV <60	TRW CV >=60
2000-2006: Best 5 years	0.6%	3.6%	14.6%	6.2%	19.1%	1.8%	10.9%	14.4%	1.7%	42.6%
2000-2006: Best 3 years	0.5%	4.2%	14.0%	5.6%	18.1%	1.4%	11.5%	16.5%	1.8%	40.3%
2002-2007: Best 5 years	0.8%	4.4%	15.5%	7.1%	20.6%	2.0%	12.2%	13.7%	1.1%	41.3%
2002-2007: Best 3 years	0.5%	4.4%	14.7%	6.9%	19.9%	1.7%	13.0%	15.2%	1.5%	39.9%
2002-2008: Best 5 years	1.1%	4.4%	14.6%	7.8%	20.3%	2.1%	12.3%	13.5%	1.2%	41.6%
2002-2008: Best 3 years	0.9%	4.3%	14.7%	6.9%	19.8%	1.7%	12.9%	15.1%	1.1%	40.3%
Each sector's best option	1.0%	4.1%	14.6%	6.7%	19.4%	1.9%	12.2%	14.3%	1.6%	40.0%
Average of Options 2, 4, and 6	0.8%	4.1%	14.9%	7.1%	20.0%	2.0%	11.8%	13.9%	1.3%	41.8%
Average of Options 1-6	0.7%	4.2%	14.7%	6.7%	19.6%	1.8%	12.1%	14.8%	1.4%	41.0%

Adjustments to sector allocations

In order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, the Council expanded the range of potential annual allocations in the analysis by 3% above each sector's highest potential allocation and 3% below each sector's lowest potential allocation, except that sectors that have a lowest potential allocation of less than 5% would receive at least that amount. The motion specified that the ±3% adjustments would be applied to the allocation percentages in Table 2-48. The adjustments could then be applied proportionally to the allocations that are divided by vessel length (shown in Table 2-49), or in the manner that the Council indicates. The potential range of allocations to each sector is shown in Table 2-50. The first column shows the range of allocations, based on the options for calculating catch history in Component 4. The second column shows the adjusted range when the ±3% adjustments are applied. These are compared to each sector's catch history (lowest and highest percent of retained catch) during 1995 through 2008. The Council's motion states that adjustments to sector allocations are intended to address conservation, catch monitoring, equity of access, bycatch reduction, PSC avoidance, and social objectives. These objectives are discussed in detail in the analysis of Component 9, and the potential effects of ±3% adjustments to the sectors are also discussed in that section.

Table 2-50 Potential range of Western and Central GOA Pacific cod sector allocations.

	Range of Options		±3% adjustment		Average option**	Range of Catch History 1995-2008	
Western GOA	Low	High	Low	High		Low	High
Hook-and-line CP	18.6%	22.7%	15.6%	25.7%	21.5%	5.9%	36.9%
Hook-and-line CV	0.5%	1.7%	0.5%	4.7%	1.0%	0.1%	3.4%
Pot CP	1.5%	2.3%	1.5%	5.3%	1.9%	0.0%	7.1%
Pot CV	28.0%	46.0%	25.0%	49.0%	39.8%	4.4%	63.4%
Trawl CP	2.1%	2.6%	2.1%	5.6%	2.5%	1.2%	4.6%
Trawl CV	26.1%	46.9%	23.1%	49.9%	33.3%	8.7%	78.1%
	Range of Options		±3% adjustment		Average option**	Range of Catch History 1995-2008	
Central GOA	Low	High	Low	High		Low	High
Hook-and-line CP	4.2%	5.5%	1.2%	8.5%	4.9%	0.3%	7.0%
Hook-and-line CV	19.5%	22.6%	16.5%	25.6%	21.4%	10.3%	29.5%
Pot CP	0.3%	1.4%	0.3%	4.4%	0.7%	0.0%	6.8%
Pot CV	25.3%	28.2%	22.3%	31.2%	26.9%	12.9%	37.6%
Trawl CP	3.3%	4.4%	3.3%	7.4%	3.7%	1.9%	10.9%
Trawl CV	41.4%	44.2%	38.4%	47.2%	42.4%	26.4%	62.3%

** Average option for WGOA: Average of Options 1-4. Average option for CGOA: Average of options 1-6.

Sideboard recalculations

If Pacific cod sector allocations are established and supersede the inshore/offshore processing allocations, the GOA Pacific cod sideboards that are currently specified as separate inshore and offshore amounts will need to be recalculated. As part of Component 4, the Council included a provision indicating that the AFA CV inshore and offshore sideboards will be combined into a single sideboard for each management area. The offshore AFA CV sideboards have not been harvested in recent years, because there has been little or no mothership activity in the GOA, and CV sideboard catches need to be delivered to motherships to accrue to the offshore sideboard. Combining the inshore and offshore AFA CV sideboards into a single sideboard for each management area would simplify catch accounting, and would give AFA CVs access to the offshore sideboards. The recalculated AFA CV sideboard percentages are shown in the upper portion of Table 2-51.

Combining the inshore and offshore sideboards into a single sideboard may not be desirable for the non-AFA crab sideboards. Several CPs have participated in the offshore crab sideboard fisheries in recent years (see Table 2-24). Combining the inshore and offshore sideboards into a single amount could result in one sector preempting the other in a race for the sideboards. The Council's motion specified that the crab sideboards would be recalculated to establish separate CP and CV sideboards by gear type. These recalculated sideboard percentages are shown in Table 2-51. Many of the sideboard percentages are only a small fraction of the respective area TACs, and are not likely to support a directed fishery. The total CP sideboard is only 0.8% of the Western GOA TAC, and 0.9% (based on pot CP history) plus a confidential amount of hook-and-line CP history in the Central GOA. Even these aggregate CP sideboards may not support directed Pacific cod fisheries for sideboarded CPs. The total CV sideboard is 8.8% of the Western GOA TAC, and more than 3.5% of the Central GOA TAC. These aggregate CV sideboards are sufficient to support directed fisheries for sideboarded CVs. Nearly all of the CV catch history was contributed by pot CVs, and most of the sideboard has been harvested by pot CVs. The separate pot CV sideboards are sufficiently large (8.2% of the Western GOA TAC and 3.5% of the Central GOA TAC) to support directed fisheries. The CV sideboards for trawl, hook-and-line, and jig gear are likely too small to support directed fisheries.

Table 2-51 GOA Pacific cod sideboards for AFA CVs and non-AFA crab vessels recalculated by combining inshore and offshore sideboards into a single sideboard percentage for each management area; non-AFA crab sideboards also calculated by gear and operation type.

AFA CV Sideboards	
Area	Sideboard (percentage of TAC)
Western GOA	13.31%
Central GOA	6.92%
Non-AFA Crab Sideboards	
Western GOA	Sideboard (percentage of TAC)
Hook-and-line CV	0.03%
Pot CV	8.16%
Trawl CV	0.60%
Hook-and-line CP	0.15%
Pot CP	0.64%
Total CP	0.79%
Total CV	8.80%
Total	9.59%
Central GOA	
Trawl CV	0.10%
Hook-and-line CV	0.01%
Jig CV	*
Pot CV	3.54%
Hook-and-line CP	*
Pot CP	0.92%
Total CP	*
Total CV	*
Total	4.64%

Source: NMFS inseason management. *Confidential.

Seasonal apportionment of sector allocations

If Pacific cod sector allocations are established, each sector's allocation could be apportioned between the A season (60%) and B season (40%), or sector allocations could be seasonally apportioned, based on each sector's seasonal catch history, while maintaining the overall 60%/40% A and B season apportionments. The start dates for each season could remain the same as the status quo (January 1 for the fixed gear sectors, and January 20 for the trawl sectors during the A season; September 1 for all sectors during the B season), or they could be changed. Changing the seasonal allocations and season start dates would likely require analysis to assess consistency with Steller sea lion protection measures. Options include:

Option 1: Apportion each sector's annual allocation 60% to the A season and 40% to the B season.
Option 2: Apportion each sector's annual allocation based on that sector's seasonal catch history during the qualifying years, while maintaining the overall 60%/40% apportionment of the TAC.
Option 3: For the Western GOA, only the A season TAC will be apportioned among sectors; the B season TAC will not be apportioned among sectors.

If each sector allocation is simply apportioned 60%/40% between the A/B seasons (Option 1), some sectors would have to alter their harvest patterns to fully utilize their allocations. For example, in the Western GOA, the trawl CV sector typically harvests more than 95% of its catch during the A season. Few trawl CVs participate in the directed Pacific cod fishery during the B season in the Western GOA. If

the trawl CV allocation is apportioned 60%/40% to the A/B seasons, the sector might only harvest 60% of its annual allocation if there is little effort during the B season.

Option 2 would apportion the sector allocations based on each sector's seasonal catch history. This approach would allow sectors to maintain their existing seasonal harvest patterns. Since 2001, the GOA Pacific cod TACs have been apportioned 60%/40% to the A/B seasons. Prior to 2001, the TACs were not seasonally apportioned. For purposes of calculating seasonal catch history, the A season was defined as January 1 through June 10, and the B season was defined as June 11 through December 31, across all years (1995 through 2008).

Prior to 2001, most Pacific cod harvests occurred before June 10. Even after Steller sea lion measures were in place, catch has not always been distributed 60%/40% between the A/B seasons. The reason is that the A season TACs are generally fully harvested, but the B season TACs often are not fully harvested. For example, in recent years a large proportion of the Western GOA B season TAC has not been harvested. Approximately 80% of Western GOA catch has been made during the A season, and only 20% of catch has been made during the B season. Since only 60% of the A season TAC may be harvested during the A season, and allocations are specified as a percentage of the TAC, the A and B season percent sector allocations have been adjusted proportionally across all sectors so that the A season allocations sum to 60% of the TAC (rather than 80%, which reflects Western GOA A season catch history). Any downward adjustment to a sector's A season allocation results in a proportional upward adjustment to its B season allocation, so that the A and B season allocations sum to the annual percent allocation that that sector would receive based on its annual catch history.

Table 2-52 shows how each sector's allocation would be seasonally apportioned, if Option 2 is selected and seasonal catch history is used to determine seasonal apportionments of sector allocations. If any of the allocation is split by vessel length, the seasonal apportionments to the divided sectors are shown in Table 2-53. In the Central GOA, most sector allocations would be apportioned to within ±10% of the 60%/40% TAC apportionment, although there are some exceptions, depending on the qualifying years selected. For example, the trawl CP sector harvests much of its annual catch as incidental catch, during the flatfish fisheries, largely after June 10, and would receive more of its allocation during the B season. In the Western GOA, the jig CV, pot CP, and trawl CP sectors would be allocated a larger proportion of their catch during the B season. The trawl CV sector mostly has catch history during the A season in the Western GOA, and would be apportioned up to 72.9% of its allocation during the A season. Even though the trawl CV sector has relatively little B season catch history in the Western GOA, it would receive approximately 25% to 30% of its allocation during the B season. This is the result of the proportional distribution of unused B season TAC among all of the sectors, based on the expansion of each sector's B season history, to sum to 40% of the TAC across all sectors. In effect, each sector receives its full A season catch history, plus an additional allocation for the B season that consists of the TAC that has not been fully harvested in recent years.

Under Option 3, in the Western GOA, only the A season TAC would be allocated among the sectors. The B season TAC would not be allocated among the sectors. The A season allocations would be based on catch history during the A season, and would be the same as the A season allocations under Option 2 (see Table 2-52). The Western GOA B season TAC has not been fully harvested since seasonal apportionments were established in 2001, and there has not been a race for fish during the B season. If the Western GOA B season TAC is not allocated among the sectors, the fishery would open on September 1 to all gear types, and would remain open until the TAC is fully harvested.

Table 2-52 Percent apportionment of Western and Central GOA sector allocations between the A season (January 1–June 10) and B season (June 10–December 31) based on each sector's seasonal catch history, under Component 4, Option 2 for seasonal apportionments (compare to 60%/40% apportionments under Component 4, Option 1 for seasonal apportionments). These apportionments apply to portion of the TAC that remains after the jig allocation is subtracted.

Western GOA

	HAL CP A	HAL CP B	HAL CV A	HAL CV B	Pot CP A	Pot CP B	Pot CV A	Pot CV B	Trawl CP A	Trawl CP B	Trawl CV A	Trawl CV B
1995-2005: Best 7 years	62.0%	38.0%	51.9%	48.1%	41.6%	58.4%	49.8%	50.2%	46.4%	53.6%	66.9%	33.1%
2000-2006: Best 5 years	59.9%	40.1%	48.3%	51.7%	35.7%	64.3%	54.7%	45.3%	37.5%	62.5%	70.6%	29.4%
2002-2007: Best 5 years	54.7%	45.3%	55.7%	44.3%	41.6%	58.4%	57.0%	43.0%	41.8%	58.2%	72.9%	27.1%
2002-2008: Best 5 years	56.4%	43.6%	46.7%	53.3%	41.6%	58.4%	56.0%	44.0%	37.9%	62.1%	72.8%	27.2%
Each sector's best option	55.3%	44.7%	47.3%	52.7%	36.3%	63.7%	57.6%	42.4%	38.2%	61.8%	67.4%	32.6%
Average of Options 1-4	58.3%	41.7%	50.7%	49.3%	40.1%	59.9%	54.4%	45.6%	40.9%	59.1%	70.8%	29.2%

Central GOA

	HAL CP A	HAL CP B	HAL CV A	HAL CV B	Pot CP A	Pot CP B	Pot CV A	Pot CV B	Trawl CP A	Trawl CP B	Trawl CV A	Trawl CV B
2000-2006: Best 5 years	70.1%	29.9%	74.0%	26.0%	72.7%	27.3%	67.7%	32.3%	47.1%	52.9%	49.0%	51.0%
2000-2006: Best 3 years	86.1%	13.9%	74.1%	25.9%	74.5%	25.5%	69.1%	30.9%	56.0%	44.0%	44.5%	55.5%
2002-2007: Best 5 years	63.2%	36.8%	67.8%	32.2%	2.7%	97.3%	64.8%	35.2%	26.6%	73.4%	55.7%	44.3%
2002-2007: Best 3 years	88.1%	11.9%	66.3%	33.7%	2.6%	97.4%	61.0%	39.0%	31.8%	68.2%	55.7%	44.3%
2002-2008: Best 5 years	77.5%	22.5%	67.8%	32.2%	2.7%	97.3%	64.4%	35.6%	26.4%	73.6%	54.1%	45.9%
2002-2008: Best 3 years	93.0%	7.0%	69.9%	30.1%	2.8%	97.2%	64.3%	35.7%	33.5%	66.5%	50.6%	49.4%
Each sector's best option	78.7%	21.3%	69.3%	30.7%	75.8%	24.2%	62.6%	37.4%	57.7%	42.3%	50.8%	49.2%
Average of Options 2, 4, and 6	89.1%	10.9%	70.1%	29.9%	26.6%	73.4%	64.8%	35.2%	40.4%	59.6%	50.2%	49.8%
Average of Options 1-6	79.7%	20.3%	70.0%	30.0%	26.3%	73.7%	65.2%	34.8%	36.9%	63.1%	51.6%	48.4%

Table 2-53 Percent apportionment of Western and Central GOA sector allocations split by vessel length between the A season (January 1–June 10) and B season (June 10–December 31) based on each sector's seasonal catch history, under Component 4, Option 2 for seasonal apportionments (compare to 60%/40% apportionments under Component 4, Option 1 for seasonal apportionments). These apportionments apply to portion of the TAC that remains after the jig allocation is subtracted.

	HAL CP <125		HAL CP >=125		TRW CV <60		TRW CV >=60		HAL CV <50		HAL CV >=50		HAL CV <60		HAL CV >=60		Pot CV <60		POT CV >=60	
Western GOA	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
1995-2005: Best 7 years	61.3%	38.7%	66.3%	33.7%	67.1%	32.9%	66.5%	33.5%	100.0%	0.0%	38.9%	61.1%	51.1%	48.9%	55.3%	44.7%	58.7%	41.3%	41.5%	58.5%
2000-2006: Best 5 years	59.4%	40.6%	62.6%	37.4%	71.0%	29.0%	69.3%	30.7%	67.3%	32.7%	25.4%	74.6%	49.4%	50.6%	33.4%	66.6%	62.4%	37.6%	48.1%	51.9%
2002-2007: Best 5 years	55.2%	44.8%	52.8%	47.2%	72.9%	27.1%	73.0%	27.0%	67.6%	32.4%	43.5%	56.5%	57.0%	43.0%	23.0%	77.0%	61.9%	38.1%	52.9%	47.1%
2002-2008: Best 5 years	55.5%	44.5%	59.9%	40.1%	72.8%	27.2%	72.8%	27.2%	61.3%	38.7%	36.4%	63.6%	51.1%	48.9%	22.5%	77.5%	60.9%	39.1%	51.4%	48.6%
Each sector's best option	55.8%	44.2%	53.4%	46.6%	67.6%	32.4%	67.1%	32.9%	61.9%	38.1%	37.0%	63.0%	51.8%	48.2%	22.9%	77.1%	62.5%	37.5%	53.5%	46.5%
Average of Options 1-4	57.8%	42.2%	59.4%	40.6%	70.5%	29.5%	69.1%	30.9%	68.0%	32.0%	37.2%	62.8%	52.7%	47.3%	30.3%	69.7%	61.2%	38.8%	49.3%	50.7%

	HAL CP <125		HAL CP >=125		TRW CV <60		TRW CV >=60		HAL CV <50		HAL CV >=50		HAL CV <60		HAL CV >=60		Pot CV <60		POT CV >=60	
Central GOA	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
2000-2006: Best 5 years	80.4%	19.6%	68.5%	31.5%	73.3%	26.7%	48.1%	51.9%	71.0%	29.0%	81.2%	18.8%	73.1%	26.9%	84.0%	16.0%	72.2%	27.8%	64.2%	35.8%
2000-2006: Best 3 years	83.8%	16.2%	86.4%	13.6%	71.0%	29.0%	43.3%	56.7%	70.5%	29.5%	83.2%	16.8%	73.1%	26.9%	86.8%	13.2%	72.7%	27.3%	66.5%	33.5%
2002-2007: Best 5 years	65.6%	34.4%	62.8%	37.2%	76.4%	23.6%	55.1%	44.9%	61.7%	38.3%	81.1%	18.9%	65.9%	34.1%	87.0%	13.0%	71.4%	28.6%	59.0%	41.0%
2002-2007: Best 3 years	85.8%	14.2%	88.4%	11.6%	76.5%	23.5%	54.9%	45.1%	60.0%	40.0%	79.8%	20.2%	64.8%	35.2%	84.3%	15.7%	66.8%	33.2%	56.0%	44.0%
2002-2008: Best 5 years	76.3%	23.7%	77.8%	22.2%	68.7%	31.3%	53.7%	46.3%	61.3%	38.7%	80.2%	19.8%	66.2%	33.8%	83.8%	16.2%	68.9%	31.1%	60.2%	39.8%
2002-2008: Best 3 years	92.2%	7.8%	93.1%	6.9%	57.7%	42.3%	50.4%	49.6%	63.3%	36.7%	84.1%	15.9%	68.3%	31.7%	88.8%	11.2%	70.4%	29.6%	59.0%	41.0%
Each sector's best option	77.5%	22.5%	79.0%	21.0%	74.7%	25.3%	49.9%	50.1%	63.3%	36.7%	82.2%	17.8%	67.5%	32.5%	87.8%	12.2%	68.4%	31.6%	57.7%	42.3%
Average of Options 2, 4, and 6	73.9%	26.1%	69.7%	30.3%	72.9%	27.1%	52.3%	47.7%	64.6%	35.4%	80.8%	19.2%	68.3%	31.7%	85.0%	15.0%	70.8%	29.2%	61.2%	38.8%
Average of Options 1-6	80.3%	19.7%	79.7%	20.3%	71.2%	28.8%	50.9%	49.1%	64.5%	35.5%	81.5%	18.5%	68.4%	31.6%	85.7%	14.3%	70.3%	29.7%	60.9%	39.1%

2.2.5 Component 5 – Jig Allocation

The Council is considering options to set aside initial allocations of 1%, 1.5%, or 2% of the Central GOA Pacific cod TAC, and 1% or 1.5% of the Western GOA Pacific cod TAC for the jig sector, with a stairstep provision to increase the jig allocation by 1%, if 90% of the federal jig allocation in a management area is harvested in a given year. The jig allocation will be capped at 5%, 6%, or 7% of the respective Western and Central GOA Pacific cod TACs.

In addition, there are options to step down the jig allocation by 1% per year, if 90% of either the (1) current allocation or (2) previous allocation is not harvested during 2 or, alternatively, 3 consecutive years, but the jig allocation will not drop below its initial level. For example, under Option 1, if the jig allocation is increased from 1% to 2% of the TAC, and at least 90% of the current 2% allocation is not harvested during either 2 or 3 consecutive years (depending on the Council's selection), the jig allocation would drop back to 1% of the TAC. This option essentially gives the jig sector either 2 or 3 years to harvest 90% of its increased allocation. However, if the jig sector does not meet the 90% threshold, the jig allocation would drop back down to its previous level, which may be lower than the sector's harvests over the past 3 years. For example:

Step down option examples:
Option 1 (with 3 year period)

- Jig allocation increased from 1% to 2% when at least 0.9% of the TAC harvested
- Harvests during the next 3 years: 1.4% of the TAC, 1.5% of the TAC, 1.7% of the TAC
- The jig sector did not harvest 90% of its current 2% allocation (1.8% of the TAC) during any of the 3 years
- The following year, the jig allocation would drop back to 1%

Under Option 2, if the jig allocation is increased from 1% to 2% of the TAC, and at least 90% of the previous 1% allocation is harvested during 2 or 3 consecutive years, the jig allocation would remain at 2%. One possible consequence, illustrated in the strawman below, is that the stepped up allocation is retained even though the jig harvest doesn't increase beyond the 0.9% needed to gain the step up to 2%.

Option 2 (with 3 year period)

- Jig allocation increased from 1% to 2% when at least 0.9% of the TAC is harvested.
- Harvests during the next 3 years: 0.9% of the TAC, 0.5% of the TAC, 0.4% of the TAC
- The jig sector harvests at least 90% of its previous 1% allocation (0.9% of the TAC) in at least one of 3 years
- The jig allocation would remain at 2%

Option 1 could make it difficult for the jig sector to grow, because of the lack of stability in the jig allocation. The step down provision in Option 1 is stringent, and doesn't allow for gradual growth in jig catches. Option 2 creates a more stable jig allocation, but this approach could result in more of the jig allocation being rolled over to other sectors in the B season. If the 90% rule applies to harvests during the next 2 years, instead of 3 years, this option would be more responsive to decreases in jig catches.

Options for management of the jig allocation

There are two options for managing the jig allocation. The options address several concerns regarding management of the jig fishery that have been expressed during public testimony and Council deliberations:

- State jig GHLs have not been fully harvested in recent years, resulting in unharvested state waters quota.
- Under the proposed GOA Pacific cod sector allocations, there may be timing conflicts between the federal and state seasons, if the federal jig and pot seasons no longer close on the same date.
- Under the proposed sector allocations, the jig sector may be allocated A relatively small proportion of the TAC, and managing a small allocation may be difficult. Consolidating the federal and state jig allocations and managing them jointly may facilitate more efficient and effective management of the fishery, while maximizing access to the resource.

The Council requested that staff work with the State of Alaska and NMFS to explore options for management of the GOA Pacific cod jig fishery that create a workable fishery and minimize the amount of unharvested quota, focusing on Option 1:

Option 1: State parallel/federally managed Pacific cod jig fishery

Federal allocation is managed from 0 to 200 nm through a parallel fishery structure. Any state waters jig GHL would (under subsequent action by the Alaska Board of Fisheries) be added to this state parallel/federally managed jig sector allocation, so that the jig sector is fishing off of a single account. If the Board of Fisheries chooses to relinquish state waters jig GHL, it would roll into the federal jig allocation. The Council will make such a recommendation to the Board of Fisheries. Until the Board of Fisheries changes the GHL in response to this recommendation, a state parallel/federal jig sector allocation with a state waters GHL fishery would be invoked.

If a combined parallel/federal fishery is created, the fishery would be managed as follows: the fishery would open on January 1 and close when (if) the jig A season sector allocation is reached. The federal B season for the jig sector would open on June 10.

Suboption: (a) The jig allocation will be apportioned 60% to the A season and 40% to the B season.
(b) The jig allocation will be apportioned 80% to the A season and 20% to the B season.

Option 2: State parallel/federal jig sector allocation with a state waters GHL fishery

Until the Board of Fisheries takes action in response to the Council recommendations or input from the public, distinct parallel/federal and state waters fisheries will continue to exist, and the two fisheries will be managed as follows:

The federal jig sector allocation would be divided into an A/B season of 60%/40%. The A season would open on January 1 and close when the jig A-season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector would open on June 10, or after the state GHL season closes, whichever occurs later.

Background on jig fishery

During recent years, the jig sector has typically harvested less than 1% of the Western and Central GOA Pacific cod catch (see Appendix A). However, in 2009 and 2010, jig vessels harvested 1.3% and 1.6% of the Western GOA catch in the respective years. Jig catch has fluctuated considerably, and during several other recent years (2001, 2002, and 2004) jig catch exceeded 1% of the total retained catch of Pacific cod in the Western GOA. Under options being considered by the Council, these catch levels could trigger a stairstep increase in the Western GOA jig allocation to 2% or more of the TAC. Recent jig catches in the Central GOA have been less than 1% of the catch. Unless jig catches increase substantially in the Central GOA, the jig sector would not fully use a 1% allocation, and would not be eligible for an increased

allocation under the stairstep provision. The Council heard public testimony expressing concern that increases in the jig allocation could result in unharvested quota during years when jig catch is low. Consequently, the Council's motion includes two options to step down the jig allocation by 1% increments, if either the current allocation or the previous allocation (prior to the stairstep increase) is not 90% harvested during 2 or 3 consecutive years, but the jig allocation would not fall below the initial level established in this action.

Most (more than 90%) of jig catch is typically harvested during the state waters fisheries, and the majority of jig landings occur during March through May (see Figure 2-22). Most jig vessels with Pacific cod catch during the federal seasons in the GOA, do not have LLP licenses and only have parallel waters landings (see Table 2-54). Nearly all catch by jig vessels during the federal seasons is from the parallel waters fishery, even for vessels that hold a valid LLP license. This indicates that LLP licenses may not be the most important factor limiting jig vessels from fishing in federal waters. Inclement weather during the federal directed Pacific cod seasons and small vessel size may be more important in limiting jig effort in federal waters. The Council recently recommended that jig gear be exempted from the LLP requirement in its preferred alternative for the fixed gear recency action. This exemption alone may not result in a significant increase in jig participation in the federal Pacific cod fisheries. However, if jig vessels were able to fish in federal waters during March through May, jig effort and catch may increase.

Jig vessels fishing in federal waters are currently required to hold a FFP and a groundfish LLP license with appropriate gear, area, and operation type endorsements. However, the Council recently took final action on GOA fixed gear recency, which included a new exemption from the LLP requirement for vessels using jig gear in the GOA. The jig exemption applies to vessels using up to 5 jigging machines, 30 hooks per line, and 1 line per machine. Vessel operators fishing exclusively in parallel waters are not required to hold an FFP or an LLP license. The jig sector is exempt from some of the federal requirements that apply to other gear types in federal waters. Currently, these include an exemption from the Vessel Monitoring System (VMS) requirement in federal waters and an exemption from participating in the Federal Observer program. Jig gear is not exempt from the Steller sea lion management measures, including seasonal apportionment of Pacific cod TACs, and closures and no transit zones around haulouts and rookeries.

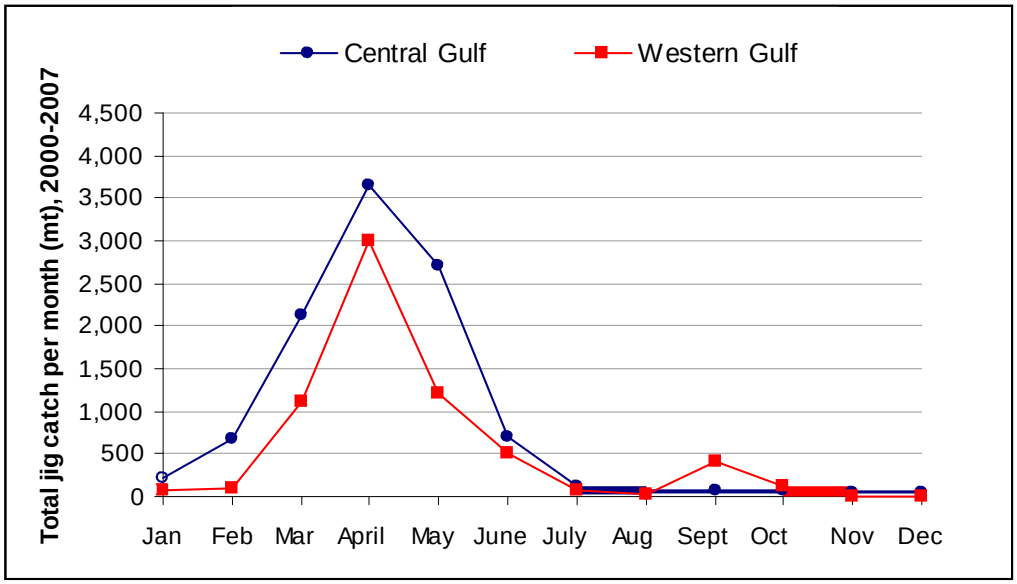

Figure 2-22 Total monthly Pacific cod catch (mt) by vessels using jig gear, 2000–2007.

Table 2-54 Number of jig vessels with groundfish and Pacific cod catch in the Western and Central GOA, and number of vessels that hold LLP licenses.

	Western GOA		Central GOA	
	Pacific cod		Pacific cod	
Year	LLP	No LLP	LLP	No LLP
2000	1	3	5	12
2001	0	17	4	12
2002	6	25	3	5
2003	2	9	5	7
2004	6	17	8	29
2005	1	8	6	24
2006	0	1	8	18
2007	0	4	7	12
2008	3	6	3	8
2009	1	10	2	13

Source: Alaska Fisheries Information Network Comprehensive ADF&G Fish Ticket and NMFS LLP data sets.
Note: "No LLP" includes vessels that held LLP licenses, but did not have the appropriate area endorsement.

Option 1 — Combined state and parallel/federal jig fisheries

Under this option, the Western and Central GOA jig allocations would be managed under a parallel/federal management structure. The state waters jig GHL could (under subsequent action by the Alaska Board of Fisheries) be combined with the federal jig allocation so that the jig sector is fishing off of a single account, and managed under a parallel/federal management structure. Currently, the state waters jig allocations include 50% of the Kodiak GHL, 25% of the Cook Inlet GHL, 15% of the South Alaska Peninsula GHL, and 10% of the Chignik GHL. In sum, these jig allocations amount to 8.06% of the Central GOA ABC and 3.75% of the Western GOA ABC.

If parallel/federal Pacific cod sector allocations are established, the jig sector could receive a base allocation of up to 1.5% of the Western GOA TAC and up to 2.0% of the Central GOA TAC. These initial allocations could increase in annual increments of 1%, if 90% of the allocation is harvested, up to 7% of the respective TACs (5.25% of each ABC). The total allocation to the jig sector, including the state GHL and parallel/federal allocation, could eventually range up to 13.3% of the Central GOA ABC, and 9% of the Western GOA ABC.

Under Option 1, the combined state/parallel/federal jig fishery would open on January 1, and close when the jig A season sector allocation is reached. The B season for the jig sector would open on June 10. The jig allocation could be seasonally apportioned 60%/40% or 80%/20%, between the A and B seasons. It is important to note that the jig sector is not exempt from Steller sea lion protection measures, and apportioning the jig allocation in a manner that is different from the status quo 60%/40% seasonal split of the GOA Pacific cod TACs, and changing the B season start date from September 1 to June 10, would likely require additional analysis.

The jig allocation for the parallel/federal fishery would be deducted from the TAC, before the other sector allocations are made. Thus, all non-jig sector allocations would contribute proportionally to the jig allocation, and to any increases to the jig allocation under the step-up provision. In the future, if the Alaska Board of Fisheries decides to roll the jig gear portion of the state waters Pacific cod GHL into the parallel/federal jig gear allocation, the resulting increase in the TAC would only increase the jig allocation, and not the other sector allocations. The resulting jig gear allocation would be managed under a parallel/federal structure. Federal regulations apply in federal waters and to vessels issued an FFP fishing in state waters. The jig allocation could be fished in either federal or state waters, consistent with other federal and state regulations.

Unharvested amounts of the jig allocation could be reallocated to other federal sectors, consistent with procedures specified in federal regulations, but cannot be returned to a GHL fishery during a given year. Any increase to the jig gear allocation as a result of a decision by the Board of Fisheries to roll the jig gear portion of the state waters Pacific cod GHL into the federal jig gear allocation would be implemented under the annual harvest specification rulemaking process. A Board of Fisheries action to reduce or increase a GHL must occur prior to the Council's October meeting to be implemented by rulemaking under the harvest specification process the following year. Any change to the jig gear allocation as A result of A Board of Fisheries action would not be effective until final harvest specifications (late February or early March), but should not impact other sector allocations. If the Board of Fisheries decision to roll the jig gear GHL into the federal jig allocation is a long-term decision, rather than an annual decision, the harvest specifications process and management of the fishery would be less complicated.

Under either the annual or long-term scenario, the step-up and step-down provisions could be implemented within the context of the combined jig allocation. Jig catch could first accrue against the GHL portion of the jig allocation. Once that amount is harvested, jig catch could then accrue against the federal allocation, and the stairstep provisions could apply to this portion of the jig gear allocation. The 5%, 6%, or 7% cap would apply to the federal portion of the TAC, excluding the GHL portion from the denominator.

Central GOA example:

- 100 mt Central GOA ABC
- GHL 25 mt (25% of ABC); 8 mt (8% of ABC) to jig GHL
- TAC 75 mt (75% of ABC)
    - 1.5 mt (2% of TAC) initial federal jig allocation
    - 73.5 mt (98% of TAC) allocated to other sectors
- Alaska Board of Fisheries reduces GHL to 17 mt (8 mt jig GHL rolled into federal TAC)
- TAC increases from 75 mt to 83 mt
    - 1.5 mt + 8 mt = 9.5 mt to jig gear (11.4% of TAC)
    - 73.5 mt allocated to other sectors
- Jig allocation could increase to 7% of the 75 mt federal portion of the TAC = 5.25 mt, in addition to the GHL portion of the TAC (8 mt) for a total allocation of 13.25 mt of the 83 mt TAC, or 16% of the combined TAC.

Western GOA example

- 100 mt Western GOA ABC
- GHL 25 mt (25% of ABC); 3.75 mt (3.75% of ABC) to jig GHL
- TAC 75 mt (75% of ABC)
    - 1 mt (1.5% of TAC) initial federal jig allocation
    - 74 mt (98.5% of TAC) allocated to other sectors
- Alaska Board of Fisheries reduces GHL to 21.25 mt (3.75 mt jig GHL rolled into federal TAC)
- TAC increases from 75 mt to 78.75 mt
    - 1 mt + 3.75 mt = 4.75 mt to jig gear (6% of TAC)
    - 74 mt allocated to other sectors
- Jig allocation could increase to 7% of the 75 mt federal portion of the TAC = 5.25 mt, in addition to the GHL portion of the TAC (3.75 mt) for a total allocation of 9 mt of the 78.75 mt combined TAC, or 11.4% of the combined TAC.

Advantages to Option 1- Combined parallel/federal and state jig allocations

- Creating a single, consolidated jig account may be more efficient to manage, may minimize the amount of stranded quota, and may increase attainment of optimum yield (National Standard 1).
- Provides jig sector the opportunity to fish in federal waters during months when weather conditions are more favorable.
- Avoids timing conflicts between state and federal seasons.
- Facilitates rollover of unharvested jig allocation to other sectors.

Disadvantages to Option 1- Combined parallel/federal and state jig allocations

- Pot vessels participating only in the state waters fishery may no longer have access to any rolled over jig GHL.

Option 2 — Distinct state and parallel/federal jig fisheries

Under Option 2, as under Option 1, the jig allocation for the parallel/federal fishery would be deducted from the TAC, before the other sector allocations are made. Thus, all non-jig sector allocations would contribute proportionally to the jig allocation, and to any increases to the jig allocation under the step-up provision. Option 2 is similar to the status quo management of the jig fishery. Jig catch in the state waters jig fisheries would be accounted for by ADF&G, and would count against the jig GHLs. Jig catch in the parallel and federal waters fisheries would be accounted for by NMFS and would count against the parallel/federal jig allocations. Distinct state and federal management measures would continue to exist.

Under this scenario, the fisheries would likely need to occur during distinct seasons to prevent gear conflicts and to simplify catch accounting. In Option 2, the Council outlined how the distinct seasons would be managed. The jig allocation would be apportioned into A and B season allocations. The A season would open on January 1, and close when the TAC is reached or on March 15, in order to facilitate coordination with the state waters fishery. The state waters jig fishery would open, either when the parallel/federal jig season closes when the TAC is reached or on March 15, whichever occurs first. The parallel/federal jig B season would open on June 10 or when the state waters GHL is reached, whichever occurs latter, and the state waters jig season would close. Any allocation to the jig sector projected by NMFS to remain unharvested could be rolled over to other sectors during the B season. If the B season jig allocation is fully harvested, the state could reopen the state waters jig season, if it is determined that sufficient state waters jig GHL is available.

Advantages to Option 2 - Distinct parallel/federal and state waters fisheries

- Distinct federal and state management measures would continue to exist.
- Pot vessels, participating exclusively in the state waters fishery, may continue to have access to rolled over state waters jig GHL.

Disadvantages to Option 2 - Distinct parallel/federal and state waters fisheries

- Unused state waters GHL may be unharvested, if the parallel waters B season pot and/or jig fisheries remain open from September 1 until December 31. If this occurs, the state waters fishery cannot be reopened and unused GHL rolled over to other gear types.
- Weather may limit jig vessel participation during the federal and parallel waters fisheries. Federal waters would be closed to directed Pacific cod fishing by jig vessels during the state waters fishery (approximately March through August).

2.2.6 Component 6 – Rollover Provisions for Unharvested Sector Allocations

Rollover provisions would make unharvested Pacific cod available to other sectors. The Council initially outlined options to roll over unharvested sector allocations on specific dates. However, the Council elected to remove this language from the motion, and chose not to recommend specific allocations of rollovers. The rationale for not recommending a specific allocation of rollovers to NMFS, is based on inseason management's experience in managing BSAI Pacific cod rollovers. Allowing flexibility in managing rollovers makes it less likely that quota will not be harvested. During the fishing year, NMFS would make any portion of an allocation, determined by NMFS to remain unharvested during the remainder of the fishing year, available as soon as practicable to either:

> Option 1: CV sector allocations to CV sectors first, and CP sector allocations to CP sectors first, and then to all sectors, taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.
> Option 2: CV sectors first, and then to all sectors taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.
> Option 3: All sectors.

The primary difference between the options is that Option 1 is likely to maintain the overall distribution of catch between CVs and CPs, assuming the sectors within each operation type are capable of harvesting the rolled over allocations. Option 2 would redistribute any unharvested allocations to CVs, which is likely to increase the amount of Pacific cod delivered to shoreside plants and increase the amount processed at-sea. Option 3 could redistribute unharvested CV allocations to CPs, which is likely to decrease the amount of Pacific cod delivered to shoreside plants and increase the amount processed at-sea, or could redistribute unharvested CP allocations to CVs, which would increase total shoreside deliveries of Pacific cod and reduce the amount processed at-sea. In addition, Options 1 and 2 have the potential to provide additional Pacific cod fishing opportunities to small CVs. Under Option 3, any rolled over CV or CP allocations would be distributed to all sectors that are still fishing, taking into account the ability of each sector to harvest additional Pacific cod, and whether sufficient Pacific cod remains to support a directed fishery for each sector.

2.2.7 Component 7 – Hook-and-line Halibut PSC Limit Apportionment

The Council is considering options to apportion the GOA hook-and-line halibut PSC limit to the hook-and-line CV and CP sectors. Currently, hook-and-line CVs and CPs share an annual limit of 290 mt of halibut PSC mortality in the GOA (excluding 10 mt apportioned to the hook-and-line demersal shelf rockfish (DSR) fishery). The non-DSR hook-and-line halibut PSC limit is apportioned into three seasons (see Table 2-12). The majority (86%) of PSC is apportioned to the first season (January 1 through June 10). Only 2% (5 mt) is apportioned to the second season (June 10 through September 1), and 12% (35 mt) is apportioned to the third season (September 1through December 31). However, if there is unused PSC during the first or second seasons, this PSC is rolled over to the following season, so the amount of PSC available during the second and third seasons may be greater than the initial apportionments. During recent years, hook-and-line halibut PSC closures have occurred during the third season. The GOA Pacific cod hook-and-line fisheries were closed when the halibut PSC limit was reached in 2001 (on September 4), 2004 (on October 2), and 2008 (on October 16).

Under Component 7, options for apportioning hook-and-line halibut PSC to the CV and CP sectors include:

> Option 1: No change in current apportionments of GOA halibut PSC.

Option 2: Apportion the GOA hook-and-line halibut PSC to the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector. No later than November 1, any remaining halibut PSC, not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year, would be made available to the other sector. The apportionment of halibut PSC mortality will be proportional to the Pacific cod area apportionment, determined during the TAC setting process.

The proposed options to apportion hook-and-line halibut PSC to CVs and CPs may increase the ability of the sectors to plan their fishing operations. The options accommodate the differences in the annual fishing operations of the hook-and-line CV and CP fleets in the GOA. The hook-and-line CV fleet is mostly based in the Central GOA, and many of the vessels that participate in the Pacific cod fishery also participate in the IFQ halibut and sablefish fisheries. Much of this fleet operates year-round in the GOA. Most of the freezer longliner fleet fishes for Pacific cod in the BSAI, then moves into the GOA after the BSAI Pacific cod seasons close. In 2005, the BSAI Pacific cod B season closed on December 12. The freezer longliner fleet had planned to fish for Pacific cod in the GOA during the remainder of December, because B season Pacific cod TAC was still available. However, NMFS inseason management was concerned that there was not sufficient halibut PSC remaining in the GOA to support the BSAI freezer longliner fleet. As a result, the BSAI freezer longliners did not fish in the GOA during the B season in 2005. During 2006 through 2009, the freezer longliners set up an informal "PSC co-op" with NMFS inseason management. Under this arrangement, the hook-and-line halibut PSC apportionment was informally divided between CPs and CVs. This arrangement allowed the freezer longliners to fish during the GOA Pacific cod B season in 2006 and 2007. In these years, the B season remained open to all hook-and-line vessels until December 31. In 2008, the B season closed on October 16 to hook-and-line gear when the hook-and-line halibut PSC limit was reached. Hook-and-line CV halibut PSC during the B season was much higher than it had been in recent years. Apportioning halibut PSC to each sectors would prevent one sector from pre-empting the other sector's fishing season by using a greater than expected proportion of the hook-and-line halibut PSC limit.

Under Component 7, Option 2, the GOA non-DSR hook-and-line halibut PSC limit would be divided between the hook-and-line CVs and hook-and-line CPs in proportion to the aggregate Western and Central GOA Pacific cod allocations to each sector. The resulting PSC allowances would apply to the entire GOA, and halibut PSC by hook-and-line CVs and CPs operating in the Western, Central, and Eastern GOA would accrue against these allowances. In order to calculate the potential PSC splits in Table 2-55, the Western and Central GOA percent sector cod allocations were first scaled to the relative size of the Western and Central GOA TACs, based on the area apportionments in the 2009 harvest specifications. Each sector's Western and Central GOA percent cod allocations were then summed, and the totals were scaled to 100%. It is important to note that under Option 2, the halibut PSC allowances would be adjusted annually, during the harvest specifications process, to reflect any changes in the area apportionments.

The halibut PSC allocations in Table 2-55 were calculated in eight ways to provide information on the potential range of PSC allocations, but it is important to note that only a subset of these options applies to each management area (see Component 4). Component 4 also includes options to take the average across specific combinations of options, and the Pacific cod sector allocations could be adjusted under Component 9. As a result, Table 2-55 shows only some of the possible options for calculating hook-and-line halibut PSC allocations. For example, the hook-and-line CV sector could receive a hook-and-line halibut PSC allocation of 147.5 to 155.3 mt, which is less halibut PSC than this sector has used in recent years (particularly in 2008; see Table 2-56). Hook-and-line CPs could be allocated 134.7 mt to 142.5 mt of halibut PSC, which is somewhat less than this sector's highest annual PSC of 162.6 mt in 2002. Depending on the actual Pacific cod allocations selected for the hook-and-line CV and CP sectors in each management area, the halibut PSC allocations could differ from those shown here.

Table 2-55 Some of the potential halibut PSC allowances to hook-and-line CPs and CVs based on Component 7, Option 2.

Period	CV share	CP share	CV amount (mt)*	CP amount (mt)*
1995-2005: Best 7 years	52.0%	48.0%	150.7	139.3
1995-2005: Best 5 years	52.7%	47.3%	152.7	137.3
2000-2006: Best 5 years	52.8%	47.2%	153.0	137.0
2000-2006: Best 3 years	50.9%	49.1%	147.5	142.5
2002-2007: Best 5 years	53.1%	46.9%	153.9	136.1
2002-2007: Best 3 years	52.9%	47.1%	153.5	136.5
2002-2008: Best 5 years	53.6%	46.4%	155.3	134.7
2002-2008: Best 3 years	53.0%	47.0%	153.8	136.2

*Based on 290 mt of non-DSR halibut PSC, apportioned to GOA hook-and-line vessels

Table 2-56 Halibut PSC use by hook-and-line CPs and CVs in the Pacific cod target, 1995–2010.

	Western GOA		Central GOA		Eastern GOA		
Year	HAL CP	HAL CV	HAL CP	HAL CV	HAL CV	Total CP	Total CV
2003	98	1	11	75	1	109	77
2004	99	0	26	166	3	125	169
2005	34	6	*	158	0	*	164
2006	104	2	46	172	1	149	175
2007	85	9	33	162	5	119	175
2008	61	20	40	371	11	101	402
2009	94	40	11	120	18	105	179
2010	78	24	46	62	18	125	105

Note: Only Hook-and-line CV halibut PSC is shown for the Eastern GOA, because CP PSC for individual years is confidential.
*Confidential.
Source: NMFS PSC data.

2.2.8 Component 8 – Community Protection Provisions

Current inshore/offshore regulations

The Council has indicated that if GOA Pacific cod sector allocations are established, sector allocations would supersede the 90%/10% allocations of the Western and Central GOA TACs to the inshore and offshore processing components. Currently, the inshore processing component includes three categories of processors:

(1) Shoreside processors
(2) Vessels less than 125 ft LOA that make an annual election to participate in the inshore component. These vessels carry an inshore processing endorsement on their FFP, and are limited to processing no more than 126 mt per week (round weight) of an aggregated amount of pollock and Pacific cod. Vessels may participate as CP and/or motherships.
(3) Stationary floating processors that hold an inshore processing endorsement on the federal processor permit, and that process pollock and/or Pacific cod harvested in a directed fishery for those species at A single geographic location in AlaskA State waters during A given year. Stationary floating processors are not subject to vessel length or weekly processing limits.

Table 2-57 Number of motherships processing Pacific cod and other groundfish species, retained catch of Pacific cod and other groundfish processed by motherships (mt), and percent of total retained catch of Pacific cod and other groundfish species processed by motherships.

Western GOA

	Pacific Cod			Other Groundfish		
Year	Number of motherships	Landings (mt) processed by motherships	Percent of retained catch processed by motherships	Number of motherships	Landings (mt) processed by motherships	Percent of retained catch processed by motherships
1995	5	2,234	10.5%	4	137	0.4%
1996	5	120	0.6%	6	380	1.3%
1997	3	385	1.7%	3	635	2.1%
1998	1	*	*	2	*	*
1999	2	*	*	1	*	*
2000	3	301	1.4%	2	*	*
2001	0	0	0.0%	0	0	0.0%
2002	0	0	0.0%	0	0	0.0%
2003	0	0	0.0%	0	0	0.0%
2004	0	0	0.0%	0	0	0.0%
2005	0	0	0.0%	1	*	*
2006	1	*	*	1	*	*
2007	1	*	*	0	0	0.0%
2008	3	357	2.4%	1	*	*
2009	0	0	0.0%	0	0	0.0%
2010	0	0	0.0%	0	0	0.0%

Central GOA

	Pacific Cod			Other Groundfish		
Year	Number of motherships	Landings (mt) processed by motherships	Percent of retained catch processed by motherships	Number of motherships	Landings (mt) processed by motherships	Percent of retained catch processed by motherships
1995	4	1,471	3.4%	4	66	0.1%
1996	8	2,006	4.8%	4	43	0.1%
1997	1	*	*	1	*	*
1998	4	344	0.9%	0	0	0.0%
1999	1	*	*	1	*	*
2000	1	*	*	1	*	*
2001	0	0	0.0%	0	0	0.0%
2002	0	0	0.0%	0	0	0.0%
2003	0	0	0.0%	0	0	0.0%
2004	0	0	0.0%	0	0	0.0%
2005	0	0	0.0%	0	0	0.0%
2006	0	0	0.0%	0	0	0.0%
2007	0	0	0.0%	0	0	0.0%
2008	0	0	0.0%	0	0	0.0%
2009	0	0	0.0%	0	0	0.0%
2010	0	0	0.0%	0	0	0.0%

Source: NMFS Blend/Catch Accounting. Other groundfish includes all FMP species other than Pacific cod.
*Confidential.

The offshore component includes all CP and/or mothership vessels ≥125 ft LOA. CPs and motherships less than 125 ft LOA may make an annual election to participate in the inshore processing component. This election results in a GOA inshore endorsement on the FFP. Some <125-ft LOA vessels have participated in the offshore component. In recent years, CPs and motherships that did not hold FFPs participated in the directed Pacific cod fisheries in the GOA, and operated only in the parallel waters fishery. Since these vessels did not hold an FFP, they did not elect a processing sector. NMFS inseason managers deducted the catch processed by these vessels from either the inshore or offshore TAC, based on the vessel's size and weekly processing activity. All groundfish catch during the federal seasons must account to the federal groundfish TACs, even if the vessel does not hold a federal permit.

The inshore/offshore processing allocations were established under Amendment 20 to the GOA FMP and became effective on June 1, 1992. The processing allocations developed out of concern that one processing sector could preempt the other. The problem statement for Amendment 20 states that specific processing allocations to the inshore and offshore sectors would resolve the preemption problem and allow operators to better plan their annual harvesting and processing activities. The primary purpose of Amendment 20 was to protect the inshore processing component from preemption by the offshore fleet. If GOA Pacific cod sector allocations are established, CP and CV harvests will be constrained by the respective sector allocations. However, if the inshore/offshore processing allocations no longer exist, there would be no limit on the amount of catch processed by motherships on a weekly or annual basis.

Shoreside processors currently process nearly all Pacific cod harvested by CVs in the Western and Central GOA. The number of motherships that processed Pacific cod and other groundfish species in the Western GOA and Central GOA, the retained amount (mt) processed, and the percentage of retained catch processed by motherships is summarized in Table 2-57. During 1995 through 2001, motherships processed up to 10.5% of the Western GOA Pacific cod catch and up to 4.8% of the Central GOA Pacific cod catch. In the Central GOA, no motherships have processed Pacific cod or other groundfish since 2001. In the Western GOA, as many as 5 motherships processed Pacific cod during 1995 through 2000, but no motherships were active from 2001 through 2005. One mothership processed cod in the Western GOA during 2006 and 2007, and 3 motherships processed 2.4% of the catch in 2008. No motherships processed Pacific cod or other groundfish species in the Western or Central GOA in 2009 and 2010. In addition to Pacific cod, motherships also process small amounts of pollock, rockfish, and flatfish, but most of these data cannot be reported, due to confidentiality restrictions. The majority of groundfish processed by motherships is comprised of Pacific cod. Under AFA regulations, beginning in 1998, all GOA directed pollock catch is required to be delivered inshore.

Options under Component 8

The Council recognized the potential for shifts in processing and delivery patterns, if the inshore/offshore processing allocations are removed, and included 4 options in Component 8 to ensure stability in the distribution of catch among the processing sectors by limiting the amount of Pacific cod processed by motherships. The purpose of these options is to protect community participation in the processing of Pacific cod and protect community delivery patterns established by the inshore/offshore regulations. For the purposes of this provision, motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year.

> For each management area, the mothership processing cap will be Option 1 **or a combination of Options 1 through 4**:
>
> Option 1: Motherships may not receive deliveries of GOA directed Pacific cod harvests.
>
> Option 2: Allow mothership activity up to a percentage of the Pacific cod TAC, to be selected by the Council at final action: 0 to 10% in the Central GOA; 1% to 10% in the Western GOA.
>
> Option 3: Allow federally permitted vessels that (1) do not meet the definition of a stationary floating processor, and (2) do not harvest groundfish off Alaska in the same calendar year, to operate as floating processors for Pacific cod deliveries within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development.

Suboption: Allow this processing activity up to a percentage of the Pacific cod TAC.

Option 4: Allow federally permitted vessels to operate as a mothership or stationary floating processor at more than one geographic location in a year, provided that the vessel is operating only within the waters of the State of Alaska.

Suboption (may be applied to Options 2, 3, and 4): Limit weekly processing of Pacific cod landings from CVs by vessels operating as motherships to (a) 125 mt per week, (b) 200 mt per week, or (c) 300 mt per week. This limit applies to all Pacific cod landings from CVs (i.e., directed or incidental catch).

Under **Option 1**, motherships may not receive deliveries of directed Pacific cod from the Western or Central GOA, but may process incidentally caught Pacific cod. A directed landing of Pacific cod is defined in regulation as a landing where Pacific cod comprises more than 20% of the landing, by weight (50 CFR 679.26). The rationale for including this option is that nearly all groundfish deliveries are likely to include at least small amounts of incidentally caught Pacific cod. If motherships are prohibited from processing any Pacific cod, but are allowed to process catch from other directed groundfish fisheries, incidentally caught Pacific cod would have to be discarded at the plant. This practice would conflict with current discard regulations. Under the Increased Retention/Increased Utilization (IR/IU) regulations, when the directed Pacific cod fishery is open, incidentally caught Pacific cod cannot be discarded. When the directed Pacific cod fishery is closed, Pacific cod must be retained up to the MRA. The MRA is 20% for most directed groundfish fisheries in the GOA, and 5% for arrowtooth flounder. Therefore, at all times during the fishing year, retention of at least some portion of incidentally caught Pacific cod is required.

In some cases, a CV that wishes to deliver to a mothership may not know, until its catch is weighed, if it will make a directed Pacific cod landing. If the amount of Pacific cod in a groundfish delivery exceeds the MRA of 20%, excess Pacific cod would need to be discarded. Requiring Pacific cod discards is inconsistent with the IR/IU regulations. However, AFA motherships are prohibited from retaining Pacific cod, and are required to discard Pacific cod.

If Option 1 is selected alone, motherships could process an unlimited amount of incidentally caught Pacific cod. In the Central GOA, trawl CVs catch A significant amount of incidental cod while prosecuting other directed fisheries. Any of this cod could be delivered to motherships under Option 1. If Option 1 is selected in combination with **Option 2**, mothership processing of cod would be limited to a percentage (up to 10%) of the respective Western and Central GOA Pacific cod TACs.

Option 2 allows motherships to process up to a specified percentage of the Western GOA and Central GOA Pacific cod TACs. This amount could range from 0 to 10% of the Central GOA TAC and 1% to 10% of the Western GOA TAC. For example, if the Council selects a zero cap for the Central GOA, motherships could be prohibited from processing any Pacific cod in the Central GOA. If the Council selects a 1% cap, mothership processing could end for the year, once the cap is reached. The Council could select Option 1, which prohibits motherships from processing directed landings of Pacific cod, in combination with Option 2, to limit the total amount of incidentally harvested Pacific cod processed by motherships. In so doing, the Council will increase the likelihood of wasteful discarding of Pacific cod at the plant. As noted above, a CV may not know, until its catch is weighed, if the amount of Pacific cod in a groundfish delivery exceeds the specified amount. Excess Pacific cod would need to be discarded.

Previously, the Council considered basing a processing cap on mothership activity during the same years used to calculate harvest sector allocations. Those percentages are reported in Table 2-58. In recent years, there has been no mothership activity in the Central GOA.

Table 2-58 Percentage of the Western and Central GOA TAC that could be processed by motherships under each option in Component 4.

		Western Gulf	Central Gulf
1995–2005	Best 7 years	2.1%	1.5%
1995–2005	Best 5 years	3.0%	2.1%
2000–2006	Best 5 years	*	*
2000–2006	Best 3 years	*	*
2002–2007	Best 5 years	*	0.0%
2002–2007	Best 3 years	*	0.0%
2002–2008	Best 5 years	1.1%	0.0%
2002–2008	Best 3 years	1.9%	0.0%

Source: NMFS Blend/Catch Accounting.
*Confidential.

Under **Option 3**, motherships could process Pacific cod in the Western and Central GOA, if they operate within Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development. A suboption would limit the percentage of the respective Western and Central GOA TACs that could be processed under this option. This option allows a floating processor to temporarily process groundfish within the boundaries of a GOA CQE community, then move to another GOA CQE community and process groundfish during the same year, and does not place a limit on the number of locations at which a processor may operate. The ability to process groundfish at more than one location may provide an incentive for vessels to act as motherships. Currently, processors operating in the inshore sector as a stationary floating processor may only process groundfish at a single geographic location in Alaska State waters during a given year. If Option 3 is selected alone, motherships operating within the specified communities could process an unlimited amount of Pacific cod. If Option 3 is selected in combination with the suboption, mothership processing of cod within CQE communities would be limited to a percentage of the respective Western and Central GOA Pacific cod TACs.

The Council identified the list of communities to which Option 3 applies, based on the same criteria used to define communities eligible to purchase halibut and sablefish quota share under GOA Amendment 66. CQE eligible communities have fewer than 1,500 residents, lack direct road access, have direct access to saltwater, and have historical participation in the halibut and sablefish fisheries. Under Amendment 66, the Council provided a mechanism for communities to petition the Council, if they wished to be placed on the list of eligible communities. If a community successfully petitions the Council, it could be added to the list of eligible communities through a regulatory amendment. The Council would need to establish a record as to why the specific communities and the criteria for defining those communities under Amendment 66 are appropriate for this action.

Community boundaries are defined as the certified municipal land and maritime boundaries provided to the State of Alaska Department of Community and Economic Development (DCED). Only 9 of the 20 CQE communities located in the Central and Western GOA management areas have provided certified municipal boundaries to the DCED (Akhiok, Chignik, King Cove, Larsen Bay, Old Harbor, Ouzinkie, Port Lions, Sand Point, and Seldovia), and documentation may be found at: http://dcra.commerce.alaska.gov/DCBD/Municipal%20Certificates/.

The Council could include a provision to allow communities that have not provided boundaries to DCED to provide these boundaries to NMFS in the future. For example, the Council could require that any mothership activity be conducted only within the maritime boundaries of a community that has registered boundaries with DCED as of the effective date of this rule, or if a community does not have maritime

boundaries in existence on the effective date of the rule, provide the opportunity for a community to provide NMFS with a notarized certification that the community has established maritime boundaries with the State of Alaska. This approach is similar to the one used to define the boundaries where custom processing operations may occur under Amendment 27 to the BSAI crab FMP.

Under **Option 4**, federally permitted vessels could operate as A mothership or stationary floating processor at more than one geographic location in a year, provided that the vessel is operating only within the waters of the State of Alaska. In effect, this option revises the current definition of a stationary floating processor, which is part of the inshore/offshore regulations, to allow stationary floating processors to operate at more than one location in a given year. Again, if Option 4 is selected alone, motherships or stationary floating processors operating within state waters could process an unlimited amount of Pacific cod. If combined with Option 2, these processors could only process a limited percentage of the Western and Central GOA Pacific cod TACs, and if combined with Option 1, these processors could not receive landings of directed Pacific cod.

Finally, under a **Suboption applicable to Options 1 through 4**, vessels that act as motherships and process Pacific cod could be subject to weekly processing limits of 125 mt, 200 mt, or 300 mt per week (applicable to CV landings to individual motherships). Under the current inshore/offshore regulations, CPs and motherships operating in the inshore sector are limited to processing 125 mt per week. Weekly landings to shoreside plants during 2007 and 2008 are shown in Figure 2-23.

During the B season in the Central GOA, there is a second peak, with landings sometimes exceeding 2,000 mt per week. In the Western GOA, B season landings were typically less than 300 mt per week, in both 2007 and 2008. In 2007, the inshore B season remained open to the fixed gear sectors until December 31, and processors in the Central GOA continued to receive landings of 200 mt to 500 mt per week through November and December. In 2008, the Central GOA inshore B season TAC was reached on October 3, and landings dropped off sharply after the closure. The Western GOA B season TAC has not been fully harvested since seasonal apportionments were established in 2001. CV deliveries to Western GOA processors during the B season in both 2007 and 2008, largely ended by mid-November.

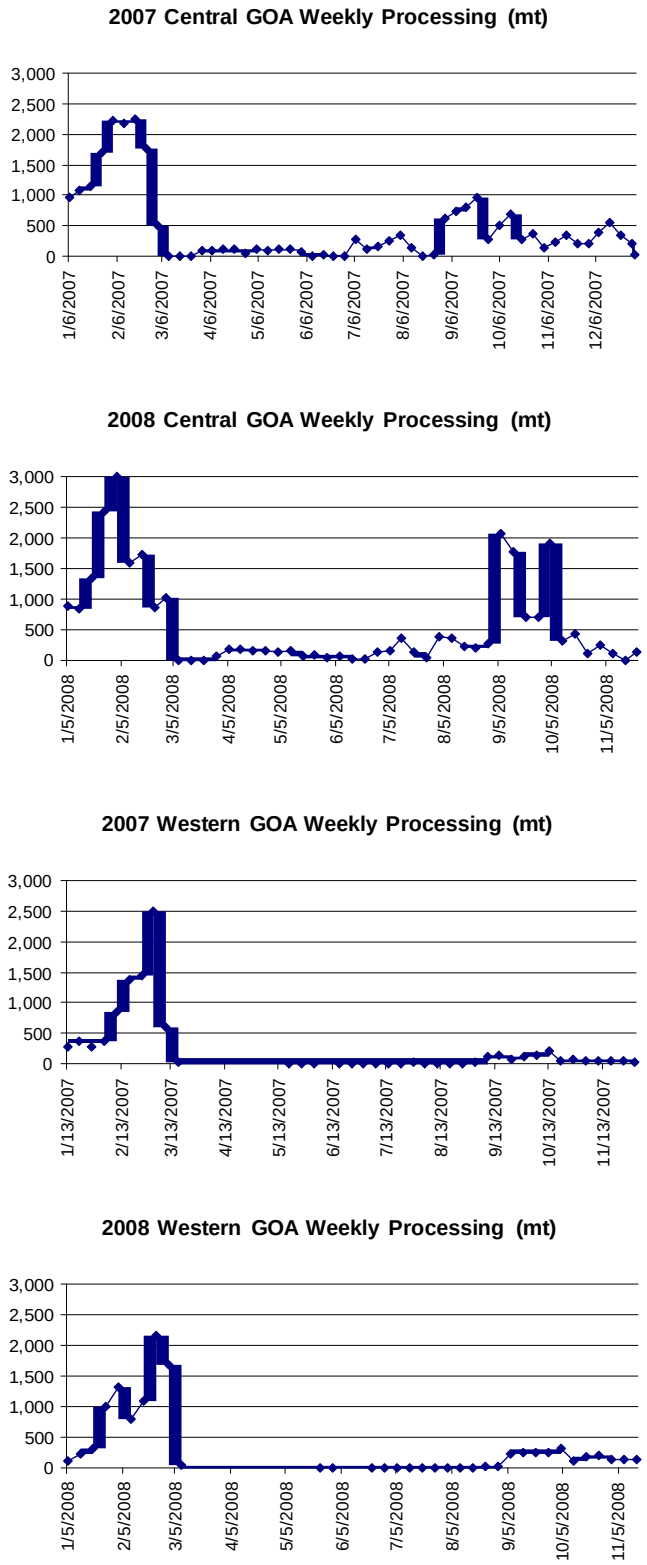

Figure 2-23 **Weekly processing activity (mt) of Pacific cod by shoreside plants and motherships in the Western and Central GOA (excludes state waters catch).**
Source: NMFS Catch Accounting. Confidential landings not shown.

The protection provided to shoreside plants by the weekly limit on the amount of Pacific cod processed by motherships depends on the number of motherships that operate. If only one mothership operates in each management area during the A season, and the processing limit is 125 mt per week, this amount is a relatively small proportion of weekly processing activity during the A season. If 4 motherships are active, and the limit is 125 mt per vessel, these motherships could process up to 500 mt per week. This weekly amount could comprise a substantial proportion of the weekly landings during the A season, and could comprise all of the weekly B season landings in the Western GOA. Any catch delivered to a mothership beyond the historical amount of catch processed by motherships in each management area is a reduction in deliveries to shoreside plants, and has the potential to have negative economic effects on shoreside processors that depend on Pacific cod deliveries.

Currently, a limited number of shoreside processors operate in GOA communities. The majority of Western GOA groundfish deliveries are made to Sand Point and King Cove, which each have one shoreside plant, and Dutch Harbor. Most (>95%) of Central GOA groundfish deliveries are made to Kodiak. The rationale for allowing motherships to process within specific GOA communities is that it may provide an incentive for additional processors to operate in the GOA, which would give CV operators more options for making deliveries, and possibly higher prices.

One of the potential effects of any shift in processing activity to floating processors may be a change in tax payments. Communities may receive tax revenues based on the value of the processing activity. However, if processing activity shifts from communities with shoreside plants to communities with motherships operating within their boundaries, the revenues associated with that processing activity will also shift. For this reason, taxes are considered transfer payments to specific communities, rather than benefits in the strict economic sense. If one community gains tax revenues from processing activity, another communities loses revenues. Moreover, many communities impose no municipal tax on fish. Currently, shoreside processors pay the State of Alaska a 3% fisheries business tax based on the value of the raw fishery resource. Floating processors operating within state waters pay a 5% state fisheries business tax. These revenues are deposited into the State of Alaska's General fund and 50% of revenues are distributed to qualified communities (see Appendix D and E). In 2008, the shared amount to municipalities was approximately $20.2 million. In addition, some boroughs and communities levy a raw fish tax. The Aleutians East Borough and Lake and Peninsula Borough each collect a 2% raw fish tax on groundfish, and the communities of Chignik, King Cove, and Sand Point each collect a 2% municipal raw fish tax on groundfish. Movement of processing between communities will have clear tax revenue consequences.

Processors operating outside of AlaskA state waters pay A fishery resource landing tax on fishery resources processed outside of and first landed in Alaska; the tax is based on the unprocessed statewide average price of the resource. The tax is primarily collected from floating processors and CPs that process fish outside the state's 3-mile limit and bring products into Alaska for transshipment, or any processed fishery resource subject to section 210(f) of the AFA. Tax rates range from 1% to 3% (AS 43.77.010). All revenues are deposited in the State of Alaska's General Fund, and 50% of revenues are distributed to qualified municipalities (see Appendix D and E). In 2008, the shared amount to municipalities was approximately $6.4 million.

Processing activity may also provide other direct benefits to communities where this processing activity occurs. Shore plants often provide opportunities for local residents by providing jobs, purchasing supplies locally, and providing the opportunity for vessels to make deliveries locally. In some communities, processors provide year-round employment for local residents who live in the community. Floating processors may provide similar local opportunities. A shift in processing activity away from shoreside plants, to motherships or floaters, may represent a tradeoff among communities, but also may

affect the opportunities in Alaskan communities generally. There may be an incentive for floating processors and motherships to operate in communities that do not charge any local fish taxes, and floating processors and motherships may have little or no direct contact with the community (not hiring local employees or purchasing supplies locally). As A result, the revenues and local economic activity associated with mothership or floating processing in a community may not be comparable to revenues and activity associated with shoreside processing. Finally, processors operating in Alaska State waters, rather than in federal waters, may assume additional operating costs, in order to meet regulatory requirements (e.g., water quality and labor regulations), which may provide a disincentive to process within communities.

During public testimony, representatives of the Amendment 80 CP fleet have expressed interest in taking CV deliveries of groundfish, particularly in the Western GOA. This processing activity has the potential to provide opportunities for harvesters, if motherships offer better prices for flatfish than shoreside plants. Currently, the flatfish fisheries in the Western GOA are not fully subscribed. For example, in 2008 only 40% of the Western GOA arrowtooth flounder TAC was harvested and less than 20% of the deep-water flatfish, shallow-water flatfish, flathead sole, and rex sole TACs were harvested. The flatfish TACs in the Central GOA are substantially higher than in the Western GOA. Several of these Central GOA flatfish TACs were more fully harvested: arrowtooth flounder (87%), shallow-water flatfish (69%), flathead sole (63%), and rex sole (37%).

Halibut PSC closures preclude the GOA flatfish TACs from being fully harvested. Halibut PSC for the trawl sector is reported by target fishery in Table 2-59. Currently, the trawl sector is apportioned 2,000 mt of halibut PSC. This amount is apportioned to the shallow water complex (900 mt) and deep water complex (800 mt); in addition, 300 mt is available after October 1 and is not apportioned to the deep or shallow water complexes. Since 2007, 171 mt of the third season deep water complex amount is allocated to the Rockfish Pilot Program. Because trawl halibut PSC is managed GOA-wide and is fully utilized, increased participation in the Western GOA flatfish fisheries would likely have effects on the availability of halibut PSC for other GOA trawl participants. Currently, the majority of the trawl gear allowance of halibut PSC (2,000 mt) is taken in the Central GOA (Figure 2-24).

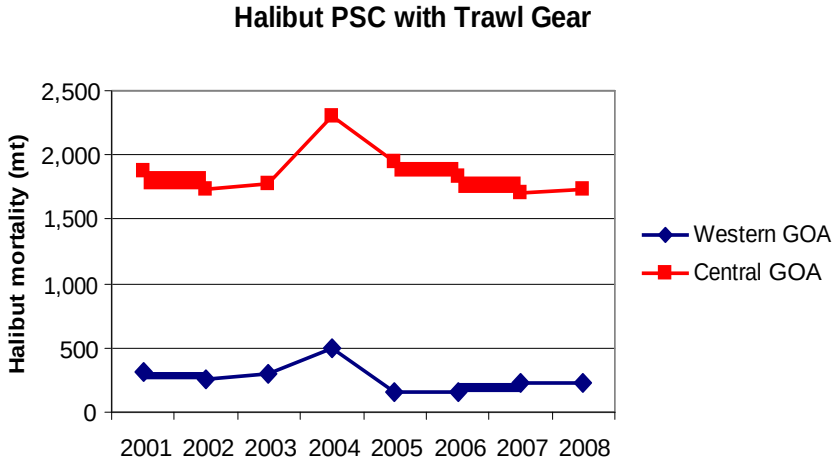

Figure 2-24 Halibut PSC with trawl gear in the Western and Central GOA.

Table 2-59 Halibut PSC with trawl gear reported by target fishery for the Western and Central GOA.

Western GOA	
Deep Water Complex	2001-2008 average
Arrowtooth Flounder	85
Deep Water Flatfish	0
Rex Sole	16
Rockfish	35
Total Deep Water Complex	135
Shallow Water Complex	
Flathead Sole	58
Other Species	0
Pacific Cod	67
Pollock - bottom	0
Pollock - midwater	1
Shallow Water Flatfish	5
Total Shallow Water Complex	132
Central GOA	
Deep Water Complex	2001-2008 average
Arrowtooth Flounder	328
Deep Water Flatfish	17
Rockfish	179
Rex Sole	164
Total Deep Water Complex	689
Shallow Water Complex	
Flathead Sole	45
Other Species	6
Pacific Cod	489
Pollock - bottom	40
Pollock - midwater	1
Shallow Water Flatfish	595
Total Shallow Water Complex	1,175

Source: NMFS PSC data.

Enforcement issues under Option 3

A potential enforcement issue relevant to Option 3 is that motherships are not currently required to use VMS. The VMS requirement applies to CVs and CPs that hold an FFP with a pollock, Pacific cod, or Atka mackerel species endorsement. CPs that operate as motherships under Option 3 may be required to use VMS if they hold an FFP with one or more of these species endorsements, but vessels that solely process fish may not hold an FFP. Enforcing the requirement that motherships operate within the municipal boundaries of a community may not be practicable unless these processors use VMS.

NMFS has recommended that federally permitted motherships that operate under Option 3 of Component 8 be required to carry VMS. Depending on which brand of VMS a mothership owner or operator chooses to purchase, NMFS estimates that this requirement would impose a cost of up to $2,000 per vessel for equipment purchase, $780 for installation and maintenance, and $5 per day for data transmission costs.

Currently, all federally permitted CPs that could also operate as motherships are required to comply with the VMS program. Vessels that receive and process groundfish from other vessels, and are not used for catching groundfish, can be considered a mothership or stationary floating processor, as those terms are defined in federal regulations at 50 CFR 679.2. These two types of floating processors are not currently

required to have VMS. Vessel owners would be required to purchase and operate VMS equipment if these vessels were used in the GOA to take advantage of the processing opportunities proposed under Option 3. Only three vessels are currently configured to operate strictly as AFA motherships; these vessels are prohibited from operating as a mothership in the BSAI and as a stationary floating processor in the inshore component of the GOA during the same fishing year. As a result, these vessels have not operated in the GOA in recent years.

One non-AFA mothership is federally permitted and operates in the GOA. Twelve additional vessels are permitted as stationary floating processors and have GOA endorsements, but only three of these processors have participated in the GOA since 2007. Thus, up to four motherships and 12 stationary floating processors could operate under Option 3, but based on recent processing activity for groundfish or halibut, these numbers likely would be curtailed to a single non-AFA mothership and up to three stationary floating processors. However, in the future additional vessels could apply for federal processing permits and take advantage of these exemptions.

Vessel owners purchasing a VMS unit in order to comply with new federal regulations under Option 3 could be eligible for a reimbursement of the initial purchase cost of the VMS unit pending approval of funding for this purpose by the NMFS Office of Law Enforcement. The VMS reimbursement funds typically cover the costs of purchase and freight, but not the costs of sales taxes, installation, annual operating expenses, or replacement.

Revisions to GOA inshore/offshore regulations

As part of the sector split action, the Council will need to identify which elements of the GOA Pacific cod inshore/offshore regulations will be retained or revised, and which elements will no longer be in effect. Staff has identified a potential list of these elements below.

Table 2-60 lists the current prohibitions on vessels participating in the inshore and offshore processing sectors. The current definitions of motherships, stationary floating processors, and the inshore and offshore components in the GOA, and the prohibitions in 50 CFR 679.7 applicable to inshore and offshore activities are listed below.

In addition to these prohibitions, as part of its fixed gear recency action, the Council recommended that CP licenses assigned to vessels that participated in a voluntary halibut PSC cooperative in the GOA, and did not otherwise meet the recency requirements, receive offshore-limited hook-and-line gear endorsements. Any LLP license assigned an offshore-limited endorsement would be limited to participating only in the offshore sector in the management area to which the Pacific cod endorsement is assigned.

The Council will need to clarify if alternative prohibitions or restrictions would apply to LLP licenses operating in the Western and Central GOA. NMFS would continue to apply these prohibitions when vessels operate in the Eastern GOA. However, in the Western and Central GOA, the following inshore/offshore requirements would be removed under all but the status quo alternative:

- 90%/10% inshore/offshore TAC split in Western GOA and Central GOA.
- Inshore component and offshore component in the Western GOA and Central GOA.
- Weekly processing limit on inshore CPs/motherships in Western GOA and Central GOA
- Inshore/offshore designations on FFP for CPs/motherships operating only in the Western GOA or Central GOA.

The limitations on stationary floating processors under the current definition of the inshore component could be retained if the Council wishes, but revised as follows, so that there is no reference to the inshore component:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.

- Under Option 4 of Component 8, the definition of stationary floating processor could be revised to allow stationary floating processors to process Pacific cod in the Western and Central GOA at more than one geographic location in state waters in a given year.

- The prohibition that states that a vessel cannot operate as both a stationary floating processor and a CP/mothership during the same year could be retained, but revised so that there is no reference to the inshore component.

The Council could clarify that in the Western GOA and Central GOA, AFA motherships and AFA CPs that are also active in the BSAI would be limited in their ability to process any Pacific cod in the GOA. This approach would be slightly more restrictive than the current regulations. For example, the prohibitions in 50 CFR 679.7(a)(7) could be restructured as follows:

- Vessel cannot operate as a stationary floating processor in the GOA and an AFA mothership in the BSAI during the same year.
- Vessel cannot operate as a stationary floating processor in the GOA and a CP in the BSAI during the same year.

Absent direction from the Council, NMFS will remove the inshore/offshore definitions and prohibitions in the Central and Western GOA.

Table 2-60 Existing inshore/offshore prohibitions in the GOA.

If the vessel is operating as a…	In the…	That vessel can…	That vessel cannot…
		(During a calendar year)	(During a calendar year)
(A) Catcher Processor or mothership less than 125' length overall and processing less than 126 mt of pollock and/or Pacific cod during a 7 day period with an inshore designation on its FFP or FPP.	GOA only	(1) Process Pacific cod from the inshore component of the GOA as a mothership-catcher processor **or** stationary floating processor (but not both during a calendar year).	Process Pacific cod from the offshore component of the GOA during that calendar year if the FFP on that vessel has a GOA inshore endorsement.
(B) Catcher Processor that meets the requirements of (A) above	BSAI and GOA	(1) Process Pacific cod from the inshore component in the GOA as a mothership-catcher processor	(1) Process Pacific cod from the inshore component of the GOA as a stationary floating processor; (2) Operate as a catcher processor in the GOA inshore sector during that calendar year.
(C) Catcher processor not meeting the requirements of (A) above	GOA	(1) Process Pacific cod from the offshore component in the GOA as a stationary floating processor, or mothership-catcher processor. (2) catcher/processor in the offshore sector.	(1) Process Pacific cod from the inshore component of the GOA as a stationary floating processor or mothership. (2) Operate as a catcher processor in the GOA inshore sector during that calendar year.

Based on definitions of "Inshore component of the GOA," "Mothership," "Offshore component of the GOA," and "Stationary floating processor" at 50 CFR 679.2, and prohibitions at 50 CFR 679.7(a)(7).

50 CFR 679.2

Inshore component in the GOA means the following three categories of the U.S. groundfish fishery that process groundfish harvested in the GOA:

(1) Shoreside processors.

(2) Vessels less than 125 ft (38.1 m) LOA that hold an inshore processing endorsement on their Federal fisheries permit, and that process no more than 126 mt per week in round-weight equivalents of an aggregate amount of pollock and GOA Pacific cod.

(3) Stationary floating processors that hold an inshore processing endorsement on their Federal processor permit, and that process pollock and/or Pacific cod harvested in a directed fishery for those species at a single geographic location in Alaska state waters during a fishing year.

Offshore component in the GOA means all vessels not included in the definition of ''inshore component in the GOA" that process groundfish harvested in the GOA.

Mothership means:

(1) A vessel that receives and processes groundfish from other vessels; or

(2) With respect to subpart E of this part, a processor vessel that receives and processes groundfish from other vessels and is not used for, or equipped to be used for, catching groundfish.

Stationary floating processor (SFP) means a vessel of the United States operating as a processor in Alaska State waters that remains anchored or otherwise remains stationary in a single geographic location while receiving or processing groundfish harvested in the GOA or BSAI.

50 CFR 679.7(a)(7)

(7) **Inshore-offshore**.

(i) Operate a vessel in the "inshore component in the GOA" as defined in § 679.2 without a valid inshore processing endorsement on the vessel's Federal fisheries or Federal processor permit.

(ii) Operate a vessel as a "stationary floating processor" in the "inshore component in the GOA" as defined in § 679.2, and as a catcher/processor in the BSAI during the same fishing year.

(iii) Operate a vessel as a "stationary floating processor" in the "inshore component in the GOA" as defined in § 679.2, and as an AFA mothership in the BSAI during the same fishing year.

(iv) Operate any vessel in the GOA in more than one of the three categories included in the definition of "inshore component in the GOA," in § 679.2, during any fishing year.

(v) Operate any vessel in the GOA under both the "inshore component in the GOA" and the "offshore component in the GOA" definitions in § 679.2 during the same fishing year.

(vi) Except as provided in paragraph (k)(3)(iv) of this section, use a stationary floating processor with a GOA inshore processing endorsement to process pollock or GOA Pacific cod harvested in a directed fishery for those species in more than one single geographic location during a fishing year.

2.2.9 Component 9 – Adjustments to Sector Allocations

Under Component 9, the Council may adjust sector allocations to address conservation, catch monitoring, equity of access, bycatch and PSC reduction, and social objectives. Any adjustments would be applied proportionately to other sector allocations so that allocations sum to 100% of the TAC. Conservation objectives could include Steller sea lion mitigation, bycatch reduction, and prohibited species mortality. Catch monitoring objectives could include enhancing observer coverage in the GOA Pacific cod fleet. Equity of access considerations could include adjustments to allocations when unfair circumstances (e.g., PSC overages) or differences in access to the Pacific cod fishery (e.g., different season start dates and closure dates for fixed vs. trawl gear, and access to incidental catch of Pacific cod in the trawl fisheries when the directed fishery is closed) result in different sector catch histories. Social objectives could include providing opportunities for new entry into the fishery and participation by coastal communities in the processing and harvesting of Pacific cod. Each of these objectives is discussed in more detail below. Following this discussion is an analysis of the potential economic effects of allocation adjustments on each sector.

Conservation objectives

Steller sea lion mitigation

A suite of Steller sea lion mitigation measures are currently in place for the GOA Pacific cod fishery. The measures differ for trawl, pot, longline, and jig gear, and were designed to mitigate the potential impacts of the fishing activities of each gear group. In November 2000, NMFS issued a Biological Opinion which determined that the pollock, Pacific cod, and AtkA mackerel fisheries in the BSAI and GOA, as prosecuted at that time, were likely to jeopardize the continued existence of the western population of Steller sea lions, and adversely modify its critical habitat. NMFS completed a Steller Sea Lion Protection

Measures Final Supplemental Environmental Impact Statement (SEIS) in November 2001 (NMFS 2001). As A result, protection measures were implemented to mitigate the direct and indirect effects of commercial fishing activities on Steller sea lions. These protection measures modified management measures, implemented beginning in 1990, when Steller sea lions were initially listed as threatened—a time when less was understood about the potential impacts of the fisheries on Steller sea lions and their designated critical habitat. A history of Steller sea lion protection measures is described in the SEIS (NMFS 2001).

The 2001 Steller sea lion protection measures for the GOA Pacific cod fishery included the following:

(1) The GOA Pacific cod fishing seasons in the Western and Central regulatory areas were divided into two periods: 60% of the TAC was apportioned to the A season (January 1 through June 10) and 40% to the B season (September 1 through December 31 for nontrawl gears and September 1 through November 1 for trawl gear). The purpose of dividing the fishing season was to temporally disperse fishing effort for Pacific cod by all gear groups.

(2) Area closures limit fishing near rookeries and haulouts. The size of the closed area varies by gear group and location, and ranges up to 20 nm from selected sites. Fish removals near haulouts and rookeries were determined to have the most impact on Steller sea lion recruitment and survival. In general, the size of the area closures is larger for trawl vessels than for fixed gear vessels.

(3) Vessels participating in the directed Pacific cod fishery in federal waters using trawl, pot, or hook-and-line gear are required to have an FFP with a Pacific cod fishery endorsement, and are required to use VMS to facilitate enforcement of closed areas. Vessels using jig gear are exempt from this requirement.

A new Biological Opinion was released in November 2010, and concludes that the status quo BSAI and GOA groundfish fisheries jeopardize the continued existence of the endangered western Distinct Population Segment (DPS) of Steller sea lions and adversely modify its designated critical habitat (NMFS 2010). The BiOp included new management measures that close the Atka mackerel and Pacific cod fisheries in the Western Aleutian Islands (Area 543), restrict the Atka mackerel and Pacific cod fisheries in the Central Aleutian Islands (Area 542), and restrict the Pacific cod fishery in the Eastern Aleutian Islands (Area 541).

In addition to the Steller sea lion area closures, bottom trawling has been prohibited in state waters (0 to 3 nm) since 2000 (with the exception of some areas in the South Alaska Peninsula management area) and in Cook Inlet since 2001. As a result of these closures, most trawl catch of Pacific cod is from federal waters. In contrast, a large proportion of pot, hook-and-line, and jig catch is from the parallel and state waters fisheries. A summary of the GOA area closures is in the EA (Chapter 3).

In sum, the existing Steller sea lion mitigation measures address the status quo fishery, and take into consideration the different removal rates of each gear type and the location of fishing activity. In general, sectors with a lower rate of removal (i.e., the small, fixed gear vessel sectors) are less likely to impact the availability of prey for Steller sea lions. However, in the GOA, the small, fixed gear vessel sectors also take a large proportion of catch in the parallel fishery and other state-managed fisheries inside state waters, which are more likely to be in Steller sea lion critical habitat. Since the existing protection measures were developed in consideration of the differences in harvest characteristics among the sectors, and the sector allocations are primarily based on historical catches, the establishment of sector allocations that are similar to those analyzed in the 2001 Biological Opinion would not result in a change in the action that would require Endangered Species Act consultation. At the time of the development of the 2001 Steller sea lion protection measures, no constraints were applied to the amount of GOA Pacific cod harvest by a particular sector and therefore, no sector specific limits on harvest were needed as a Steller

sea lion protection measure. Establishing sector allocations would apply constraints on the harvest by a sector, which may be beneficial to Steller sea lions, compared to the status quo without sector harvest limits.

Bycatch and PSC reduction

The problem statement notes that competition among sectors in the GOA Pacific cod fishery may contribute to higher rates of PSC and groundfish discards. Although the primary purpose of sector allocations is to stabilize the distribution of catch among sectors, dividing the TACs among sectors may also facilitate the development of management measures and fishing practices to address bycatch reduction and PSC mortality issues. This discussion summarizes PSC and groundfish discards in the status quo fisheries, but it is important to note that current bycatch levels have the potential to be mitigated, if sector allocations are established and additional management measures specific to each sector are developed to minimize bycatch and PSC in the Pacific cod fishery.

PSC of halibut, salmon, and crab in the Pacific cod target fisheries by the different gear and operation types are summarized in Chapter 3. The trawl and hook-and-line sectors are subject to halibut PSC limits. Halibut PSC mortality rates are generally lower during the A season, when cod are aggregated and catch rates are high. Halibut PSC limits sometimes close the hook-and-line and trawl B seasons before the Pacific cod TAC is fully harvested. There are no limits on crab or salmon PSC in the GOA for any gear type. Tanner crab PSC levels are relatively high in the Pacific cod target fishery, but Chinook and "other" salmon PSC rates are generally low in the GOA Pacific cod target fishery. The crab and salmon PSC estimates are not adjusted by a discard mortality rate, and simply report the number of animals that were discarded. Gear-specific PSC mortality rates are applied in the annual BSAI Crab SAFE Report (NPFMC 2004) to summarize mortality in the BSAI directed crab and other fisheries using the mortality rates of 80% for trawl gear and 20% for fixed gear. However, these estimates are specific to the BSAI, and a range of mortality rates have been estimated for various crab species and gear types, which are summarized in Chapter 3.

The annual trawl PSC limit of 2,000 mt (shallow and deep water targets combined) is often fully utilized, although in several recent years the trawl B seasons have closed either on November 1 due to Steller sea lion regulations or when the TAC was reached. The more recent B season closures on TAC for trawl gear may be due, in part, to use in the fleet of trawl halibut excluders and stand downs during night time hours, when halibut PSC rates tend to be higher. As long as the GOA Pacific cod, pollock, and flatfish fisheries are managed as a limited access race for fish, the trawl halibut PSC limit is likely to be reached in most years. Most salmon PSC in the Pacific cod target fisheries is taken with trawl gear, but the Pacific cod target fisheries accounted for only 4% of Chinook PSC and 1% of non-Chinook salmon PSC in the GOA (2003 through 2008 average). Tanner crab PSC with trawl gear in the Pacific cod target fisheries was relatively low from 2003 through 2006, but increased in 2007 and 2008. Overall, trawl gear accounted for 12% of Tanner crab PSC in the Pacific cod target fisheries during 2003 through 2008. While an increase in the Pacific cod allocations to trawl gear would likely result in increased halibut, crab, and salmon PSC in the Pacific cod target fishery (under the existing derby fishery), a reduction in these Pacific cod allocations could result in a shift in effort to the flatfish targets, where halibut, crab, and salmon PSC rates may be similar to or higher than in the Pacific cod target. As a result, overall trawl removals of halibut, crab, and salmon may stay the same or increase, even if Pacific cod catch with trawl gear decreases.

The annual hook-and-line PSC limit of 290 mt (non-DSR fisheries) has limited the B season in some recent years. Nearly all of the GOA hook-and-line PSC allowance has been used in the Pacific cod target fishery. Crab and salmon PSC with hook-and-line gear is minimal, and no significant crab or salmon savings would be expected, if hook-and-line harvests of Pacific cod are reduced. If Pacific cod

allocations to hook-and-line gear are reduced, halibut PSC is likely to decrease, since effort in other target fisheries is limited for this sector. An increase in the Pacific cod allocations to hook-and-line gear is likely to result in increased halibut PSC, and the halibut PSC limit is likely to be a limiting factor in the B season, if rates are similar to those in recent years.

The majority of Tanner crab PSC occurs in the pot fisheries. Pot gear accounted for more than 85% of Tanner crab PSC in the Pacific cod target fisheries from 2003 through 2008, and 22% of overall Tanner crab PSC in the GOA. Pot Tanner crab PSC was particularly high in 2007 and 2008, both in terms of the number of crab caught and the rate. Again, it is important to note that crab PSC estimates are not adjusted to account for mortality, and simply report the number of crab discarded. An increase in Pacific cod harvests with pot gear would likely result in higher Tanner crab PSC levels, in the absence of management measures (for example, area closures in areas of high crab abundance) to limit crab encounters. Likewise, a decrease in pot harvests is likely to result in lower Tanner crab removals.

Seabird and marine mammal incidental takes in the GOA Pacific cod target fisheries are also summarized in Chapter 3. Hook-and-line vessels account for the majority of seabird bycatch in the GOA, but bycatch rates have been reduced substantially, since 2001, as a result of the widespread use of seabird avoidance techniques such as paired streamer lines. An increase in the Pacific cod allocations to hook-and-line gear has the potential to increase seabird incidental takes, but existing mitigation measures have reduced these rates. Incidental take of Steller sea lions in the GOA fisheries is uncommon. One incidental take was observed in the GOA Pacific cod trawl fisheries during 2004 through 2007. Incidental take rates are negligible, and with existing mitigation measures in place, may not be a consideration in allocating Pacific cod among sectors.

Incidental catch and discards of Pacific cod and other groundfish species in the Pacific cod target fisheries are summarized in Table 3-3. As noted previously, Pacific cod must be retained if caught during the directed Pacific cod season. When the directed season is closed, Pacific cod may be retained up to the MRA (20% of the aggregate groundfish caught, by weight, for most groundfish species), but any amount exceeding the MRA must be discarded. Bycatch of skates, squid, and non-specified species in the Pacific cod target are summarized in Table 3-4. Incidental catch and discards of groundfish and other species with pot gear is minimal, with the exception of octopus. In the hook-and-line fisheries, discards consist primarily of skates and other species, and some flatfish. In the trawl fisheries, discards vary by fleet. In the Western GOA trawl CV fleet, vessels primarily fish during the directed Pacific cod A season, when cod are aggregated and bycatch rates of groundfish and other species are relatively low. The other GOA trawl fleets fish during both the A and B seasons, and incidental catch and discards rates of groundfish and other species are higher during the B season. At current bycatch rates, any increase in the Pacific cod allocations to hook-and-line, pot, or trawl gear is likely to increase incidental catch and discards rates for that gear type and those groundfish species.

Total discards of Pacific cod (in all groundfish fisheries) are summarized in Table 2-18. During the directed Pacific cod fishery, retention of Pacific cod is required, although discards of decomposed or previously caught fish are allowed. Sectors that primarily or exclusively fish during the directed Pacific cod season (hook-and-line and pot) have minimal discards (<1% for pot gear, 2% to 3% for hook-and-line gear). Jig vessels are not observed, and NMFS does not estimate discards for jig gear. When the directed fishery is closed, Pacific cod may only be retained up to the MRA (20% for most directed groundfish fisheries, except 5% for arrowtooth flounder). Discards of incidentally caught Pacific cod are required if the MRA for Pacific cod is exceeded. The trawl sectors participate in other directed fisheries and discard Pacific cod in these targets. In the Central GOA, trawl CVs discarded an average of 13% of total Pacific cod catch during 2001 through 2008. Trawl CPs discarded 17% and 13% of total Pacific cod catch in the Western and Central GOA areas, respectively. In the Western GOA, few trawl CVs target other groundfish fisheries, and the discard rate for Pacific cod is relatively low (3%). If sector allocations are

established, the MRAs for certain targets could be increased to reduce trawl discards of Pacific cod, particularly in the shallow water flatfish fisheries. Since each sector's allocation would support both directed and incidental catch, modifying the MRAs would not impact the amount of Pacific cod available to other sectors. However, increasing the MRAs would affect the distribution of Pacific cod within the trawl sector, particularly for those vessels that choose not to fish other targets.

Catch monitoring

There is a summary of observer coverage in the GOA Pacific cod fisheries during 2004 through 2007 in Chapter 3. The tables have been expanded to show percent observer coverage within each sector (all vessel lengths combined), total percent coverage across the period from 2004 through 2007, and combined Western GOA and Central GOA observer coverage within each sector. Most CPs participating in the GOA Pacific cod fisheries are 60 ft to 125 ft LOA, and 30% observed, or >125 ft LOA, and 100% observed. Observer coverage in some of the CV sectors is quite low, due to the predominance of <60 ft LOA vessels in certain sectors.

For example, hook-and-line CVs targeting Pacific cod in the Central GOA were observed during only 2% of fishing days from 2004 through 2007, and were completely unobserved in the Western GOA. Most of the catch by this fleet is made by vessels <60 ft in length. Halibut PSC and groundfish discards for hook-and-line CVs are largely estimated using PSC and bycatch rates from 30% observed hook-and-line CPs. The majority of catch by hook-and-line CPs in the Western GOA is made by vessels in the 30% observed fleet. This sector's total catch in the Pacific cod target was 43% observed in 2004 and 81% observed in 2006 (2005 and 2007 coverage is confidential).

Pot CVs have higher observer coverage levels, because a substantial proportion of catch is made by pot CVs ≥60 ft LOA. In the Central GOA, pot CV catch in the Pacific cod target was 12% to 16% observed during 2004 through 2007, and 8% to 15% observed in the Western GOA (these estimates may only include catch by vessels <125 ft in some years, due to confidentiality). All pot CP catch during 2004 through 2007 was made by vessels 60 ft to 125 ft LOA, and these vessels are 30% observed.

In the Central GOA, most trawl CV catch in the Pacific cod target is made by vessels 60 ft to 125 ft LOA, and 30% of fishing days are observed. In the Western GOA, the majority of trawl CV catch is made by <60 ft vessels that are unobserved. Observer coverage in this fleet was 0% in 2004 and 9% in 2005, and confidential in other years. All trawl CPs that have targeted Pacific cod in the Western and Central GOA in recent years are either 30% or 100% observed.

The overall level of observer coverage in the Pacific cod target in the GOA is quite low. Reductions in Pacific cod allocations to sectors that have relatively high observer coverage rates could result in a reduction in the level of observer coverage for specific gear types, and for the Pacific cod fishery overall. Reductions in observer coverage in the Pacific cod target may make it more difficult for inseason management to close sectors on a timely basis, to avoid exceeding halibut PSC limits and total catch limits (sector allocations and TACs). For example, observer data is sparse for CV fleets, so potential halibut PSC apportionments between hook-and-line CP and CV sectors under Component 7 would be managed primarily based on observed PSC rates from the CP sector.

Equity of access

This section describes examples of how access to the Pacific cod fishery has not been equal for all gear groups and has directly impacted the catch history of the various sectors. Three examples are discussed in detail: (1) access to incidental catch when the directed Pacific cod fishery is closed, (2) the delayed A season start date (January 20) and early B season closure (November 1) for trawl gear, and (3) the trawl

halibut PSC overage in 2004. The Council could consider these examples when making adjustments to sector allocations.

Incidental catch of Pacific cod

In the GOA, the sectors differ with respect to the amount of incidental catch they accrue when the directed Pacific cod fishery is closed. The fixed gear sectors (pot, jig, and hook-and-line) primarily fish during the directed Pacific cod season, and have little incidental catch of cod. Trawl CVs in the Central GOA, and trawl CPs in both management areas, catch a substantial portion of their annual catch of Pacific cod as incidental catch, while participating in other directed fisheries. When the directed fishery is closed, Pacific cod may only be retained up to the MRA (20% for most directed groundfish fisheries, except 5% for arrowtooth flounder). Discards of incidentally caught Pacific cod are required if the MRA for Pacific cod is exceeded. Allowing incidental catch of Pacific cod to be retained increases the overall benefits from other directed fisheries that cannot avoid incidental catch of cod. Allowing vessels to retain incidentally caught Pacific cod also provides harvesters with incentives to participate in several lower-valued fisheries that might otherwise go unharvested, if harvesters could not retain higher valued Pacific cod. Incidental catch is counted toward catch history for the purpose of calculating sector allocations. If sector allocations are established, each sector's allocation will support its own incidental catch.

The amount of retained incidental catch by each sector may be calculated by subtracting directed retained catch from total retained catch, and is summarized below in Table 2-61. In recent years (2001 through 2008), trawl CPs caught a substantial proportion of their annual Pacific cod while targeting other groundfish species, but total annual catches of Pacific cod by trawl CPs are relatively small. In the Western GOA, trawl CVs fish primarily during the directed A season, and incidental catch accounts for only 1% of catches. In the Central GOA, trawl CVs in recent years (2001 through 2008) have caught 19% of annual retained catch as incidental catch.

Table 2-61 **Retained incidental catch (mt) of Pacific cod, retained total catch, and percent of retained catch harvested as incidental catch in the Western and Central GOA, 1995–2008. Incidental catch includes retained catch of Pacific cod when the directed fishery was closed.**

Western GOA

	Hook-and-line CP			Hook-and-line CV			Trawl CP			Trawl CV		
Year	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch
1995	499	5,632	8.9%	14	35	39.0%	28	587	4.7%	9	12,704	0.1%
1996	4	4,369	0.1%	6	193	3.2%	60	787	7.6%	98	13,921	0.7%
1997	16	3,837	0.4%	*	34	*	21	295	7.3%	52	18,554	0.3%
1998	37	3,168	1.2%	*	22	*	168	276	61.1%	287	15,007	1.9%
1999	31	5,116	0.6%	*	70	*	142	623	22.8%	37	14,673	0.3%
2000	384	4,706	8.2%	25	54	46.5%	367	751	48.9%	168	11,113	1.5%
2001	50	3,969	1.3%	12	31	38.2%	197	670	29.4%	64	6,135	1.0%
2002	78	6,411	1.2%	29	38	77.8%	192	327	58.7%	36	5,073	0.7%
2003	103	4,242	2.4%	20	47	43.8%	210	340	61.6%	132	1,367	9.7%
2004	34	2,893	1.2%	19	28	67.2%	347	539	64.3%	34	1,717	2.0%
2005	31	724	4.3%	27	281	9.8%	*	217	*	78	4,441	1.8%
2006	40	2,691	1.5%	19	106	17.9%	111	218	50.8%	65	4,917	1.3%
2007	41	3,069	1.3%	32	390	8.3%	409	529	77.4%	6	4,281	0.1%
2008	32	3,072	1.0%	77	506	15.2%	244	391	62.2%	41	4,601	0.9%
Avg 95-00	162	4,471	3.6%	15	68	22.0%	131	553	23.7%	108	14,329	0.8%
Avg 01-08	51	3,384	1.5%	30	178	16.6%	244	404	60.4%	57	4,066	1.4%

Central GOA

	Hook-and-line CP			Hook-and-line CV			Trawl CP			Trawl CV		
Year	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch	Retained incidental catch	Total retained catch	Percent of catch
1995	9	134	6.5%	202	4,546	4.4%	327	2,072	15.8%	2,373	23,548	10.1%
1996	0	710	0.0%	27	4,491	0.6%	373	2,714	13.8%	380	23,975	1.6%
1997	*	*	*	143	6,401	2.2%	225	770	29.2%	1,243	25,895	4.8%
1998	*	175	*	186	5,815	3.2%	1,405	4,447	31.6%	1,683	21,214	7.9%
1999	5	313	1.6%	201	6,174	3.3%	216	1,595	13.5%	998	19,881	5.0%
2000	1	209	0.3%	157	6,529	2.4%	291	1,387	21.0%	2,519	10,971	23.0%
2001	*	*	*	133	5,684	2.3%	291	2,241	13.0%	2,427	15,169	16.0%
2002	15	1,638	0.9%	117	6,867	1.7%	624	835	74.7%	2,648	10,568	25.1%
2003	50	1,462	3.4%	220	3,586	6.1%	785	1,219	64.4%	2,602	14,405	18.1%
2004	2	1,453	0.1%	151	5,423	2.8%	268	770	34.8%	2,324	13,669	17.0%
2005	*	267	*	62	4,271	1.5%	411	719	57.1%	1,845	8,591	21.5%
2006	7	897	0.8%	90	6,183	1.5%	544	877	62.1%	1,451	5,922	24.5%
2007	12	1,376	0.9%	148	6,341	2.3%	247	590	41.8%	1,502	8,220	18.3%
2008	17	1,755	0.9%	194	6,054	3.2%	450	632	71.2%	2,262	11,680	19.4%
Avg 95-00	4	308	1.2%	153	5,659	2.7%	473	2,164	21.8%	1,533	20,914	7.3%
Avg 01-08	17	1,264	1.4%	139	5,551	2.5%	452	985	45.9%	2,133	11,028	19.3%

Source: NMFS Blend/Catch Accounting (CPs) and ADF&G Fish Tickets (CVs).

Delayed A season start for trawl gear, early B season closure for trawl gear

Another example of how the sectors have not had equal access to the GOA Pacific cod fishery is the delayed start and early closure for trawl gear. The A season begins for fixed gear on January 1 and for trawl gear on January 20. The delayed start for trawl gear was implemented in 1993. The purpose of delaying the start of the trawl season was to reduce Chinook salmon and halibut PSC. In the BSAI, Pacific cod sector allocations were established the year following implementation of the staggered season start dates, and were based on catch history. As a result, the delayed start for trawl gear did not impact the ability of the sectors to maintain their historical catches of the BSAI TAC. The early closure for trawl gear on November 1 is a Steller sea lion mitigation measure.

Table 2-62 reports inshore Pacific cod catch by the fixed gear sectors from January 1 through January 20 during 2001 through 2009. During the period from 2001 through 2008, as much as 24% of the inshore A season catch in the Western GOA and 48% of the inshore A season catch in the Central GOA was harvested by fixed gear vessels prior to the trawl gear opening on January 20. The proportion of the A season catch harvested prior to January 20 varies annually, and likely depends on weather conditions, the number of participants in the fishery, and catch per unit effort of Pacific cod. In some years, vessels using fixed gear have participated in the offshore sector prior to January 20, but fewer than three vessels fished in most years and offshore catch during this period cannot be reported.

Table 2-63 reports inshore Pacific cod catch by the fixed gear sectors from November 1 through December 31, during 2001 through 2008. The Pacific cod target fishery closes to trawl gear on November 1, due to Steller sea lion protection measures. During the period from 2001 through 2008, as much as 62% of the inshore B season catch in the Western GOA and 27% of the inshore B season catch in the Central GOA was harvested by fixed gear vessels after the trawl gear closure on November 1. Again, the proportion of the B season catch harvested after November 1 varies annually, and likely depends on weather conditions, the number of participants in the fishery, and catch per unit effort of Pacific cod, as well as how much B season TAC is available on November 1. In years when the B season TAC was reached prior to November 1, the amount of incidental catch by fixed gear vessels after November 1 is minimal. In some years, vessels using fixed gear have participated in the offshore sector after November 1, but fewer than three vessels fished in most years and offshore catch during this period cannot be reported.

Table 2-62 Pacific cod catch (mt) by the fixed gear sectors participating in the inshore sector from January 1 through January 20, 2001–2008.

Western GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Total (mt)	Inshore A season catch	% of A season catch harvested Jan 1-20
	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)			
2001	5	1,049	0	0	0	0	0	0	0	0	1,059	10,902	9.7%
2002	3	496	0	0	0	0	0	0	17	358	873	11,548	7.6%
2003	5	*	1	*	0	0	0	0	28	1,115	2,093	10,057	20.8%
2004	3	559	0	0	5	*	1	*	54	1,873	2,572	10,589	24.3%
2005	0	0	0	0	1	*	1	*	8	*	389	10,296	3.8%
2006	0	0	0	0	0	0	0	0	26	1,251	1,277	12,309	10.4%
2007	0	0	1	*	0	0	1	*	25	*	726	10,836	6.7%
2008	1	*	0	0	0	0	0	0	27	*	739	10,557	7.0%

Central GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Total (mt)	Inshore A season catch	% of A season catch harvested Jan 1-20
	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)			
2001	0	0	80	1,137	0	0	0	0	25	300	1,541	16,427	9.4%
2002	0	0	53	1,181	0	0	0	0	11	252	1,496	17,881	8.4%
2003	2	*	51	1,235	2	*	0	0	24	1,070	2,537	15,714	16.1%
2004	1	*	59	2,645	7	*	0	0	28	2,594	5,463	15,585	35.1%
2005	1	*	63	2,226	17	*	0	0	38	3,550	6,092	12,687	48.0%
2006	0	0	48	1,867	15	33	0	0	33	2,919	4,916	15,602	31.5%
2007	0	0	50	1,325	3	*	1	*	42	1,792	3,220	15,242	21.1%
2008	1	*	59	1,337	2	*	0	0	38	1,388	2,832	15,996	17.7%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend/Catch Accounting (CPs). *Confidential.

Table 2-63 Pacific cod catch (mt) by the fixed gear sectors participating in the inshore sector from November 1 through December 31, 2001–2008.

Western GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Total (mt)	Inshore B season catch	% of B season catch harvested Nov 1-Dec 31
	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)			
2001	0	0	1	*	0	0	0	0	3	*	47	1,559	3.0%
2002	5	1,064	3	*	0	0	1	*	12	825	1,918	3,993	48.0%
2003	0	0	1	*	0	0	0	0	0	0	*	3,972	*
2004	0	0	3	*	1	*	1	*	7	154	279	3,744	7.4%
2005	2	*	9	55	0	0	0	0	4	*	227	1,750	12.9%
2006	5	700	8	*	1	*	0	0	5	113	842	1,351	62.3%
2007	1	*	6	*	0	0	0	0	5	196	223	1,449	15.4%
2008	0	0	6	12	0	0	0	0	6	433	445	2,878	15.5%

Central GOA

	Hook-and-line CP		Hook-and-line CV		Jig CV		Pot CP		Pot CV		Total (mt)	Inshore B season catch	% of B season catch harvested Nov 1-Dec 31
	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)			
2001	0	0	31	7	0	0	0	0	5	43	49	8,832	0.6%
2002	0	0	19	*	0	0	0	0	1	*	7	4,785	0.1%
2003	0	0	1	*	0	0	0	0	0	0	*	6,915	*
2004	0	0	21	*	1	*	0	0	9	473	486	9,905	4.9%
2005	0	0	27	299	4	6	0	0	12	1,139	1,444	9,704	14.9%
2006	0	0	52	546	4	4	0	0	28	1,110	1,660	6,167	26.9%
2007	1	*	71	859	4	*	1	*	22	1,425	2,607	10,042	26.0%
2008	0	0	31	15	0	0	0	0	0	0	15	11,051	0.1%

Note: In the Western GOA, the B season closed due to TAC on 9/25/2003. In the Central GOA, the B season closed due to TAC on 9/3/2003 and 10/3/2008. In these years, fixed gear catches after November 1 were minimal, consisting only of incidental catch. *Confidential.

Trawl halibut PSC overage in 2004

In 2004, there was a substantial halibut PSC overage for trawl gear. Despite an aggregate annual PSC limit for the shallow and deep water trawl fisheries of 2,000 mt, 2,444 mt of halibut PSC was taken with trawl gear. Most (1,567 mt) of this amount was taken in the shallow water target fisheries. The annual shallow water trawl PSC limit is 900 mt and the deep water PSC limit is 800 mt. An additional 300 mt is available on October 1 that is not apportioned between the shallow and deep water trawl fisheries. This halibut PSC overage occurred in 2004 because observer data was not available on a timely basis to allow inseason management to determine when the PSC limit was reached. If these data had been available, NMFS could have determined that the fourth season shallow water halibut PSC limit (900 mt) was reached on September 4; instead, the fishery was closed on September 10.

If NMFS had closed the shallow water trawl fisheries when the PSC limit was reached on September 4, the trawl sectors would have harvested less Pacific cod during the B season, and the fixed gear sectors would have had access to this additional B season TAC. In the Central GOA, trawl CVs harvested approximately 2,400 mt of Pacific cod, and trawl CPs harvested nearly 300 mt of Pacific cod during the period from September 5 through September 10. There was relatively little trawl catch in the Western GOA during this period. In 2004, trawl CVs harvested 51.9% of the retained Central GOA catch, which was the sector's third highest catch share during the years being considered in the Central GOA (2000 through 2008). If the directed trawl fishery had closed on September 4, the Central GOA trawl CV share would have been approximately 42.8%, assuming total catch (all sectors combined) remained the same.

Other examples of equity of access that have been discussed in public testimony and during Council and AP deliberations include:

- In 1997, the State of Alaska initiated the state waters Pacific cod fisheries for pot and jig gear, which include 25% of the Western and Central GOA ABCs, and 10% of the Eastern GOA ABC. Trawl and hook-and-line vessels do not have access to these fisheries.
- In 2000, the start of the Opilio crab season was delayed due to ice. Some crab vessels participated in the GOA Pacific cod fisheries during this delay, and pot catches were higher in that year.
- When Steller sea lion mitigation measures were implemented in 2001, including the A/B seasonal apportionments and area closures, all of the sectors experienced disruptions. Quantifying the precise impacts of the mitigation measures on the different gear groups is not possible, but there were notable changes in the distribution of Pacific cod catches among the sectors when the measures were initially established. For example, in the Western GOA, trawl catches decreased substantially, and pot catches increased.

Social objectives

The analysis includes extensive information on the potential impacts of establishing GOA Pacific cod sector allocations on harvesters, processors, and communities. For example, the analysis includes information on fisheries taxes and the distribution of these tax revenues to Alaska communities. There is extensive information on participants in the GOA Pacific cod fishery, including data on the residency of participants in each sector, and the amount of catch in each sector made by residents of Alaska communities and other states. There are options in Component 8 to protect established patterns of community participation in the processing of Pacific cod, and to provide opportunities for motherships to process Pacific cod within GOA communities. The Council also has the option, in Component 5, to establish a jig allocation above the level of historical catch by this sector. This option, in combination with the exemption from the LLP requirement in the fixed gear recency action, would provide opportunities for growth in participation and the amount of TAC harvested by jig vessels. However,

increasing the jig allocation beyond the jig sector's catch history would result in reductions to allocations to other sectors.

Potential allocation adjustments

In order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, the Council expanded the range of potential annual allocations in the analysis by 3% above each sector's highest potential allocation and 3% below each sector's lowest potential allocation, except that sectors with an allocation of less than 5% would retain their current lowest potential allocation. The motion specified that the ±3% adjustments would be applied to the allocation percentages in Table 2-48. The adjustments could then be applied proportionally to the allocations that are divided by vessel length (shown in Table 2-49), or in the manner that the Council indicates. Table 2-64 shows the potential range of allocations to the sectors. The first column shows the range of potential allocations, based on the options for calculating catch history in Component 4. The second column shows the adjusted range when the ±3% adjustments are applied. These are compared to each sector's catch history (lowest and highest percent of retained catch) during 1995 through 2008.

Table 2-64 Potential range of Western and Central GOA Pacific cod sector allocations.

	Range of Options		±3% adjustment		Average	Range of Catch History	
Western GOA	Low	High	Low	High	option**	Low	High
Hook-and-line CP	18.6%	22.7%	15.6%	25.7%	21.5%	5.9%	36.9%
Hook-and-line CV	0.5%	1.7%	0.5%	4.7%	1.0%	0.1%	3.4%
Pot CP	1.5%	2.3%	1.5%	5.3%	1.9%	0.0%	7.1%
Pot CV	28.0%	46.0%	25.0%	49.0%	39.8%	4.4%	63.4%
Trawl CP	2.1%	2.6%	2.1%	5.6%	2.5%	1.2%	4.6%
Trawl CV	26.1%	46.9%	23.1%	49.9%	33.3%	8.7%	78.1%
	Range of Options		±3% adjustment		Average	Range of Catch History	
Central GOA	Low	High	Low	High	option**	Low	High
Hook-and-line CP	4.2%	5.5%	1.2%	8.5%	4.9%	0.3%	7.0%
Hook-and-line CV	19.5%	22.6%	16.5%	25.6%	21.4%	10.3%	29.5%
Pot CP	0.3%	1.4%	0.3%	4.4%	0.7%	0.0%	6.8%
Pot CV	25.3%	28.2%	22.3%	31.2%	26.9%	12.9%	37.6%
Trawl CP	3.3%	4.4%	3.3%	7.4%	3.7%	1.9%	10.9%
Trawl CV	41.4%	44.2%	38.4%	47.2%	42.4%	26.4%	62.3%

** Average option for WGOA: Average of Options 1-4. Average option for CGOA: Average of options 1-6.

Potential economic effects of allocation adjustments

Allocation adjustments that shift catch from the CP sectors to the CV sectors would directly benefit CV operators, and adjustments that shift catch from the CV sectors to the CP sectors would provide direct benefits to CP operators. Increased allocations to CVs could also result in more catch being delivered to shoreside plants, which would provide direct and indirect benefits to communities where shoreside plants are located. However, this outcome depends on the Council's action under Component 8. Under Component 8, the Council could provide additional opportunities for motherships to process Pacific cod in the GOA, and these options have the potential to redistribute CV landings from shoreside plants to motherships. Motherships processing Pacific cod could be required to operate within specific GOA communities, but could also be allowed to operate offshore. As a result, whether increased allocations to the CV sectors benefits shoreside plants and/or coastal communities could depend on the Council's decision concerning mothership processing.

The most direct effect of a reduced allocation on an individual sector is a reduction in revenues from the GOA Pacific cod fishery. The extent of this effect depends on the size of the adjustments to the sector allocation, and the relative dependency of the sector on the GOA Pacific cod fisheries. In addition, individual vessels within each sector may have a higher dependence on the fishery than the sector as a whole. As a result, reductions to sector allocations could disproportionately impact these vessels. These

within-sector effects could depend on the timing of fishing of the various participants. Vessels that participate in the Pacific cod fishery later in the year (prosecuting other fisheries prior to the cod fishery) could lose a greater share of their potential catch from the fishery, if they choose to maintain their current fishing practices.

Movements of vessels among other fisheries that might be induced by the reduction of A sector's allocation from its historical level could also occur later, after the Pacific cod fishery closes for a season. For example, a reduction in the Western or Central GOA trawl CV allocations could redistribute effort to the GOA flatfish fisheries, which are not fully subscribed, but are nonetheless limited by halibut PSC. Other potential shifts in effort are more difficult to predict. There are relatively few accessible fisheries in and off Alaska. A reduction in allocations to the pot CP or pot CV sectors could result in a shift in effort to the GOA and AI state waters Pacific cod fisheries, the state Tanner crab fishery, and to the parallel waters BSAI Pacific cod fishery (for vessels <58 ft LOA). Hook-and-line vessels could target skates, or participate in the AI state waters Pacific cod fishery, the parallel waters BSAI Pacific cod fishery (vessels <58 ft LOA), or the recently initiated state waters Prince William Sound hook-and-line Pacific cod fishery. Most of these fisheries are already fully subscribed, and an influx of new effort would have direct effects on current participants in these fisheries. In considering these effects, the Council should consider that an adjustment to sector allocations is one of many factors that might induce these changes. Market conditions and TAC changes can also lead vessels to opportunistically move among fisheries.

2.2.10 Component 10 – Parallel Fishery Issues

The LLP limits access to the GOA Pacific cod fishery in federal waters. However, vessel operators are not required to hold an LLP license to participate in the parallel waters fishery. In years when Pacific cod are concentrated in inside waters, or when economic conditions in other fisheries are unfavorable, participation by vessels without LLP licenses may increase in the parallel fishery. In the GOA, the presence of a local fleet that can readily access the parallel fishery makes it likely that during some years, operators without LLP licenses will fish for Pacific cod in parallel waters. During recent years, vessels without LLP licenses, fishing during the parallel waters seasons, have harvested a relatively small proportion of overall catch in each management area. Table 2-65 shows the average number of vessels without LLP licenses that fished for Pacific cod during the parallel waters seasons during 2002 through 2008, retained catch, and percent of catch within each sector, by these vessels. These numbers are an estimate, and are intended to provide the Council with some perspective on the extent of participation in the Pacific cod fisheries by vessels without LLP licenses.

The table also provides some insight into the level of participation within each sector by vessels without licenses. If Pacific cod sector allocations are established, increased participation in the parallel waters fisheries by vessels without LLP licenses could erode the historical catches of long-term participants in the fisheries. It was this latter group of vessel operators that contributed catch history to the sector allocations, because catch in the parallel waters fisheries counts against the federal TAC. Most hook-and-line CVs that did not hold LLP licenses were participating in the halibut and sablefish IFQ fisheries at the time they made the reported Pacific cod landings. Under the LLP, vessels participating in the IFQ fisheries that do not have LLP licenses are allowed to retain incidental catches of Pacific cod, up to the MRA. This provision in the LLP is consistent with National Standard 9 of the Magnuson-Stevens Act and is intended to reduce the waste that occurs when discards of groundfish are required. In the Central GOA, an average of 90 hook-and-line vessels per year that did not have LLP licenses had at least one landing of Pacific cod, but catch by these vessels amounted to only 3% of the hook-and-line CV catch for the area. Hook-and-line vessels without LLP licenses harvested 17% of the Western GOA hook-and-line catch during 2002 through 2008, but hook-and-line CVs typically catch less than 1% of the total Pacific cod catch. The majority of the jig catch in each management area is harvested by vessels without LLP licenses, but these vessels generally harvest less than 1% of the catch. Overall, vessels without LLP

licenses harvest a small proportion of the retained catch of Pacific cod in the Central GOA (2%) and Western GOA (5%). The majority of this catch was by pot CVs. Notably, an average of 9% of pot CV catch in the Western GOA was made by vessels that do not hold LLP licenses.

Table 2-65 Average number of vessels fishing in the parallel waters fisheries without an LLP license, retained catch (mt), and percent of retained catch of Pacific cod within each sector by vessels without LLP licenses, 2002–2008.

		HAL CV		Jig CV		Pot CV		Trawl CV		All sectors
	Period	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Catch (mt)
Central GOA	2002-2008 average	90	149	15	43	5	232	1	*	424 (range: 190 - 645)
Western GOA	2002-2008 average	21	35	9	46	7	606	1	*	687 (range: 518 - 887)

		HAL CV	Jig CV	Pot CV	Trawl CV	All sectors
	Period	Percent of sector catch	Percent of sector catch	Percent of sector catch	Percent of sector catch	Percent of total catch
Central GOA	2002-2008 average	3%	70%	4%	*	2%
Western GOA	2002-2008 average	17%	66%	9%	*	5%

Source: ADF&G Fish Tickets and RAM groundfish license file, May 2009. *Withheld due to confidentiality.
Notes: Excludes state waters fisheries. Includes IFQ fisheries, because IFQ participants may retain groundfish without an LLP license (and are required to retain Pacific cod up to the MRA).

In Component 10, there are two options to limit access to the parallel fishery. Option 1 applies to all vessels, and Option 2 only applies to federally permitted vessels:

Option 1. Develop recommendations for the Alaska Board of Fisheries on the parallel fishery that could complement Council action, such as:

- gear limits
- vessel size limits
- exclusive registration

Option 2. Limit access to the parallel fishery for federal fishery participants.

- Require any pot or longline vessel with an LLP license or an FFP to have the appropriate Pacific cod endorsement and area endorsement on the LLP license; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery.

- Require any trawl vessel with an LLP license or an FFP to have the appropriate gear and area endorsements on the LLP license; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery.

  Suboption 1: In addition, require the above federally permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations, corresponding to the sector in which the vessel operates.

Suboption 2: Vessels with a GOA area designation and the gear and operation type designations specified in Option 2 cannot remove these designations from the FFP and can only surrender or reactivate the FFP:

a. Once per calendar year
b. Once every 18 months
c. Once every 3 years

Option 1

Under Option 1, the Council could recommend to the Alaska Board of Fisheries, vessel size limits, gear limits, and/or exclusive registration rules for the GOA Pacific cod parallel waters fisheries. If adopted by the Board of Fisheries, these limits would apply to all vessels, regardless of whether the vessel is federally permitted. For example, the Alaska Board of Fisheries recently adopted a 58 ft LOA vessel size limit for hook-and-line gear in the Aleutian Islands parallel waters fishery. The purpose of this regulation is to allow small hook-and-line vessels that do not hold LLP licenses and that cannot participate in the federal waters fishery to continue to have access to the parallel fishery, but to exclude larger hook-and-line vessels.

At its February 2010 meeting, the Alaska Board of Fisheries took action to approve a proposal to limit vessel size to 58 ft LOA in the South Alaska Peninsula Management Area parallel fishery. The proposed limit would apply to all gear types. Vessel size limits in the parallel fishery may be specific to an ADF&G management area or gear type, but cannot be specific to vessel operation type, because the State of Alaska does not distinguish between vessels, based on processing activity (i.e., the distinction between CVs and CPs).[5] The Council could also recommend that the Alaska Board of Fisheries consider adopting gear limits in the GOA Pacific cod parallel fishery, and these could also be specific to a management area. For example, pot limits, similar to those in effect for the GOA state waters Pacific cod fisheries, may be desirable. Currently, there is a 60-pot limit in the GOA state waters cod fisheries, and no pot limits in the federal or parallel Pacific cod fishery. Finally, exclusive registration rules could limit effort by precluding vessels from participating in the parallel fishery in more than one management area. The exclusive and superexclusive registration rules in the GOA state waters cod fisheries are summarized in Table 2-5. Any of these approaches—vessel size limits, gear limits, and exclusive registration rules—could apply on a seasonal basis. For example, the limits could apply only during the A season, if there is not a perceived need to limit effort during the B season.

Option 2

Option 2 would require federally permitted vessel operators to hold an LLP license with the appropriate area, gear, and species endorsements, in order to participate in the parallel fishery. This is essentially the same management approach that the Council used to limit access by federally permitted vessels to the BSAI Pacific cod parallel waters fishery. The Council took final action on the BSAI parallel waters amendment package in June 2009. However, an important distinction between the BSAI action and the proposed GOA action is that in the BSAI, the action applied only to federally permitted CPs. Currently, Option 2 applies to all federally permitted vessels (both CVs and CPs). Most CVs and CPs that participate in the groundfish fisheries hold federal permits. Option 2 would preclude all federally permitted CVs and CPs from participating in the GOA Pacific cod parallel fishery, unless they hold an

[5] State v. Grunert, 139 P.2d 1226 (Alaska 2006); Grunert v. State, 109 P.2d 924 (Alaska 2005). In the 2005 case, the Alaska Supreme Court ruled that the Board of Fisheries could not allocate within a single fishery. 109 P.2d at 931-32. In the 2006 case, the Court held that 'fisheries' could only be distinguished by differences in the gear that is actually used to harvest the fish. 139 P.2d at 1235-39.

LLP license. If this option is selected, the only potential increase in parallel waters effort would be by non-federally permitted vessels. Some of these non-federally permitted vessels may already participate in the parallel fishery and may contribute catch history to the sector allocations. Option 2 may limit the erosion of the sector allocations by precluding new entry of federally permitted, but non-LLP license holding vessel operators into the parallel fishery.

Under Option 2, suboptions would preclude CVs and CPs from surrendering and reactivating the FFP on an unlimited basis, as is presently allowed. The purpose of this restriction is to preclude federally permitted vessels from circumventing the LLP requirement in parallel waters by surrendering the FFP. Vessels that surrender the FFP are not required to participate in the Federal Observer program, carry VMS, or comply with NMFS recordkeeping or reporting requirements. All of these requirements make possible management and conservation of the fisheries. For example, increased observer coverage improves bycatch and PSC monitoring by improving the quality of data available to inseason managers. Data collected by VMS is used to enforce area closures around sea lion rookeries and haulouts, and to enforce gear closures in sensitive habitat. To the extent that Option 2 would result in increased observer and VMS coverage of the vessels that participate in the parallel waters groundfish fisheries, the proposed action could contribute to resolution of these concerns.

A drawback is that vessels that cannot surrender the FFP may incur additional costs for observer coverage and VMS. For example, vessels often surrender the FFP prior to participating in the state waters Pacific cod fisheries, and vessels that do this are not required to have observer coverage for these state waters trips. Option 2 would preclude vessels from surrendering the FFP. Observer coverage costs to industry were last estimated in 2004 as approximately $355/day, but costs may be higher, depending on the fishery. Factors that may increase observer coverage costs include operation out of remote ports with higher transportation costs, short-term "pulse" fisheries, fishery disruptions, and lack of advance planning (NPFMC 2008).

The VMS requirement only applies if the FFP has an Atka mackerel, Pacific cod, or pollock species endorsement. These species endorsements are required to participate in the directed fisheries for these species. An FFP holder can remove the species endorsement from the FFP (without surrendering the FFP) at any time during the 3-year term of the permit and turn off the VMS. Option 2 would not preclude an FFP holder from amending the species endorsements on the FFP.

Only a small number of vessels have surrendered the FFP in recent years. In 2008, there were approximately 1,700 FFPs, 1,500 of which had GOA area endorsements. Data provided by RAM indicate that 12 to 25 FFPs with GOA area endorsements were surrendered per year, during 2003 through 2008 (Table 2-66). Based on the timing of these surrenders, it appears that some vessels surrendered the FFP prior to participating in the AI or GOA state waters Pacific cod fisheries. This is the universe of FFPs that would potentially be subject to increased costs of observer coverage, if the FFP cannot be surrendered and reactivated in the same fishing year on an unlimited basis.

It should be noted that Option 2, Suboption 2 applies to all GOA management areas (including the Eastern GOA), not just to the Western and Central GOA management areas, because it applies to any FFP with a GOA endorsement and the specified gear endorsements. The FFP does not have subarea (e.g., Central GOA, Western GOA, Eastern GOA) endorsements. Suboption 2 applies only to FFPs with GOA endorsements, in order to limit the scope of this action to vessels participating in the GOA, but cannot be applied more specifically to only Western and Central GOA participants, because of the structure of the area designations on the FFP.

Table 2-66 Number of Federal Fisheries Permits with GOA area endorsements that were surrendered per year, 2003–2008.

Year	Number of FFPs with GOA endorsements that were surrendered per year
2003	12
2004	18
2005	13
2006	20
2007	16
2008	25

Source: NMFS RAM division.

Option 2 also includes a suboption that requires federally permitted vessels to adhere to the sector allocation closures, even while vessels are fishing in parallel waters. In the BSAI, vessels have fished for Pacific cod in the BSAI parallel waters fishery, after the TAC for their respective sector has been harvested and the season in federal waters has closed. This occurred in 2008 and 2009. Again, the state recognizes sector allocations by gear type, but does not recognize sector allocations based on processing activity (i.e., the distinction between CV and CP allocations).[6] If the directed fishery for one of the sectors is open in federal waters, any vessel using that gear type and meeting any applicable vessel length restrictions is eligible to participate in the parallel waters fishery.

For example, in 2008 pot CPs continued to fish in the Aleutian Islands parallel waters fishery, after the Amendment 85 pot CP allocation had been fully harvested, because the adjacent federal waters fishery was still open to pot CVs. Similarly, CVs may participate in the parallel waters fishery, even if it is only open to CPs in adjacent federal waters. NMFS inseason management accounts for parallel waters catch by gear and operation type. For example, in the BSAI Pacific cod fishery, parallel waters catch is deducted from the appropriate Amendment 85 allocation, based on the gear and operation type of the harvesting vessel. However, if one sector's season closes and vessels in that sector continue to fish in the parallel waters fishery, this creates a catch accounting problem. If NMFS continues to count the catch against the sector's allocation, the result is an overage for that sector, and catch could potentially exceed the ABC. If NMFS counts the catch against another sector's allocation, this would effectively result in a reallocation of the TAC. Option 2 addresses this management issue by precluding vessels from fishing in parallel waters, after their respective sector's season has closed.

One drawback to Option 2 is that it may preclude some federally permitted vessels that wish to enter the directed groundfish fisheries from participating in the parallel fishery. For example, vessels that participate in the IFQ halibut and sablefish fisheries, and fish in federal waters, are required to hold an FFP. Under Option 2, federally permitted vessels would be precluded from participating in the directed GOA Pacific cod parallel waters fisheries, unless they hold an LLP license with the required endorsements. However, vessels fishing for IFQ halibut or sablefish may continue to retain Pacific cod up to the MRA (20%), without an LLP license.

If Option 2 is not selected, federally permitted vessels that do not hold LLP licenses with the required endorsements would benefit, because they would continue to have access to the parallel fishery. The likelihood of parallel waters effort increasing depends on market conditions, the availability of Pacific cod in state waters, and opportunities to participate in other fisheries. If Option 2 is not selected and

[6] State v. Grunert, 139 P.2d 1226 (Alaska 2006); Grunert v. State, 109 P.2d 924 (Alaska 2005). In the 2005 case, the Alaska Supreme Court ruled that the Board of Fisheries could not allocate within a single fishery. 109 P.2d at 931-32. In the 2006 case, the Court held that 'fisheries' could only be distinguished by differences in the gear that is actually used to harvest the fish. 139 P.2d at 1235-39.

sector allocations are established, vessels could participate in the parallel fishery, after their respective sector closes, as long as the gear type remains open (e.g., pot CPs could fish off the pot CV allocation), and potentially result in the ABC being exceeded.

2.3 Potential Effects of the Alternatives

2.3.1 Effects on harvesters

Under the no action alternative, vessel participation levels are likely to continue to vary annually, with changes in the GOA Pacific cod fisheries, market conditions, the regulatory environment, and opportunities to participate in other fisheries. The number of vessels participating in each sector is summarized in Table 2-20. There has been a general trend toward fleet consolidation that would likely continue, if sector allocations are established. Since 1995, the proportion of catch taken by the various sectors has changed, in some cases substantially (see Appendix A). In general, the proportion of the Central and Western GOA Pacific cod TACs caught by trawl CVs has declined, while the proportion of the TACs caught by pot CVs has increased. The fixed gear sectors have an earlier A season start date (January 1), than the trawl sector (January 20), and with smaller TACs during recent years, the fixed gear sectors have harvested a larger proportion of the catch. Catch by hook-and-line CPs has also increased in recent years.

Under the no action alternative, the sectors would continue to race each other for shares of the TACs, particularly during the A season, and the relative catch levels of each sector would vary from year to year, depending on fishing conditions and incentives to participate in other fisheries. Product quality likely suffers as a result of the race for fish. Overfilling nets and holds can affect fish quality, and CPs, who must process fish quickly to maintain quality, may forego potential recovery rate improvements.

Under the proposed action, sectors would receive allocations based on historical catch levels and other criteria. Sector allocations would be calculated as a percentage of the respective Western and Central GOA Pacific cod TACs, and could differ substantially, depending on the years used to calculate catch history. In the Western GOA, trawl CVs would receive a substantially larger allocation, if catch history during 1995 through 2005 is selected, instead of 2000 through 2006, 2002 through 2007, or 2002 through 2008. For pot CVs in the Western GOA, the opposite is true. In the Central GOA, trawl vessels have generally caught less Pacific cod during recent years, while the fixed gear sectors have increased their catch. Allocating fixed shares to each sector would reduce this annual variability and may allow participants to better plan their fishing year, but may also decrease the flexibility of sectors to respond to changes in fishing and market conditions.

Under existing options, there is potential for growth in entry-level opportunities within the jig sector. The Council recently exempted jig gear from the groundfish LLP license requirement in the GOA, as part of its final action on GOA fixed gear recency. The jig allocation could potentially be increased in annual increments of 1%, if the jig allocation is 90% harvested in a given year, up to a maximum of 7% of the TAC. An increase in the jig allocation would impose costs on the other sectors, by proportionally reducing their Pacific cod allocations. During most recent years, less than 1% of the Western and Central GOA Pacific cod catches were harvested by jig vessels.

In some recent years, the jig sector has not fully harvested its state waters Pacific cod GHL in the GOA, and few jig vessels have elected to participate in the parallel/federal fisheries. Low participation levels in both the parallel/federal and state waters fisheries may be the result of high operating costs and difficulty finding fish in state waters. In addition, inclement weather may limit jig vessel participation during the federal A season. When the B season opens on September 1, adverse weather conditions may again limit

participation by smaller vessels. If jig vessels are provided with the opportunity to fish year round, in both parallel and federal waters, the number of jig participants and amount of jig catch may increase.

At its April 2008 meeting, the Council took final action on trawl recency, which extinguishes trawl licenses that do not have recent landings in the BSAI and GOA groundfish fisheries. This action will reduce the number of trawl CV licenses eligible to fish in the Western and Central GOA by approximately 50%, and will reduce the number of trawl CP licenses by approximately 25%. In April 2009, the Council took final action on GOA fixed gear recency, which adds Pacific cod endorsements to Western and Central GOA fixed gear licenses. This action substantially reduces the number of fixed gear licenses eligible to access the GOA Pacific cod fisheries in federal waters.

Sector allocations, in combination with the trawl and fixed gear recency actions, may stabilize participation in the fisheries. Under the current set of options, season opening dates would not change, and seasons are likely to remain short, so any new participants in the GOA Pacific cod fisheries would likely have to forgo participation in other fisheries. Fleet consolidation may continue, but in the absence of the cooperative formation, the number of vessels participating is not likely to decrease dramatically. While sector allocations may reduce competition among sectors in the GOA Pacific cod fisheries, participants within each sector are likely to continue to race each other for shares of the TACs. Poor fish handling practices will likely continue, and product quality and recovery rates will continue to suffer.

2.3.2 Effects on processors

Under the status quo alternative, the race for fish during the A season would likely continue, and the pace of processing at shorebased plants, CPs, and motherships would not slow down. The GOA Pacific cod TACs would continue to be allocated 90% to the inshore processing sector and 10% to the offshore sector. During recent years, the majority of CV landings have been received by shorebased plants, and there has been little mothership participation in the GOA Pacific cod fisheries. CPs less than 125 ft LOA would continue to have the option to fish the inshore TACs, and the proportion of the Western and Central GOA TACs that is harvested by CPs would likely continue to vary, depending on when BSAI Pacific cod seasons close and the availability of halibut PSC to support the hook-and-line and trawl sectors.

Under the proposed action, the pace of the fisheries is not likely to slow, and processors will continue to receive deliveries within compressed seasons. Allocations to the processing sectors would be replaced by allocations to the harvest sectors. If the inshore/offshore processing allocations are eliminated, harvests by CPs would be constrained by their respective sector allocations, but there would no longer be a limit on the amount of catch processed at sea by motherships. Currently, motherships greater than 125 ft in length, or which process more than 126 mt of pollock and Pacific cod (in the aggregate) per week, must participate in the offshore sector, and the amount of catch processed by the offshore sector is capped at 10% of the Western and Central GOA TACs. Few motherships have participated in the GOA Pacific cod fisheries during recent years. However, if the offshore sector is no longer capped at processing 10% of the Pacific cod TACs, mothership participation in the GOA may increase. CPs could also potentially act as motherships and take deliveries from CVs. Deliveries to CPs that are acting as motherships would accrue to the CV sector of the harvesting vessel, whereas currently, this catch accrues to either the inshore or offshore TAC, depending on the processing component of the mothership. There are options in Component 8 of the Council's motion to limit the amount of Pacific cod processed by motherships in the GOA, which were discussed in detail earlier in this document.

2.3.3 Effects on management, monitoring, and enforcement

Under the no action alternative, the GOA Pacific cod fisheries would continue to be managed as a limited access race for fish, with fleet-wide TACs in the Western, Central, and Eastern GOA. The GOA Pacific cod TACs are allocated between the inshore processing component (90%) and the offshore component (10%). The TACs are also apportioned between the A season (60%) and B season (40%). When inshore/offshore and seasonal apportionments are taken into consideration, there are currently 8 distinct Pacific cod TACs in the Western and Central GOA. Halibut PSC is currently managed on a GOA-wide basis, with separate allocations to the trawl and hook-and-line sectors. Trawl and hook-and-line PSC limits are divided into seasonal apportionments.

If sector allocations are implemented, NMFS will need to monitor up to 19 new Pacific cod allocations in the Western and Central GOA. Inshore/offshore allocations of Pacific cod in the Eastern GOA also would continue to be monitored and managed. Each sector allocation would be further divided into A and B season allocations. In addition, two new GOA-wide allocations of hook-and-line halibut PSC, divided between CPs and CVs, could be established under Component 7 and also apportioned seasonally. Observer data are sparse for CV fleets, so potential halibut PSC apportionments between hook-and-line CP and CV sectors under Component 7 would be managed primarily based on observed PSC rates from the CP sector.

Substantial staff resources would be required to revise the NMFS catch accounting system (CAS) to monitor and manage the new allocations. This could be accomplished with a combination of existing NMFS staff resources and contracts for application development that already are in place. The cost estimate for changes to CAS is about $100,000. Significant additional funding requirements may be triggered to revise the federal/state eLandings system, if allocation options are chosen under Component 2 that establish separate allocations based on LLP license endorsements (e.g., separate allocations for trawl endorsed, pot endorsed, or combined pot/trawl endorsed LLP licenses). This option, as proposed, would require tracking Pacific cod landings for specific LLP licenses, and would require a major modification to eLandings that basically would reflect a new IFQ type of accounting. This modification could cost well in excess of $100,000. A more accurate cost estimate is not available at this time and would require substantial design and scoping.

In addition to the front end work setting up the new catch monitoring program through changes to CAS and eLandings, additional staff resources will be required to actively monitor and manage nearly 50 new seasonal allocations of Pacific cod and halibut PSC. Active inseason monitoring and management of directed fisheries, incidental catch, bycatch, PSC, and rollovers would require an additional employee, at a cost of about $180,000, annually. The increased number of Pacific cod CV and CP allocations for different gear types and vessel size classes limits management flexibility to address inseason constraints as sector specific quotas are reached. Thus, NMFS expects that Pacific cod will increasingly be put on prohibited species status for specific sectors, as allocations are reached. This will occur if sector specific directed fisheries are closed without leaving sufficient amounts of Pacific cod in the sector allocation to accommodate incidental catch of Pacific cod in other directed fisheries. Some sectors rely on Pacific cod as a “top off” fishery, to supplement gross revenue while participating in other directed fisheries. As a result, economic incentives exist to fish up to the MRA of Pacific cod, once the directed fishery is closed. NMFS expects to manage the sector allocations conservatively, so that this situation is avoided and regulatory discards of Pacific cod are minimized to the extent practicable.

The increased number of sector allocations also will increase the complexity of at-sea enforcement efforts and fisheries policy guidance for NMFS Office of Law Enforcement and the U.S. Coast Guard. The number of sector specific fishery allocations likely would expand the time period the directed fishing for Pacific cod is open and could substantially increase the number of closures, requiring more aircraft and

patrol vessel hours to effectively enforce each specific sector closure. The existence of different hook and line or pot CV length options (60 ft in Western GOA and 50 ft in Central GOA) also makes enforcement more difficult. Industry costs to comply with recommended VMS requirements to allow for enforcement of area specific mothership exemptions are addressed under Component 8.

2.3.4 Effects on communities

Fisheries impact communities through the economic and socioeconomic activities generated by participants in the different harvesting and processing sectors, and through supporting industries. Several measures of the importance of fisheries to a community are participation by vessel owners and permit holders residing in that community; gross revenues from the fisheries to those vessel owners and permit holders, landings to shorebased processors in the community, economic activity generated by fishery support and secondary commercial businesses, and revenues from state and municipal fisheries taxes. In-depth profiles of GOA fishing communities may be found in Community Profiles for North Pacific Fisheries (Sepez et al. 2005). This document includes profiles of 136 fishing communities in Alaska. The profiles provide demographic information on each community, and describe the history, geography, and local economy of each community. In addition, they provide detailed descriptions of each community's involvement in the North Pacific fisheries, including data on the number and type of fishing permits held by residents, and participation by those permit holders in the different fisheries. Finally, each profile provides information on subsistence and sport fishing activities in each community. The profiles may be found at http://www.afsc.noaa.gov/REFM/Socioeconomics/Projects/CPU.php.

The State of Alaska's Community Information Summaries, which are compiled by the Alaska Department of Commerce, Community, and Economic Development (DCCED), include information on community location, population, taxes, climate, history, culture, demographics, utilities, schools, health care, economy, and transportation. The summaries may be found at http://www.commerce.State.ak.us/dca/commdb/CF_CIS.htm.

Participation by community and sector

Estimates of the number of vessel owners participating in the GOA Pacific cod fisheries, by residency, were generated to provide perspective on the level of participation in the status quo GOA Pacific cod fisheries by residents of Alaska and other States. This information is used to examine the potential impacts of GOA Pacific cod sector allocations on the distribution of Pacific cod catch (and revenues) to communities. These community-level estimates should be interpreted with caution, because available data may not fully reflect the actual residence of participants. For example, a vessel owner may not reside in the community that is used as a registered mailing address, or may only reside in that community on a seasonal basis. Impacts of the proposed sector allocations are likely to depend on the relative size of the local and regional economy. Small communities could be greatly impacted by even a small increase in participation in the fisheries that would have a negligible impact on a larger community.

Catcher processors

The majority of the CP fleet is based in the Seattle area, but a number of vessels are home ported in Alaska communities. A total of 69 CPs fished for Pacific cod in the GOA during 2000 through 2008. Of these vessels, 48 are home ported in the greater Seattle area and 21 are home ported in Alaska Table 2-67). In addition, community development quota (CDQ) groups own a percentage of several companies which own CPs that participate in the GOA Pacific cod fisheries. Each of the CDQ groups has made several equity acquisitions, and all six CDQ groups have acquired ownership interests in hook-and-line CPs that are used to harvest Pacific cod. In the BSAI, virtually all of the Pacific cod CDQ is harvested by hook-and-line CPs, although several of the groups have acquired ownership interests in vessels that only

fish for Pacific cod in the non-CDQ fisheries. Table 2-68 provides a summary of CDQ ownership interests in vessels that have participated in both the GOA and BSAI Pacific cod fisheries. This ownership information was provided to the Council in 2006, for inclusion in the BSAI Amendment 85 analysis. The table may not include vessels that fish in the GOA, but not in the BSAI, and ownership interests may have changed since 2006. If the Council would like updated information on CDQ ownership interests in vessels that participate in the GOA Pacific cod fisheries, staff could request that the CDQ groups provide this information. However, it is important to note that CDQ groups provide this information on a voluntary basis.

Table 2-67 Home ports for catcher processors that participated in the GOA Pacific cod fisheries, 2000–2008.

Home port*	Hook-and-line	Pot	Trawl	Total
Adak	1	0	0	1
Dutch Harbor	0	0	4	4
Homer	1	0	0	1
Juneau	2	0	1	3
Kodiak	5	1	2	8
Petersburg	3	0	0	3
Seattle, WA	27	5	16	48
Sitka	1	0	0	1
Grand Total	40	6	23	69

Note: Some vessels may have participated in more than one gear group, but are shown under only one group in this table.
*Home port based on NMFS Alaska region vessel database.

Table 2-68 CDQ group ownership interest in vessels that participate in the GOA and BSAI Pacific cod fisheries.

Vessel	Percent ownership	Company/Partner	Description
APICDA			
Bering Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Ocean Prowler	20%	Prowler Fisheries	Longline CP; 155' LOA
BBEDC			
Bristol Leader LLC	50%	Alaskan Leader	Longline CP; 167' LOA
Bering Leader LLC	50%	Alaskan Leader	Longline CP; under construction
CBSFA			
Deep Pacific	2.89%	Pacific Longline Co.	Longline CP; 130' LOA
Lilli Ann	2.89%	Pacific Longline Co.	Longline CP; 141' LOA
North Cape	2.89%	Pacific Longline Co.	Longline CP; 124' LOA
CVRF			
Deep Pacific	35%	Pacific Longline Co.	Longline CP; 130' LOA
Lilli Ann	35%	Pacific Longline Co.	Longline CP; 141' LOA
North Cape	35%	Pacific Longline Co.	Longline CP; 124' LOA
Ocean Prowler	20%	Prowler Fisheries	Longline CP; 155' LOA
Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Bering Prowler	20%	Prowler Fisheries	Longline CP; 124' LOA
Silver Spray	50%	Silver Spray Seafoods	Pot CP; 124' LOA
NSEDC			
Norton Sound	51.78%	Glacier Fish Co.	Longline CP; 136' LOA
Glacier Bay	50%	Glacier Fish Co.	Longline CP; 178' LOA
YDFDA			
Baranof	41%	Romanzof Fishing Co.	Combo (pot/longline) CP; 180' LOA
Courageous	100%	N/A	Combo (pot/longline) CP; 180' LOA

Source: CDQ groups, as of October 2005. Note that this list only includes vessels that participated in both the BSAI and GOA Pacific cod fisheries during at least one year, and may not include vessels that have only fished in the GOA.

Catcher vessels

This section describes the potential impacts of Pacific cod sector allocations on the distribution of catch among residents of Alaska communities and other states. Table 2-69 reports the number of CVs that participated in each harvest sector by vessel owner residency during two time periods (1995 through 2000 and 2001 through 2008). The vessel counts in the table reflect the historical residency data for each vessel owner. For example, if a vessel owner lived in Homer from 1995 until 2000, but currently resides in Oregon, the vessel is listed under Homer from 1995 through 2000, and under Oregon from 2001 through 2008. The table also shows the percentage of Pacific cod catch within each sector made by residents of Alaska communities and other states. Harvests by CPs are not reported here, because there are fewer than three CPs homeported in most Alaska communities, and these data are confidential.

In most CV sectors, the majority of catch was harvested by vessel owners who are Alaska residents. Across all sectors, during 2001 through 2008, 60% of Central GOA catch and 62% of Western GOA catch was harvested by vessels owned by Alaska residents. In both management areas, most (80% to 97%) of catch by <60 ft LOA pot and hook-and-line vessels during 2001 through 2008, was made by vessels owned by Alaska residents. In the Central GOA, the majority of trawl catch is made by vessels >60 ft LOA, 34% of this catch was made by vessel owners who are Alaska residents, and 66% by vessel

owners from other states. In the Western GOA, trawl catch was mostly made by vessels owned by Alaska residents (56% to 57%).

The proposed Pacific cod sector allocations could be based on catch history during 1995 through 2005, 2000 through 2006, 2002 through 2007, or 2002 through 2008. Under any of these options, there may be modest distributional effects among residents of different states. The extent of these effects depends not only on the range of qualifying years selected, but the number of years within each time period used to calculate allocations. During recent years, the fixed gear sectors have harvested a higher proportion of the catch than the trawl sectors. If the Council chooses to base allocations on catch during 2000 through 2006, 2002 through 2007, or 2002 through 2008, more catch will be distributed to pot and hook-and-line vessels, and if the period from 1995 through 2005 is selected, more catch will be distributed to trawl CVs. Most of the fixed gear catch during recent years has been made by vessels owned by Alaska residents, with the exception of catch by >60 ft LOA pot vessels in the Western GOA. In the Western GOA, most trawl catch has also been made by vessels owned by Alaska residents.

The distribution of Pacific cod catch among residents of Alaska communities is also reported in Table 2-69. In the Western GOA, a total of 49% of <60 ft LOA trawl catch and 58% of <60 ft LOA pot catch was harvested by residents of Sand Point and King Cove during 2001 through 2008. The majority of ≥60 ft LOA pot catch was harvested by residents from Washington State (55%) and Kodiak (22%). Overall, a substantial proportion of Western GOA catch in 2001 through 2008 was harvested by residents of Sand Point (22%), King Cove (17%), and Kodiak (9%), and this was mostly comprised of trawl and pot catch. Consequently, the different potential allocations of the Western GOA TAC to the pot and trawl sectors may not result in a distribution of catch out of these communities, although a larger allocation to ≥60 ft LOA pot vessels may benefit Kodiak residents.

Vessels owned by Kodiak residents harvested 40% of the overall Central GOA Pacific cod catch from 2001 through 2008, and the majority of the pot, jig, and >60 ft LOA hook-and-line CV catch. Vessels owned by Homer and Anchor Point residents harvested a total of 48% of the <60 ft LOA hook-and-line catch, and 12% of the overall Central GOA catch from 2001 through 2008. If the Council chooses to base allocations on recent catch history, a larger proportion of the Central GOA TACs will be distributed to the pot and hook-and-line sectors. These allocations may distribute more catch to residents of Alaska communities, who in recent years have harvested the majority of the Central GOA fixed gear catch.

Table 2-69 Number of catcher vessels that participated in the Western and Central GOA Pacific cod fisheries and percent of retained Pacific cod catch within each sector made by residents of Alaska communities, Washington, Oregon, and other states.

Western GOA

		HAL CV <60		HAL CV >=60		Jig CV		POT CV <60		POT CV >=60		TRW CV <60		TRW CV >=60		Total
		Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Percent catch
1995-2000	Anchor Point	1	*	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0%
	Cordova	0	0%	0	0%	0	0%	0	0%	1	*	0	0%	1	*	0%
	Homer	6	9%	4	61%	0	0%	1	*	1	*	0	0%	1	*	2%
	King Cove	1	*	0	0%	2	*	24	58%	2	*	10	16%	1	*	17%
	Kodiak	13	10%	6	20%	2	*	0	0%	7	17%	2	*	8	8%	3%
	Other Alaska	12	37%	5	*	12	19%	7	9%	5	2%	4	*	0	0%	5%
	Sand Point	9	18%	0	0%	12	53%	29	30%	3	7%	25	52%	3	9%	36%
	Seward	2	*	1	*	1	*	2	*	0	0%	0	0%	1	*	0%
	Alaska Total		76%		87%		95%		97%		39%		72%		38%	64%
	Oregon	1	*	2	*	1	*	0	0%	7	10%	0	0%	14	3%	1%
	Other State	3	*	3	*	0	0%	1	*	4	10%	2	*	5	6%	4%
	Washington	9	37%	13	8%	1	*	6	*	40	40%	9	*	70	53%	30%
2001-2008	Anchor Point	4	13%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0%
	Cordova	1	*	1	*	0	0%	0	0%	1	*	0	0%	0	0%	0%
	Homer	21	21%	4	5%	4	4%	1	*	2	*	0	0%	1	*	2%
	King Cove	4	1%	0	0%	3	9%	17	26%	3	9%	7	19%	1	*	17%
	Kodiak	24	14%	6	3%	7	10%	11	7%	18	22%	0	0%	3	3%	9%
	Other Alaska	37	25%	4	2%	22	29%	20	24%	8	4%	6	7%	0	0%	11%
	Sand Point	18	5%	0	0%	27	28%	29	32%	1	*	18	30%	2	*	22%
	Seward	2	*	1	*	0	0%	1	*	0	0%	0	0%	0	0%	0%
	Alaska Total		80%		11%		78%		90%		37%		56%		57%	62%
	Oregon	4	0%	7	*	2	*	3	*	7	*	0	0%	8	*	3%
	Other State	3	0%	1	*	1	*	1	*	2	*	1	*	2	*	4%
	Washington	25	19%	16	87%	10	14%	12	6%	26	55%	13	*	32	40%	32%

Central GOA

		HAL CV <60		HAL CV >=60		Jig CV		POT CV <60		POT CV >=60		TRW CV <60		TRW CV >=60		Total
		Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Vessels	Percent catch	Percent catch
1995-2000	Anchor Point	36	9%	1	*	10	*	2	*	0	0%	0	0%	0	0%	1%
	Cordova	7	0%	4	*	0	0%	2	*	4	2%	0	0%	1	*	1%
	Homer	159	43%	11	0%	20	26%	18	4%	8	7%	0	0%	1	*	8%
	King Cove	0	0%	0	0%	0	0%	0	0%	1	*	7	3%	1	*	1%
	Kodiak	173	30%	40	62%	29	38%	61	66%	51	61%	15	20%	29	38%	43%
	Other Alaska	185	10%	23	28%	25	28%	34	26%	10	10%	8	11%	1	*	9%
	Sand Point	0	0%	0	0%	0	0%	0	0%	1	*	25	37%	3	1%	5%
	Seward	25	4%	5	0%	1	*	2	*	1	*	0	0%	1	*	1%
	Alaska Total		97%		93%		94%		98%		80%		70%		42%	67%
	Oregon	22	1%	13	*	1	*	2	*	8	10%	0	0%	22	35%	17%
	Other State	15	0%	1	*	1	*	2	*	3	7%	0	0%	1	*	1%
	Washington	46	3%	21	6%	2	*	4	1%	10	3%	14	30%	64	*	15%
2001-2008	Anchor Point	19	4%	0	0%	0	0%	1	*	0	0%	0	0%	0	0%	1%
	Cordova	7	*	0	0%	0	0%	0	0%	1	*	0	0%	0	0%	0%
	Homer	111	44%	5	0%	5	*	12	*	4	1%	0	0%	1	*	11%
	Kodiak	145	22%	30	82%	59	68%	44	75%	30	61%	5	47%	21	32%	40%
	Other Alaska	142	16%	10	0%	17	24%	15	14%	6	7%	3	17%	1	*	8%
	Sand Point	1	*	0	0%	0	0%	0	0%	0	0%	10	3%	2	*	0%
	Seward	17	1%	3	0%	2	*	0	0%	2	*	0	0%	0	0%	0%
	Alaska Total	0	87%	0	83%	0	94%	0	97%	0	69%	0	67%	0	34%	60%
	Oregon	20	1%	16	6%	0	0%	2	*	7	28%	0	0%	22	45%	26%
	Other State	19	3%	3	0%	3	6%	3	*	1	*	2	*	1	*	3%
	Washington	37	9%	24	10%	5	0%	5	1%	3	*	7	*	30	*	12%

Source: ADF&G Fish Tickets.
*Data withheld due to confidentiality

Gross revenues from the GOA Pacific cod fisheries by community

This section examines revenues from the GOA Pacific cod fisheries accruing to CV owners who reside in Alaska communities. Wholesale revenues to CPs by vessel owner residency are not reported here, because there are fewer than three CPs homeported in most Alaska communities and these data are confidential. The tables report Commercial Fisheries Entry Commission (CFEC) gross revenues data for Alaska communities with four or more vessel owners with landings from the GOA Pacific cod fisheries, and the 21 communities in the GOA that are eligible for the CQE program (see Table 2-70). CQE eligible communities have fewer than 1,500 residents, lack direct road access, have direct access to saltwater, and have historical participation in the halibut and sablefish fisheries. These communities were identified in Amendment 66 to the GOA FMP. Seventeen of the 21 CQE communities in Southcentral and Southwest Alaska are profiled in the Community Profiles databases, and all of the communities are included in the State of Alaska's Community Information Summaries.

Table 2-70 Communities eligible for the Community Quota Entity (CQE) program in Southwest and Southcentral Alaska.

Name	Population[1]	Management Area
Akhiok	80	Central Gulf
Chenega Bay	86	Central Gulf
Chignik	79	Central Gulf
Chignik Lagoon	103	Central Gulf
Chignik Lake	145	Central Gulf
Halibut Cove	35	Central Gulf
Ivanof Bay	22	Western Gulf
Karluk	27	Central Gulf
King Cove	792	Western Gulf
Larsen Bay	115	Central Gulf
Nanwalek	177	Central Gulf
Old Harbor	237	Central Gulf
Ouzinkie	225	Central Gulf
Perryville	107	Western Gulf
Port Graham	171	Central Gulf
Port Lions	256	Central Gulf
Sand Point	952	Western Gulf
Seldovia	286	Central Gulf
Tatitlek	107	Central Gulf
Tyonek	193	Central Gulf
Yakutat	680	West Yakutat

[1]2000 U.S. Census estimates.

The number of vessel owners from Alaska communities, Oregon, Washington, and other states with landings in the Western and Central GOA Pacific cod fisheries, and gross revenues from those landings during two time periods are reported in Table 2-71. The table also reports vessel gross revenues from the GOA Pacific cod fisheries as a percentage of gross revenues by those vessel owners, from all fishing activity in and off Alaska. This percentage shows the relative importance of revenues from the GOA Pacific cod fisheries to residents of each community or state. Residents from 10 of the 21 Southwest and Southcentral AlaskA CQE communities had landings in the Western and Central GOA Pacific cod fisheries during 2001 through 2008. Alaska communities with the highest proportion of gross revenues from the Western and Central GOA Pacific cod fisheries during 2001 through 2008 include Willow, Delta Junction, King Cove, Kodiak, Akutan, Seldovia, False Pass, and Sand Point. At least 10% of gross revenues in these communities were from the Western and Central GOA Pacific cod fisheries. The majority of revenues accruing to vessel owners from Alaska communities were from fixed gear catch, although residents of Kodiak, Sand Point, and King Cove also had substantial trawl landings. Continued access to the GOA Pacific cod resource is particularly important to residents of these communities, because a large proportion of fisheries revenues are from the GOA Pacific cod fisheries.

Table 2-71 Number of catcher vessels participating in the Western and Central GOA Pacific cod fisheries, gross revenues, and percent of total gross revenues in Alaska fisheries from GOA Pacific cod, reported by vessel owner residency.

		1995-2000				2001-2008			
Community	Fishery	Vessels	Revenues from cod	Total revenues	Percent revenues from cod	Vessels	Revenues from cod	Total revenues	Percent revenues from cod
Adak	Fixed	0	0	0	0%	1	*	*	*
Akutan	Fixed	2	*	*	*	4	64,264	484,968	13%
Anchor Point	Fixed	38	1,931,935	14,815,816	13%	20	1,562,398	23,827,973	7%
Anchorage	Fixed	46	525,702	18,976,491	3%	27	1,511,394	31,267,887	5%
Anchorage	Trawl	2	*	*	*	2	*	*	*
Auke Bay	Fixed	1	*	*	*	0	0	0	0%
Big Lake	Fixed	1	*	*	*	0	0	0	0%
Chignik	Fixed	3	*	*	*	3	*	*	*
Chignik Lagoon	Fixed	3	*	*	*	4	576,940	10,725,713	5%
Chugiak	Fixed	1	*	*	*	0	0	0	0%
Clam Gulch	Fixed	3	*	*	*	1	*	*	*
Cold Bay	Fixed	0	0	0	0%	1	*	*	*
CordovA	Fixed	14	473,846	14,875,692	3%	10	91,670	13,728,738	1%
CordovA	Trawl	1	*	*	*	0	0	0	0%
Craig	Fixed	0	0	0	0%	1	*	*	*
Delta Junction	Fixed	0	0	0	0%	6	2,830,421	9,942,498	28%
Dillingham	Fixed	0	0	0	0%	1	*	*	*
Douglas	Fixed	0	0	0	0%	3	*	*	*
Dutch Harbor	Fixed	5	144,003	3,789,181	4%	10	468,096	9,962,859	5%
Eagle River	Fixed	6	57,430	1,029,898	6%	5	137,890	3,808,375	4%
Ester	Fixed	1	*	*	*	0	0	0	0%
Fairbanks	Fixed	1	*	*	*	1	*	*	*
False Pass	Fixed	2	*	*	*	7	828,144	6,010,059	14%
Fritz Creek	Fixed	2	*	*	*	3	*	*	*
Girdwood Fixed	Girdwood	3	*	*	*	1	*	*	*
Trawl		0	0	0	0%	2	*	*	*
Gustavus	Fixed	0	0	0	0%	1	*	*	*
Haines	Fixed	0	0	0	0%	1	*	*	*
Halibut Cove	Fixed	1	*	*	*	3	*	*	*
Homer	Fixed	190	10,733,050	137,757,456	8%	140	17,756,382	220,207,337	8%
Homer	Trawl	1	*	*	*	1	*	*	*
Juneau	Fixed	8	58,114	5,288,044	1%	8	466,547	9,522,601	5%
Juneau	Trawl	1	*	*	*	1	*	*	*
Kasilof	Fixed	9	61,845	2,602,525	2%	6	7,533	2,973,060	0%
Kenai	Fixed	26	61,556	6,857,683	1%	13	43,238	7,061,694	1%
Ketchikan	Fixed	2	*	*	*	3	*	*	*
Ketchikan	Trawl	1	*	*	*	0	0	0	0%
King Cove	Fixed	28	2,332,495	27,040,931	9%	22	6,082,899	40,271,006	15%
King Cove	Trawl	12	5,566,366	15,209,098	37%	8	3,823,857	27,307,846	14%
King Salmon	Fixed	0	0	0	0%	1	*	*	*
Kodiak	Fixed	265	31,831,118	396,567,929	8%	249	41,781,338	521,816,785	8%
Kodiak	Trawl	44	21,343,744	112,377,077	19%	26	20,361,109	136,552,247	15%
Larsen Bay	Fixed	7	125,053	1,560,146	8%	3	*	*	*
Mountain Village	Fixed	0	0	0	0%	1	*	*	*
Naknek	Fixed	1	*	*	*	0	0	0	0%
Nelson Lagoon	Fixed	0	0	0	0%	1	*	*	*
NenanA	Fixed	1	*	*	*	0	0	0	0%
NikishkA	Fixed	1	*	*	*	0	0	0	0%
Nikiski	Fixed	5	139,627	2,153,755	6%	5	21,156	1,681,469	1%
Nikolaevsk	Fixed	14	250,924	3,886,677	6%	10	804,397	13,390,802	6%
Ninilchik	Fixed	9	9,723	1,843,769	1%	5	8,412	2,450,251	0%
Old Harbor	Fixed	17	1,640,711	10,763,915	15%	9	1,048,188	11,296,612	9%
Ouzinkie	Fixed	7	127,737	1,369,949	9%	8	4,202	3,515,131	0%
Palmer	Fixed	2	*	*	*	1	*	*	*
Palmer	Trawl	1	*	*	*	0	0	0	0%
Pelican	Fixed	0	0	0	0%	1	*	*	*
Petersburg	Fixed	16	32,263	39,781,320	0%	15	448,639	79,118,954	1%
Petersburg	Trawl	2	*	*	*	3	*	*	*

Source: ADF&G Fish Tickets and CFEC gross revenues data. Note: Only includes Pacific cod catch from the parallel and federal waters fisheries. The previous version of this table excluded IFQ participants, and fixed gear participation totals were lower. This table includes all vessels with retained catch of Pacific cod. *Confidential.

Table 2-71 (continued) Number of catcher vessels participating in the Western and Central GOA Pacific cod fisheries, gross revenues, and percent of total gross revenues in Alaska fisheries from GOA Pacific cod, reported by vessel owner residency.

		1995-2000				2001-2008			
Community	Fishery	Vessels	Revenues from cod	Total revenues	Percent revenues from cod	Vessels	Revenues from cod	Total revenues	Percent revenues from cod
Port Graham	Fixed	2	*	*	*	0	0	0	0%
Port Heiden	Fixed	1	*	*	*	0	0	0	0%
Port Lions	Fixed	6	77,591	1,804,760	4%	6	5,656	3,180,919	0%
Saint Paul Island	Fixed	0	0	0	0%	1	*	*	*
Sand Point	Fixed	44	1,452,493	54,265,813	3%	60	5,303,403	84,642,241	6%
Sand Point	Trawl	28	17,825,391	58,723,940	30%	20	6,897,508	67,808,567	10%
SeldoviA	Fixed	12	3,299,740	15,058,931	22%	8	2,091,414	15,852,711	13%
Seward	Fixed	35	923,028	27,373,420	3%	23	419,906	54,399,856	1%
Seward	Trawl	1	*	*	*	0	0	0	0%
SitkA	Fixed	9	835,435	25,787,829	3%	12	76,065	57,283,921	0%
SoldotnA	Fixed	9	3,540	2,468,205	0%	8	2,230	4,788,511	0%
Sterling	Fixed	2	*	*	*	2	*	*	*
Tuluksak	Fixed	0	0	0	0%	1	*	*	*
Unalakleet	Fixed	1	*	*	*	0	0	0	0%
UnalaskA	Fixed	5	74,866	1,876,297	4%	7	365,954	8,215,131	4%
Valdez	Fixed	2	*	*	*	0	0	0	0%
Ward Cove	Fixed	1	*	*	*	0	0	0	0%
Ward Cove	Trawl	2	*	*	*	0	0	0	0%
WasillA	Fixed	9	637,069	4,210,237	15%	15	825,706	6,030,888	14%
Willow	Fixed	5	691,628	2,065,337	33%	7	1,755,534	5,189,160	34%
Alaska Total	Fixed	835	59,514,962	853,269,449	7%	697	88,672,839	1,314,277,760	7%
Alaska Total	Trawl	94	48,898,621	208,507,545	23%	62	34,234,617	260,119,050	13%
Oregon	Fixed	43	3,009,447	99,773,899	3%	44	8,198,077	192,098,872	4%
Oregon	Trawl	30	18,059,154	118,566,119	15%	26	26,808,838	183,298,222	15%
Other State	Fixed	25	1,620,354	324,468,356	0%	29	2,261,696	79,881,904	3%
Other State	Trawl	7	1,002,751	26,919,253	4%	4	3,927,958	24,204,450	16%
Washington	Fixed	136	3,405,207	392,229,192	1%	122	15,830,604	574,675,851	3%
Washington	Trawl	104	25,588,599	685,506,962	4%	61	19,943,905	534,627,909	4%

Source: ADF&G Fish Tickets and CFEC permit and gross revenues data. Note: Pacific cod catch only includes catch from the parallel and federal fisheries. The previous version of this table excluded IFQ participants, and fixed gear participation totals were lower. This table includes all vessels with retained catch of Pacific cod. *Confidential.

Deliveries to shorebased processors

Most Pacific cod harvested by CVs during 2001 through 2008, was delivered to shoreside processors in Kodiak, King Cove, Sand Point, and Dutch Harbor. Only a small proportion of catch was delivered to motherships or inshore floating processors (Table 2-72). In the Western GOA, and to a lesser extent in the Central GOA, some CVs deliver Pacific cod to floating processors, but the proportion of catch delivered to floating processors has declined in recent years. During 1995 through 2000, an estimated 8% of CV harvests from the Western GOA and 2% of harvests from the Central GOA were delivered to floating processors, and during 2001 through 2008 deliveries to floating processors declined to 6% in the Western GOA. It is important to note that these estimates include deliveries to inshore floating processors that may be located in or near GOA communities during part or all of the fishing season. The State of Alaska's Intent to Operate data often do not currently capture the precise location where inshore floating processors are located when deliveries are received. This is a data gap that needs to be addressed, if the Council wishes to have more precise information on deliveries to floating processors operating in or near coastal communities.

Most Western GOA Pacific cod catch is delivered to shorebased plants in King Cove, Sand Point, and Dutch Harbor. The amount of catch delivered to King Cove and Sand Point cannot be reported, because each of these communities only has a single processing facility. An estimated 12% of Western GOA

catch was delivered to Dutch Harbor during 2001 through 2008, but this catch is only a small fraction of the seafood processed there.

Most Central GOA Pacific cod catch is delivered to shorebased plants in Kodiak, and smaller amounts are delivered to processors in Homer and Seward. During 1995 through 2000, deliveries were more widely distributed among Central GOA communities. Specifically, the proportion of catch delivered to Homer and Seward was larger during 1995 through 2000, than during 2001 through 2008. During 1995 through 2000, 75% of Central GOA catch was delivered to Kodiak, 7% was delivered to Homer, and 5% was delivered to Seward. During 2001 through 2008, 95% of Central GOA catch was delivered to Kodiak, and only 3% of the catch was delivered to Homer and 1% to Seward. Processors in Homer and Seward mainly receive deliveries from pot and hook-and-line vessels. Because nearly all of the Pacific cod harvested in the Central GOA is delivered to Kodiak, allocating the Central GOA TAC to the sectors is unlikely to have a substantial effect on the distribution of landings among communities. During 1991 through 2000, Pacific cod production comprised 8% to 31% of first wholesale gross revenues for Kodiak processors (EDAW 2005). In 2006, GOA Pacific cod comprised 16% of the first wholesale gross revenues and pounds processed by Kodiak processors. During recent years, 8 to 10 shorebased plants in Kodiak have processed Pacific cod.

Table 2-72 Percent of retained Pacific cod harvested by each CV sector delivered to shorebased processors in Alaska communities and to floating processors, 1995–2000 and 2001–2008.

Western GOA

	Community	HAL CV	Jig CV	Pot CV	Trawl CV	Total
1995–2000	Akutan	*	*	*	*	*
	Dutch Harbor	53%	9%	18%	4%	6%
	Floating Processor	19%	23%	12%	7%	8%
	Homer	*	0%	0%	0%	*
	King Cove	*	*	*	*	*
	Kodiak	*	0%	0%	*	*
	Other Alaska	*	0%	0%	0%	*
	Sand Point	*	*	*	*	*
	Seward	*	0%	0%	0%	*
2001–2008	Akutan	*	*	*	*	*
	Dutch Harbor False	29%	4%	19%	1%	12%
	Pass Floating	*	*	*	*	*
	Processor Homer	8%	4%	7%	4%	6%
	King Cove	*	0%	0%	0%	*
	Kodiak	*	*	*	*	*
	Other Alaska	*	0%	*	*	*
	Sand Point	*	0%	0%	0%	*
	Seward	*	*	*	*	*
		*	0%	0%	0%	*

Source: ADF&G fish tickets. *Data withheld due to confidentiality. Includes parallel and federal waters fisheries.

Table 2-72 (continued) Percent of retained Pacific cod harvested by each CV sector delivered to shorebased processors in Alaska communities and to floating processors, during 1995 through 2000 and 2001 through 2008.

Central GOA

	Community	HAL CV	Jig CV	Pot CV	Trawl CV	Total
1995–2000	Akutan	0%	0%	*	*	*
	Cordova	0%	0%	1%	1%	1%
	Dutch Harbor	*	0%	0%	*	*
	Floating Processor	0%	0%	1%	4%	2%
	Homer	16%	28%	14%	0%	7%
	King Cove	*	*	*	*	*
	Kodiak	58%	58%	81%	76%	75%
	Other Alaska	*	*	*	0%	*
	Sand Point	*	*	*	*	*
	Seward	26%	14%	1%	2%	5%
2001–2008	Akutan	*	0%	0%	*	*
	Cordova	*	0%	0%	*	*
	Dutch Harbor	*	0%	*	*	*
	Floating Processor	*	*	*	*	*
	Homer	2%	0%	10%	0%	3%
	King Cove	*	*	*	*	*
	Kodiak	95%	100%	87%	99%	95%
	Other Alaska	*	0%	0%	0%	*
	Sand Point	*	*	*	*	*
	Seward	2%	0%	2%	0%	1%

Source: ADF&G fish tickets.
*Data withheld due to confidentiality. Includes parallel and federal waters fisheries.

Fisheries Taxes

The State of Alaska levies taxes on fishery resources processed outside of, and first landed in, Alaska, as well as on fishery resources processed in Alaska. Alaska statutes provide that a percentage of revenue collected from these taxes shall be shared with qualified municipalities in Alaska. The amount of money available for distribution to Alaska communities is based upon fisheries business and fishery resource landing taxes collected during the program base year, as defined in Alaska statute.[7] Essentially, the tax is levied against fishery resources, processed or landed 2 years before. For example, fiscal year 2008 payments were based on taxes collected in fiscal year 2007, for fish that were processed or landed during calendar year 2006.

The following sections describe the State Fisheries Business tax and State Fishery Resource Landing tax, and Appendix D provides the current amounts shared to municipalities in Alaska. The last section describes the Municipal Raw Fish tax. These revenues are reported in Appendix E.

State Fisheries Business Tax

The fisheries business tax ("raw fish tax") is levied on businesses that process fisheries resources in Alaska or export fisheries resources from Alaska. The tax is based on the value of the raw fishery resource, and the tax rates vary from 1% to 5%, depending on whether the fishery resource is considered "established" or "developing," and whether it was processed by a shore-based or floating processor. Currently, the tax rates for established fisheries are 3% for fishery resources processed at shorebased

[7]Refer to 3 AAC 134.160(11).

plants and 5% for those processed at floating processors (AS 43.75.015). Revenues are deposited into the State of Alaska's General Fund, and 50% of these revenues are distributed to qualified municipalities. In 2008, the shared amount going to municipalities was approximately $20.2 million.[8]

State Fishery Resource Landing Tax

The fishery resource landing tax is levied on fishery resources processed outside of, and first landed in, Alaska, and is based on the unprocessed statewide average price of the resource. The tax is primarily collected from floating processors and CPs that process fish outside the state's 3-mile limit and bring products into Alaska for transshipment, or any processed fishery resource subject to section 210(f) of the AFA. Tax rates range from 1% to 3% (AS 43.77.010). All revenues are deposited in the State of Alaska's General Fund, and 50% of these revenues are distributed to qualified municipalities. In 2008, the shared amount going to municipalities was approximately $6.4 million.

Most CPs offload processed fish in Alaska communities and pay a 3% fishery resource landing tax to the state. The fishery resource landing tax is levied on fishery resources processed outside 3 miles and first landed in Alaska, or any processed fishery resource subject to section 210(f) of the AFA. The tax is based on the unprocessed value of the resource, which is determined by multiplying a statewide average price (determined by ADF&G) by the unprocessed weight. The tax is primarily collected from floating processors that process fish outside state waters and bring their product into Alaska for transshipment.

Revenues from the fishery resource landing tax are allocated to municipalities within Alaska in a two stage process. First, revenues are allocated among the 19 Fisheries Management Areas (FMA) within Alaska, based on the ratio of the management area's fishery resource landing tax production value, to the value for all management areas combined. Second, payments to municipalities within each FMA are determined under one of two methods. If available funds are less than $4,000 multiplied by the number of municipalities in the FMA, then 50% of funds are divided equally among communities and 50% are distributed based on the population of each community. If available funds are more than $4,000 multiplied by the number of municipalities in the FMA, then municipalities apply for funds based on the cost of fisheries business impacts experienced by the community and other considerations.

Industry representatives have indicated that offloads of GOA Pacific cod are primarily made in Dutch Harbor/Unalaska. Council staff does not have access to tax records or offload information for individual vessels or entities, and cannot estimate the amount of fishery resource landing tax paid by each of the CP sectors for GOA Pacific cod offloads. If Pacific cod product is offloaded in Alaska communities, the CP sectors pay taxes to the state in proportion to the unprocessed value of their annual retained catch.

Municipal Raw Fish Tax

In addition to the state taxes described above, municipalities may collect their own raw fish taxes on landings. (All political subdivisions within the State of Alaska are termed "municipalities" for these purposes.) Municipal raw fish taxes vary by community, and range from approximately 1% to 3% of the unprocessed value of the fishery resources. Refer to Appendix E for a list of municipalities that levy a raw fish tax, and the amount of revenue generated from such taxes in 2007.

2.3.5 Harvest cooperative formation

Long term allocations of the Western and Central GOA Pacific cod TACs to the sectors, and provisions that limit entry to the directed Pacific cod fisheries, may provide opportunities for the formation of

[8]Alaska Dept. of Revenue, Tax Division, Revenue Sources Book, Fall 2008, pp. 66 – 67.

harvest cooperatives. Individual sectors may be more likely to form cooperatives, if all eligible participants are easily identified through A restrictive license limitation program, and if separate allocations are made to each sector. Pacific cod endorsements on fixed gear licenses would limit entry to the directed Pacific cod fisheries in federal waters, but would not restrict vessels without LLP licenses, or without Pacific cod endorsements on licenses, from participating in the directed Pacific cod fisheries in the parallel waters fisheries. NMFS does not currently have a mechanism to allocate catch history to cooperatives in the GOA Pacific cod fisheries. All vessel owners within A sector would need to voluntarily join a cooperative and abide by its bylaws, or Congressional action could be taken, or additional Council action, with Secretary of Commerce approval, and implementing regulations would need to be established to provide NMFS with the necessary authority to allocate Pacific cod to individual cooperatives.

In the GOA Pacific cod fisheries, the hook-and-line CP sector may be the sector that is most likely to form a harvest cooperative. Traditionally, most of the freezer longliner fleet fishes for Pacific cod in the BSAI, then moves into the GOA, after the BSAI Pacific cod seasons close. In 2005, the BSAI freezer longliner fleet voluntarily agreed not to fish in the GOA during the B season, because NMFS inseason management was concerned that there was not sufficient halibut PSC to support this fleet. As a result, during 2006 through 2009, the freezer longliners set up an informal "PSC co-op" with NMFS inseason management. Under this arrangement, halibut PSC was informally divided between CPs and CVs. The freezer longliners then further divided the CP PSC among vessels. This informal cooperation in sharing PSC suggests that this sector has the potential to establish a formal harvest cooperative.

The freezer longliner fleet is relatively small, and the Council's fixed gear recency action limits the number of participants in this sector by adding gear-specific Pacific cod endorsements to fixed gear licenses. An estimated 12 Central GOA licenses and 16 Western GOA licenses qualify for a hook-and-line CP endorsement. In addition, an estimated 12 Central GOA and 3 Western GOA licenses qualify for an offshore-limited hook-and-line CP endorsement, because these licenses qualified under an exemption for participants in the informal halibut PSC co-op. If Pacific cod sector allocations are established, total catch by hook-and-line CPs would be capped by the allocations. If vessels in this sector form a harvest cooperative subsequent to the implementation of sector allocations, this sector could potentially take advantage of increased production efficiencies of fishing cooperatively, but would not be able to increase the sector's overall harvest of the Western and Central GOA Pacific cod TACs. However, if vessels fish the CP allocations cooperatively, some vessels in this fleet could opportunistically act as CVs and fish off the hook-and-line CV allocations. This would be fully consistent with the present management design in this fishery, described earlier in this document (i.e., qualified CPs operating in a CV mode). Again, if the Council perceives this to be a potential problem, there are options under Component 2 to address this issue by precluding CPs that haven't previously operated as CVs from opportunistically operating as CVs, and thereby eroding the CV allocation, while allowing vessel operators who hold CP licenses, and have historically participated as CVs, to elect to operate as CVs.

2.3.6 Interactions with other actions

Several recent and reasonably foreseeable Council actions have the potential to limit or expand effort by individuals or sectors in the GOA Pacific cod fishery. The trawl and fixed gear LLP recency actions have the potential to limit future effort in the GOA Pacific cod fisheries. The trawl recency action extinguished latent trawl LLP licenses, and the fixed gear recency action added gear-specific Pacific cod endorsements to fixed gear LLP licenses to limit access to the directed GOA Pacific cod fishery. Neither of the recency actions is likely to impact the number of vessels or licenses actively participating in either the trawl or fixed gear Pacific cod fisheries in the GOA in the near term, because licenses with recent participation in the fisheries will continue to have access to the fisheries. The trawl recency action used the qualifying years from 2000 through 2006, and the fixed gear recency action used the years 2002 through 2008. If

the Council chooses to allocate Pacific cod to sectors, based on catch history during 1995 through 2005, some license holders who contributed history to the trawl and fixed gear allocations would not be eligible to fish those allocations in federal waters, if they did not have any groundfish landings during recent years. During 1995 through 1999, the number of trawl and fixed gear vessels participating in the GOA Pacific cod fisheries was substantially higher than during 2000 through 2008. In addition, Pacific cod sideboards limit catches by several sectors. In 2000, sideboards were implemented that limit 94 non-exempt AFA vessels to their retained catch history from 1995 through 1997. In 2006, another set of sideboards were implemented that limit 82 crab-qualified vessels and 37 groundfish LLP licenses to their retained catch history of Pacific cod from 1996 through 2000. Finally, in 2008, Amendment 80 sideboards were implemented to limit vessels in that program to their historical catch of Pacific cod from 1998 through 2004 in the GOA. The overall effect of these actions is to limit the number of participating vessels, and the amount of catch by specific groups of vessels, in the GOA Pacific cod fisheries.

The Council recently took final action on an amendment to exempt several vessels from the GOA Pacific cod sideboards for BSAI crab vessels. The Council is also considering an amendment to lift the crab sideboards after a specified date during the B season. During recent years, the Western GOA B season TAC has not been fully harvested, and allowing additional vessels to catch more fish would not have reduced the TAC available to non-sideboarded participants. However, in the Central GOA, B season TACs have been fully harvested in recent years, and allowing additional vessels to participate would dilute catch (and revenues) among a larger pool of participants.

2.3.7 Net benefits to the Nation

Overall, this action is likely to have a limited effect on net benefits realized by the Nation. Under the status quo (Alternative 1), the Western and Central GOA Pacific cod TACs will continue to be allocated between the inshore and offshore processing sectors, and the harvest sectors will continue to race for shares of the catch. There are substantial numbers of LLP licenses eligible to participate in the GOA groundfish fisheries, and the LLP license is not required to participate in the parallel waters fishery. Vessels not currently active in the fisheries have the potential to enter the fisheries in the future, increasing overall effort in the fisheries. This increase in effort would contribute to losses of production efficiency. Costs could rise slightly if participants perceive a need to increase effort to secure their historical catches. The increase in effort could contribute to more aggressive fishing and processing practices, both of which contribute to lower quality and less value added production. The extent of these potential effects is very difficult to predict and depends on several exogenous factors, including future TAC levels, market conditions, and operating costs.

Under the proposed action (Alternative 2), the Western and Central GOA Pacific cod TACs would be allocated among the various harvest sectors, based on catch history or other criteria. As a result, each sector's catch would be constrained by its allocation, and individual sectors would be shielded from increased effort by other sectors. However, sector allocations alone are not likely to slow down the race for fish, reduce bycatch and PSC, or significantly increase production efficiency. Vessels within each sector would compete against each other for shares of the sector allocations, and new vessels could enter the fisheries and increase the race for fish within each sector. Sector allocations, combined with recent reductions in the number of LLP licenses eligible to access the GOA Pacific cod fisheries, may contribute to slowing the GOA Pacific cod fisheries and stabilizing the sectors. However, future TAC levels, input factor costs, PSC constraints, and market conditions for Pacific cod will also be important factors in determining effort in the fisheries. The proposed action has the potential to increase overall efficiency and reduce waste associated with the status quo fishery

Implementation of the action alternative would require NMFS to monitor catch by 13 harvest sectors, and to monitor newly established halibut PSC allowances. These new allowances, combined with any

modifications to the current inshore/offshore processing allocations, would require NMFS to incur up-front costs to modify the catch accounting system, and ongoing costs to monitor the apportionments.

The main economic benefits from the proposed action are derived from the stabilization of the distribution of catch of the GOA Pacific cod TACs among the harvest sectors. The action also has the potential to benefit LLP license holders who have recent participation in the fisheries and qualify under the fixed or trawl recency actions. The net benefit to the Nation from this action is the sum of the efficiency gains to license holders, who are all U.S. citizens or U.S. owned corporations, less the added costs of administration of the allocations. Overall, a net gain to the Nation is anticipated, *ceteris paribus*.

2.3.8 Preferred Alternative

The Council recommended **Alternative 2**, which allocates the Western and Central GOA Pacific cod TACs among the sectors. Sector allocations limit the proportion of the respective Western and Central GOA Pacific cod TACs that may be harvested by each of the sectors. Within Alternative 2, the Council recommended Component 1, which applies the action to both the Western and Central GOA, but allows different sector definitions to be used in the respective management areas. In **Component 2,** the Council defined the sectors as shown in Table 2-73.

The Council also recommended the option to Component 2 that requires holders of CP licenses to make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement for Pacific cod, if the license holder made at least one Pacific cod landing while operating as a CV under the authority of the CP license, from 2002 through 2008. Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA Pacific cod fishery. For example, if a Western GOA CP license holder elects a Western GOA Pacific cod CP endorsement, all Western GOA Pacific cod catch made under the authority of that license will be accounted for from the respective CP allocations. Under the existing LLP regulations, those operators who hold CV licenses may only operate as CVs, but CP license holders may operate as either CPs or CVs. The purpose of this option is to preclude CP license holders from opportunistically fishing off both the CP and CV Pacific cod sector allocations. NMFS cannot require or enforce that a vessel process its catch on board, and CP license holders will continue to have the option to operate as either CPs or CVs in the groundfish fisheries. However, in the Western GOA and Central GOA Pacific cod fisheries, catch will be accounted for based on the CP or CV Pacific cod endorsement on the LLP license. The CP or CV Pacific cod endorsement does affect catch accounting in other groundfish fisheries.

The Council recommended all of the provisions in **Component 3**. These provisions define qualifying catch for the purposes of calculating sector allocations and describe how incidental catch will be managed. In **Component 4**, the Council recommended that sector allocations be calculated using each sector's best option, but made several adjustments to the sector allocations (Table 2-73). The Council recommended seasonally apportioning sector allocations between the A and B seasons, based on each sector's seasonal catch history during the qualifying years, while maintaining the overall 60%/40% apportionment of the TAC, excluding the jig sector allocation.

Finally, under Component 4, the Council identified how Pacific cod sideboards for the Western and Central GOA management areas will be recalculated. The AFA CV Pacific cod inshore and offshore sideboards will be combined into a single sideboard in each management area. The non-AFA crab sideboards will be recalculated to establish separate CP and CV sideboard amounts for each gear type, in each management area.

Table 2-73 Pacific cod sector allocations recommended in Council's preferred alternative.

Western GOA sector allocations with jig allocation taken off the top of the TAC

		Compare to 60/40		A season allocation	B season allocation	A season allocation	B season allocation
	Annual Allocation	A season	B season	Percent of annual allocation	Percent of annual allocation	Percent of seasonal allocation	Percent of seasonal allocation
HAL CP	19.8%	55.2%	44.8%	10.9%	8.9%	18.2%	22.2%
HAL CV	1.4%	47.2%	52.8%	0.7%	0.7%	1.1%	1.8%
Pot CV/CP	38.0%	52.0%	48.0%	19.8%	18.2%	32.9%	45.6%
Trawl CP	2.4%	37.9%	62.1%	0.9%	1.5%	1.5%	3.7%
Trawl CV	38.4%	72.3%	27.7%	27.7%	10.7%	46.2%	26.6%
Total	100.0%			60.0%*	40.0%*	100.0%*	100.0%*

Central GOA sector allocations with jig allocation taken off the top of the TAC

		Compare to 60/40		A season allocation	B season allocation	A season allocation	B season allocation
	Annual Allocation	A season	B season	Percent of annual allocation	Percent of annual allocation	Percent of seasonal allocation	Percent of seasonal allocation
HAL CP	5.1%	80.3%	19.7%	4.1%	1.0%	6.8%	2.5%
HAL CV <50	14.6%	63.9%	36.1%	9.3%	5.3%	15.5%	13.2%
HAL CV >=50	6.7%	84.0%	16.0%	5.6%	1.1%	9.4%	2.7%
Pot CV/CP	27.8%	63.9%	36.1%	17.8%	10.0%	29.7%	25.1%
Trawl CP	4.2%	48.8%	51.2%	2.0%	2.2%	3.4%	5.4%
Trawl CV	41.6%	50.8%	49.2%	21.1%	20.5%	35.2%	51.2%
Total	100.0%			60.0%*	40.0%*	100.0%*	100.0%*

*Due to rounding, percentages for each sector may not sum to totals.

Component 5 addresses the allocation to jig vessels. The Council recommended setting aside the jig allocation from the respective Pacific cod TACs, before allocations to other sectors are made, and recommended an initial jig allocation of 1% of the Central GOA Pacific cod TAC and 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig allocation by 1%, if 90% of the federal jig allocation in an area is harvested in any given year. The jig allocation will be capped at 6% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas would be stepped down in 1% annual increments, if 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during 2 consecutive years following the stairstep increase. However, the allocation would not drop below its initial level.

The Council recommended two sets of management measures for the jig allocation. The first set of management measures applies, if under a subsequent action, the Alaska Board of Fisheries relinquishes any portion of the state waters jig GHL. Any relinquished jig GHL would be added to the parallel/federal jig allocation, so that the jig sector is fishing from a single account. Under this scenario, the combined state/parallel/federal jig allocation would be seasonally apportioned 80%/20%, to the A/B seasons. The A season would open on January 1 and close when the A season allocation is reached. The B season would open on June 10. If the Board of Fisheries does not relinquish any portion of the jig GHL, the parallel/federal jig allocation will be apportioned 60%/40% into an A/B season. The A season will open on January 1 and close when the A season jig allocation is reached or on March 15, whichever occurs first. The B season will open on June 10, or after the state GHL season closes, whichever occurs later.

Under **Component 6**, the Council identified how rollovers of unharvested sector allocations will be managed. Any portion of an allocation that NMFS determines will not be harvested by the respective sectors during the remainder of the fishing year will be rolled over to CV sectors first, and then to all sectors, as needed, to harvest the remaining Pacific cod.

Under **Component 7**, the Council recommended apportioning the GOA hook-and-line halibut PSC limit between the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector, after scaling the Pacific cod allocations to reflect the relative size of the Pacific cod TAC area apportionments (Table 2-74). Area apportionments are determined during the annual harvest specifications process. No later than November 1, any remaining halibut PSC allowance not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year, would be made available to the other sector.

Table 2-74 Halibut PSC apportionments to hook-and-line CVs and CPs under Component 7.

2009 Pacific cod ABC area apportionments:

56.5% Central GOA, 38.7% Western GOA

Period	CV Allocation	CP Allocation	CV amount (mt)	CP amount (mt)
Preferred Alternative	54.4%	45.6%	157.7	132.3

In **Component 8**, the Council recommended allowing motherships to process up to 2% of the Western GOA TAC while operating in the Western GOA management area; and prohibiting any motherships from processing groundfish in or from the Central GOA. Motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year.

The Council recommended allowing federally permitted vessels that do not meet the definition of stationary floating processor, and that do not harvest groundfish off Alaska in the same calendar year, to operate as floating processors for Pacific cod deliveries in an amount up to 3% of the Central GOA Pacific cod TAC and 3% of the Western GOA Pacific cod TAC within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development.

Finally, the Council recommended retaining the current definition of a stationary floating processor, revised as follows, so that there is no reference to the inshore component:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.
- A stationary floating processor may not operate as both a stationary floating processor and a CP/mothership during the same year.

In addition, the Council recommended retaining limits on the ability of AFA motherships and AFA CPs that are also active in the BSAI, to process any Pacific cod in the GOA, as follows:

- A vessel may not operate as a stationary floating processor for Pacific cod in the GOA and as an AFA mothership in the BSAI, during the same year.
- A vessel may not operate as a stationary floating processor for Pacific cod in the GOA and as a CP in the BSAI, during the same year.

The Council recommended removing **Component 9**, which addressed adjustments to sector allocations based on several criteria (conservation, catch monitoring, and social objectives) from the final motion. As a result, **Component 10**, which addresses the parallel fishery, was renumbered as Component 9 in the Council's final motion. In this component, the Council recommended limiting access to the parallel fishery by federal fishery participants. Specifically, the Council recommended requiring operators of pot, longline, or trawl vessels who hold an LLP license or an FFP to have the appropriate gear, area, and species endorsements on the LLP license and FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. In addition, federally permitted vessel operators who fish in the parallel waters will be required to adhere to federal seasonal closures of the Western and Central GOA sector allocations. In order to preclude operators from circumventing the above requirements, operators with a GOA area designation and trawl, pot, or hook-and-line gear designations, and CP or CV operation type designations will be precluded from removing these designations from the FFP, and the FFP may only be surrendered or reactivated once during the 3-year term of the permit.

Rationale for and effects of preferred alternative

The preferred alternative recommended by the Council would allocate the Western and Central GOA Pacific cod TACs among the sectors (Table 2-75). The action is intended to enhance stability in the Western and Central GOA Pacific cod fisheries, reduce competition and resulting waste among the sectors, and preserve the historical division of catch among sectors. The Council's recommended alternative also expands opportunities for jig vessels, by providing an initial allocation that is above the sector's historical catch in the fishery, and the opportunity for incremental increases to the jig allocation, if it is fully harvested. Any increases in the jig allocation would result in proportional reductions to the allocations to the other sectors.

The Council generally defined sectors, based on gear and operation type, with several exceptions. In both the Western and Central GOA, the pot CV and pot CP sectors were combined. The rationale for combining these sectors is that the pot CP sector has historically been relatively small and would receive a small allocation. Small allocations can be difficult to manage, depending on the level of participation and effort in the sector. Moreover, the majority of vessels that have participated as pot CPs in the GOA Pacific cod fishery in recent years also have fishing history as pot CVs, and will contribute catch history to both the pot CP and CV allocations. In the Central GOA, the hook-and-line CV sector was split by vessel length (50 ft LOA). Historically, the majority of catch by hook-and-line CVs has been made by vessels <50 ft LOA, but in recent years, there has been a substantial increase in effort by hook-and-line CVs that are between 50 ft and 60 ft LOA. Dividing this sector at 50 ft LOA protects smaller boats from an influx of effort by >50 ft LOA vessels. However, it also means that vessels >50 ft LOA that are long-time participants in the fishery will share an allocation with these new entrants.

The recommended action does not preclude operators from participating in the GOA Pacific cod fishery using more than one gear type during a given season or year. However, the action does preclude operators from fishing off both the CP and CV allocations to hook-and-line and trawl gear. The rationale for this restriction is that CP operators could fish off the hook-and-line CP or trawl CP allocation until it is fully harvested, and then could opportunistically continue to fish as CVs, if the hook-and-line or trawl CV allocation has not yet been fully harvested. The purpose of establishing separate CP and CV allocations is to shield CVs and CPs from competing against each other for access to the Pacific cod TAC. Allowing CPs to fish off both the CP and CV allocations for their respective gear type would not meet this intent.

Allocations were calculated by taking each sector's "best option" from four options in the Western GOA and six options in the Central GOA for calculating catch history, and then scaling allocations so that they sum to 100%. The Western GOA allocations to the pot CV/CP, hook-and-line CP, and trawl CP sectors

were then adjusted to account for differences between using each sector's best option and taking the average across the four options. In addition, the seasonal apportionments of the Western GOA trawl CV and pot CV/CP allocations were shifted to allow more trawl harvests during the A season, because there is little trawl effort during the B season.

In the Western GOA, the four options for calculating catch history included the 1995 to 2005 time period. This time period includes 6 years of catch history prior to implementation of the Steller sea lion mitigation measures in 2001. In the Western GOA, the Steller sea lion measures resulted in a dramatic shift of catch, from trawl gear to pot gear, and including this earlier time period accounts for the catch history of the trawl sector prior to this shift. The options in the Central GOA do not include the 1995 to 2005 time period. While there was a reduction in trawl catch concurrent with implementation of the Steller sea lion mitigation measures in the Central GOA, the shift was less dramatic than in the Western GOA.

The Council's action includes extensive provisions addressing mothership and stationary floating processor activity in the GOA. The harvest sector allocations will supersede the current 90%/10% inshore/offshore processing allocations. The Council's action is intended to protect historical processing and community delivery patterns established in the GOA groundfish fisheries. Motherships will be allowed to process up to 2% of the Western GOA Pacific cod TAC, but will be prohibited from processing groundfish in the Central GOA. In the Central GOA, no motherships have processed groundfish since 2000. In the Western GOA, there has been limited mothership activity. In addition, floating processors that do not harvest groundfish or act as a stationary floating processor in a given year may process up to 3% of the respective Western and Central GOA TACs, provided that they operate within the municipal boundaries of CQE communities. The Council's recommended alternative provides additional mothership processing opportunities, but ties this activity to Western and Central GOA CQE communities, thus providing economic benefits from any increase in mothership processing activity to these coastal communities (i.e., local tax revenues).

Finally, the Council's action addressed potential entry by federally permitted vessels into the parallel waters fishery. If GOA Pacific cod sector allocations are established, parallel waters activity by federally permitted vessel operators who do not hold LLP licenses, could erode the catches of historical participants who contributed catch history to the sector allocations and depend on the GOA Pacific cod resource. Vessels fishing in federal waters are required to hold an LLP license with the appropriate area, gear, and species endorsements, but vessels fishing in parallel state waters are not required to hold an LLP license. The Council's action precludes federally permitted vessels that do not have LLP licenses from participating in the GOA Pacific cod parallel fishery, to prevent any such encroachment.

Table 2-75 The Council's recommended alternative.

COMPONENT	ALTERNATIVE 2
	Allocate Western and Central Pacific cod TACs among sectors.
Component 1: Areas included	Western GOA and Central GOA. Different options may be selected for each management area.
Component 2: Identify and define sectors	**Central GOA** -Trawl CPs, Trawl CVs, hook-and-line CPs, hook-and-line CVs <50 ft, hook-and-line CVs >=50 ft, combined pot CV/CP sector, jig **Western GOA** -Trawl CPs, Trawl CVs, hook-and-line CPs, hook-and-line CVs, combined pot CV/CP sector, jig
	Option: Holders of CP licenses shall make a one-time election to receive a WG and/or CG CP or CV endorsement for Pacific cod if the license holder made at least one Pacific cod landing while operating as a CV during 2002 through 2008. Catch accounting in the WG and CG Pacific cod fishery will be determined by this endorsement (i.e., licenses with CP endorsements will fish off the CP allocations).
Component 3: Qualifying catch	Qualifying catch includes retained legal catch of Pacific cod from the federal and parallel fisheries in the WG and CG.
Component 4: Sector allocations	Part A: Sector allocations selected in the preferred alternative are shown in Table E-7.
	Part B: AFA sideboards will be recalculated by combining the inshore and offshore sideboards into a single account in the respective WG and CG management areas. Non-AFA crab sideboards will be recalculated as separate CP and CV sideboards for each gear type.
	Part C: Sector allocations will be seasonally apportioned based on each sector's seasonal catch history during the qualifying years, while maintaining the overall 60/40 apportionment of the TAC.
Component 5: Jig allocation	Set aside 1% of the CG Pacific cod TAC and 1.5% of the WG Pacific cod TAC for the initial allocation to the jig sector, with a stairstep provision to increase the jig sector allocation by 1% if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 6% of the respective Central and Western GOA federal Pacific cod TACs. Subsequent to the jig allocation increasing, if 90% of the previous allocation is not met during two consecutive years, the jig allocation will be stepped down by 1% in the following year, but shall not drop below the level initially allocated. The federal jig sector allocation will be divided into an A/B season of 60%/40%. The A season will open on January 1 and close when the jig A-season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector will open on June 10 or after the state GHL season closes, whichever occurs later.
	Any state waters jig GHL could (under subsequent action by the Alaska Board of Fisheries) be added to this state parallel/federal managed jig sector allocation so that the jig sector is fishing off of a single account. If the Board of Fisheries chooses to relinquish state waters jig GHL, it would roll into the federal jig allocation. The combined state/federal jig fishery would open on January 1 and close when the jig A season sector allocation is reached. The federal B season for the jig sector would open on June 10. The jig allocation will be apportioned 80% to the A season and 20% to the B season.
Component 6: **Rollovers**	Any portion of a CV, CP, or jig allocation determined by NMFS to remain unharvested during the remainder of the fishery year will become available as soon as practicable to CV sectors first, and then to all sectors taking into account the capability of a sector, as determined by the Regional Administrator, to harvest the reallocated amount of Pacific cod.

Table 2-75 (continued) The Council's recommended alternative.

Component 7: Apportionment of hook-and-line halibut PSC	Apportion the GOA hook-and-line halibut PSC to the CP and CV sectors in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector. The apportionment of halibut will be proportional to the Pacific cod area apportionment determined during the TAC setting process.
Component 8: Community protection	For the purposes of this provision, motherships include catcher processors receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year. For each management area, allow mothership activity for Pacific cod up to 2% of the WG TAC. Prohibit mothership activity for groundfish in the CG. Allow federally-permitted vessels that do not meet the definition of stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries in an amount up to 3% of the CG Pacific cod TAC and 3% of the WG Pacific cod TAC, provided that processors operate within the boundaries of Western and Central GOA CQE communities.
Component 9: Parallel fishery	• Require any pot or longline vessel with an LLP or an FFP to have the appropriate Pacific cod endorsement and area endorsement on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. • Require any Trawl vessel with an LLP or an FFP to have the appropriate gear and area endorsements on the LLP; and the GOA area designation and the appropriate gear and operation type designations on the FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. In addition, require the above federally-permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations corresponding to the sector in which the vessel operates. Vessels with a GOA area designation and the gear and operation type designations specified in Option 2 cannot remove these designations from the FFP and can only surrender or reactivate the FFP once every three years.

3 FINAL ENVIRONMENTAL ASSESSMENT

The purpose of this environmental assessment (EA) is to analyze the environmental impacts of the proposed federal action to allocate the Central and Western Gulf of Alaska (GOA) Pacific cod total allowable catches (TACs) among the various gear and operation types. An EA is intended to provide sufficient evidence of whether or not the environmental impacts of the action are significant (40 CFR 1508.9).

The purpose and need statement for this action and a description of the alternatives and options are included in Chapter 1. This chapter analyzes the alternatives for their effects on the biological, physical, and human environment. Each section discusses the environment that would be affected by the alternatives and then describes the impacts of the alternatives. The following components of the environment are discussed: the Pacific cod fishery, other groundfish and prohibited species caught incidentally in the Pacific cod target fishery, seabirds, marine mammals, benthic habitat and essential fish habitat, the ecosystem, economic impacts and management considerations, and cumulative effects.

The criteria listed in Table 3-1 are used to evaluate the significance of impacts. If significant impacts are likely to occur, preparation of an Environmental Impact Statement (EIS) is required. Although economic and socioeconomic impacts must be evaluated, such impacts by themselves are not sufficient to require the preparation of an EIS (see 40 CFR 1508.14).

Table 3-1 Criteria used to evaluate the alternatives.

Component	Criteria
Fish species	An effect is considered to be significant if it can be reasonably expected to jeopardize the sustainability of the species or species group.
Habitat	An effect is considered to be significant if it exceeds a threshold of more than minimal and not temporary disturbance to habitat.
Seabirds and marine mammals	An effect is considered to be significant if it can be reasonably expected to alter the population trend outside the range of natural variation.
Ecosystem	An effect is considered to be significant if it produces population-level impacts for marine species, or changes community- or ecosystem-level attributes beyond the range of natural variability for the ecosystem.

3.1 Purpose and Need Statement

The GOA Pacific cod resource is targeted by multiple gear and operation types, principally by pot, trawl, and hook-and-line catcher vessels (CVs) and catcher processors (CPs). Smaller amounts of cod are harvested by jig vessels. Separate TACs are identified for Pacific cod in the Western, Central, and Eastern GOA management subareas, but the TACs are not divided among gear or operation types. This results in a derby-style race for fish and competition among the various gear types for shares of the TACs.

The proposed action will divide the Western and Central GOA Pacific cod TACs among gear and operation types based on historical dependency and use by each sector. The action will not allocate the Eastern GOA Pacific cod TAC among sectors. Only a small proportion of the Eastern GOA Pacific cod TAC is typically harvested, and sector allocations have not been perceived to be necessary. The proposed action may enhance stability in the Western and Central GOA Pacific cod fisheries, reduce competition among sectors, and preserve the historical distribution of catch among sectors. Without sector allocations, future harvests by some sectors may increase and impinge on the historical levels of catch by

other sectors. For example, some fixed gear participants believe that the relatively high catching power of the trawl fleet has limited their ability to maintain their historical catch levels in the Pacific cod fishery. Sector allocations would stabilize the proportion of the catch taken by each sector, allowing participants to better plan their operations. Another concern expressed by some participants is that larger boats, both trawl and fixed gear, are more capable of fishing during the winter months (January/February) of the A season. Harvest opportunities for smaller vessels may be limited if larger vessels quickly catch much of the TAC.

The proposed action includes options to divide sectors by vessel length to ensure that smaller boats have a stable allocation. For example, separate allocations could be established for pot CVs <60 feet (ft) length overall (LOA) and ≥60 ft LOA. Finally, some participants are concerned that CPs fishing the inshore TACs have the potential to increase their catches and impinge on CV harvests. Sector allocations would protect harvests of inshore participants by creating distinct CP and CV allocations. Although sector allocations may reduce competition among sectors and protect historical catch levels, sector allocations alone may not slow down the race for fish, reduce bycatch, increase product quality, or have a substantial effect on the number of participating vessels. However, sector allocations may be a first step toward stabilizing the GOA Pacific cod fishery, and may enable the Council to begin developing a series of management measures to address Steller sea lion issues, halibut prohibited species catch (PSC) usage, and bycatch reduction.

GOA Pacific Cod Sector Split Purpose and Need Statement

The limited access derby-style management of the Western GOA and Central GOA Pacific cod fisheries has led to competition among the various gear types (trawl, hook-and-line, pot and jig) and operation types (catcher processor and catcher vessel) for shares of the total allowable catch (TAC). Competition for the GOA Pacific cod resource has increased for a variety of reasons, including increased market value of cod products, rationalization of other fisheries in the BSAI and GOA, increased participation by fishermen displaced from other fisheries, reduced Federal TACs due to the State waters cod fishery, and Steller sea lion mitigation measures including the A/B seasonal split of the GOA Pacific cod TACs. The competition among sectors in the fishery may contribute to higher rates of bycatch, discards, and out-of-season incidental catch of Pacific cod.

Participants in the fisheries who have made long-term investments and are dependent on the fisheries face uncertainty as a result of the competition for catch shares among sectors. To reduce uncertainty and contribute to stability across the sectors, and to promote sustainable fishing practices and facilitate management measures, the Western and Central GOA Pacific cod TACs should be divided among the sectors. Allocations to each sector would be based primarily on qualifying catch history, but may be adjusted to address conservation, catch monitoring, and social objectives, including considerations for small boat sectors and coastal communities. Because harvest sector allocations would supersede the inshore/offshore processing sector allocations for Pacific cod by creating harvest limits, the Council may consider regulatory changes for offshore and inshore floating processors in order to sustain the participation of fishing communities.

The timing of the Pacific cod A and B seasons may have limited the participation of jig vessels in the parallel and Federal fisheries of the GOA. Additionally, the State waters jig allocation has gone uncaught in some years, potentially due to the lack of availability of Pacific cod inside three miles. A non-historical Federal catch award, together with the provision of access in Federal waters for the State Pacific cod jig allocations, offers entry-level opportunities for the jig sector.

Currently, there are no limits on entry into the parallel waters groundfish fisheries, and no limits on the proportion of the GOA Pacific cod TAC that may be harvested in parallel waters. There is concern that participation in the GOA Pacific cod parallel waters fishery by vessels that do not hold LLP licenses may increase. The Council, in consideration of options and recommendations for the parallel fishery, will need to balance the objectives of providing stability to the long term participants in the sectors, while recognizing that new entrants who do not hold Federal permits or licenses may participate in the parallel fishery.

3.2 Alternatives, Components, and Options

This analysis considers two alternatives. **Alternative 1** (no action) would not make any changes to the existing allocations of the Western and Central GOA TACs between the inshore and offshore processing sectors. **Alternative 2** would allocate the Western and Central GOA Pacific cod TACs among the sectors, as defined by gear and operation types. These harvest allocations would supersede the existing inshore/offshore processing sector allocations. There are ten components under Alternative 2 that outline the details of the proposed action. The alternatives and components are summarized below. See Chapter 1 for the exact wording of the alternatives, components, and options under consideration.

Component 1 identifies the management areas subject to the proposed action, the Western GOA and Central GOA. The Western and Central GOA Pacific cod TACs will be allocated among the sectors, and sector definitions may differ between the management areas. The Eastern GOA Pacific cod TAC will not be allocated among the sectors, because there is not a perceived need for such an action.

Component 2 identifies the options for sector definitions in each management area. In the Central GOA, sectors could include trawl CPs, trawl CVs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide the hook-and-line CP sector by length (125 ft LOA), the hook-and-line CV sector by length (50 ft LOA), and to combine the pot CV and pot CP sectors. In the Western GOA, sectors could include trawl CPs, trawl CVs, hook-and-line CPs, hook-and-line CVs, pot CPs, pot CVs, and jig vessels. In addition, there are options to divide several sectors by length: hook-and-line CPs (125 ft LOA), hook-and-line CVs (60 ft LOA), pot CVs (60 ft LOA); and an option to combine the pot CV and pot CP sectors. In the Western GOA, there is also an option to create a combined trawl CV and pot CV sector, either for all CVs or for vessels <60 ft LOA.

Finally, there is an option under Component 2 to require holders of CP licenses to make a one-time election to receive a Western GOA and/or Central GOA CP or CV endorsement. Only CP license holders who made a minimum of one Pacific cod landing while operating as a CV under the authority of the CP license, from 2002 through 2008, would have the option to elect to receive a CV endorsement. Upon implementation of the GOA Pacific cod sector allocations, holders of these licenses will be limited to fishing off of the allocation assigned to the sector designated by their license in the GOA cod fishery. However, this endorsement would not preclude a license holder from operating as a CV or CP in other groundfish fisheries.

Component 3 identifies catch history that will be used to calculate sector allocations. Catch history includes all retained legal catch of Pacific cod from the federal and parallel waters fisheries in the Western and Central GOA, calculated using Alaska Department of Fish and Game (ADF&G) Fish Tickets for CVs and NMFS Catch Accounting/Blend data for CPs. Catch history includes both directed and incidental catch of Pacific cod, which is defined as Pacific cod caught in the parallel and federal waters groundfish fisheries, when the directed Pacific cod season is closed. Under all options, incidental catch allocated to trawl CVs for the Central GOA Rockfish program (currently, 2.09% of the Central GOA Pacific cod TAC) will be deducted from the Central GOA trawl CV B season allocation. Each sector's allocation will be managed to support both incidental and directed catch of Pacific cod.

Component 4 identifies the potential sets of years that could be used to calculate sector allocations. The options for the Western and Central GOA differ. In the Central GOA, allocations could be calculated using each sector's best 3 or 5 years (identified based on each sector's annual percentage of catch) during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or based on the average of all options, or the average of the options that include the best 5 years. In the Western GOA, allocations could be

calculated based on each sector's best 7 years during 1995 through 2005, or best 5 years during 2000 through 2006, 2002 through 2007, or 2002 through 2008, or the average of these four options. The Council also has the option to choose separate qualifying years for each sector. Allocations are then adjusted proportionally, so that they sum to 100% of the TAC. Finally, in order to reflect a broader range of allocations for the Council's allocation adjustment considerations under Component 9, allocations could be adjusted by 3% above each sector's highest potential allocation or 3% below each sector's lowest potential allocation.

Component 4 also identifies options for recalculating Pacific cod sideboards for the Western and Central GOA management areas. The AFA CV Pacific cod inshore and offshore sideboards will be combined into a single sideboard in each management area. The non-AFA crab sideboards will be recalculated to establish separate CP and CV sideboard amounts for each gear type in each management area. Finally, Component 4 includes several options for establishing seasonal apportionments. Each sector's allocation could be apportioned 60%/40% between the A and B seasons, or could be apportioned based on each sector's seasonal catch history. In addition, there is an option in the Western GOA to allocate only the A season TAC among sectors.

Component 5 addresses the allocation to jig vessels. The jig allocation would be set aside from the TAC before allocations to other sectors are made, and could include an initial allocation of 1%, 1.5%, or 2% of the Central GOA Pacific cod TAC, and 1% or 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig sector allocation by 1%, if 90% of the federal jig allocation in an area is harvested in any given year. The jig gear allocation will be capped at 5%, 6%, or 7% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas would be stepped down in 1% annual increments, if 90% of the current allocation or 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during either (a) 2 consecutive years or (b) 3 consecutive years, following the stairstep increase. However, the allocation would not drop below its initial level.

There are two options in Component 5 for managing the jig allocation. **Option 1** outlines the management measures that would take effect if, under a subsequent action, the Alaska Board of Fisheries relinquishes any portion of the state waters jig GHL. Any relinquished jig GHL would be added to the parallel/federal jig allocation, so that the jig sector is fishing from a single account. Under this scenario, there are three options for seasonally apportioning the combined state/parallel/federal jig allocation: no seasonal apportionment, 60%/40% A/B season apportionment, or 80%/20% A/B season apportionment. Under the first option, the jig season would open on January 1 and close when the allocation is reached. Under the latter two options, the fishery would open on January 1, and close when the jig A season allocation is reached. The B season would open on June 10.

Until the Board of Fisheries relinquishes any portion of the jig GHL, distinct parallel/federal and state waters fisheries will continue to exist, and the two fisheries will be managed as described under **Option 2**. The parallel/federal jig allocation would be apportioned 60%/40% into an A/B season. The A season would open on January 1 and close when the jig A season sector allocation is reached or on March 15, whichever occurs first. The federal B season for the jig sector would open on June 10, or after the state GHL season closes, whichever occurs later.

Component 6 outlines three options for managing rollovers of unharvested sector allocations. Any portion of an allocation that NMFS determines will not be harvested by the respective sector during the remainder of the fishing year will be rolled over as follows: (1) CV allocations to CV sectors first, and CP allocations to CP sectors first, then to all sectors as needed to harvest the remaining amount of Pacific cod; (2) all allocations to CV sectors first, and then to all sectors as needed to harvest the remaining Pacific cod; and (3) all allocations to all sectors as needed to harvest the remaining Pacific cod.

Component 7 includes two options for apportioning the GOA non-demersal shelf rockfish (non-DSR) hook-and-line halibut PSC allowance between CVs and CPs. **Option 1** would not apportion the GOA non-DSR hook-and-line PSC allowance between CVs and CPs. **Option 2** would apportion the GOA hook-and-line halibut PSC between the CP and CV sectors, in proportion to the total Western GOA and Central GOA Pacific cod allocations to each sector, as adjusted to reflect the relative size of the Pacific cod area apportionments, determined during the annual harvest specifications process. No later than November 1, any remaining halibut PSC not projected by NMFS to be used by one of the hook-and-line sectors during the remainder of the year would be made available to the other sector.

Component 8 identifies options to protect community participation and processing patterns in the GOA Pacific cod fishery that were established by the inshore/offshore regulations. For the purposes of Component 8, motherships include CPs receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor in 50 CFR 679.2. Stationary floating processors may process groundfish only at a single geographic location during a given year. The Council could select one or a combination of four options. Under **Option 1**, motherships may not receive deliveries of directed Pacific cod harvests. **Option 2** allows mothership activity up to a percentage of the Pacific cod TAC to be selected by the Council (0–10% in the Central GOA; 1%–10% in the Western GOA). **Option 3** allows federally permitted vessels that do not meet the definition of a stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year to operate as floating processors for Pacific cod deliveries within the boundaries of Western and Central GOA CQE communities that provide certified municipal land and water boundaries to the State of Alaska Department of Commerce, Community, and Economic Development. A suboption to Option 3 would limit this processing activity within CQE communities to a percentage of the Pacific cod TACs in the respective management areas. **Option 4** allows federally permitted vessels to operate as a mothership or stationary floating processor at more than one geographic location in a year, provided that the vessel is operating only within the waters of the State of Alaska, and, in effect, revises the existing definition of a stationary floating processor. A suboption that may be applied to Options 2, 3, and 4 would limit weekly processing of Pacific cod landings by vessels operating as motherships to (a) 125 mt per week, (b) 200 mt per week, or (c) 300 mt per week. This limit applies to all Pacific cod landings from CVs.

Component 8 also includes several potential revisions to the existing inshore/offshore regulations. Depending on the options selected in Component 8, the current definition of a stationary floating processor could be retained, but revised as follows, so that there is no reference to the inshore component as applied to Pacific cod:

- A stationary floating processor may process Pacific cod in the Western and Central GOA only at a single geographic location in Alaska State waters in a given year.
- A vessel cannot operate as both a stationary floating processor and a CP/mothership during the same year.

Additionally, retain limits on the ability for AFA motherships and AFA CPs that are also active in the Bering Sea/Aleutian Islands (BSAI) to process any Pacific cod in the GOA as follows:

- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as an AFA mothership in the BSAI during the same year.
- A vessel cannot operate as a stationary floating processor for Pacific cod in the GOA and as a CP in the BSAI during the same year.

Component 9 states that the Council may adjust sector allocations to incorporate considerations that are associated with conservation, catch monitoring, equity of access, bycatch reduction, PSC avoidance, and social objectives. The potential range of adjustments (±3%) is indicated in Component 4.

Finally, **Component 10** includes potential management measures for the parallel waters Pacific cod fishery. Under **Option 1**, the Council may provide recommendations for the Alaska Board of Fisheries' consideration on the parallel fishery that could complement Council action through use of the Joint Protocol Committee, and review and comment on Board of Fisheries proposals, such as gear limits, vessel size limits, and exclusive registration. **Option 2** limits access to the parallel fishery for federal fishery participants, by requiring operators of pot, longline, or trawl vessels who hold an LLP license or a Federal Fisheries Permit (FFP) to have the appropriate gear, area, and species endorsements on the License Limitation Program (LLP) license and FFP in order to participate in the Western GOA or Central GOA Pacific cod parallel waters fishery. Two suboptions to Option 2 are intended to make it more difficult for operators to circumvent the LLP requirement. **Suboption 1** requires the above federally permitted or licensed vessels that fish in the parallel waters to adhere to federal seasonal closures of the Western/Central GOA sector allocations, corresponding to the sector in which the vessel operates. **Suboption 2** precludes operators with a GOA area designation, and the gear and operation type designations specified in Option 2, from removing these designations from the FFP. This suboption provides that an FFP may only be surrendered or reactivated (a) once per calendar year, (b) once every 18 months, or (c) once every 3 years.

There are elements of two of the components that apply to the entire GOA, including the Western, Central, and Eastern GOA management areas. Component 7 will apportion the non-DSR hook-and-line halibut PSC limit between CVs and CPs, based on the aggregate (Western and Central GOA) allocation of Pacific cod to each sector. The resulting CV and CP hook-and-line PSC limits will apply to the entire GOA. Halibut PSC by hook-and-line vessels operating in the Western, Central, and Eastern GOA will accrue against these PSC allowances. In Component 10, Option 2, there is a suboption to preclude holders of FFPs with a GOA area endorsement from surrendering the FFP during a specified time period. Again, this suboption applies to the entire GOA, and is discussed in detail in that section of the analysis.

3.3 Pacific cod

Pacific cod (*Gadus macrocephalus)* is widely distributed in the GOA and occurs at depths from shoreline to 500 m (Thompson et al. 2007). Pacific cod are moderately fast growing, and females reach 50% maturity at approximately 5.8 years old. Spawning occurs during January through April in the GOA. Cod are demersal and concentrate on the shelf edge and upper slope at depths of 100–250 m in the winter, and move to shallower waters (<100 m) in the summer.

The Pacific cod resource is managed under three discrete TACs in the GOA: the Western GOA TAC, the Central GOA TAC, and the Eastern GOA TAC. In addition, the GOA Pacific cod TACs are divided between the A season (60%) and B season (40%), and apportioned to the inshore processing component (90%) and offshore component (10%). Historically, the majority of the GOA Pacific cod catch has come from the Central and Western GOA management subareas. Final 2008 harvest specifications apportioned 57% of the GOA catch to the Central GOA (28,426 mt), 39% to the Western GOA (19,449 mt), and 5% to the Eastern GOA (2,394 mt). Table 3-2 provides a history of acceptable biological catch (ABC), TAC, and actual catch of Pacific cod in the federal and state fisheries in the GOA from 1985 to 2010. From 1989 to 1996, the federal TAC was set at 100% of the ABC. The federal TAC has been set below the ABC since 1997 to accommodate the state waters Pacific cod fishery. Total catch in the federal and state Pacific cod fisheries averaged 89% of the ABC from 1997 to 2010.

Changes in the abundance of major predator or prey species may affect Pacific cod abundance and recruitment. Pacific cod prey on polychaetes, amphipods, crangonid shrimp, walleye pollock, fishery offal, yellowfin sole, and crustaceans. Predators of Pacific cod include Pacific cod, halibut, salmon shark, northern fur seals, Steller sea lions, harbor porpoises, various whale species, and tufted puffin. Effects of the proposed action depend to some extent on current and future abundance of the Pacific cod stock. Model projections indicate that the Pacific cod stock is not overfished. However, TAC is projected to decline over the next several years due to below average recruitment levels during a series of recent years. A comprehensive description of recent survey data and biomass projections is available in the groundfish Stock Assessment and Fishery Evaluation report (SAFE) Report (NMFS 2008a).

Table 3-2 Total catch (including discards) of Pacific cod catch in the federal and state managed fisheries in the GOA (Western, Central, and Eastern GOA combined), total allowable catch (TAC), and acceptable biological catch (ABC), 1985–2010.

	Federal						State		Total catch	ABC	Percent of ABC harvested
Year	Trawl	Longline	Pot	Jig	Total	TAC	Pot	Jig			
1985	4,876	9,411	2	139	14,428	60,000	n/a	n/a	14,428	n/a	
1986	6,850	17,619	141	402	25,012	75,000	n/a	n/a	25,012	136,000	18.4%
1987	22,486	8,261	642	1,550	32,939	50,000	n/a	n/a	32,939	125,000	26.4%
1988	27,145	3,933	1,422	1,302	33,802	80,000	n/a	n/a	33,802	99,000	34.1%
1989	37,637	3,662	376	1,618	43,293	71,200	n/a	n/a	43,293	71,200	60.8%
1990	59,188	5,919	5,661	1,749	72,517	90,000	n/a	n/a	72,517	90,000	80.6%
1991	58,093	7,656	10,464	115	76,328	77,900	n/a	n/a	76,328	77,900	98.0%
1992	54,593	15,675	10,154	325	80,747	63,500	n/a	n/a	80,747	63,500	127.2%
1993	37,806	8,962	9,708	11	56,487	56,700	n/a	n/a	56,487	56,700	99.6%
1994	31,446	6,778	9,160	100	47,484	50,400	n/a	n/a	47,484	50,400	94.2%
1995	41,875	10,978	16,055	77	68,985	69,200	n/a	n/a	68,985	69,200	99.7%
1996	45,991	10,196	12,040	53	68,280	65,000	n/a	n/a	68,280	65,000	105.0%
1997	48,406	10,978	9,065	26	68,476	69,115	7,322	1,327	77,124	81,500	94.6%
1998	41,570	10,012	10,510	29	62,121	66,060	9,189	1,321	72,630	77,900	93.2%
1999	37,167	12,363	19,015	70	68,614	67,835	12,321	1,518	82,453	84,400	97.7%
2000	25,443	11,660	17,351	54	54,508	58,715	10,399	1,644	66,551	76,400	87.1%
2001	24,383	9,910	7,171	155	41,619	52,110	7,841	2,085	51,544	67,800	76.0%
2002	19,810	14,666	7,694	176	42,345	44,230	10,505	1,714	54,564	57,600	94.7%
2003	18,885	9,470	12,675	161	41,191	40,540	8,132	3,486	52,809	52,800	100.0%
2004	17,593	10,327	14,889	345	43,154	48,033	10,874	2,878	56,905	62,810	90.6%
2005	14,549	5,731	14,752	203	35,236	44,433	10,020	2,741	47,996	58,100	82.6%
2006	13,131	10,229	14,495	118	37,973	52,264	9,648	690	48,311	68,859	70.2%
2007	14,795	11,501	13,523	39	39,857	52,264	11,904 (total)		51,760	68,859	75.2%
2008	20,101	12,017	11,313	62	43,494	50,269	13,396 (total)		56,890	66,493	85.6%
2009	13,984	13,848	11,576	194	39,603	41,807	12,690 (total)		52,293	55,300	94.6%
2010	21,791	16,423	20,114	426	58,753	59,563	17,608 (total)		76,361	79,100	96.5%

Source: 2008 Groundfish SAFE Report (NMFS 2007a), NMFS Blend and Catch Accounting databases (1995–2010 federal catch), Mattes and Stichert (2008), and ADF&G Online catch reports.

Effects of the Alternatives

Current management of the GOA Pacific cod fishery was analyzed in detail in the Groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004). This analysis is updated annually during the harvest specifications process for the groundfish fisheries. These analyses concluded that the Pacific cod stock is currently being managed at a sustainable level, and that the probability of overfishing occurring is low. The status quo management of Pacific cod is not expected to have a significant impact on the long-term sustainability of the GOA Pacific cod stock. The proposed

action would divide the GOA Pacific cod TACs among the various gear and operation types based on the average annual harvest by each sector. Under Alternative 2 the sector allocations are likely to reflect the current distribution of catch among the sectors. Overall levels of fishing effort by each gear sector, and the timing and location of fishing activities, are not expected to change under the proposed action. The proposed action would not change the annual harvest specifications process, which sets TACs at appropriate levels to prevent the stock from being overfished. As a result, the proposed action is not expected have a significant effect on the sustainability of the Pacific cod stock.

3.4 Incidental catch in the Pacific cod target fisheries

Incidental catch of groundfish, skates, squid, and "other species" in the GOA Pacific cod target fisheries is summarized by gear type in Table 3-3. Incidental catch was averaged across the period from 2001 to 2008. There are some discards of Pacific cod during the Pacific cod target fishery. The Increased Retention/Increased Utilization requirements do not apply to catch of decomposed or previously caught and discarded fish (50 CFR 679.21(h)). Vessels using pot gear mainly have incidental catch of skates, squid, and "other species," including octopus, while targeting Pacific cod. Hook-and-line vessels have somewhat higher incidental catch levels, and catch skates, roundfish (including sablefish, pollock, and Atka mackerel), flatfish, and rockfish. Trawl vessels have the highest incidental catch levels, and the majority of incidental catch consists of flatfish. In general, incidental catch is more likely to be discarded than retained, but trawl CVs in the Central GOA retain the majority of flatfish and roundfish.

Table 3-3 Catch composition of Pacific cod target fisheries by gear and operation type, including amount retained and discarded (mt), averaged from 2001–2008.

Western Gulf		Hook-and-line		Jig	Pot		Trawl	
Species	Retained or Discarded	CP	CV	CV	CP	CV	CP	CV
Pacific Cod*	R	3,343	140	78	307	6,057	136	3,914
Pacific Cod*	D	34	3	0	0	65	0	123
Flatfish	R	8	0	0	0	0	101	1
Flatfish	D	48	2	0	0	5	130	302
Roundfish**	R	19	2	0	0	1	19	17
Roundfish**	D	8	1	0	0	10	8	346
Rockfish	R	4	1	0	0	0	7	0
Rockfish	D	15	1	0	0	7	21	32
Skate, Squid, and Other Species	R	64	1	0	3	38	4	1
Skate, Squid, and Other Species	D	209	15	0	2	137	8	77
Central Gulf		Hook-and-line		Jig	Pot		Trawl	
Species	Retained or Discarded	CP	CV	CV	CP	CV	CP	CV
Pacific Cod*	R	1,096	5,317	75	133	5,467	388	8,344
Pacific Cod*	D	28	58	0	0	27	3	106
Flatfish	R	2	0	0	0	0	164	1,082
Flatfish	D	11	83	0	0	6	326	845
Roundfish**	R	2	66	2	0	5	11	402
Roundfish**	D	3	50	0	0	5	4	90
Rockfish	R	0	3	2	0	0	8	25
Rockfish	D	2	20	0	0	6	10	53
Skate, Squid, and Other Species	R	47	169	0	2	79	2	59
Skate, Squid, and Other Species	D	139	475	1	0	78	19	131

Source: Catch Accounting/Blend database. *Does not include Pacific cod caught incidentally in other target fisheries. **Roundfish includes Atka mackerel, pollock, and sablefish.

Incidental catch of skates, "other species," and non-specified species during 2004 and 2005 is summarized in Table 3-4. The "other species" management category is comprised of octopus, squid, sculpins, and sharks, and is managed under a single TAC in the GOA. The "other species" complex opened to directed fishing in 2005. Information on "other species" and non-specified species is derived from observer data. A complete account of incidental catch in the Pacific cod target fisheries since 1997 is included in the Pacific cod chapter of the GOA SAFE Report (Thompson et al. 2007).

In the hook-and-line fishery, skates, large sculpins, other sculpins, sharks, and sea stars comprise the majority of the other and non-specified species bycatch. The pot fishery catches the majority of the octopus bycatch in the GOA, and the trawl fishery catches much of the non-specified species catch. It is not possible to determine whether the "other species" complex is overfished or whether it is approaching an overfished condition. However, even though the complex is managed under a single ABC and TAC, the "other species complex" stock assessment recommended ABCs for each species group. Catch in 2006 did not exceed these ABC recommendations (NMFS 2007a).

Table 3-4 Incidental catch (mt) of skates, "other species," and non-specified species in the GOA Pacific cod target fisheries, 2004–2005, and percent of each species taken by each sector.

Gear	Species group	Catch (mt)		Percent of GOA catch	
		2004	2005	2004	2005
Hook-and-line	Skate	472	108	21%	6%
	Sea Star	246	170	23%	17%
	Large sculpins	129	49	20%	9%
	Shark	13	10	11%	4%
	Other sculpins	7	7	14%	15%
	Misc fish	6	2	2%	1%
	Octopus	1	0	1%	0%
	Sea Anemone	1	0	9%	2%
	Greenlings	1	1	6%	16%
	Sponge	0	1	7%	34%
Trawl	Misc fish	108	35	36%	11%
	Skate	49	26	2%	1%
	Large sculpins	20	88	3%	16%
	Sea Star	9	3	1%	0%
	Other sculpins	5	0	9%	0%
	Shark	5	7	4%	3%
	Greenlings	5	0	36%	3%
	Octopus	3	0	2%	0%
	Sea Anemone	1	0	6%	0%
Pot	Sea Star	756	748	71%	73%
	Large sculpins	262	157	41%	28%
	Octopus	135	88	86%	96%
	Other sculpins	7	8	15%	18%
	Greenlings	1	0	4%	4%
	Skate	0	1	0%	0%

Source: 2006 Groundfish SAFE Report, Pacific cod stock assessment (Thompson et al. 2007).

Effects of the Alternatives

Incidental catch of other groundfish species during the directed GOA Pacific cod fishery is counted toward the TAC for that species or species group. Groundfish stocks are assessed annually and are managed using conservative catch quotas. The Groundfish PSEIS (NMFS 2004) concludes that the

groundfish species caught incidentally during the directed GOA Pacific cod fishery are currently at sustainable population levels and are unlikely to be overfished under the current management program. As a result, impacts on these species under the status quo alternative are not likely to be significant.

The proposed action is not expected to result in significant changes in incidental catch levels. Sector allocations are likely to reflect the current distribution of catch among the gear sectors. Overall levels of fishing effort by each gear sector, and the timing and location of fishing activities, are not expected to change under the proposed action. Consequently, effects on populations of the species caught incidentally to Pacific cod are not expected to be significant.

3.5 Prohibited species catch in the Pacific cod fisheries

The North Pacific Groundfish Observer Program collects catch and bycatch data used for management and inseason monitoring of groundfish fisheries. Since 1990, all vessels ≥60 ft LOA participating in the groundfish fisheries have been required to have observers onboard at least part of the time. The amount of observer coverage is based on vessel length, with 30% coverage required on vessels 60 ft to 125 ft, 100% coverage on vessels larger than 125 ft, and 100% coverage at shorebased processing facilities. There are no observer coverage requirements for vessels <60 ft LOA. Since January 2003, observer requirements for pot vessels ≥60 ft LOA have been modified such that these vessels are required to have coverage on only 30% of pots pulled for that calendar year, rather than 30% of fishing days. Observer estimates from the 30% observed fleet are extrapolated to unobserved vessels. Observer data provide for accurate and relatively precise estimation of groundfish catch, particularly for fleets with high levels of observer coverage, such as the Bering Sea pollock fishery (Volstad et al. 1997).

In the GOA fisheries, observer coverage is relatively low in some target fisheries, in comparison with observer coverage in the BSAI fisheries, due to the prevalence of smaller vessels in the GOA fleet. Over the past 10 years, there has generally been an increasing level of participation by smaller vessels in the GOA groundfish fisheries, particularly by trawl and fixed gear CVs <60 ft LOA. As a result, estimates of halibut, crab, and salmon bycatch in the GOA fisheries may be less precise than estimates of bycatch in the Bering Sea fisheries.

Information on actual observer coverage levels in the GOA groundfish fisheries has been made available by NMFS at: http://www.fakr.noaa.gov/sustainablefisheries/inseason/percent_observed.pdf. NMFS compiled a series of tables that report the percentage of harvest that was observed in each target fishery during 2004 through 2007, in order to evaluate the effective rate of coverage in specific target fisheries. The data are reported by observer coverage category (30%, 100%), gear type, processing sector, and management area. The tables also report the amount of catch by the unobserved <60 ft LOA fleet.[9]

Annual observer coverage rates in the Pacific cod target fishery in the Western and Central GOA are summarized in Table 3-5. Most CPs participating in the GOA Pacific cod fisheries are 60 ft to 125 ft LOA, and 30% observed, or >125 ft LOA, and 100% observed. Observer coverage in some of the CV sectors is quite low, due to the predominance of <60 ft LOA vessels in certain sectors.

[9] Note that the total catch data used in the tables is from the NMFS catch accounting system, and the observer data is from the NMFS observer database. The observer data includes both sampled and unsampled hauls when an observer is onboard, as the data request attempts to determine the percent observed catch whenever an observer is onboard a vessel. High variability in percent observed catch among years has been correlated with several factors, such as the varying season lengths, number of participating vessels, different catch rates per year, weather, and market prices.

For example, hook-and-line CVs targeting Pacific cod in the Central GOA were observed during only 2% of fishing days from 2004 through 2007, and were 0% observed in the Western GOA. Most of the catch by this fleet is made by vessels <60 ft in length. Halibut PSC and discards for hook-and-line CVs are largely estimated using bycatch rates from 30% observed hook-and-line CPs. The majority of catch by hook-and-line CPs in the Western GOA is made by vessels in the 30% observed fleet. This sector's total catch in the Pacific cod target was 43% observed in 2004 and 81% observed in 2006 (2005 and 2007 coverage is confidential). Pot CVs have higher observer coverage levels, because a substantial proportion of catch is made by pot CVs ≥60 ft LOA. In the Central GOA, pot CV catch in the Pacific cod target was 12% to 16% observed during 2004 through2007, and 8% to 15% observed in the Western GOA (these estimates may only include catch by vessels <125 ft LOA in some years due to confidentiality). All pot CP catch during 2004 through 2007 was made by vessels 60 ft to 125 ft LOA, and these vessels are 30% observed.

In the Central GOA, most trawl CV catch in the Pacific cod target is made by vessels 60 ft to 125 ft LOA, and 30% of fishing days are observed. In the Western GOA, the majority of trawl CV catch is made by <60 ft vessels that are unobserved. Observer coverage in this fleet was 0% in 1004 and 9% in 2005, and confidential in other years. All trawl CPs that have targeted Pacific cod in the Western and Central GOA in recent years are either 30% or 100% observed.

Table 3-5 Total catch (mt), observed catch (mt), and percent observer coverage in the Pacific cod target fishery in the Western and Central GOA, 2004–2007.

Western GOA

Catcher processors

		2004			2005			2006			2007		
Gear	Length	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed
HAL CP	<60	0	0	0%	0	0	0%	0	0	0%	*	*	0%
	60-125	2,394	509	21%	*	*	7%	2,199	1,587	72%	2,895	1,989	69%
	>125	925	925	100%	292	292	100%	956	956	100%	442	444	100%
Total				43%			*			81%			*
TRW CP	60-125	635	0	0%	*	*	100%	*	*	0%	*	*	39%
	>125	*	*	100%	0	0	0%	0	0	0%	0	0	0%
Total				*			100%			0%			39%
Pot CP	60-125	*	*	0%	*	*	34%	*	*	0%	*	*	28%
Total				0%			34%			0%			28%

Shoreside Processors

		2004			2005			2006			2007		
Gear	Length	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed
HAL CV	<60	*	*	0%	242	0	0%	78	0	0%	327	0	0%
	60-125	4	0	0%	*	*	0%	0	0	0%	*	*	0%
Total				0%			0%			0%			0%
TRW CV	<60	1,464	0	0%	3,554	0	0%	5,114	0	0%	*	*	0%
	60-125	183	0	0%	783	392	50%	*	*	25%	*	*	77%
Total				0%			9%			*			*
Pot CV	<60	4,823	0	0%	1,962	0	0%	1,913	0	0%	2,441	0	0%
	60-125	5,016	1,138	23%	4,428	965	22%	3,882	683	18%	2,205	378	17%
	>125	*	*	64%	*	*	0%	*	*	0%	*	*	0%
Total				*			*			*			*

Central GOA

Catcher Processors

		2004			2005			2006			2007		
Gear	Length	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed
HAL CP	<60	*	*	0%	*	*	0%	0	0	0%	0	0	0%
	60-125	0	0	0%	0	0	0%	*	*	100%	*	*	17%
	>125	*	*	100%	*	*	100%	1,195	1,195	100%	*	*	100%
Total				*			*			100%			*
TRW CP	60-125	*	*	0%	565	411	73%	*	*	0%	166	0	0%
	>125	*	*	100%	0	0	0%	0	0	0%	0	0	0%
Total				*			73%			0%			0%
Pot CP	60-125	0	0	0%	0	0	0%	0	0	0%	*	*	0%
Total				0%			0%			0%			0%

Shoreside processors

		2004			2005			2006			2007		
Gear	Length	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed	Total (mt)	Observed (mt)	Percent observed
HAL CV	<60	5,144	0	0%	4,289	0	0%	6,185	0	0%	6,617	0	0%
	60-125	748	99	13%	519	226	43%	802	179	22%	512	116	23%
Total				2%			5%			3%			2%
TRW CV	<60	*	*	0%	*	*	0%	*	*	0%	*	*	0%
	60-125	12,443	3,716	30%	7,376	2,185	30%	4,861	1,152	24%	8,377	2,216	26%
Total				*			*			*			*
Pot CV	<60	2,426	0	0%	3,233	0	0%	3,778	0	0%	4,296	0	0%
	60-125	2,475	687	28%	4,920	1,298	26%	4,369	1,074	25%	4,090	969	24%
	>125	0	0	0%	0	0	0%	*	*	0%	0	0	0%
Total				14%			16%			*			12%

Source: NMFS Alaska Region, April 2008.
*Confidential.

Estimation of Prohibited Species Catch Rates

NMFS uses data from observed vessels to estimate prohibited species catch (PSC) rates when sufficient data are available. The PSC rate is the weight (halibut) or number of animals (salmon and crab) per metric ton of groundfish. Until recently, all CV deliveries to shoreside processors that had the same gear, target, and management area used an average PSC rate for all observed CVs with the same gear, target, and area. Several improvements were made to the catch accounting system in 2003. Observed CVs now use the rates from the observer on the vessel, rather than an average PSC rate for all observed CVs applied to the shoreside processor data with the same gear, target, and area. Also, PSC rates are now computed on a daily rather than a weekly basis.

There are seven types of PSC rates:

- Precedence 50 / Vessel Specific / CVs
- Precedence 50 / Vessel Specific / CPs
- Precedence 45 / Co-op Specific
- Precedence 40 / Processing Sector
- Precedence 30 / Three-Week Average
- Precedence 25 / Three-Month Average
- Precedence 20 / Fishery Management Plan (FMP) Area

Observed CPs and CVs use the PSC rates from the on board observer for that vessel (precedence 50). Smaller vessels (<60 ft LOA) with no observers and unobserved vessels in the 30% observer coverage category utilize PSC rates calculated based on the best data available. The first choice is to use a three week average rate for the same processing sector (shoreside, mothership, or CP), week, reporting area, gear, and target (precedence 40). The processing sector rates are applied to unobserved catch from the corresponding sector if a sufficient number of observer reports are available. If no processing sector rate is available, the three week average (precedence 30) for the same week, reporting area, gear, and target is used. This rate combines data from all CV and CP observers. If a three week average rate is not available, a three month average rate (precedence 25) from the same FMP area, gear, and target may be used. Finally, if a three month average rate is not available, an average annual rate (precedence 20) for all GOA vessels using the same gear and target is used. Once the PSC rate has been determined, PSC estimates are computed by multiplying the PSC rate by the total groundfish weight for the vessel or processor.

Table 3-6 Data elements used by each PSC rate.

Precedence rate	Desc	Vessel	Coop	Proc. Sector	Year	Week End Date	Trip Targ Date	Trip Targ Code	Gear	FMP Area	Report Area	Special Area
50	C/V	Yes		'S'	Yes		Yes			Yes		
50	C/P	Yes		'CP','M'	Yes		Yes		Yes		Yes	Yes
45	Coop		Yes		Yes	Yes		Yes	Yes		Yes	Yes
40	Proc			Yes	Yes	Yes		Yes	Yes		Yes	Yes
30	3wk				Yes	Yes		Yes	Yes		Yes	Yes
25	3mo				Yes	Yes		Yes	Yes	Yes		
20	FMP				Yes			Yes	Yes	Yes		

Source: NMFS Alaska region.

The halibut PSC data are multiplied by the estimated discard mortality rate for a given gear type, target fishery, and management areA to calculate halibut mortality. The International Pacific Halibut Commission (IPHC) estimates halibut discard mortality rates for each gear type, target fishery, and

management area based on observer data. The IPHC then recommends discard mortality rates to the Council for use in managing halibut bycatch in subsequent seasons. In 2007, the IPHC recommended that the Council adopt halibut discard mortality rates for the GOA Pacific cod target fishery of 63% (trawl), 16% (pot), and 14% (longline).

The crab and salmon PSC data are not adjusted by a discard mortality rate, and simply report the number of animals that were discarded. Estimates of crab discard mortality vary widely. Gear-specific bycatch mortality rates are applied in the annual BSAI Crab SAFE Report (NPFMC 2004) to summarize mortality in the BSAI directed crab and other fisheries using the mortality rates of 80% for trawl gear and 20% for fixed gear. However, these estimates are specific to the BSAI, and a range of mortality rates have been estimated for various crab species and gear types. Recently, new overfishing definitions for BSAI crab stocks were established, and the analysis used a 50% discard mortality rate for *C. opilio*, 20% for king crab, and 20% for *C. bairdi* in each of the respective directed crab fisheries (NPFMC 2007). Salmon bycatch mortality rates are also highly variable, and differ by gear type and size of the salmon. Chinook salmon caught in troll gear have an estimated mortality rate as low as 8%, while longline gear mortality rates have been estimated to be as high as 100% (Alverson et al. 1994). For the purpose of this discussion, it is assumed that salmon bycatch has a 100% mortality rate within the longline and trawl fisheries.

Several area and gear closures in the GOA were implemented to limit the impacts of commercial fishing activities on red king crab, nearshore habitat, and Steller sea lion critical habitat. Bottom trawl area closures to protect red king crab were established in 1993. In addition to the red king crab area closures, bottom trawling has been prohibited east of 140º in Southeast Alaska since 1998, in state waters since 2000, and in Cook Inlet since 2001. In addition, Steller sea lion protection measures resulted in fishing closures around rookeries. The timing and purpose of each closure is summarized below.

Kodiak red king crab closures (1993). In the GOA, trawl closure areas have been implemented around Kodiak Island to protect red king crab. Specific areas are designated as Type I, Type II, and Type III, depending upon the importance of the area to concentrations of red king crab at various life stages. Type I areas have very high red king crab concentrations and, to promote rebuilding of the stock, are closed year-round to all non-pelagic trawl gear. Type II areas are closed to non-pelagic trawl gear during the molting period for red king crab (February 15 through June 15), while Type III areas are closed only during specified "recruitment events" and are otherwise opened year-round. These closures are delineated in green (year-round) and red (seasonal) in Figure 3-1.

Southeast Alaska no trawl closure (1998). Year-round trawl closure east of 140° initiated as part the License Limitation Program.

State Waters no bottom trawling (2000). Closed all state waters (0–3 nm) to commercial bottom trawling year-round to protect nearshore habitats and species, with the exception of some areas in the South Alaska Peninsula management area that remain open to bottom trawling.

Cook Inlet bottom trawl closure (2001). Prohibits non-pelagic trawling in Cook Inlet to control crab bycatch mortality and protect crab habitat in an areas with depressed king and Tanner crab stocks.

Steller Sea Lion 3-nautical mile (nm) No Transit Zone (2003). Groundfish fishing closures related to Steller sea lion conservation establish 3-nm no-transit zones surrounding rookeries to protect endangered Steller sea lions.

Steller sea lion no pollock trawl zones (2003). Groundfish fishing closures related to Steller sea lion conservation establish 10-nm fishing closures surrounding rookeries to protect endangered Steller sea lions.

Prince William Sound rookeries no fishing zone (2003). Groundfish fishing closures related to Steller sea lion conservation include two rookeries in the Prince William Sound area, Seal Rocks (60° 09.78' N. lat., 146° 50.30' W. long.) and Wooded Island (Fish Island) (59° 52.90' N. lat., 147° 20.65' W. long.). Directed commercial fishing for groundfish is closed to all vessels within 3 nm of each of these rookeries.

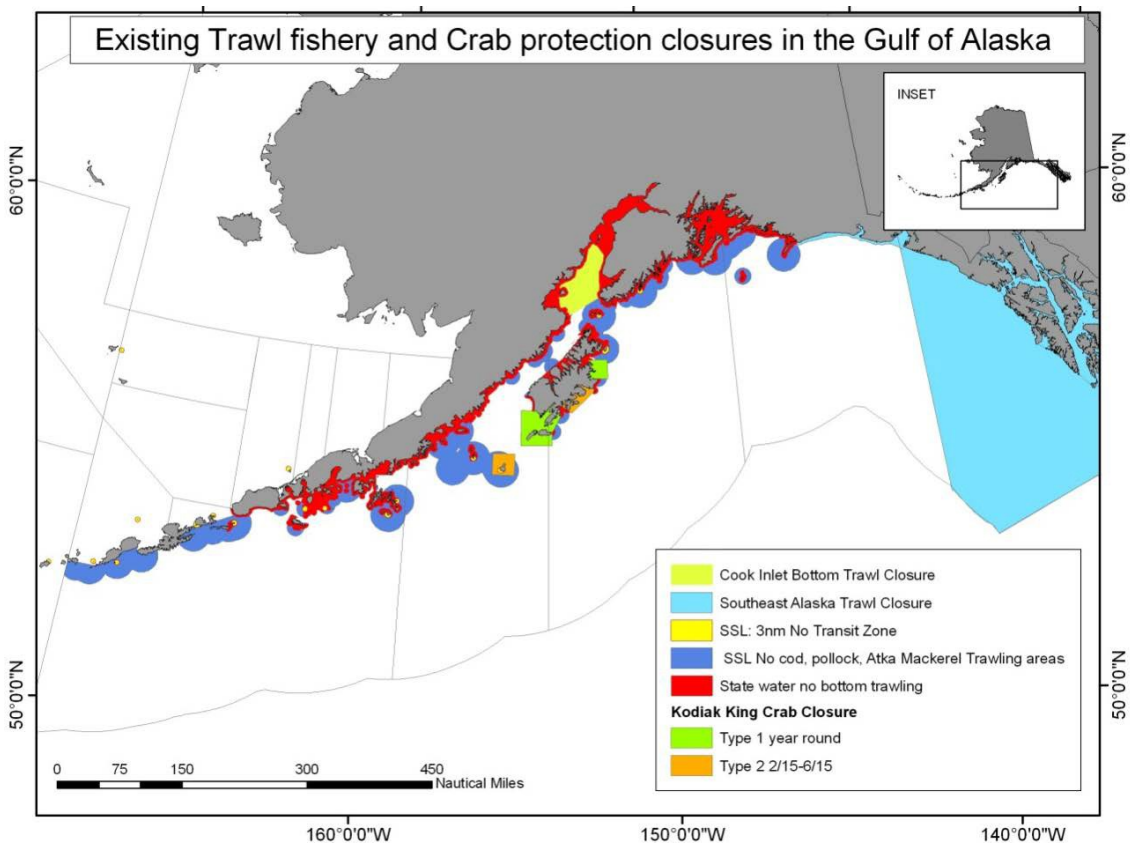

Figure 3-1 Existing trawl gear closures in the Gulf of Alaska.

Halibut PSC

Halibut PSC allowances are currently apportioned separately to the GOA trawl and hook-and-line sectors, according to the guidelines outlined in 50 CFR 679.21(d). Halibut PSC allowances are not apportioned by management subarea within the GOA. The 2008 PSC allowances for the GOA Pacific cod trawl and hook-and-line fisheries are shown in Table 3-7. The pot and jig sectors are exempt from halibut PSC limits. The GOA-wide halibut PSC mortality allowance is 2,000 mt for the trawl sector and 300 mt for the hook-and-line sector (including 10 mt set aside for the DSR fishery).

The hook-and-line allowance is divided into three seasons: January 1 to June 10 (the A season for Pacific cod), June 10 to September 1, and September 1 to December 31 (the B season for Pacific cod). The trawl allowance is divided not only seasonally, but also between the shallow-water species complex (including the pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, and the "other

species" directed fisheries) and the deep-water species complex (all other fisheries, which includes Pacific Ocean perch, northern rockfish, pelagic shelf rockfish, and deep-water flatfish). Halibut PSC occurring during the directed Pacific cod fishery is counted against the shallow-water trawl halibut PSC apportionment. This apportionment is divided into four seasons: January 20 to April 1, April 1 to July 1, July 1 to September 1, and September 1 to October 1. In addition, a separate apportionment that is not divided between the shallow-water and deep-water complexes is available from October 1 to December 31. Unused seasonal halibut PSC apportionments are rolled over to the following season. Halibut PSC limits often determine season closure dates for the trawl sector, and to a lesser extent, for the hook-and-line sector. The Council is considering options to apportion the hook-and-line halibut PSC allowance to the hook-and-line CV and CP sectors. These options are discussed later in this document.

The current halibut PSC seasonal apportionments were established in 2001, when the B season for Pacific cod was implemented as part of the Steller Sea Lion management measures. The seasonal apportionments may be changed as part of the harvest specifications process, but if a change is made in the final specifications, it wouldn't be effective until the fishing year is underway, and there is the potential for overages or underages in managing the apportionments. Changes to the seasonal apportionments would likely need to be made 2 years in advance, to avoid management issues. The factors that are considered in establishing seasonal apportionments of halibut PSC are found in 50 CFR 679.21(d)(5), and include:

(A) Seasonal distribution of halibut.
(B) Seasonal distribution of target groundfish species relative to halibut distribution.
(C) Expected halibut PSC needs, on a seasonal basis, relative to changes in halibut biomass and expected catches of target groundfish species.
(D) Expected variations in halibut PSC rates throughout the fishing year.
(E) Expected changes in directed groundfish fishing seasons.
(F) Expected start of fishing effort.
(G) Economic effects of establishing seasonal halibut allowances on segments of the target groundfish industry.

Halibut PSC usage in the GOA Pacific cod target fisheries during 1995 through 2010 is summarized in Table 3-8 and Table 3-9. The tables report PSC, by CVs and CPs, in each harvest sector. The pot sector is not subject to PSC limits in the GOA, and halibut PSC by pot vessels is reported for informational purposes only. PSC limits for halibut apply to the hook-and-line and trawl sectors, and constrain PSC mortality levels. Inseason managers monitor halibut PSC in the Pacific cod fisheries, and close the directed fisheries if halibut PSC limits are reached. After such a closure, the directed fisheries are typically reopened when the next seasonal apportionment of halibut PSC becomes available.

Table 3-7 Halibut prohibited species catch seasonal allowances in the GOA, 2008.

Trawl		Hook-and-line			
		Other than Demersal Shelf Rockfish		Demersal Shelf Rockfish	
Dates	Amount (mt)	Dates	Amount (mt)	Dates	Amount
Jan 20–Apr 1	550 (27.5%)	Jan 1–Jun 10	250 (86%)	Jan 1–Dec 31	10 (100%)
Apr 1–July 1	400 (20%)	Jun 10–Sep 1	5 (2%)		
July 1–Sep 1	600 (30%)	Sep 1–Dec 31	35 (12%)		
Sep 1–Oct 1	150 (7.5%)				
Oct 1–Dec 31	300 (15%)				
Total	2000		290		10

Source: NMFS 2008–2009 harvest specifications for the groundfish fisheries in the GOA.

Table 3-10 shows the halibut PSC rate in the Pacific cod target fishery, calculated in two ways: (1) in Table 3-10, the halibut PSC rate is calculated as kg of halibut per mt of groundfish harvested, and does

not account for the estimated halibut mortality rates, and (2) the halibut PSC mortality rate is calculated as kg of halibut mortality per mt of groundfish harvested. The hook-and-line sectors have the highest halibut PSC rates of all of the sectors during both the A and B seasons. The B season hook-and-line PSC rates were often more than twice as high as rates during the A season. In the trawl sectors, halibut PSC rates are, on average, more than twice as high during the B season as in the A season, with the exception of the Western GOA trawl CV sector, where there has been little to no participation in the Pacific cod target fishery during the B season in recent years. During 2007 and 2008, the Central GOA trawl CV fleet reduced its B season halibut PSC (Table 3-9) via voluntary measures, including (1) fishing during daylight hours, when halibut PSC rates are lower, and (2) a portion of the fleet using halibut excluder devices.

Halibut PSC mortality rates are similar in the hook-and-line and trawl sectors. The average (2001 through 2010) halibut mortality rates during the A season ranged from 16.3 kg/mt to 19.4 kg/mt for the hook-and-line sectors, and 14.3 kg/mt to 26.0 kg/mt for the trawl sectors. Halibut PSC rates are lower during the A season, when Pacific cod are aggregated and catch per unit effort is higher, than during the B season.

It is important to note that these halibut PSC rates are based on the best available data, and some sectors have relatively low levels of observer coverage. The trawl and hook-and-line CP fleets in the GOA have relatively high observer coverage rates, and the majority of the halibut PSC mortality amounts are estimated based on observer estimates from on board these vessels. Most trawl CV catch in the Central GOA is by vessels in the 30% observed fleet (60 ft to 125 ft LOA), and most trawl CV catch in the Western GOA is by the unobserved <60 ft LOA fleet. The hook-and-line CV fleet has a very low observer coverage level. In recent years, only 2 to 4 hook-and-line CVs have carried observers for any portion of the Pacific cod season in the GOA.

Table 3-8 Halibut prohibited species catch (mt) in the Pacific cod target in the Western and Central GOA.

Western GOA									
Year	HAL CP	HAL CV	HAL Total	Trawl CP	Trawl CV	Trawl Total	Pot CP	Pot CV	Pot Total
1995	88	0	88	13	122	135	0	2	2
1996	37	1	39	22	86	108	0	2	2
1997	41	1	42	*	91	91	0	1	1
1998	34	1	36	*	93	93	*	2	2
1999	142	0	143	32	377	409	3	0	4
2000	84	1	85	15	131	146	*	1	1
2001	122	0	122	33	78	111	0	1	1
2002	100	0	100	5	33	38	*	1	1
2003	98	1	99	22	44	66	*	6	6
2004	99	0	99	30	57	87	*	8	8
2005	34	6	40	*	25	25	*	7	7
2006	104	2	106	*	60	60	0	5	5
2007	85	9	94	*	42	42	*	5	5
2008	61	20	81	*	98	98	*	13	13
2009	94	40	134	*	43	43	*	3	3
2010	78	24	103	*	6	6	0	17	17
Central GOA									
Year	HAL CP	HAL CV	HAL Total	Trawl CP	Trawl CV	Trawl Total	Pot CP	Pot CV	Pot Total
1995	17	254	271	43	294	337	0	15	15
1996	18	94	112	25	130	155	0	15	15
1997	*	70	70	66	447	512	0	8	8
1998	17	212	229	243	358	601	0	11	11
1999	*	168	168	147	678	826	25	12	37
2000	4	165	169	51	189	239	1	5	6
2001	*	144	144	150	530	679	1	3	3
2002	63	75	138	*	152	152	0	1	1
2003	11	75	85	29	367	396	*	3	3
2004	26	166	191	56	795	851	0	8	8
2005	*	158	158	33	606	639	0	25	25
2006	46	172	218	*	266	266	0	14	14
2007	33	162	195	0	423	423	*	13	13
2008	40	371	411	*	474	474	0	18	18
2009	11	120	132	16	220	236	0	4	4
2010	46	62	109	0	239	239	0	12	12

Source: NMFS PSC data.
*Indicates data are confidential. Totals do not include confidential data.

Table 3-9 Halibut PSC in the Pacific cod target during the A (January 1–June 10) and B (June 11–December 31) seasons in the Western and Central GOA.

Western GOA												
	Hook-and-line CP		Hook-and-line CV		Trawl CP		Trawl CV		Pot CP		Pot CV	
Year	A	B	A	B	A	B	A	B	A	B	A	B
2001	*	*	*	*	*	*	*	*	*	*	0	0
2002	57	43	0	0	*	*	32	1	*	*	0	1
2003	79	19	1	0	*	*	44	0	*	*	2	4
2004	50	49	*	*	*	*	57	0	*	*	3	6
2005	*	*	4	2	0	*	*	*	*	*	2	6
2006	35	69	1	1	*	*	60	0	0	0	3	1
2007	59	26	8	1	*	*	42	0	*	*	3	2
2008	33	28	3	17	*	*	98	0	*	*	3	10
2009	62	32	27	14	*	*	*	*	*	*	1	2
2010	36	42	13	12	*	*	6	0	0	0	1	16
Central GOA												
	Hook-and-line CP		Hook-and-line CV		Trawl CP		Trawl CV		Pot CP		Pot CV	
Year	A	B	A	B	A	B	A	B	A	B	A	B
2001	*	*	142	2	*	*	132	397	1	0	2	1
2002	*	*	63	13	*	*	152	0	*	*	1	0
2003	*	*	69	6	0	29	156	211	*	0	3	0
2004	26	0	116	49	*	*	190	605	0	0	5	2
2005	*	*	78	80	0	33	103	503	0	0	6	19
2006	0	46	96	76	0	*	221	45	0	0	9	4
2007	*	*	97	65	0	0	262	161	*	*	5	8
2008	40	0	124	247	*	*	253	221	0	0	5	13
2009	*	*	89	31	*	*	73	146	0	0	2	1
2010	21	25	52	10	*	*	112	127	0	0	3	9

Source: NMFS PSC data.
*Confidential.

Table 3-10 Halibut PSC rates (kg halibut per mt groundfish) in the Pacific cod target during the A season (January 1 through June 10) and B season (June 11 through December 31) averaged from 2001 through 2010.

Western Gulf												
	Hook-and-line CP		Hook-and-line CV		Pot CP		Pot CV		Trawl CP		Trawl CV	
	A	B	A	B	A	B	A	B	A	B	A	B
Halibut PSC rate (kg/mt)	142.5	291.2	134.9	214.7	2.6	6.6	4.2	15.8	37.3	58.5	23.4	109.0
Halibut PSC mortality rate (kg/mt)	19.2	39.4	16.3	28.9	0.2	0.8	0.3	2.4	23.1	35.8	14.3	67.1
Central Gulf												
	Hook-and-line CP		Hook-and-line CV		Pot CP		Pot CV		Trawl CP		Trawl CV A	
		B	A	B	A	B	A	B	A	B	A	B
Halibut PSC rate (kg/mt)	137.4	175.1	142.9	248.8	5.6	11.5	8.0	20.9	38.5	92.9	42.3	111.7
Halibut PSC mortality rate (kg/mt)	18.8	23.5	19.4	33.5	0.3	1.3	0.8	2.9	23.6	56.9	26.0	68.7

Source: NMFS PSC data. Averages exclude seasons when there was no participation by a sector.

Salmon PSC

Pacific salmon, including Chinook, chum, coho *(O. kisutch*), sockeye (*O. nerka*), and pink (*O. gorbuscha*) are taken incidentally in the groundfish fisheries within the GOA. Salmon are not generally caught with longline and pot gear. Most salmon PSC in the GOA occurs in the trawl fisheries. Salmon PSC is currently grouped as Chinook salmon or "other" salmon, which consists of the other four species combined. More than 95% of the "other" salmon PSC consists of chum salmon.

The majority of Chinook and "other" salmon PSC in the GOA is seasonal and occurs during the pollock fishery. During 2003 through 2010, an average of 17,538 Chinook salmon per year were taken in the Central GOA groundfish fisheries and 7,387 Chinook salmon were taken in the Western GOA fisheries (Table 3-11). Only a small proportion of this PSC occurred in the Pacific cod target fisheries. In an average year, the pollock fishery accounted for 75% of the Chinook salmon PSC, the flatfish fisheries took 15%, and the Pacific cod fishery took 4%. Within the Pacific cod target fishery, most Chinook salmon PSC is incurred by trawl vessels, but PSC rates in the trawl fisheries are very low (Table 3-12). Bycatch of "other" salmon averaged 3,525 in the Central GOA and 1,773 in the Western GOA during 2003 through 2008. The majority of non-Chinook salmon PSC has been taken in the flatfish fishery (44%), followed by the walleye pollock trawl fishery (30%), and the rockfish fishery (26%). During 2003 through 2008, an average of 61 non-Chinook salmon were taken in the Pacific cod target fishery, accounting for only 1.2% of the other salmon PSC. Non-Chinook salmon PSC rates in all sectors are very low (<0.1 salmon per mt of groundfish).

Table 3-11 Chinook salmon PSC (number of salmon) in the GOA Pacific cod target fisheries.

Western GOA

	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV	Cod target total	All target total
2003	0	0	*	0	72	143	215	2,860
2004	6	0	*	0	92	*	98	4,184
2005	0	0	*	0	*	0	0	7,567
2006	0	0	0	0	*	201	201	4,880
2007	0	0	*	0	*	9	9	3,666
2008	0	0	*	0	*	108	108	2,398
2009	0	0	*	0	*	10	10	558
2010	0	0	0	0	*	0	0	32,980

Central GOA

	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV	Cod target total	All target total
2003	0	0	*	0	89	2,863	2,952	12,313
2004	0	7	0	0	44	769	819	13,412
2005	*	0	0	0	0	41	41	23,157
2006	0	0	0	0	*	667	667	13,847
2007	0	0	*	0	0	441	441	36,654
2008	0	0	0	0	*	322	322	12,903
2009	0	0	0	0	0	101	101	7,209
2010	0	0	0	0	0	442	442	20,812

Source: NMFS PSC data. *Confidential.

Table 3-12 Chinook salmon PSC rate (number of salmon/mt groundfish) in the GOA Pacific cod target fisheries averaged from 2001 through 2010.

Area	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV
Western GOA	0.0	0.0	0.0	0.0	0.1	0.1
Central GOA	0.0	0.0	0.0	0.0	0.1	0.1

Source: NMFS PSC data.

Crab PSC

Several species of crab may be taken incidentally in GOA groundfish fisheries, but this discussion focuses on *C. bairdi* Tanner crab and red king crab. PSC levels of red king crab in the GOA are relatively low, and averaged 173 red king crab per year, during 2003 through 2008. On average, only 19 red king crab

per year were taken in the Pacific cod target fisheries. The numbers of *C. bairdi* Tanner crab taken as PSC in GOA groundfish fisheries are shown in Table 3-13. PSC of *C. bairdi* Tanner crabs in the GOA Pacific cod target fishery is highly variable. During recent years, PSC in the Central GOA has ranged from 2,027 crabs in 2004 to 94,364 crabs in 2008. In the Western GOA, PSC has ranged from 1,256 crabs in 2003 to 64,039 crabs in 2010. In previous versions of this document, Tanner crab PSC in the state waters pot fisheries was not excluded in the PSC estimates for pot gear. Here, state waters Tanner crab PSC has been removed from the data. The tables show Tanner crab PSC in the Pacific cod target for the parallel and federal fisheries only.

The majority of Tanner crab PSC in the GOA Pacific cod target fishery occurs in the pot fisheries. On average from 2003 through 2010, pot gear accounted for more than 85% of Tanner crab PSC in the Pacific cod target fisheries, and 25% of overall Tanner crab PSC in the GOA. Bycatch of Tanner crab in the Pacific cod pot fishery was notably higher in some recent years. Again, it is important to note that these PSC estimates do not account for estimated mortality, and are simply a count of the number of animals discarded.

Table 3-13 Tanner crab PSC (number of crab) in the GOA Pacific cod target fisheries.

Western GOA

	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV	Cod target total	All target total
2003	0	0	*	561	0	695	1,256	7,388
2004	0	0	*	3,272	188	79	3,539	12,313
2005	265	136	*	9,929	*	1,045	11,374	45,865
2006	0	0	0	2,587	*	209	2,796	9,911
2007	6	0	*	23,409	*	2,985	26,399	34,215
2008	7	21	*	24,146	*	4,841	29,015	31,172
2009	0	2	*	6,450	*	705	7,156	8,888
2010	256	252	0	61,781	*	1,750	64,039	65,096

Central GOA

	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV	Cod target total	All target total
2003	0	0	*	5,638	0	1,532	7,170	141,150
2004	0	0	0	1,133	326	568	2,027	54,800
2005	*	910	0	25,060	0	270	26,240	118,353
2006	4	444	0	25,367	0	532	26,348	325,581
2007	0	114	*	78,765	0	12,164	91,042	277,819
2008	1,071	704	0	79,172	*	13,417	94,364	206,513
2009	29	297	0	10,033	22	1,434	11,815	236,732
2010	903	755	0	78,211	0	174	80,043	168,967

Note: Tanner crab PSC in the state waters fisheries (pot gear only) has been removed from the data.
Source: NMFS PSC data. *Confidential.

Table 3-14 Tanner crab PSC rate (number of crab per mt of groundfish) in the Pacific cod target fisheries averaged from 2001 through 2010.

Area	Hook-and-line CP	Hook-and-line CV	Pot CP	Pot CV	Trawl CP	Trawl CV
Western GOA	0.0	0.1	5.4	2.0	0.2	0.4
Central GOA	0.1	0.1	9.0	5.3	0.2	0.6

Note: Tanner crab PSC in the state waters fisheries (pot gear only) has been removed from the data.
Source: NMFS PSC data.

3.6 Marine mammals

Marine mammals occur in diverse habitats in the GOA, and include both resident and migratory species. Marine mammal species that occur in the GOA are in Table 3-15 (Angliss and Allen 2009 and NMFS 2007c). The Groundfish PSEIS (NMFS 2004) provides descriptions of the range, habitat, and diet for these marine mammals. Annual stock assessment reports prepared by the National Marine Mammal Laboratory provide population estimates, population trends, and estimates of potential biological removals (Angliss and Allen 2009).

Table 3-15 Marine mammal stocks occurring in Gulf of Alaska.

NMFS Managed Species		
Pinnipedia	**Species**	**Stocks**
	Steller sea lion*	Western U.S (west of 144□ W long.) and Eastern U.S. (east of 144□ W long.)
	Northern fur seal**	Eastern Pacific
	Harbor seal	Southeast Alaska, Gulf of Alaska, Bering Sea
	Ribbon seal	Alaska
	Northern elephant seal	California
Cetacea	**Species**	**Stocks**
	Beluga Whale*	Cook Inlet
	Killer whale	Eastern North Pacific Northern Resident, Eastern North Pacific Alaska Resident, Eastern North Pacific GOA, Aleutian Islands, and Bering Sea transient, AT1 transient**, West Coast Transient
	Pacific White-sided dolphin	North Pacific
	Harbor porpoise	Southeast Alaska, Gulf of Alaska, and Bering Sea
	Dall's porpoise	Alaska
	Sperm whale*	North Pacific
	Baird's beaked whale	Alaska
	Cuvier's beaked whale	Alaska
	Stejneger's beaked whale	Alaska
	Gray whale	Eastern North Pacific
	Humpback whale*	Western North Pacific, Central North Pacific
	Fin whale*	Northeast Pacific
	Minke whale	Alaska
	North Pacific right whale*	North Pacific
	Blue whale*	North Pacific
	Sei whale*	North Pacific
USFWS Managed Species		
	Species	**Stock**
Mustelidae	Northern sea otter*	Southeast Alaska, Southcentral Alaska, Southwest Alaska

Source: Angliss and Allen (2009).
*ESA-listed species.
**Listed as depleted under the Marine Mammal Protection Act.

Direct and indirect interactions between marine mammals and the groundfish fisheries result from temporal and spatial overlap between commercial fishing activities and marine mammal occurrence. Direct interactions include injury or mortality due to entanglement in fishing gear and disturbance. Indirect interactions include overlap in the size and species of groundfish important both to the fisheries and to marine mammals as prey. The GOA Pacific cod target fisheries (pot, trawl, and hook-and-line) are classified as Category III fisheries under the Marine Mammal Protection Act (2009 draft List of Fisheries [74 FR 27739, June 11, 2009]). Category III fisheries are unlikely to cause mortality or serious injury to

more than 1% of the marine mammal's potential biological removal level, calculated on an annual basis (50 CFR 229.2). Taking of marine mammals is monitored by the North Pacific observer program.

Marine mammals listed under the Endangered Species Act (ESA) that may be present in the GOA are listed in Table 3-15. All of these species are managed by NMFS, with the exception of Northern Sea Otter, which is managed by U.S. Fish and Wildlife Service (USFWS). NMFS completed informal consultation on northern sea otters in 2006 and found that the AlaskA fisheries were not likely to adversely affect northern sea otters (Mecum 2006). Critical habitat for sea otters has been designated and is located primarily in nearshore waters (74 FR 51988, October 8, 2009) and is not likely affected by federal fisheries.

A Biological Opinion evaluating impacts of the groundfish fisheries on the endangered species managed by NMFS was completed in December 2010 (NMFS 2010). The western population segment of Steller sea lions was the only ESA-listed species identified as likely to be jeopardized or to have adverse modification of designated critical habitat from the Alaska groundfish fisheries. Changes to the BSAI Pacific cod and Atka mackerel fisheries were made to mitigate the potential adverse effects and to remove the potential for jeopardy or adverse modification or destruction of critical habitat for Steller sea lions. Additional Steller sea lion protection measures were not recommended for the GOA groundfish fisheries (NMFS 2010).

Steller sea lion protection measures have been in effect since 2001 and include area-specific closures around rookeries and haulouts and seasonal divisions of TACs to disperse fishing effort throughout the year. The harvest of Pacific cod is divided into A and B seasonal apportionments, 60% A season (January 1 to June 10) and 40% B season (opens September 1), to disperse fishing effort throughout the year. The objective was to limit the total amount of cod harvested in the first half of the year. Pacific cod is an important prey item of Steller sea lions (NMFS 2010).

Since 2000, the count trends for pups and non-pup of the U.S. portion of the western population of Steller sea lions has not been consistent. The Western Aleutian Islands has shown continued declines while the Eastern Aleutian Island and the Eastern GOA have shown increases. In the GOA, the 2004 non-pups count (12,276 animals) was 13.3% higher than the 2000 count (10,653 animals), but was 32.0% lower than the 1991 count. Although counts at some trend sites are missing for both 2006 and 2007, available data indicate that the size of the adult and juvenile portion of the western Steller sea lion population throughout much of its range (Cape St. Elias to Tanaga Island, 145°–178° W) in Alaska has remained largely unchanged between 2004 (23,107 animals) and 2007 (23,118 animals) (DeMaster. 2009).

The Western distinct population segment (DPS) of Steller sea lion continues to show improvement in pup production. Analysis of recent regional trends in pup production in the GOA indicates that pup production in the Eastern, Central, and Western GOA increased 57%, 6%, and 23%, repspectivly, between 2001/2002 and 2009. Pup production in the Western DPS increased at a non-significant rate of 0.6 % per year from 1998 through 2009. Most of the increase in rookery pup production was observed between 2005 and 2009 (DeMasters 2009).

Incidental mortality of Steller sea lions during the GOA Pacific cod target fisheries is summarized in Table 3-16. No incidental mortalities were observed in the fixed gear sectors, inclucing jig gear. In the 2007 stock assessment, the GOA Pacific cod trawl fishery contributes an estimated 4% of the total annual mortality to the western population of Steller sea lions attributed to commercial fisheries. The minimum estimate of incidental mortality due to commercial fishing activities in all waters off Alaska is 24.2 sea lions per year, which is slightly more than 10% of the allowable level (234 animals) of removal for this stock (Angliss and Outlaw 2007). In the most recent stock assessment, the previous 5 years of data does

not include 2001 and results in a zero mean annual mortality estimate for the GOA Pacific cod trawl fishery (Angliss and Allen 2009).

Table 3-16 Incidental mortality of Steller sea lions in the GOA Pacific cod target fisheries (2001–2005) and estimate of the mean annual mortality rate, based on observer data.

Fishery	Years	Observer coverage	Observed mortality	Estimated mortality	Mean annual mortality
GOA Pacific cod trawl	2001	20.3%	1	4.7	0.94 (CV = 0.83)
	2002	23.2%	0	0	
	2003	27.3%	0	0	
	2004	27.0%	0	0	
	2005	21.4%	0	0	

Source: Angliss and Outlaw (2007).

Effects of the Alternatives on Marine Mammals

Impacts of the GOA Pacific cod fishery on marine mammals, including Steller sea lions were analyzed in the Programmatic SEIS (NMFS 2004), the 2007 Alaska Groundfish Harvest Specifications FEIS (NMFS 2007c), and in the 2010 Biological Opinion (NMFS 2010). NMFS does not expect affects of the alternative on marine mammal beyond those previously analyzed in the 2010 Biological Opinion and the EISs. As a result, the status quo alternative is not expected to have a significant impact on Steller sea lions or other marine mammals.

The current Steller sea lion protection measures provide for the spatial and temporal dispersion of Pacific cod harvest in the Western and Central GOA. These protection measures do not require sector allocations of Pacific cod to different gear groups, but did recognize that trawl gear is likely to harvest at a faster rate than non-trawl gear (pot, hook-and-line, and jig), and therefore trawl gear poses more likelihood to lead to localized depletion of prey compared to fixed gear gears (NMFS 2010). Component 2 would establish allocations to sectors, including allocations by gear groups, which would limit the amount of harvest that may be taken by a particular gear. Component 2 would be generally beneficial to Steller sea lion prey availability by limiting the harvest by trawl gear and requiring some of the Pacific cod harvest to be taken by gear that fishes at a slower rate. Because the allocations would be based on historical fishing, the harvest of Pacific cod would be similar to status quo, but with more control over the amount of harvest by gear types. There is an option under Component 2 to combine the Western GOA trawl and pot CV allocations. In general, this may be less beneficial to Steller sea lions than separate trawl and pot allocations, assuming that trawl gear generally harvests at a higher rate than pot gear. However, State of Alaska fish ticket data during 2005 through 2008 shows that pot gear can have similar rates of Pacific cod harvest as trawl gear. Based on the assumption that trawl and pot can have similar rates of harvest, the Western GOA option to combine the pot and trawl CV allocations would have no effect on Steller sea lions prey availability compared to Component 2 without the option.

Under the preferred alternative, the Western and Central GOA jig sector allocation in the parallel/Federal Pacific cod fisheries initially would be set above historic catch levels (typically <1% of the TAC in each area) and would increase further if the initial allocations are fully harvested. Jig gear harvests Pacific cod at a slower rate than other gear types. Shifting Pacific cod harvests from gear types that harvest at a faster rate to gear types that harvest at a slower rate may be beneficial to the Steller sea lions by decreasing the potential for localized depletion.

Any shift of Pacific cod ABC into a gear type that is less likely to harvest Pacific cod at a rate that may cause localized depletion would not likely affect competition for prey for Steller sea lions. In addition, jig vessels are not known to incidentally take marine mammals, including Steller sea lions so shifting

harvests into the jig fishery from gear types that have taken Steller sea lions (e.g., trawl) may reduce potential adverse effect on Steller sea lions. The current Steller sea lion protection measures around rookeries would limit potential disturbance of animals. For these reasons, the preferred alternative is not likely to result in adverse effects on ESA-listed marine mammals beyond those already analyzed for the GOA Pacific cod fisheries in previous biological opinions (NMFS 2001, NMFS 2003, and NMFS 2010).

With the exception of jig fishery under Component 5 (see discussion below), the timing, location, and overall level of fishing effort in the GOA Pacific cod fishery is not expected to change and there would be no changes to the harvest specification process or management of the fisheries relevant to Steller sea lion protection measures. Annual mortality of Steller sea lions is not expected to change under the proposed action, because fishing effort by the various gear sectors will remain similar to the status quo. Sector allocations will continue to be divided into seasonal apportionments to disperse fishing effort throughout the year. Nearly all of the alternatives are not likely to change fisheries activities in a way that would affect the potential for competition for prey, disturbance, or incidental takes of marine mammals. Thus, most decision points under this action would not likely have any effects on marine mammals beyond those already analyzed for the GOA Pacific cod fisheries in previous biological opinions and environmental impact statements. Although Component 5 option 1 is not part of the preferred alternative the impacts of this decision point are discussed below.

Under Component 5, Option 1, the current seasonal apportionment of the jig Pacific cod fishery would be removed. The 2001 Biological Opinion (NMFS 2001) requires the seasonal apportionment of the GOA fixed gear Pacific cod fishery as 60 % in the A season (January 1 through June 10) and 40 % in the B season (September 1 through December 31). The federal jig fishery is not exempt from this seasonal apportionment; however, Component 5, Option 1 would remove seasonal apportionment of this catch. Because the potential allocation to jig gear under Component 5, Option 1 is up to 13.3% of the ABC in the Central GOA and 9% of the ABC in the Western GOA, a larger portion of the ABC could be harvested without temporal dispersion compared to the status quo. **Removing the seasonal management of the GOA federal/parallel waters jig fishery and allowing a portion of the Western and Central GOA Pacific cod TACs to be harvested without temporal dispersion would be a change in the action analyzed in the 2010 Biological Opinion and would require reinitiation of ESA Section 7 consultation on the effect of this action on Steller sea lions and their designated critical habitat.** Should the Council choose this alternative, NMFS would assess this proposed change to Steller sea lion protection measures as part of a new consultation process.

Currently, jig harvests (and harvests by all other gear types) accrue to the A and B season TACs. Table 2-19 shows that between 2001 and 2008 the jig fishery harvested an average of 69 % of its annual harvest in the A season in the Central GOA and 25 % of its annual harvest in the A season in the Western GOA. Because the fixed and trawl gears are managed together for the seasonal allocations, having more than 60 % of the annual jig harvest occurring in the A season has been offset by controlling total Pacific cod harvest by all gear types to meet the 60 % seasonal allocation. Separating jig gear from the annual Western and Central GOA Pacific cod TAC without a separate seasonal apportionment specific to the jig sector would remove the ability to control overall seasonal Pacific cod harvests. Maintaining the seasonal apportionment of jig gear harvest (Component 5, Option 1, with the suboption to seasonally apportion the jig allocations) would allow for seasonal apportionment of the jig harvest consistent with Steller sea lion protection measures and would not require ESA Section 7 consultation.

The effect of Component 5, Option 1 without the suboption would be to remove the temporal dispersion of Pacific cod harvests for the federally-managed fishery. Jig vessels harvest Pacific cod at a slower rate than other gear types, and it is not likely that temporally concentrated harvests by jig vessels would have as much of an effect on Pacific cod prey availability for Steller sea lions compared with other gear types (e.g. trawl). The significance of the effects on marine mammals is determined based on the potential for

population level effects. Under Component 5, Option 1, it is possible that Steller sea lions occurring in areas where jig fishing occurs may experience difficulty in obtaining Pacific cod prey during the time of the jig fishery in the A season, especially in the Central GOA where historical jig harvests are concentrated in the A season.

The amount, method, and timing of the harvest under Component 5, Option 1 is not likely to result in localized depletion of prey to the level of causing population level effects on Steller sea lions. Even though the amount of jig harvest could potentially be at a higher level than current harvests, the harvests would be limited, mitigating the potential effects of not having temporal dispersion under Option 1. The location of the jig harvest is likely to move into waters further from shore. Sector allocations would remove the current competition that occurs in federal waters that precludes the jig fishery from having a longer season when the Federal waters fishery is open. Shifting Pacific cod harvests into Federal waters, 3 to 200 nm from shore, may benefit Steller sea lions using prey within State waters, 0 to 3 nm from shore. Moreover, shifting Pacific cod harvests from gear types that harvest at a faster rate to gear types that harvest at a slower rate may be beneficial to the Steller sea lions by decreasing the potential for localized depletion. Because of the combination of these potential effects, it is not likely that adverse population level effects on Steller sea lions would occur even if the Council recommended Component 5, Option 1 as part of their preferred alternative. However likely an "insignificant" determination under NEPA may be, such a determination would not alter the fact that NMFS still would be required to conduct a Section 7 consultation on this change should the Council choose to recommend Component 5, Option 1, and not include the suboption for seasonal apportionment.

3.7 Seabirds

Various species of seabirds occur in the GOA, including resident species, migratory species that nest in Alaska, and migratory species that occur in Alaska only outside of the breeding season. A list of species is provided below.[10] The Groundfish PSEIS (NMFS 2004) provides descriptions of the range, habitat, diet, abundance, and population status for these seabirds.

Species nesting in Alaska
Tubenoses-Albatrosses and relatives: Northern Fulmar, Fork-tailed Storm-petrel, Leach's Storm-petrel
Kittiwakes and terns: Black-legged Kittiwake, Red-legged Kittiwake, Arctic Tern, Aleutian Tern
Pelicans and cormorants: Double-crested Cormorant, Brandt's Cormorant, Pelagic Cormorant, Red-faced Cormorant
Jaegers and gulls: Pomarine Jaeger, Parasitic Jaeger, Bonaparte's Gull, Mew Gull, Herring Gull, Glaucous-winged Gull, Glaucous Gull, Sabine's Gull
Auks: Common Murre, Thick-billed Murre, Black Guillemot, Pigeon Guillemot, Marbled Murrelet, Kittlitz's Murrelet, Ancient Murrelet, Cassin's Auklet, Parakeet Auklet, Least Auklet, Wiskered Auklet, Crested Auklet, Rhinoceros Auklet, Tufted Puffin, Horned Puffin

Species that visit Alaska waters
Tubenoses: Short-tailed Albatross, Black-footed Albatross, Laysan Albatross, Sooty Shearwater, Short-tailed Shearwater
Gulls: Ross's Gull, Ivory Gull

Several species of conservation concern occur in the GOA as well (Table 3-17). Short-tailed albatrosses are listed as endangered under the ESA, while Kittlitz's Murrelet is a candidate species for listing under the ESA, and the USFWS is currently working on a 12-month finding for black-footed albatrosses.

[10] Source: (USFWS web site "Seabirds. Species in Alaska. Accessed at http://alaska.fws.gov/mbsp/mbm/seabirds/species.htm on August 31, 2007).

Table 3-17 ESA-listed and candidate seabird species that occur in the GOA.

Common Name	Scientific Name	ESA Status
Short-tailed Albatross	*Phoebaotria albatrus*	Endangered
Steller's Eider	*Polysticta stelleri*	Threatened
Kittlitz's Murrelet	*Brachyramphus brevirostris*	Candidate
Black-footed Albatross	*Phoebastria nigripes*	USFWS working on 12-month finding

USFWS has primary responsibility for managing seabirds, and has evaluated effects of the BSAI and GOA FMPs and the harvest specifications process on currently listed species in two Biological Opinions (USFWS 2003a, 2003b). Both Biological Opinions concluded that the groundfish fisheries, including the GOA Pacific cod fishery, are unlikely to jeopardize populations of listed species or adversely modify or destroy critical habitat for listed species.

The Pacific cod fishery has direct and indirect impacts on seabirds. Seabird take is the primary direct effect of fishing operations. Seabirds are taken in the hook-and-line fisheries in two ways. While hooks are being set, seabirds attracted to bait may become entangled in fishing lines. Seabirds are also caught directly on baited hooks. Seabirds are taken in the trawl fisheries when they are attracted by offal or discarded fish and become entangled in fishing gear. Indirect effects include impacts to food sources. The Pacific cod fishery may reduce the biomass of prey species available to seabird populations. Fishing gear may disturb benthic habitat used by seabirds that forage on the seafloor and reduce available prey. Bottom trawl gear is the primary source of benthic habitat disturbance in the groundfish fisheries. Fishing activities may also create feeding opportunities for seabirds, for example when CPs discard offal.

Hook-and-line gear accounts for up to 94% of seabird bycatch in the BSAI and GOA groundfish fisheries combined (Fitzgerald et al. 2006). In the GOA, this bycatch consists of 46% fulmars, 34% albatrosses, 12% gull species, 5% unidentified seabirds, 2% shearwater species, and less than 1% of "all other" species (Fitzgerald et al. 2006). Most bycatch of Black-footed Albatross in waters off Alaska occurs in the GOA hook-and-line fisheries. From 2000 through 2004, an estimated 88 Black-footed Albatross were taken annually in the GOA hook-and-line fisheries. Total seabird bycatch in the GOA hook-and-line fisheries peaked in 1996 at 1,649 birds, and decreased to 156 birds in 2004, despite an increase in fishing effort. The incidental catch rate in the GOA decreased from an annual average of 0.021 birds per 1,000 hooks from 1993 through 1999 to 0.01 birds per 1,000 hooks from 2000 through 2004.

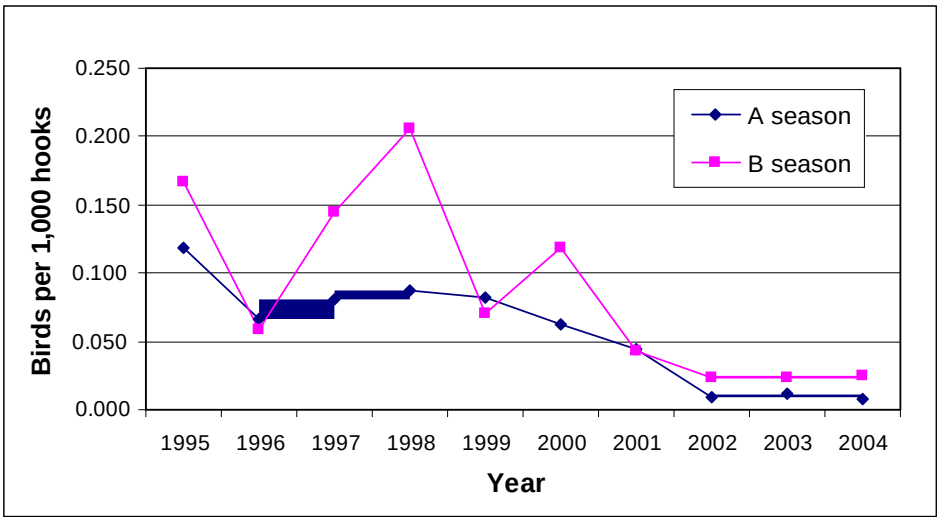

Figure 3-2 Seabird catch rates in the hook-and-line catcher processor sector by season, 1995–2004

Source: Alaska Fisheries Science Center. Data include BSAI and GOA hook-and-line CP fisheries.

Figure 3-2 compares seabird bycatch rates per 1,000 hooks by the hook-and-line CP fleet during the A and B seasons from 1995 through 2004, and includes data from both the BSAI and GOA. Seabird bycatch by hook-and-line CPs has historically been higher during the B season than during the A season, but bycatch rates have been reduced substantially since 2001 as a result of widespread use of seabird avoidance techniques such as paired streamer lines. During recent years, bycatch rates during the A and B seasons have been similar. The average bycatch rate for hook-and-line CPs from 2002 through 2004 was 0.018 birds per 1,000 hooks, a substantial reduction from previous years.

Due to different sampling procedures on trawl vessels, two sets of estimates are calculated for seabird bycatch. Average annual take by trawl vessels in the GOA from 1993 through 2004 was either 63 birds or 97 birds (Fitzgerald et al. 2006). Northern Fulmars comprised the majority of bycatch by trawl vessels during this period. Seabird bycatch by the groundfish pot sector has historically been very low. Average annual bycatch in the GOA pot sector from 1993 through 2004 was 55 seabirds, less than 1% of the average annual seabird bycatch in the groundfish fisheries.

Effects of the Alternatives

The Groundfish PSEIS (NMFS 2004) concluded that the current groundfish fisheries are not adversely impacting ESA-listed seabird species. Biological Opinions by the USFWS (2003a, 2003b) concluded that the groundfish fisheries, including the GOA Pacific cod fishery, are unlikely to jeopardize populations of listed species or adversely modify or destroy critical habitat for listed species. Based on current estimates of seabird bycatch, the status quo alternative is not likely to have a significant impact on seabird populations.

The proposed action would establish sector allocations for the GOA Pacific cod fisheries based on historical catch levels. Under sector allocations, overall levels of fishing effort by each gear sector, and the timing and location of fishing activities are not expected to change. Sector allocations will not modify the management practices analyzed in previous Biological Opinions (USFWS 2003a, 2003b), are not likely to cause additional adverse effects to ESA-listed species, and are not likely to increase incidental takes of listed species. The hook-and-line CP sector is responsible for the majority of seabird take in the GOA. If recent catch history (2000 through 2006, 2002 through 2007, or 2002 through 2008) is used to calculate sector allocations, the hook through and through line CP sector's effort in the GOA Pacific cod fishery would remain approximately the same as it has been during recent years. This sector has realized substantial reductions in seabird bycatch during recent years as a result of using paired streamer lines. If the Council chooses to include earlier years in catch history (1995 through 2005), the hook-and-line CP sector's allocation would be somewhat smaller than its recent catch levels, and this sector's effort (and seabird bycatch levels) in the GOA Pacific cod fishery would likely decrease. Consequently, seabird bycatch by this sector is not expected to increase under any of the options being considered by the Council, and the proposed action is not likely to have a significant impact on seabird populations.

3.8 Benthic Habitat and Essential Fish Habitat

Benthic habitat is potentially impacted by fishing practices that contact the seafloor. The impacts of fishing gear on benthic habitat are discussed in the Groundfish PSEIS (NMFS 2004). Essential fish habitat (EFH) is defined as those areas necessary to fish for spawning, breeding, feeding, or growth to maturity. Maps and descriptions of EFH for the GOA groundfish species are available in the EFH EIS (NMFS 2005). This document also describes the importance of benthic habitat to different groundfish species and the impacts of different types of fishing gear on benthic habitat. In the hook-and-line fishery, anchors, groundline, ganglions, and hooks potentially contact the seafloor. The Pacific cod pot fishery

has a very small footprint (an estimated 0.17 square mile footprint for the GOA and BSAI combined; NMFS 2007b). The jig fishery has no direct contact with the seafloor, although contact may occur incidentally. In the trawl fishery, doors, sweeps, and bobbins on the net may contact the seafloor.

Effects of the Alternatives

The effects of the GOA Pacific cod fishery on benthic habitat and EFH were analyzed in the EFH EIS (NMFS 2005). Year-round area closures protect sensitive benthic habitat. Current fishing practices have minimal or temporary effects on benthic habitat and EFH. These effects are likely to continue under Alternative 1, and are not considered to be significant. Under the proposed sector allocations, the location, timing, and overall level of fishing effort by the various gear sectors will remain essentially the same as under Alternative 1. As a result, impacts on benthic and EFH under this alternative are expected to be not significant.

3.9 Ecosystem

Ecosystems consist of communities of organisms interacting with their physical environment. Within marine ecosystems, competition, predation, and environmental disturbance cause natural variation in recruitment, survivorship, and growth of fish stocks. Human activities, including commercial fishing, also influence the structure and function of marine ecosystems. Fishing may change predator-prey relationships and community structure, introduce foreign species, affect trophic diversity, alter genetic diversity and habitat, and damage benthic habitats.

The GOA Pacific cod fishery potentially impacts the GOA ecosystem by relieving predation pressure on shared prey species (i.e., species which are prey for both Pacific cod and other species), reducing prey availability for predators of Pacific cod, altering habitat, imposing bycatch mortality, or by "ghost fishing" caused by lost fishing gear. Further information may be found in the Ecosystem Considerations Appendix to the SAFE Report (NMFS 2007b) and the Groundfish PSEIS (NMFS 2004).

Effects of the Alternatives

An evaluation of the effects of the GOA Pacific cod fisheries on the ecosystem is conducted annually in the Ecosystem Considerations Appendix of the SAFE Report (NMFS 2007b) and in the Harvest Specifications SAFE Report (NMFS 2007c). These analyses conclude that the current GOA Pacific cod fishery does not produce population-level impacts to marine species or change ecosystem-level attributes beyond the range of natural variation. Consequently, Alternative 1 is not expected to have a significant impact on the ecosystem.

Alternative 2 will result in the same overall level of Pacific cod harvest as Alternative 1. The level of fishing effort by each sector, and the location and timing of fishing activities is not expected to change, because allocations are based on historical catch. As a result, Alternative 2 is not likely to have a significant impact on the ecosystem.

3.10 Economic Impacts and Management Considerations

A detailed description of the economic and socioeconomic components of the GOA Pacific cod fisheries and an analysis of the effects of the proposed action are found in the Regulatory Impact Review. Here, management considerations are briefly discussed. A more comprehensive analysis of the effects of the proposed action on management of the GOA Pacific cod fishery is provided in Chapter 2.

The GOA Pacific cod resource is currently managed as a limited access race for fish, with fleet-wide TACs in the Western, Central, and Eastern GOA. The Pacific cod A season TACs are typically fully harvested, but much of the B season TACs have remained unharvested in recent years. If sector allocations are implemented, NMFS will be required to manage catch for up to 19 sectors, depending on how sectors are defined. Each sector's allocation would be further divided into A and B season allocations. Inseason monitoring of GOA Pacific cod sector allocations and management of rollovers of unused quota would likely require additional staff resources.

3.11 Cumulative Effects

Analysis of the potential cumulative effects of a proposed action and its alternatives is a requirement of NEPA. Cumulative effects result from the incremental impact of the proposed action in addition to past, present, and reasonably foreseeable future actions. The Alaska Groundfish Fisheries PSEIS (NMFS 2004) assesses the potential direct and indirect effects of groundfish FMP policy alternatives in combination with other factors that affect physical, biological, and socioeconomic components of the BSAI and GOA environment.

Beyond the cumulative impacts analysis documented in the Groundfish PSEIS, no additional past, present, or reasonably foreseeable future negative impacts on the natural and physical environment (including fish stocks, EFH, ESA-listed species, marine mammals, seabirds, or marine ecosystems), fishing communities, fishing safety, or consumers have been identified that would occur as a result of the proposed action. The proposed action, in combination with other actions, may have additional economic effects on sectors participating in the GOA Pacific cod fishery. In recent years, several regulatory changes implemented to protect Steller sea lions have had economic effects on participants in the GOA Pacific cod fisheries. Several recent or reasonably foreseeable future actions, discussed in detail in Chapter 2, are expected to have additional social and economic effects on these sectors, including GOA fixed gear LLP recency, GOA and BSAI trawl LLP recency, and possible revisions to the GOA Pacific cod sideboards.

4 Initial Regulatory Flexibility Analysis (IRFA)

The Regulatory Flexibility Act (RFA), first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a federal regulation. Major goals of the RFA are (1) to increase agency awareness and understanding of the impact of their regulations on small business; (2) to require that agencies communicate and explain their findings to the public; and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either, (1)"certify" that the action will not have a significant adverse effect on a substantial number of small entities, and support such a certification declaration with a "factual basis", demonstrating this outcome, or, (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

Based upon a preliminary evaluation of the proposed program alternatives, it appears that "certification" would not be appropriate. Therefore, this IRFA has been prepared. Analytical requirements for the IRFA are described below in more detail.

The IRFA must contain:

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

The "universe" of entities to be considered in an IRFA generally includes only those small entities that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall

primarily on a distinct segment of the industry, or portion thereof (e.g., user group, gear type, geographic area), that segment would be considered the universe for purposes of this analysis.

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

4.1 Definition of a Small Entity

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

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

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

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

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

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners control the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint ventures if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations: The RFA defines "small organizations" as any nonprofit enterprise that is independently owned and operated and is not dominant in its field.

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

4.2 Reason for considering the proposed action

The North Pacific Fishery Management Council (Council) developed a purpose and need statement defining the reasons for considering the proposed action (see Chapter 1). The Western and Central GOA Pacific cod fisheries are currently managed as a limited access race for fish and the sectors race each other for shares of the total allowable catches (TACs). Participants who have made significant long-term investments, have extensive catch histories, and are highly dependent on the Gulf of Alaska (GOA) Pacific cod fisheries desire stability, in the form of sector allocations. Without sector allocations, future harvests by some sectors may increase and impinge upon historical levels of catch by other sectors, with undesirable economic, socioeconomic, and social consequences for fishery participants and the communities that support and depend upon them.

4.3 Objectives of, and legal basis for, the proposed action

The objective of the proposed action is to establish direct allocations for each gear sector in the GOA Pacific cod fishery, in order to protect the relative catch distribution among sectors. The problem statement notes that dividing the TAC among sectors may also facilitate the development of management measures to address Steller Sea lion mitigation issues, bycatch reduction, and PSC mortality avoidance issues.

The legal basis for this action is the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). One of the stated purposes of the Magnuson-Stevens Act is to promote domestic commercial fishing under sound conservation and management principles and to achieve and maintain the optimum yield from each fishery. The Magnuson-Stevens Act also requires conservation and management measures take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

4.4 Number and description of directly regulated small entities

The proposed action directly regulates catcher vessels and catcher processors that participate in the Pacific cod fisheries in the GOA. The number of small entities potentially directly regulated by the proposed action was estimated by calculating 2009 gross earnings for catcher vessels, and 2009 first wholesale revenues for catcher processors, from their respective participation in all commercial fisheries in and off Alaska.[11]

In 2009, 445 catcher vessels retained Pacific cod in the GOA, including vessels that did not participate in the directed federal fisheries, and only had incidental catch of Pacific cod. Forty-five of these catcher vessels were either members of AFA cooperatives and, as such, are not considered small entities for the purpose of the RFA, or had annual gross revenues of at least $4 million. The remaining 401 catcher vessels are all considered small entities. In 2009, 41 catcher processors retained Pacific cod in the GOA, and 7 of these vessels are estimated to be small entities.

In addition, five processing entities would be directly regulated by this proposed action. A review of processor activity from 2002 through 2010 revealed that five active processing entities own seven stationary floating processors and four motherships that have participated in the GOA Pacific cod fisheries. In the absence of detailed employment data, size determinations were based on a staff review of known ownership information and knowledge of Alaska processing firms. On this basis, nine of these vessels are not considered small entities for the purpose of the RFA, because they appear to be owned by firms that exceed the "500 or more employees" threshold, when all their affiliates worldwide are included. NMFS estimates that two vessels, owned by two different processing entities, are small entities.

It is likely that additional catcher vessels, catcher processor vessels, or processing entities are affiliated through partnerships, or in other ways, with other entities, and would be considered large entities for the purpose of this action, if more complete ownership information were available.

4.5 Recordkeeping and reporting

Recordkeeping and reporting requirements are not expected to change as a result of the proposed action. Implementation of the proposed action would require NMFS to modify the catch accounting system to track catch by each sector. However, vessels fishing off these allocations and allowances will simply have to report their catch to NMFS, as usual under the status quo, and catch will be deducted from the appropriate account by the Agency, in accord with the proposed revisions to the catch monitoring and accounting program.

4.6 Relevant federal rules that may duplicate, overlap, or conflict with the proposed action

There do not appear to be any federal rules that duplicate, overlap, or conflict with the proposed action.

[11] This was done using gross revenues estimates produced by the Alaska Fisheries Science Center and used to prepare tables with information on large and small entities, as defined by RFA criteria, in the annual Groundfish Economic Stock Assessment and Fishery Evaluation Report.

4.7 Description of significant alternatives to the proposed action

The Council considered two alternatives for this action, along with a suite of "options" that could be adopted singularly or in combination. **Alternative 1** is the no action alternative. The Western and Central GOA Pacific cod TACs would not be allocated among the various sectors, and the fisheries would continue to be managed as a limited access race for fish. Under **Alternative 2**, the Western and Central GOA Pacific cod TACs would be allocated among the various gear sectors and operation types. Allocations would be based on retained catch history over a series of years during 1995 through 2005, 2000 through 2006, 2002 through 2007, or 2002 through 2008, or upon other criteria. The action would have similar impacts on small and large entities. Allocations would stabilize catches of the sectors. Options to increase the jig sector allocation beyond historical catch levels would be advantageous to jig vessels, which are among the smallest entities participating in the fisheries. The jig allocation allows for potential growth in entry-level opportunities in the GOA Pacific cod fisheries. During 1995 through 2008, the jig sector harvested, on average, less than 1% of the Western and Central GOA Pacific cod TACs. This allocation could potentially increase to 6% of the Western and Central GOA TACs, but would not be expected to do so, in the foreseeable future. Nonetheless, this provision does explicitly recognize and accommodate the special circumstances of the group of small entities.

The Council considered, but rejected, options to establish separate allocations for trawl and hook-and-line catcher processors that have historically fished off the inshore TACs. Establishing distinct inshore catcher processor allocations would protect harvests of smaller catcher processors, if combined with a provision to limit entry to the inshore processing component. Prior to removing the option to create distinct inshore catcher processor allocations, the Council reviewed data that showed that during most years, nearly all catcher processors less than 125 feet in length elected to fish inshore. Therefore, if catcher processor allocations were to be based on vessel length (e.g., vessels less than, and vessels greater than 125 feet in length), these allocations would be nearly identical to allocations based on catch by the inshore and offshore processing components. This would not serve the objectives for this action.

The Council considered options to assign mothership processing caps as high as 10 % of the Western and Central GOA Pacific cod TACs. High processing caps would benefit mothership vessels that have traditionally processed little Pacific cod in the GOA. During 2002 through 2008, less than 2 % of the Western GOA TAC had been processed annually by motherships, and no mothership processing activity had occurred in the Central GOA. The Council declined to increase processing caps above recent participation levels, because such a recommendation is inconsistent with the objectives of this action and could redistribute catch, imposing greater economic burdens on other directly regulated entities with documented dependence (i.e., recent catch history) of these resources.

Based upon the best available scientific data and information, none of the alternatives to the proposed action appear to have the potential to accomplish the stated objectives of the Magnuson-Stevens Act and other applicable statutes (as reflected in the proposed action), while minimize any significant adverse economic impact on small entities, beyond those achieved under the proposed rule.

5 CONSISTENCY WITH OTHER APPLICABLE LAWS

5.1 Consistency with National Standards

Below are the ten National Standards in the Magnuson-Stevens Act (Act), and a brief discussion of the consistency of the proposed alternatives with those National Standards.

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

In terms of achieving 'optimum yield' from the fishery, the Act defines 'optimum', with respect to yield from the fishery, as the amount of fish which:

(A) Will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
(B) Is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and,
(C) In the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery.

The Gulf of Alaska (GOA) Pacific cod fisheries will continue to be managed under the current harvest specifications process. Pacific cod stocks in the GOA are not currently in danger of being overfished and are considered stable. Overall levels of Pacific cod catch in the GOA will not be affected by the proposed sector allocations. The proposed allocations will not substantially change the current distribution of catch among sectors, and overall net benefits to the Nation are not expected to change to an identifiable degree.

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

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

National Standard 3- To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The Western and Central GOA Pacific cod total allowable catches (TACs) are established on an annual basis during the harvest specifications process. NMFS conducts annual GOA stock assessments for Pacific cod and makes acceptable biological catch recommendations to the North Pacific Fishery Management Council (Council). The Council sets the Pacific cod TAC based on the most recent stock assessment and survey information. The GOA TAC is divided among the three GOA management areas (Western, Central, and Eastern GOA) based on stock assessment models and survey data. Separate quotas for each sector would continue to be monitored inseason by NMFS.

National Standard 4 – Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

Sectors are defined by gear type (hook-and-line, pot, jig, or trawl), operation type (catcher vessel or catcher processor), and vessel length. Residency is not a criterion for sector allocations, and allocations will not be made to individual persons or entities.

National Standard 5 – Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The wording of this standard was changed in the 1996 Magnuson-Stevens Act authorization, to "consider" rather than "promote" efficiency. Efficiency in this context refers to economic efficiency, and the reason for the change is to de-emphasize the importance of economics relative to other considerations (Senate Report of the Committee on Commerce, Science, and Transportation on S. 39, the Sustainable Fisheries Act, 1996). The analysis presents information on economic considerations, but does not emphasize this standard over other considerations.

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

Establishing sector allocations will likely reduce the ability of participants to increase effort in response to changes in fishing and market conditions. Overall harvest levels by each sector would be constrained by sector allocations. In the event of lower Pacific cod quotas in the Bering Sea and Aleutian Islands management area or changes in other fisheries, sector allocations would protect the relative harvest levels of sectors that have long-term participation and are dependent on the GOA Pacific cod resource. In addition, provisions to increase the jig allocation may increase opportunities for participation and total catch by this sector.

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

The alternatives under consideration appear to be consistent with this standard.

National Standard 8 – Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The Regulatory Impact Review presents information on the impact of the proposed action on GOA Pacific cod fishery participants who are residents of Alaska and other states, and effects on the distribution of catch to shorebased processors. This action does not appear to have a disproportionate effect on residents of a particular state or on specific fishing communities. If sector allocations are made based on catch history, the proposed action may provide stability to the harvesting sectors and to the communities in which participants in the fisheries reside.

Major ports in Alaska that process catch from the Western and Central GOA include Kodiak, Dutch Harbor, Akutan, Sand Point, and King Cove. Additionally, the greater Seattle, Washington metropolitan area is home to many catcher vessels and catcher processors operating in these fisheries, as well as cold storage, transshipping, and secondary processing facilities. Information on these communities is available in the Steller Sea Lion Supplemental Environmental Impact Statement (SEIS) (NMFS 2001), the Draft Programmatic SEIS (NMFS 2004), and the crab rationalization EIS (NPFMC 2004). Detailed

information on Kodiak, Akutan, Dutch Harbor, and King Cove is available in the Comprehensive Baseline Commercial Fishing Community Profiles Final Report (EDAW 2005).

National Standard 9 – Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The Environmental Assessment (EA) (Chapter 3) presents information on bycatch rates in the GOA Pacific cod fishery by sector. Because sector allocations will reflect historical levels of catch by each sector, bycatch levels are not expected to change under the proposed action.

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

In recent years, the A season has closed approximately one month after the trawl season opens. Participants in the A season have had to fish early in the year (January/February). The proposed action would create separate allocations for several small vessel sectors. These allocations may reduce the incentive for the small vessel sectors to harvest Pacific cod early in the year during adverse weather and promote safer fishing practices.

5.2 Magnuson-Stevens Act Section 303(a) (9) – Fisheries Impact Statement

The Magnuson-Stevens Act requires that any management measure submitted by the Council take into account potential impacts on participants in the fisheries subject to the proposed action, as well as participants in other fisheries. The impacts of alternatives on participants in the harvesting and processing sectors are discussed in Chapter 2. Sector allocations will reflect the historical distribution of catch among sectors, and are unlikely to have a substantial effect on the number of participants or overall level of effort in the GOA Pacific cod fishery. Seasons will likely continue to be short, particularly during the A season, and participants will continue to have to choose among participation in this or other fisheries. Consequently, no impacts to participants in other fisheries are anticipated. The reauthorized Magnuson Stevens Act (section 303(9)) also requires analysis of cumulative effects of the proposed action, and interactions with other recent or proposed actions, and impacts on participants, communities, and the fisheries. These impacts are also discussed in Chapter 2.

5.3 Marine Mammal Protection Act (MMPA)

The Marine Mammal Protection Act (MMPA) of 1992 (16 U.S.C. 1361 *et seq.*) vests the Department of Commerce with authority to manage marine mammal populations. The Department of the Interior, United States Fish and Wildlife Service, has management authority for all other marine mammal species in Alaska, including sea otter, walrus, and polar bear. The MMPA recognizes that certain species and populations of marine mammals are or may be in danger of depletion due to human activities, and that marine mammals are resources of international significance and should be protected using best management practices.

The primary management objectives of the MMPA are to maintain the health and stability of the marine ecosystem and to maintain sustainable populations of marine mammals within the carrying capacity of the habitat. The MMPA is intended to work in concert with the provisions of the Endangered Species Act. The Secretary of Commerce is required to give full consideration to all factors regarding regulations applicable to the "take" of marine mammals, including the conservation, development, and utilization of marine resources, and the economic and technological feasibility of implementing the regulations.

Impacts of commercial fishing activities on marine mammal populations must be analyzed in an EA or EIS, and the Council or NMFS may be requested to consider measures to mitigate adverse impacts. Under the proposed Pacific cod sector allocations, no changes in the temporal or spatial distribution of harvests or overall level of fishing effort are anticipated. Consequently, no additional impacts to marine mammal populations are expected to result from the proposed action.

5.4 Coastal Zone Management Act

Implementation of either of the alternatives would be conducted in a manner consistent with the Alaska Coastal Management Program and section 30(c) (1) of the Coastal Zone Management Act of 1972 and it's implementing regulations.

6 REFERENCES

Alverson, D.L., Freeberg, M.H., Pope, J.G., Murawski, S.A. 1994. A global assessment of fisheries bycatch and discards. FAO Fisheries Technical Paper. No. 339. Rome, FAO. 1994. 233p.

Angliss, R. P., and B. M. Allen. 2009. Alaska marine mammal stock assessments, 2008. U.S. Dep. Commer., NOAA Tech. Memo. NMFS AFSC-193, 258 p.

Angliss, R. P., and R. B. Outlaw. 2007. Draft Alaska marine mammal stock assessments. U.S. Department of Commerce, NOAA Technical Memorandum.

EDAW (2005), with Northern Economics. Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska.

DeMaster, Douglas. 2009. Aerial Survey of Steller Sea Lions in Alaska, June-July 2009 and Update on the Status of the Western Stock in Alaska. Alaska Fisheries Science Center National Marine Mammal Laboratory. NOAA 7600 Sand Point Way NE, Seattle, WA 98115

Fitzgerald, S., K. Kuletz, M. Perez, K. Rivera, and D. Dragoo. 2006. Seabirds. *In* J Boldt, ed., Appendix C, Ecosystem Considerations for 2007. November 2006. NPFMC 605 West 4th Ave., Suite 306 Anchorage, AK 99501. Pp. 239–278.

Fritz, L., E. Kunisch, K. Sweeney, T. Gelatt, M. Lynn, and W. Perryman. 2007. Survey of adult and juvenile Steller sea lions, June-July 2007. Memorandum for the Record, 23 October 2007, Available AFSC, National Marine Mammal Laboratory, NOAA, NMFS, 7600 Sand Point Way NE, Seattle, WA 98115. 13 pp.

Hiatt, Terry. 2010. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the GOA and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries Off Alaska, 2009. NMFS Plan Team for the Groundfish Fisheries of the GOA.

Mattes, L.A., and M. Stichert. 2008. Annual management report for the shellfish fisheries of the Kodiak, Chignik, and Alaska Peninsula Areas, 2007. Alaska Department of Fish and Game, Anchorage.

Mecum, R. D. 2006. Letter to U. S. Fish and Wildlife Service regarding further consideration of Endangered Species Act Section 7 consultation for the Alaska Fisheries and its effects on the Threatened Southwest Distinct Population Segment of Northern Sea Otters (consultation number 2006-117). May 25, 2006. National Marine Fisheries Service, Juneau, AK.

NMFS. 2007a. Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the GOA Region, 2008. NPFMC Plan Team for the Groundfish Fisheries of the GOA.

NMFS. 2007b. Stock Assessment and Fishery Evaluation Report. Ecosystem Considerations. NPFMC Plan Team for the Groundfish Fisheries of the BSAI and the GOA.

NMFS. 2007c. Alaska Groundfish Harvest Specifications Final Environmental Impact Statement. January 2007. National Marine Fisheries Service, Juneau, AK.

NMFS. 2005. Environmental Impact Statement for the Essential Fish Habitat Identification and Conservation in Alaska. NOAA NMFS Alaska Regional Office. Juneau, Alaska.

NMFS. 2004. Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement, U.S. Dept. of Commerce, NOAA Fisheries, Alaska Region. June 2004.

NMFS. 2001. Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement. Implemented under the Fishery Management Plans for the Groundfish of the GOA and the Groundfish of the BSAI. 2001. October 2001 Section 7 Biological Opinion in Appendix A. NMFS, Alaska Region P.O. Box 21668, Juneau, AK 99801. November 2001.

NMFS. 2000. Endangered Species Act – Section 7 Consultation: Biological Opinion and Incidental Take Statement (Biological Opinion). NOAA NMFS Alaska Regional Office. Juneau, Alaska.

NPFMC. 2004. Stock Assessment and Fishery Evaluation (SAFE) Report for the King and Tanner crab stocks of the Bering Sea and Aleutian Islands region. Compiled by the Plan Team for the BSAI crab fisheries. NPFMC, 605 West 4th Avenue, Anchorage, AK. 99501.

NPFMC. 2008. Public Review Draft, RIR/IRFA for a Regulatory Amendment to Revise Administrative and Procedural Aspects of the North Pacific Groundfish Observer Program. March 2008.

NMFS. 2010. Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) Groundfish Fisheries Section 7 Consultation - Biological Opinion. December, 2010 NMFS, Alaska Region P.O. Box 21668, Juneau, AK 99801. December, 2011.

Queirolo, L. E. 2011. Conducting Economic Impact Analyses for NOAA Fisheries Service. (Revised in response to Presidential Executive Order 13563). February 23, 2011.

Sepez, J.A., B.D. Tilt, C.L. Package, H.M. Lazrus, and I. Vaccaro. (2005). *Community profiles for North Pacific fisheries - Alaska*, Dept. Commer. NOAA Tech. Memo. NMFS-AFSC-160. 552 p.

Thompson, G., J. Ianelli, M. Dorn, and M. Wilkins. 2007. Assessment of the Pacific Cod Stock in the GOA. Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the GOA. National Marine Fisheries Service. pp. 169–194.

USFWS. 2003a. Programmatic Biological Opinion on the effects of the Fishery Management Plans (FMPs) for the GOA (GOA) and Bering Sea/Aleutian Islands (BSAI) groundfish fisheries on the endangered short-tailed albatross (*Phoebastria albatrus*) and threatened Steller's eider (*Polysticta stelleri*). Anchorage Fish and Wildlife Field Office.

USFWS. 2003b. Biological Opinion on the Effects of the Total Allowable Catch (TAC)-Setting Process for the GOA (GOA) and Bering Sea/Aleutian Islands (BSAI) Groundfish Fisheries to the Endangered Short-tailed Albatross (*Phoebastria albatrus*) and Threatened Steller's Eider (*Polysticta stelleri*). Anchorage Fish and Wildlife Field Office.

Volstad, J. H., Richkus, W., Gaurin, S. and Easton, R. 1997. Analytical and statistical review of procedures for collection and analysis of commercial fishery data used for management and assessment of groundfish stocks in the U.S. exclusive economic zone off Alaska. Versar, Inc., Columbia, Maryland. 172 pp.

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APPENDIX A. RETAINED CATCH OF PACIFIC COD

Table A-1. Retained catch of Pacific cod (mt) from the Western GOA, 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	18	5,632	26.2%	20	35	0.2%	13	48	0.2%	3	104	0.5%	58	2,352	11.0%	11	587	2.7%	104	12,704	59.2%
1996	17	4,369	20.8%	15	193	0.9%	14	45	0.2%	1	*	*	38	1,689	8.0%	19	787	3.7%	62	13,921	66.2%
1997	13	3,837	16.1%	20	34	0.1%	6	5	0.0%	0	0	0.0%	20	1,041	4.4%	17	295	1.2%	90	18,554	78.1%
1998	7	3,168	15.1%	16	22	0.1%	4	1	0.0%	1	*	*	53	2,533	12.0%	15	276	1.3%	98	15,007	71.3%
1999	20	5,116	21.8%	27	70	0.3%	0	0	0.0%	6	1,424	6.1%	34	1,591	6.8%	13	623	2.7%	78	14,673	62.4%
2000	14	4,706	21.5%	29	54	0.2%	4	5	0.0%	2	*	*	81	5,107	23.3%	13	751	3.4%	57	11,113	50.7%
2001	16	3,969	27.3%	29	31	0.2%	17	157	1.1%	3	1,038	7.1%	46	2,538	17.5%	13	670	4.6%	56	6,135	42.2%
2002	16	6,411	36.9%	30	38	0.2%	31	193	1.1%	2	*	*	48	4,805	27.7%	13	327	1.9%	48	5,073	29.2%
2003	19	4,242	27.0%	25	47	0.3%	11	46	0.3%	1	*	*	60	9,549	60.8%	11	340	2.2%	40	1,367	8.7%
2004	12	2,893	18.9%	32	28	0.2%	23	183	1.2%	1	*	*	81	9,718	63.4%	13	539	3.5%	34	1,717	11.2%
2005	10	724	5.9%	46	281	2.3%	9	46	0.4%	1	*	*	59	6,402	52.2%	13	217	1.8%	37	4,441	36.2%
2006	14	2,691	19.4%	37	106	0.8%	2	*	*	0	0	0.0%	51	5,918	42.7%	11	218	1.6%	37	4,917	35.5%
2007	12	3,069	23.2%	58	390	2.9%	4	2	0.0%	1	*	*	48	4,646	35.1%	12	529	4.0%	39	4,281	32.4%
2008	14	3,072	20.9%	74	506	3.4%	10	63	0.4%	1	*	*	60	6,009	40.8%	11	391	2.7%	29	4,601	31.2%
2009	15	4,300	28.7%	60	1,905	12.7%	11	189	1.3%	2	*	*	39	5,915	39.5%	14	424	2.8%	31	2,100	14.0%
2010	14	4,932	23.8%	80	1,686	8.1%	31	323	1.6%	0	0	0.0%	46	10,520	50.7%	13	385	1.9%	29	2,915	14.0%

Table A-2. Retained catch of Pacific cod (mt) <u>from the directed Pacific cod fishery</u> in the Western GOA, 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	16	5,133	24.6%	4	21	0.1%	10	43	0.2%	2	*	*	58	2,352	11.3%	8	559	2.7%	86	12,695	60.7%
1996	15	4,365	21.0%	10	187	0.9%	7	40	0.2%	0	0	0.0%	38	1,689	8.1%	15	727	3.5%	54	13,823	66.4%
1997	13	3,822	16.2%	2	*	*	2	*	*	0	0	0.0%	20	1,041	4.4%	17	273	1.2%	78	18,501	78.2%
1998	4	3,131	15.3%	1	*	*	2	*	*	0	0	0.0%	53	2,533	12.4%	4	107	0.5%	66	14,719	71.7%
1999	19	5,085	21.9%	2	*	*	0	0	0.0%	6	1,424	6.1%	34	1,591	6.8%	5	481	2.1%	65	14,636	62.9%
2000	12	4,323	20.6%	3	29	0.1%	2	*	*	2	*	*	81	5,107	24.3%	4	384	1.8%	51	10,946	52.2%
2001	13	3,919	28.3%	6	19	0.1%	16	157	1.1%	3	1,038	7.5%	42	2,196	15.8%	8	473	3.4%	55	6,071	43.8%
2002	11	6,333	37.3%	13	8	0.0%	26	187	1.1%	2	*	*	48	4,755	28.0%	6	135	0.8%	44	5,038	29.7%
2003	14	4,139	27.2%	8	26	0.2%	11	46	0.3%	1	*	*	60	9,543	62.7%	3	130	0.9%	35	1,235	8.1%
2004	8	2,859	19.2%	14	9	0.1%	22	183	1.2%	1	*	*	81	9,715	65.3%	4	192	1.3%	31	1,683	11.3%
2005	5	693	5.8%	27	254	2.1%	8	46	0.4%	1	*	*	58	6,380	53.6%	2	*	*	35	4,363	36.7%
2006	12	2,651	19.5%	20	87	0.6%	1	*	*	0	0	0.0%	51	5,918	43.5%	4	107	0.8%	36	4,852	35.6%
2007	11	3,028	23.8%	27	357	2.8%	4	2	0.0%	1	*	*	48	4,646	36.5%	5	120	0.9%	38	4,274	33.5%
2008	12	3,040	21.2%	33	429	3.0%	9	53	0.4%	1	*	*	59	6,009	41.9%	4	148	1.0%	28	4,559	31.8%
2009	15	4,278	29.5%	40	1,882	13.0%	11	189	1.3%	2	*	*	39	5,915	40.7%	2	*	*	29	1,987	13.7%
2010	12	4,924	24.6%	35	1,620	8.1%	30	320	1.6%	0	0	0.0%	46	10,518	52.5%	0	0	0.0%	29	2,655	13.2%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-3. Retained catch of Pacific cod (mt) from the Central GOA, 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	8	134	0.3%	380	4,546	10.3%	29	51	0.1%	0	0	0.0%	122	13,760	31.2%	24	2,072	4.7%	114	23,548	53.4%
1996	4	710	1.7%	173	4,491	10.6%	17	34	0.1%	0	0	0.0%	87	10,539	24.8%	23	2,714	6.4%	112	23,975	56.5%
1997	2	*	*	308	6,401	15.4%	19	21	0.1%	0	0	0.0%	61	8,420	20.3%	21	770	1.9%	128	25,895	62.3%
1998	7	175	0.4%	270	5,815	14.2%	18	50	0.1%	0	0	0.0%	61	9,208	22.5%	17	4,447	10.9%	137	21,214	51.9%
1999	9	313	0.7%	313	6,174	14.3%	10	24	0.1%	11	2,938	6.8%	84	12,182	28.3%	15	1,595	3.7%	100	19,881	46.1%
2000	8	209	0.7%	340	6,529	20.4%	17	38	0.1%	4	910	2.8%	114	11,967	37.4%	10	1,387	4.3%	59	10,971	34.3%
2001	2	*	*	274	5,684	20.9%	15	11	0.0%	3	588	2.2%	62	3,505	12.9%	11	2,241	8.2%	73	15,169	55.8%
2002	7	1,638	7.0%	210	6,867	29.5%	8	3	0.0%	3	131	0.6%	45	3,228	13.9%	9	835	3.6%	67	10,568	45.4%
2003	8	1,462	6.1%	187	3,586	15.0%	12	16	0.1%	1	*	*	35	3,201	13.4%	12	1,219	5.1%	55	14,405	60.3%
2004	5	1,453	5.5%	192	5,423	20.6%	36	118	0.4%	0	0	0.0%	35	4,916	18.7%	10	770	2.9%	55	13,669	51.9%
2005	7	267	1.2%	192	4,271	19.3%	30	137	0.6%	0	0	0.0%	47	8,169	36.9%	11	719	3.2%	50	8,591	38.8%
2006	9	897	4.0%	208	6,183	27.6%	26	96	0.4%	0	0	0.0%	59	8,420	37.6%	11	877	3.9%	47	5,922	26.4%
2007	7	1,376	5.5%	238	6,341	25.2%	18	36	0.1%	1	*	*	63	8,286	32.9%	7	590	2.3%	39	8,220	32.6%
2008	13	1,755	6.9%	275	6,054	23.9%	11	19	0.1%	0	0	0.0%	57	5,208	20.5%	9	632	2.5%	45	11,680	46.1%
2009	9	1,154	5.7%	229	5,270	26.0%	13	42	0.2%	0	0	0.0%	50	5,366	26.4%	11	1,023	5.0%	40	7,446	36.7%
2010	9	3,217	9.4%	304	5,379	15.7%	24	103	0.3%	0	0	0.0%	48	9,561	27.9%	9	759	2.2%	43	15,284	44.6%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases.

Table A-4. Retained catch of Pacific cod (mt) <u>from the directed Pacific cod fishery</u> in the Central GOA, 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	3	125	0.3%	120	4,344	10.7%	15	42	0.1%	0	0	0.0%	120	13,067	32.3%	21	1,745	4.3%	101	21,175	52.3%
1996	4	710	1.7%	140	4,464	10.7%	13	34	0.1%	0	0	0.0%	87	10,539	25.3%	12	2,341	5.6%	108	23,595	56.6%
1997	1	*	*	173	6,258	15.7%	8	18	0.0%	0	0	0.0%	61	8,398	21.0%	6	546	1.4%	120	24,652	61.7%
1998	2	*	*	140	5,629	15.0%	16	50	0.1%	0	0	0.0%	60	9,207	24.5%	17	3,042	8.1%	123	19,531	51.9%
1999	5	308	0.7%	186	5,973	14.5%	10	24	0.1%	10	2,462	6.0%	84	12,182	29.6%	14	1,379	3.3%	92	18,884	45.8%
2000	5	208	0.7%	148	6,372	22.6%	16	38	0.1%	1	*	*	114	11,967	42.4%	9	1,096	3.9%	53	8,452	29.9%
2001	1	*	*	122	5,550	22.8%	14	11	0.0%	3	588	2.4%	62	3,497	14.4%	5	1,950	8.0%	70	12,743	52.3%
2002	4	1,622	8.2%	100	6,751	34.0%	7	3	0.0%	3	131	0.7%	45	3,228	16.2%	3	212	1.1%	52	7,920	39.9%
2003	4	1,412	7.0%	74	3,365	16.6%	7	15	0.1%	0	0	0.0%	35	3,201	15.8%	7	434	2.1%	52	11,803	58.3%
2004	3	1,451	6.1%	92	5,272	22.3%	30	114	0.5%	0	0	0.0%	35	4,916	20.8%	5	502	2.1%	49	11,345	48.1%
2005	2	*	*	107	4,209	21.2%	26	134	0.7%	0	0	0.0%	47	8,169	41.2%	4	308	1.6%	44	6,746	34.1%
2006	6	889	4.4%	131	6,093	30.0%	24	93	0.5%	0	0	0.0%	59	8,420	41.5%	8	333	1.6%	39	4,471	22.0%
2007	5	1,364	5.9%	151	6,193	26.6%	18	36	0.2%	1	*	*	63	8,279	35.6%	3	343	1.5%	36	6,718	28.9%
2008	7	1,738	7.8%	156	5,860	26.1%	10	18	0.1%	0	0	0.0%	58	5,209	23.2%	4	182	0.8%	42	9,417	42.0%
2009	5	1,145	6.8%	130	4,820	28.4%	13	42	0.2%	0	0	0.0%	50	5,366	31.6%	4	423	2.5%	37	5,157	30.4%
2010	7	3,202	10.3%	119	5,081	16.4%	22	102	0.3%	0	0	0.0%	47	9,492	30.5%	2	*	*	38	13,087	42.1%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-5. Retained catch of Pacific cod (mt) from the Western GOA during the A season (January 1–June 10), 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	16	5,622	26.2%	5	21	0.1%	12	*	*	2	*	*	58	2,352	11.0%	8	576	2.7%	103	12,700	59.2%
1996	16	*	*	14	*	*	9	43	0.2%	1	*	*	38	1,689	8.0%	16	779	3.7%	60	13,918	66.2%
1997	12	3,821	16.1%	11	28	0.1%	4	*	*	0	0	0.0%	20	1,041	4.4%	10	246	1.0%	85	18,539	78.0%
1998	6	3,157	15.0%	7	13	0.1%	0	0	0.0%	1	*	*	32	1,766	8.4%	9	152	0.7%	86	14,931	71.0%
1999	20	5,111	21.8%	15	60	0.3%	0	0	0.0%	6	*	*	34	1,591	6.8%	7	517	2.2%	70	14,663	62.4%
2000	14	*	*	13	38	0.2%	2	*	*	2	*	*	81	5,107	23.3%	8	600	2.7%	53	10,961	50.0%
2001	11	3,953	27.2%	14	22	0.2%	1	*	*	3	*	*	38	1,745	12.0%	9	292	2.0%	52	5,754	39.6%
2002	14	4,543	26.2%	10	23	0.1%	3	4	0.0%	0	0	0.0%	42	3,201	18.4%	7	166	1.0%	38	4,937	28.4%
2003	18	3,664	23.4%	11	34	0.2%	0	0	0.0%	1	*	*	42	6,704	42.7%	7	127	0.8%	36	1,315	8.4%
2004	11	2,034	13.3%	8	11	0.1%	17	119	0.8%	1	*	*	68	6,725	43.9%	7	241	1.6%	27	1,670	10.9%
2005	8	336	2.7%	19	197	1.6%	6	43	0.4%	1	*	*	56	5,052	41.2%	6	156	1.3%	31	4,340	35.4%
2006	8	1,507	10.9%	11	57	0.4%	1	*	*	0	0	0.0%	49	5,548	40.0%	4	151	1.1%	35	4,834	34.9%
2007	9	2,476	18.7%	27	333	2.5%	1	*	*	1	*	*	44	3,604	27.2%	7	385	2.9%	31	4,247	32.1%
2008	11	2,597	17.6%	22	202	1.4%	0	0	0.0%	1	*	*	54	4,158	28.2%	4	149	1.0%	25	4,434	30.1%
2009	13	2,647	27.2%	23	1,082	11.1%	0	0	0.0%	2	*	*	35	3,859	39.7%	3	127	1.3%	28	1,869	19.2%
2010	14	2,645	20.4%	33	1,000	7.7%	2	*	*	0	0	0.0%	42	7,038	54.2%	3	34	0.3%	27	2,256	17.4%

Table A-6. Retained catch of Pacific cod (mt) from the Western GOA during the B season (June 10- December 31), 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	4	10	0.0%	15	13	0.1%	2	*	*	1	*	*	0	0	0.0%	3	11	0.1%	11	4	0.0%
1996	1	*	*	1	*	*	5	2	0.0%	0	*	*	0	0	0.0%	4	8	0.0%	5	3	0.0%
1997	4	16	0.1%	11	5	0.0%	2	*	*	0	0	0.0%	0	0	0.0%	8	49	0.2%	28	14	0.1%
1998	4	11	0.1%	13	8	0.0%	4	1	0.0%	0	0	0.0%	26	767	3.6%	8	124	0.6%	42	76	0.4%
1999	3	5	0.0%	14	10	0.0%	0	0	0.0%	2	*	*	0	0	0.0%	9	106	0.5%	30	10	0.0%
2000	2	*	*	16	16	0.1%	2	*	*	0	0	0.0%	0	0	0.0%	9	150	0.7%	18	152	0.7%
2001	6	16	0.1%	19	9	0.1%	17	*	*	1	*	*	14	794	5.5%	9	378	2.6%	28	381	2.6%
2002	8	1,868	10.8%	25	15	0.1%	29	189	1.1%	2	*	*	17	1,604	9.2%	11	162	0.9%	33	136	0.8%
2003	5	578	3.7%	16	12	0.1%	11	46	0.3%	1	*	*	39	2,845	18.1%	7	213	1.4%	21	52	0.3%
2004	5	859	5.6%	27	17	0.1%	7	65	0.4%	1	*	*	31	2,993	19.5%	12	298	1.9%	22	47	0.3%
2005	5	388	3.2%	34	84	0.7%	3	3	0.0%	0	0	0.0%	17	1,349	11.0%	9	61	0.5%	27	101	0.8%
2006	11	1,183	8.5%	32	48	0.3%	1	*	*	0	0	0.0%	9	369	2.7%	10	67	0.5%	23	82	0.6%
2007	6	593	4.5%	45	57	0.4%	3	*	*	0	0	0.0%	14	1,042	7.9%	10	144	1.1%	20	34	0.3%
2008	6	475	3.2%	63	304	2.1%	10	63	0.4%	0	0	0.0%	16	1,851	12.6%	11	242	1.6%	15	167	1.1%
2009	7	1,653	31.5%	48	823	15.7%	11	189	3.6%	0	0	0.0%	16	2,056	39.2%	14	297	5.7%	19	231	4.4%
2010	7	2,288	29.4%	61	686	8.8%	31	*	*	0	0	0.0%	27	3,481	44.8%	12	351	4.5%	21	659	8.5%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-7. Retained catch of Pacific cod (mt) from the Central GOA during the A season (January 1- June 10), 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	5	126	0.3%	208	4,395	10.0%	16	42	0.1%	0	0	0.0%	120	13,101	29.7%	13	1,632	3.7%	107	21,552	48.9%
1996	4	710	1.7%	167	4,489	10.6%	17	34	0.1%	0	0	0.0%	87	10,539	24.8%	19	2,673	6.3%	112	*	*
1997	1	*	*	210	6,134	14.8%	13	20	0.0%	0	0	0.0%	60	8,306	20.0%	8	224	0.5%	130	20,852	50.2%
1998	1	*	*	185	5,691	13.9%	17	*	*	0	0	0.0%	59	9,202	22.5%	12	1,294	3.2%	144	18,367	44.9%
1999	5	303	0.7%	222	6,062	14.1%	7	21	0.0%	1	*	*	64	11,053	25.6%	9	453	1.1%	97	14,682	34.1%
2000	6	*	*	248	6,454	20.2%	16	*	*	4	*	*	114	11,967	37.4%	7	948	3.0%	55	9,225	28.8%
2001	1	*	*	204	5,554	20.4%	14	*	*	3	588	2.2%	55	3,139	11.5%	7	1,699	6.2%	73	6,707	24.7%
2002	6	*	*	161	5,732	24.6%	8	3	0.0%	2	*	*	38	2,667	11.5%	6	427	1.8%	58	8,623	37.1%
2003	8	*	*	145	3,322	13.9%	11	*	*	1	*	*	35	*	*	7	442	1.9%	51	8,171	34.2%
2004	5	1,453	5.5%	132	4,273	16.2%	29	66	0.3%	0	0	0.0%	31	3,739	14.2%	5	98	0.4%	45	6,464	24.5%
2005	6	*	*	134	2,853	12.9%	24	96	0.4%	0	0	0.0%	38	4,437	20.0%	6	132	0.6%	45	4,707	21.2%
2006	3	7	0.0%	117	4,374	19.5%	24	82	0.4%	0	0	0.0%	47	6,467	28.9%	3	155	0.7%	45	4,198	18.7%
2007	2	*	*	150	3,896	15.5%	11	18	0.1%	1	*	*	58	5,693	22.6%	3	214	0.8%	39	4,948	19.6%
2008	10	1,748	6.9%	174	4,251	16.8%	7	10	0.0%	0	0	0.0%	50	4,031	15.9%	6	351	1.4%	40	6,136	24.2%
2009	8	*	*	154	3,864	27.6%	10	15	0.1%	0	0	0.0%	44	4,083	29.2%	5	309	2.2%	34	4,563	32.6%
2010	8	2,105	9.1%	197	4,554	19.6%	9	45	0.2%	0	0	0.0%	44	7,834	33.7%	5	300	1.3%	42	8,380	36.1%

Table A-8. Retained catch of Pacific cod (mt) from the Central GOA during the B season (June 10- December 31), 1995–2010.

	HAL CP			HAL CV			Jig CV			Pot CP			Pot CV			Trawl CP			Trawl CV		
	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	4	7	0.0%	221	151	0.3%	14	9	0.0%	0	0	0.0%	18	659	1.5%	21	441	1.0%	46	1,996	4.5%
1996	0	0	0.0%	8	3	0.0%	0	0	0.0%	0	0	0.0%	0	0	0.0%	6	41	0.1%	2	*	*
1997	1	*	*	174	266	0.6%	6	1	0.0%	0	0	0.0%	8	114	0.3%	18	546	1.3%	72	5,044	12.1%
1998	6	*	*	148	124	0.3%	1	*	*	0	0	0.0%	3	6	0.0%	12	3,153	7.7%	80	2,847	7.0%
1999	5	10	0.0%	176	112	0.3%	4	3	0.0%	11	*	*	27	1,129	2.6%	14	1,142	2.6%	74	5,199	12.1%
2000	2	*	*	173	75	0.2%	1	*	*	2	*	*	0	0	0.0%	10	439	1.4%	40	1,747	5.5%
2001	1	*	*	141	130	0.5%	1	*	*	0	0	0.0%	14	366	1.3%	9	542	2.0%	53	8,462	31.1%
2002	2	*	*	115	1,135	4.9%	0	0	0.0%	2	*	*	10	561	2.4%	7	408	1.8%	50	1,946	8.4%
2003	1	*	*	90	264	1.1%	1	*	*	0	0	0.0%	2	*	*	10	777	3.3%	43	6,234	26.1%
2004	0	0	0.0%	114	1,150	4.4%	13	51	0.2%	0	0	0.0%	15	1,177	4.5%	9	672	2.5%	50	7,205	27.3%
2005	2	*	*	113	1,418	6.4%	12	40	0.2%	0	0	0.0%	27	3,732	16.8%	11	588	2.7%	41	3,885	17.5%
2006	6	889	4.0%	158	1,808	8.1%	7	14	0.1%	0	0	0.0%	29	1,953	8.7%	11	722	3.2%	33	1,724	7.7%
2007	5	*	*	194	2,445	9.7%	8	19	0.1%	1	*	*	25	2,594	10.3%	7	376	1.5%	30	3,271	13.0%
2008	3	6	0.0%	212	1,803	7.1%	5	8	0.0%	0	0	0.0%	16	1,178	4.6%	8	281	1.1%	34	5,543	21.9%
2009	1	*	*	172	1,405	22.3%	5	27	0.4%	0	0	0.0%	15	1,283	20.3%	11	714	11.3%	32	2,883	45.7%
2010	4	1,112	10.0%	234	825	7.4%	16	58	0.5%	0	0	0.0%	22	1,727	15.6%	9	460	4.1%	34	6,904	62.3%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-9. Retained catch of Pacific cod (mt) from the Western GOA from 1995–2010 reported by vessel length.

	HAL CP <125			HAL CP >=125			TRW CP <125			TRW CP >=125			TRW CV <60			TRW CV >=60		
Year	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	12	4,974	23.2%	6	658	3.1%	3	40	0.2%	8	547	2.5%	41	5,842	27.2%	63	6,862	32.0%
1996	13	3,842	18.3%	4	526	2.5%	4	55	0.3%	15	732	3.5%	40	10,932	52.0%	22	2,990	14.2%
1997	9	3,642	15.3%	4	195	0.8%	4	156	0.7%	13	138	0.6%	41	13,045	54.9%	49	5,509	23.2%
1998	5	*	*	2	*	*	4	190	0.9%	11	86	0.4%	41	11,094	52.7%	57	3,913	18.6%
1999	10	4,021	17.1%	10	1,095	4.7%	4	558	2.4%	9	66	0.3%	42	10,549	44.9%	36	4,124	17.6%
2000	10	4,538	20.7%	4	168	0.8%	3	451	2.1%	10	300	1.4%	39	8,360	38.1%	18	2,753	12.6%
2001	11	3,904	26.9%	5	65	0.4%	3	268	1.8%	10	403	2.8%	37	4,773	32.8%	19	1,362	9.4%
2002	9	5,472	31.5%	7	939	5.4%	2	*	*	11	*	*	30	3,268	18.8%	18	1,806	10.4%
2003	7	2,671	17.0%	12	1,572	10.0%	4	262	1.7%	7	77	0.5%	24	850	5.4%	16	518	3.3%
2004	4	2,160	14.1%	8	733	4.8%	3	260	1.7%	10	279	1.8%	20	1,526	10.0%	14	191	1.2%
2005	4	484	3.9%	6	241	2.0%	3	163	1.3%	10	54	0.4%	24	3,688	30.1%	13	753	6.1%
2006	8	1,966	14.2%	6	725	5.2%	3	134	1.0%	8	84	0.6%	25	4,255	30.7%	12	662	4.8%
2007	8	2,706	20.5%	4	363	2.7%	3	365	2.8%	9	163	1.2%	25	3,928	29.7%	14	353	2.7%
2008	10	2,567	17.4%	4	505	3.4%	2	*	*	9	*	*	25	4,591	31.2%	4	10	0.1%
2009	9	3,866	25.8%	6	434	2.9%	2	*	*	12	*	*	26	2,065	13.8%	5	35	0.2%
2010	9	3,334	16.1%	5	1,598	7.7%	2	*	*	11	*	*	22	2,407	11.6%	7	508	2.4%

Table A-10. Retained catch of Pacific cod (mt) from the Western GOA from 1995–2010 reported by vessel length.

	HAL CV <50			HAL CV 50-60			HAL CV >=60			POT CV <50			POT CV 50-60			POT CV >=60		
Year	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	5	17	0.1%	4	5	0.0%	11	12	0.1%	14	247	1.1%	21	984	4.6%	23	1,122	5.2%
1996	4	81	0.4%	5	19	0.1%	6	93	0.4%	14	426	2.0%	20	971	4.6%	4	292	1.4%
1997	10	21	0.1%	6	5	0.0%	4	8	0.0%	10	*	*	8	390	1.6%	2	*	*
1998	11	16	0.1%	2	*	*	3	*	*	14	562	2.7%	18	1,160	5.5%	21	811	3.9%
1999	8	3	0.0%	8	46	0.2%	11	22	0.1%	10	310	1.3%	20	1,083	4.6%	4	198	0.8%
2000	6	26	0.1%	9	11	0.1%	14	17	0.1%	9	219	1.0%	28	885	4.0%	44	4,003	18.3%
2001	9	8	0.1%	11	19	0.1%	9	5	0.0%	9	342	2.4%	23	1,004	6.9%	14	1,192	8.2%
2002	5	2	0.0%	13	22	0.1%	12	14	0.1%	3	178	1.0%	30	2,831	16.3%	15	1,796	10.3%
2003	4	23	0.1%	10	17	0.1%	11	7	0.0%	3	325	2.1%	39	5,701	36.3%	18	3,523	22.4%
2004	8	3	0.0%	13	16	0.1%	11	9	0.1%	7	240	1.6%	46	4,488	29.3%	28	4,990	32.6%
2005	14	190	1.6%	24	86	0.7%	8	5	0.0%	5	262	2.1%	35	1,634	13.3%	19	4,506	36.7%
2006	13	37	0.3%	17	65	0.5%	7	4	0.0%	7	213	1.5%	26	1,614	11.6%	18	4,091	29.5%
2007	24	175	1.3%	25	208	1.6%	9	7	0.1%	5	305	2.3%	25	2,035	15.4%	18	2,306	17.4%
2008	27	109	0.7%	37	201	1.4%	10	197	1.3%	2	*	*	42	4,005	27.2%	16	*	*
2009	22	501	3.3%	29	931	6.2%	9	473	3.2%	4	133	0.9%	32	5,231	34.9%	3	552	3.7%
2010	21	179	0.9%	35	1,037	5.0%	24	470	2.3%	4	422	2.0%	34	8,802	42.4%	8	1,296	6.2%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-11. Retained catch of Pacific cod (mt) from the Central GOA from 1995–2010 reported by vessel length.

	HAL CP <125			HAL CP >=125			TRW CP <125			TRW CP >=125			TRW CV <60			TRW CV >=60		
Year	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	8	134	0.3%	0	0	0.0%	7	326	0.7%	17	1,747	4.0%	45	5,247	11.9%	69	18,301	41.5%
1996	4	710	1.7%	0	0	0.0%	7	183	0.4%	16	2,531	6.0%	53	9,021	21.2%	59	14,954	35.2%
1997	1	*	*	1	*	*	6	623	1.5%	15	147	0.4%	55	5,765	13.9%	73	20,130	48.4%
1998	4	6	0.0%	3	169	0.4%	4	390	1.0%	13	4,057	9.9%	48	4,591	11.2%	89	16,623	40.6%
1999	7	*	*	2	*	*	4	423	1.0%	11	1,172	2.7%	33	1,799	4.2%	67	18,082	41.9%
2000	6	*	*	2	*	*	4	375	1.2%	6	1,012	3.2%	11	999	3.1%	48	9,972	31.2%
2001	1	*	*	1	*	*	4	750	2.8%	7	1,491	5.5%	17	1,053	3.9%	56	14,116	51.9%
2002	2	*	*	5	*	*	3	328	1.4%	6	507	2.2%	17	577	2.5%	50	9,991	42.9%
2003	4	280	1.2%	4	1,181	4.9%	4	399	1.7%	8	820	3.4%	9	572	2.4%	46	13,833	57.9%
2004	2	*	*	3	*	*	4	330	1.3%	6	439	1.7%	6	197	0.7%	49	13,472	51.1%
2005	3	244	1.1%	4	22	0.1%	4	497	2.2%	7	222	1.0%	4	3	0.0%	46	8,588	38.8%
2006	3	29	0.1%	6	867	3.9%	5	545	2.4%	6	332	1.5%	4	34	0.2%	43	5,888	26.3%
2007	4	499	2.0%	3	877	3.5%	3	388	1.5%	4	202	0.8%	2	*	*	37	*	*
2008	7	586	2.3%	6	1,168	4.6%	4	505	2.0%	5	127	0.5%	4	230	0.9%	41	11,449	45.2%
2009	3	298	1.5%	6	857	4.2%	5	627	3.1%	6	396	2.0%	1	*	*	39	*	*
2010	3	797	2.3%	6	2,419	7.1%	3	483	1.4%	6	276	0.8%	5	358	1.0%	38	14,926	43.5%

Table A-12.Retained catch of Pacific cod (mt) from the Central GOA from 1995–2010 reported by vessel length.

	HAL CV <50			HAL CV 50-60			HAL CV >=60			POT CV <50			POT CV 50-60			POT CV >=60		
Year	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total	Vessels	Catch	Percent of total
1995	246	2,635	6.0%	74	1,081	2.5%	60	830	1.9%	28	1,297	2.9%	35	5,812	13.2%	59	6,650	15.1%
1996	131	2,973	7.0%	25	1,177	2.8%	17	342	0.8%	21	813	1.9%	25	4,578	10.8%	41	5,148	12.1%
1997	210	4,527	10.9%	60	1,621	3.9%	38	253	0.6%	18	820	2.0%	21	3,957	9.5%	22	3,643	8.8%
1998	177	3,885	9.5%	54	1,452	3.5%	39	478	1.2%	14	688	1.7%	25	3,637	8.9%	22	4,883	11.9%
1999	187	3,846	8.9%	75	1,847	4.3%	51	481	1.1%	14	804	1.9%	30	5,317	12.3%	40	6,061	14.1%
2000	226	4,237	13.2%	68	1,666	5.2%	46	626	2.0%	15	454	1.4%	40	3,708	11.6%	59	7,806	24.4%
2001	178	4,367	16.1%	61	1,025	3.8%	35	291	1.1%	7	246	0.9%	27	1,825	6.7%	28	1,434	5.3%
2002	130	5,443	23.4%	46	1,161	5.0%	34	264	1.1%	8	101	0.4%	20	1,459	6.3%	17	1,668	7.2%
2003	111	2,544	10.6%	44	689	2.9%	32	353	1.5%	5	79	0.3%	17	1,561	6.5%	13	1,560	6.5%
2004	108	3,793	14.4%	45	942	3.6%	39	688	2.6%	6	110	0.4%	16	2,388	9.1%	13	2,418	9.2%
2005	101	2,906	13.1%	54	986	4.4%	37	379	1.7%	7	122	0.5%	18	3,201	14.5%	22	4,846	21.9%
2006	125	3,663	16.4%	51	1,725	7.7%	32	795	3.5%	9	185	0.8%	27	3,821	17.1%	23	4,413	19.7%
2007	131	4,108	16.3%	70	1,739	6.9%	37	494	2.0%	7	110	0.4%	33	4,069	16.2%	23	4,108	16.3%
2008	143	3,081	12.2%	87	2,360	9.3%	45	613	2.4%	9	59	0.2%	29	2,686	10.6%	19	2,462	9.7%
2009	122	2,550	12.6%	68	1,927	9.5%	39	792	3.9%	5	39	0.2%	24	2,900	14.3%	21	2,427	12.0%
2010	157	2,888	8.4%	97	1,972	5.7%	50	519	1.5%	4	55	0.2%	27	5,056	14.7%	17	4,450	13.0%

Source: ADF&G Fish Tickets (CVs) and NMFS Blend (1995–2002) and Catch Accounting (2003–2010) databases. *Confidential.

Table A-13. Retained catch of Pacific cod (mt) by the inshore and offshore catcher processing sectors in the Western GOA from 1995–2010.

	Hook-and-line CP				Pot CP				Trawl CP			
	Inshore		Offshore		Inshore		Offshore		Inshore		Offshore	
Year	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch
1995	11	4,871	7	761	1	*	2	*	3	40	8	547
1996	12	3,649	5	720	0	0	0	0	4	55	15	732
1997	7	3,310	6	520	0	0	0	0	4	156	13	138
1998	5	*	2	*	0	0	1	*	5	194	10	82
1999	9	3,908	11	1,208	0	0	6	1,424	5	567	8	57
2000	9	3,622	5	1,085	0	0	2	*	3	451	10	300
2001	7	3,598	9	372	0	0	3	1,038	4	392	9	279
2002	8	5,459	8	952	1	*	1	*	2	*	11	*
2003	6	2,490	13	1,752	1	*	1	*	3	261	8	79
2004	4	2,160	8	733	1	*	0	0	2	*	11	*
2005	4	484	6	241	1	*	0	0	2	*	11	*
2006	7	1,966	7	725	0	0	0	0	1	*	10	*
2007	8	2,715	4	355	1	*	0	0	2	*	11	*
2008	10	2,567	4	505	0	0	1	*	1	*	10	*
2009	9	3,866	6	434	0	0	2	*	1	*	13	*
2010	9	3,334	5	1,598	0	0	0	0	1	*	12	*

Table A-14. Retained catch of Pacific cod (mt) by the inshore and offshore catcher processing sectors in the Central GOA from 1995–2010.

	Hook-and-line CP				Pot CP				Trawl CP			
	Inshore		Offshore		Inshore		Offshore		Inshore		Offshore	
Year	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch	Vessels	Catch
1995	7	*	1	*	0	0	0	0	5	253	19	1,819
1996	4	710	0	0	0	0	0	0	6	229	17	2,484
1997	1	*	1	*	0	0	0	0	5	675	15	95
1998	4	6	3	169	0	0	0	0	4	1,651	13	2,796
1999	6	306	3	7	1	*	10	*	5	673	10	922
2000	6	*	2	*	0	0	4	910	4	375	6	1,012
2001	1	*	1	*	0	0	3	588	5	785	6	1,456
2002	2	*	5	*	0	0	3	131	3	328	6	507
2003	4	268	5	1,194	1	*	0	0	3	392	9	827
2004	2	*	3	*	0	0	0	0	3	175	7	595
2005	3	244	4	22	0	0	0	0	3	494	8	226
2006	2	*	7	*	0	0	0	0	2	*	9	*
2007	3	549	5	827	1	*	0	0	2	*	5	*
2008	7	791	7	963	0	0	0	0	2	*	7	*
2009	3	8	6	1,146	0	0	0	0	2	*	9	*
2010	1	*	8	*	0	0	0	0	2	*	7	*

Source: NMFS Blend/Catch Accounting, 1995–2010. *Confidential.

APPENDIX B. COMPARISON BETWEEN CATCH DATA SETS

In developing catch histories for recent sector allocations, the North Pacific Fishery Management Council (Council) has typically used Alaska Department of Fish and Game (ADF&G) Fish Tickets for catcher vessels and NMFS Weekly Production Reports (WPRs) for catcher processors. An alternative data source is the NMFS Blend (1995 through 2002) and Catch Accounting (2003 through present) databases. The Blend data is comprised of WPRs and Observer data, and the Catch Accounting data is comprised of WPRs, Fish Tickets, and Observer data. NMFS uses the Blend and Catch Accounting databases to manage the fishery inseason, and these databases comprise the official catch record. Fish Ticket information prior to 2008 was not available quickly enough for NMFS' inseason management purposes. NMFS inseason management requires prompt reporting of catch to successfully manage the fisheries to stay within the established limits for total allowable catch and prohibited species catch. Data from non-electronic WPRs and Fish Tickets take time to compile. With the advent of eLandings, NMFS Catch Accounting database and the ADF&G Fish Ticket database are in close agreement for landings data.

For catcher vessels, ADF&G Fish Tickets are a more comprehensive record of catch than the Blend (1995 through 2002) database. As a result catch estimates based on Fish Tickets are generally higher than those from the Blend database. Blend catch estimates are based on WPRs and Observer data. Catch Accounting estimates for catcher vessels are based on Fish Tickets for vessels that deliver shoreside and use eLandings; retained catch estimates are very similar between the Catch Accounting database and the Fish Ticket database.

For catcher processors and motherships, the Blend database consists of WPRs and Observer data, based on the selection rules detailed below. Catch Accounting data for catcher processors and motherships uses WPRs for 30% observed vessels and Observer data for 100% observed vessels. There is very little mothership activity in the Gulf of Alaska. Discrepancies between WPRs and Blend/Catch Accounting databases may be the result of underreporting on WPRs compared to observer data, the use of product recovery rates to back-calculate round weights for catch recorded on WPRs, and the increased use of observer estimates for catcher processors and motherships in Blend/Catch Accounting data. The advantage of using WPRs for allocations is that certain product types, such as meal, can be excluded from catch estimates. The Blend and Catch Accounting databases do not contain A record of products produced. However, in the Gulf of Alaska, WPRs indicated that no catcher processors produced meal from Pacific cod during 1995 through 2006. For this reason, the Council elected to use Blend and Catch Accounting data rather than WPRs to calculate qualifying catch for catcher processors. Table B-1 and Table B-2 compare estimates of retained catch from the Blend and Catch Accounting databases to retained catch estimates from Fish Tickets and WPRs.

DATA USED FOR CATCH ACCOUNTING

All vessels are observed if ≥60 ft LOA
30% coverage if <125 ft LOA or pot
100% coverage if ≥125 ft LOA and non-pot
200% coverage if AFA CP, Amendment 80, CDQ, or Atka Mackerel in critical habitat

<u>Catcher Processor or Mothership</u>

If 100% observed, data used is observer data

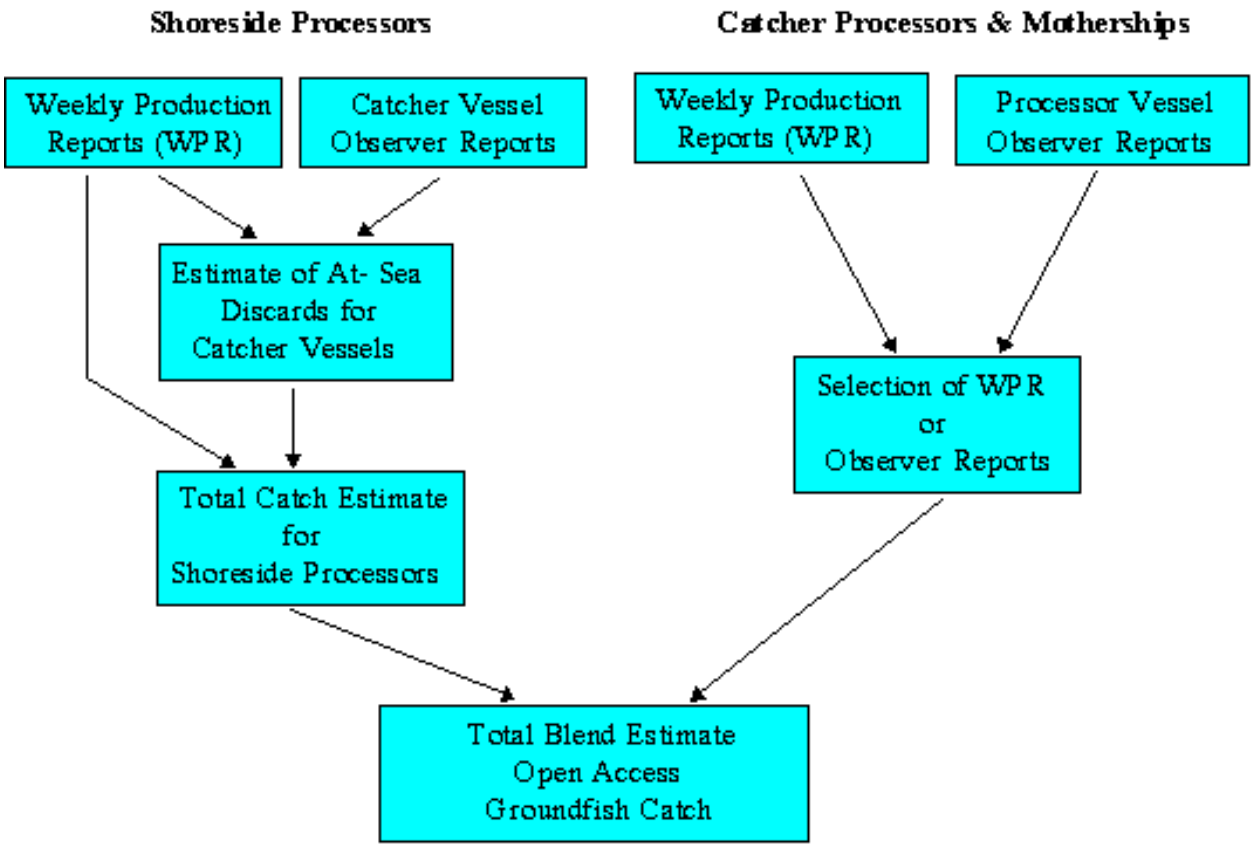
If 30% observed, data used is WPR data

<u>Catcher Vessels</u>

<u>For shoreside deliveries</u>:

- **If processor uses SPELR/IERS, individual vessel Fish Ticket data is used**
- **Otherwise, shoreside WPR weekly fish ticket summary data**

DATA USED FOR BLEND



Blend selection rules for picking WPR or Observer data:

- Total groundfish catch for all species combined is computed each week for each processor vessel from the Weekly Production Report and from the Observer report.

- If either report is missing, the report present is selected. If both reports are present the Blend compares the two numbers:

    - If the WPR and Observer total catch numbers are within 5%, the WPR is selected as the source.
    - If the WPR is more than 30% higher than the Observer total catch (for pollock target fisheries)* or more than 20% higher (all other targets), the WPR is selected as the source.
    - In all other cases, the Observer report is selected as the source.

* Pollock is processed into several products with highly variable recovery rates, including surimi and deep-skin fillets. The wider selection range is needed to ensure that WPR records are not inappropriately selected in cases where a processor achieves high recovery rates.

Table B-1 Comparison between retained catch estimates (mt) for Western GOA Pacific cod based on ADF&G Fish Tickets and NMFS Blend/Catch Accounting data, 1995–2008.

Western Gulf

	Hook-and-line CV			Jig CV			Pot CV			Trawl CV		
Year	FT	CA	Percent difference	FT	CA	Percent difference	FT	CA	Percent difference	FT	CA	Percent difference
1995	35	19	45.8%	48	32	32.1%	2,352	2,360	-0.3%	12,704	12,526	1.4%
1996	193	132	31.4%	45	45	-0.2%	1,689	1,663	1.5%	13,921	11,942	14.2%
1997	34	52	-54.0%	5	4	29.9%	1,041	992	4.7%	18,554	18,053	2.7%
1998	22	112	-418.0%	1	*	na	2,533	1,618	36.1%	15,007	14,382	4.2%
1999	70	37	48.0%	0	0	0.0%	1,591	1,313	17.5%	14,673	14,335	2.3%
2000	54	65	-20.8%	5	4	16.5%	5,107	4,670	8.6%	11,113	11,284	-1.5%
2001	31	25	19.4%	157	130	17.1%	2,538	1,971	22.4%	6,135	6,143	-0.1%
2002	38	9	77.2%	193	172	10.8%	4,805	4,340	9.7%	5,073	5,026	0.9%
2003	47	76	-63.2%	46	46	-0.4%	9,549	9,492	0.6%	1,367	1,422	-4.0%
2004	28	40	-42.9%	183	178	3.0%	9,718	9,680	0.4%	1,717	1,698	1.1%
2005	281	295	-5.0%	46	52	-12.8%	6,402	6,355	0.7%	4,441	4,386	1.2%
2006	106	130	-22.5%	*	*	*	5,918	5,908	0.2%	4,917	4,813	2.1%
2007	390	403	-3.4%	2	2	0.1%	4,646	4,653	-0.2%	4,281	4,281	0.0%
2008	506	499	1.4%	63	44	30.2%	6,009	6,000	0.1%	4,601	4,601	0.0%

Source: ADF&G Fish Tickets (1995–2008), NMFS Blend (1995–2002), and NMFS Catch Accounting (2003–2008).
*Confidential.

Table B-2 Comparison between retained catch estimates (mt) for Central GOA Pacific cod based on ADF&G Fish Tickets and NMFS Blend/Catch Accounting data, 1995–2008.

Central Gulf

	Hook-and-line CV			Jig CV			Pot CV			Trawl CV		
Year	FT	CA	Percent difference	FT	CA	Percent difference	FT	CA	Percent difference	FT	CA	Percent difference
1995	4,546	4,479	1.5%	51	41	19.7%	13,760	12,962	5.8%	23,548	23,575	-0.1%
1996	4,491	4,433	1.3%	34	8	77.8%	10,539	10,176	3.4%	23,975	23,481	2.1%
1997	6,401	6,137	4.1%	21	13	38.5%	8,420	7,563	10.2%	25,895	25,135	2.9%
1998	5,815	5,852	-0.6%	50	16	68.1%	9,208	8,690	5.6%	21,214	20,862	1.7%
1999	6,174	6,153	0.3%	24	30	-25.6%	12,182	12,779	-4.9%	19,881	19,506	1.9%
2000	6,529	6,342	2.9%	38	35	7.6%	11,967	11,423	4.5%	10,971	10,740	2.1%
2001	5,684	5,605	1.4%	11	20	-71.3%	3,505	3,443	1.8%	15,169	13,749	9.4%
2002	6,867	6,423	6.5%	3	4	-23.8%	3,228	2,579	20.1%	10,568	10,112	4.3%
2003	3,586	3,294	8.1%	16	42	-167.8%	3,201	3,050	4.7%	14,405	13,877	3.7%
2004	5,423	5,510	-1.6%	118	166	-40.9%	4,916	4,868	1.0%	13,669	13,669	0.0%
2005	4,271	4,274	-0.1%	137	152	-10.8%	8,169	8,099	0.9%	8,591	8,468	1.4%
2006	6,183	6,286	-1.7%	96	117	-21.7%	8,420	8,286	1.6%	5,922	5,818	1.7%
2007	6,341	6,354	-0.2%	36	39	-6.1%	8,286	8,126	1.9%	8,220	8,241	-0.3%
2008	6,054	6,139	-1.4%	19	18	5.3%	5,208	5,209	0.0%	11,680	11,677	0.0%

Source: ADF&G Fish Tickets (1995–2008), NMFS Blend (1995–2002), and NMFS Catch Accounting (2003–2008).
*Confidential.

Table B-3 Comparison between retained catch estimates (mt) for Pacific cod in the Western GOA based on NMFS Weekly Production Reports and NMFS Blend/Catch Accounting data, 1995–2008.

	Hook-and-line CP			Pot CP			Trawl CP		
Year	CA	WPR	Percent difference	CA	WPR	Percent difference	CA	WPR	Percent difference
1995	5,632	4,875	13.4%	104	84	19.1%	587	612	-4.2%
1996	4,369	4,220	3.4%	*	*	100.0%	787	612	22.2%
1997	3,837	3,360	12.4%	0	0	0.0%	295	263	11.0%
1998	3,168	2,959	6.6%	*	*	100.0%	276	251	8.9%
1999	5,116	4,947	3.3%	1,424	1,347	5.4%	623	618	0.8%
2000	4,706	4,532	3.7%	*	*	0.0%	751	555	26.1%
2001	3,969	3,657	7.9%	1,038	1,074	-3.4%	670	618	7.8%
2002	6,411	5,790	9.7%	*	*	0.3%	327	419	-28.0%
2003	4,242	3,923	7.5%	*	*	0.0%	340	317	6.7%
2004	2,893	2,813	2.8%	*	*	0.0%	539	425	21.2%
2005	724	698	3.6%	*	*	0.0%	217	228	-5.2%
2006	2,691	2,575	4.3%	*	*	0.0%	218	206	5.7%
2007	3,069	3,066	0.1%	*	*	12.4%	529	493	6.8%
2008	3,072	3,098	-0.8%	*	*	0.0%	391	311	20.5%

Source: NMFS Weekly Production Reports (1995–2008), NMFS Blend (1995–2002), and NMFS Catch Accounting (2003–2008). *Confidential.

Table B-4 Comparison between retained catch estimates (mt) for Pacific cod in the Central GOA based on NMFS Weekly Production Reports and NMFS Blend/Catch Accounting data, 1995–2008.

	Hook-and-line CP			Pot CP			Trawl CP		
Year	CA	WPR	Percent difference	CA	WPR	Percent difference	CA	WPR	Percent difference
1995	134	216	-61.7%	0	0	--	2,072	1,860	10.3%
1996	710	494	30.4%	0	0	--	2,714	2,100	22.6%
1997	*	*	0.5%	0	0	--	770	790	-2.6%
1998	175	107	38.8%	0	0	--	4,447	4,155	6.6%
1999	313	314	-0.4%	2,938	2,932	0.2%	1,595	1,451	9.0%
2000	209	209	0.0%	910	781	14.1%	1,387	1,724	-24.3%
2001	*	*	-4.4%	588	572	2.7%	2,241	2,447	-9.2%
2002	1,638	1,297	20.8%	131	128	1.8%	835	687	17.8%
2003	1,462	1,260	13.8%	*	*	0.0%	1,219	1,448	-18.8%
2004	1,453	1,383	4.8%	0	0	--	770	934	-21.4%
2005	267	264	0.9%	0	0	--	719	752	-4.5%
2006	897	837	6.7%	0	0	--	877	886	-1.1%
2007	1,376	1,059	23.0%	*	*	1.3%	590	593	-0.6%
2008	1,755	1,631	7.1%	0	0	0.0%	632	607	4.0%

Source: NMFS Weekly Production Reports (1995–2008), NMFS Blend (1995–2002), and NMFS Catch Accounting (2003–2008). *Confidential.

APPENDIX C. MARKET INFORMATION ON ALASKA PACIFIC COD PRODUCTS

Market information on Pacific cod products

This information below is summarized from "Selected Market Information for Pacific Cod" by Gunnar Knapp, January 12, 2006, an unpublished report prepared for the North Pacific Fishery Management Council.

- The proportion of frozen (headed & gutted) Pacific cod increased steadily from 1995 through 2004. The overall amount of Pacific cod exported has also increased.
- Data presented in this report show a convergence between headed & gutted production in the United States with total exports of frozen cod (currently over 90%). This suggests that most headed & gutted Pacific cod is being exported.
- Since 2001, there has been a declining trend in exports of Pacific cod fillets as a share of total U.S. production. The production of Pacific cod fillets has been declining in the United States since 1997, and the proportion of the fillet production exported has recently decreased.
- China has received an increasing share of U.S. exports of frozen cod since 1999, but Japan still accounts for the largest proportion of U.S. exports of cod.
- The cod imports to the United States from China have increased very dramatically since 1998.
- The amount of frozen cod fillets imported by the United States has increased steadily since 1998.
- About 90% (2004) of U.S. export of Pacific cod is headed & gutted production.

APPENDIX F. Proposed FMP Amendment Text for GOA Amendment 83

Deletions are stricken and additions are in bold.

p. ES-3

Apportionment of TAC -- Pacific cod

TAC shall be allocated 90% to the inshore sector and 10% to the offshore sector **in the Eastern GOA**. **TAC shall be allocated to the harvest sectors (catcher vessels and catcher processors using trawl, pot, hook-and-line, and jig gear) in the Western and Central GOA. The Western and Central GOA harvest sector allocations superseded the inshore and offshore processing sector allocations.**

p. ES-4

Prohibited Species Catch Limits

Pacific halibut: Halibut mortality PSC limits are established annually in regulation; may be apportioned by season, regulatory area, gear type, **operation type,** and/or target fishery.

Section 3.2.6.3.2 Pacific Cod and Pollock

The GOA pollock and **the eastern GOA Pacific cod TACs** will be allocated between the inshore and offshore components of industry in specific shares in order to lessen or resolve resource use conflicts and preemption of one segment of the groundfish industry by another, to promote stability between and within industry sectors and affected communities, and to enhance conservation and management of groundfish and other fish resources. **The Western and Central GOA Pacific cod TACs are allocated among the harvest sectors, and these sector allocations supersede the inshore and offshore processing allocations.**

Inshore endorsements and operating restrictions

Annually before operations commence, each mothership, floating processing vessel and catcher/processor vessel that intends to process GOA pollock or **eastern** GOA Pacific cod harvested in an inshore directed fishery for those species must apply for and receive an inshore processing endorsement on its Federal fisheries or Federal processor permit. All shoreside processors are by definition included in the inshore component and are not required to apply for an inshore processing endorsement. Once an inshore processing endorsement is issued it is valid for the duration of the fishing year and cannot be rescinded. Processors that lack an inshore processing endorsement are prohibited from processing GOA pollock or **eastern** GOA Pacific cod harvested in a directed fishery for processing by the inshore component. Harvesting vessels that do not process pollock or Pacific cod do not need an inshore processing endorsement and may choose to deliver their catch to either or both components.

Catcher/processors that hold an inshore processing endorsement are prohibited from harvesting or processing more than 126 mt (round weight) of pollock or **eastern** GOA Pacific cod in combination during any fishing week.

Motherships and floating processors that hold an inshore processing endorsement must process all GOA pollock and **eastern** GOA Pacific cod harvested in a directed fishery for those species in a single geographic location inside the waters of the State of Alaska during a fishing year.

Inshore/Offshore Allocations

One hundred percent of the allowed harvest of pollock is allocated to inshore catcher/processors or to harvesting vessels which deliver their catch to the inshore component, with the exception that offshore catcher/processors, and vessels delivering to the offshore component, will be able to take pollock incidentally as bycatch in other directed fisheries. All pollock caught as bycatch in other fisheries will be attributed to the sector which processes the remainder of the catch.

Ninety percent of the allowed harvest of **eastern GOA** Pacific cod is allocated to inshore catcher/processors or to harvesting vessels which deliver to the inshore component and to inshore catcher/processors; the remaining ten percent is allocated to offshore catcher/processors and harvesting vessels which deliver to the offshore component. All Pacific cod caught as bycatch in other fisheries will be attributed to the sector which processes the remainder of the catch.

Pacific Cod Sector Allocations

The Western and Central GOA Pacific cod TACs are allocated to the sectors as shown in the table below. The jig allocation is deducted from the respective Pacific cod TACs before allocations to other sectors are made. The initial jig allocations are 1% of the Central GOA Pacific cod TAC and 1.5% of the Western GOA Pacific cod TAC, with a stairstep provision to increase the jig allocation by 1% if 90% of the federal jig allocation in an area is harvested in any given year. The jig allocation will be capped at 6% of the respective Central and Western GOA Pacific cod TACs. The jig allocation in the respective management areas will be stepped down in 1% annual increments, if 90% of the previous allocation (prior to the most recent stairstep increase) is not harvested during two consecutive years following the stairstep increase, but will not drop below its initial level.

Motherships are limited to processing up to 2% of the Western GOA Pacific cod TAC and are prohibited from processing groundfish in the Central GOA. Motherships include catcher processors receiving deliveries over the side and any floating processor that does not meet the regulatory definition of a stationary floating processor. However, federally permitted vessels that do not meet the definition of stationary floating processor and that do not harvest groundfish off Alaska in the same calendar year may operate as floating processors for Pacific cod deliveries in an amount up to 3% of the Central GOA Pacific cod TAC and 3% of the Western GOA Pacific cod TAC within the boundaries of Western and Central GOA CQE communities.

Sector Allocations of the Western and Central GOA Pacific Cod TACs

Western GOA sector allocations with jig allocation taken off the top of the TAC				Central GOA sector allocations with jig allocation taken off the top of the TAC			
		Seasonal allocation				Seasonal allocation	
	Annual Allocation	A season	B season		Annual Allocation	A season	B season
HAL CP	19.8%	55.2%	44.8%	HAL CP	5.1%	80.3%	19.7%
HAL CV	1.4%	47.2%	52.8%	HAL CV <50	14.6%	63.9%	36.1%
				HAL CV >=50	6.7%	84.0%	16.0%
Pot CV/CP	38.0%	52.0%	48.0%	Pot CV/CP	27.8%	63.9%	36.1%
Trawl CP	2.4%	37.9%	62.1%	Trawl CP	4.2%	48.8%	51.2%
Trawl CV	38.4%	72.3%	27.7%	Trawl CV	41.6%	50.8%	49.2%

Note: Due to rounding, percentages for each sector may not sum to totals.

License Limitation Program. Add Section 3.3.1.4 (note that GOA Am86 will add Sections 3.3.1.2 and 3.3.1.3)

Operation type endorsement for Western and Central GOA Pacific cod fishery

- **Vessels engaged in directed fishing for Pacific cod in the WGOA and CGOA management area that hold a CP LLP license must also hold a CV Pacific cod endorsement on the license in order to participate as a catcher vessel. Holders of CP licenses must make a one-time election to receive a WGOA and/or CGOA CP or CV endorsement for Pacific cod, if the license holder made at least one Pacific cod landing while operating as a CV under the authority of the CP license from 2002 through 2008. The purpose of this option is to preclude CP license holders from opportunistically fishing off both the CP and CV Pacific cod sector allocations. The CP or CV Pacific cod endorsement does affect catch accounting in other groundfish fisheries.**

4.1.2.2 Pacific Cod

In 1993, the Council apportioned 90 percent of GOA Pacific cod TAC to the inshore sector and 10 percent to the offshore sector. Beginning in 1998, the IR/IU program was implemented, requiring full retention of all Pacific cod caught. **In 2009, the Council allocated the Western and Central GOA Pacific cod TACs among the gear and operation types based on catch history and other criteria. The sector allocations superseded the inshore/offshore processing allocations in the Western and Central GOA management areas.**

p. A-11, Appendix A, A.1 Amendments to the FMP

Amendment 83 was implemented _____.
Allocated the Western GOA and Central GOA Pacific cod TACs among gear (trawl, pot, longline, jig) and operation types.

S:\Amendment 83 (GOA) Pcod sector split\final rule\GOA_83_EA.doc

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Finding of No Significant Impact for the Final Rule Implementing Amendment 83 to the Fishery Management Plan for Groundfish of the Gulf of Alaska to Allocate Pacific Cod Among Harvesting Sectors, RIN 0648-AY53

National Marine Fisheries Service
September 22, 2011

The actions analyzed are the revision of the allocations of Gulf of Alaska (GOA) Pacific cod total allowable catch (TAC) among various fixed gear, trawl gear, and jig gear sectors. The final environmental assessment/regulatory impact review/initial regulatory flexibility analysis (EA/RIR/IRFA) also analyzed revisions to related provisions governing inseason reallocations of unused Pacific cod allocations, seasonal apportionments, and prohibited species bycatch allowances.

One of the purposes of an EA is to provide the evidence and analysis necessary to decide whether an agency must prepare an environmental impact statement (EIS). This Finding of No Significant Impact (FONSI) is the decision maker's determination that this action will not result in significant impacts to the human environment, and therefore, further analysis in an EIS is not needed. The Council on Environmental Quality regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of its "context" and its "intensity." An action must be evaluated at different spatial scales and settings to determine the context of the action. Intensity is evaluated with respect to the nature of impacts and the resources or environmental components affected by the action. NOAA Administrative Order (NAO) 216-6 provides guidance on National Environmental Policy Act (NEPA) specifically to line agencies within NOAA. It specifies the definition of significance in the fishery management context by listing criteria that should be used to test the significance of fishery management actions (NAO 216-6 §§ 6.01 and 6.02). These factors form the basis of the analysis presented in sections 2.0, 3.0, and 4.0 of the attached EA/RIR/IRFA. The results of that analysis are summarized here for those criteria.

Context: For this action, the setting is the Pacific cod fishery of the GOA. Any effects of this action are limited to this area. The effects of this action on society within this area are on individuals directly and indirectly participating in this fishery and on those who use the ocean resources. Because this action concerns the use of a present and future resource, this action may have impacts on society as a whole or regionally.

Intensity: Listings of considerations to determine intensity of the impacts are in 40 CFR 1508.28(b) and in the NAO 216-6, Section 6. Each consideration is addressed below in order as it appears in the NMFS Instruction 30-124-1 dated July 22, 2005, Guidelines for Preparation of a FONSI.

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?

Response: No. Pacific cod is the target species affected by the action. The Pacific cod stock is at a sustainable population level. Implementation of the preferred alternative would change sector and seasonal allocations of Pacific cod to reflect average historic annual harvest share by sector. The total amount of Pacific cod caught, however, would not change under this alternative. All retained and discarded harvest would be counted against the TAC. As a result, the alternative is not expected to jeopardize the sustainability of Pacific cod, and thus will not result in a significant impact (EA/RIR/IRFA section 3.3).

2) *Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

Response: No. Previous analyses concluded that species caught incidentally in the Pacific cod fisheries are at sustainable population levels. The intent of the preferred alternative is for allocations to mimic actual catch patterns among gear types, based on recent historical averages. Therefore, the impacts of the proposed action on non-target species are not expected to be significant (EA/RIR/IRFA sections 3.4 and 3.5).

3) *Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act and identified in FMPs?*

Response: No. The effects of the Pacific cod fisheries on benthic habitat and EFH were analyzed in the EFH Identification and Conservation EIS. Recent closures in the Aleutian Islands have protected sensitive habitat areas from future adverse impacts due to fishing. The overall amount of effort in the fisheries will remain the same under the preferred alternative, as the overall Pacific cod TAC is not affected under this alternative. This EIS found no indication that continued fishing activities at the current rate and intensity would alter the capacity of EFH to support healthy populations of managed species over the long term. These effects are likely to be the same under the proposed action and are not considered to be significant (EA/RIR/IRFA section 3.8).

4) *Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

Response: No. Public health and safety are not expected to be adversely affected by the proposed action (EA/RIR/IRFA sections3.11 and 5.1). Safety requirements for fishing vessels would not be changed. Restricting the <50 ft length overall (LOA) fixed gear vessels to fishing only from their own allocation, but not allowing this sector to fish off the general hook-and-line and pot allocations when those directed fisheries are open may reduce incentives for the <50 ft LOA fixed gear sector to harvest Pacific cod earlier in the year in more difficult weather. This may increase safety for this small boat fleet.

5) *Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

Response: No. This action is intended to continue to establish in regulation specific allocations of GOA Pacific cod to the various industry sectors, based on the historical harvest distribution (and temporal distribution of that harvest) among sectors. No adverse impacts on marine mammals are anticipated as a result of implementing the preferred alternative (EA/RIR/IRFA sections 3.5 and 3.6).

6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: No. This action would not produce population-level impacts to marine species, or change community- or ecosystem-level attributes beyond the range of natural variability of the ecosystem. This action is limited to reallocation of Pacific cod among sectors and does not affect overall removals. Therefore, the proposed action is not expected to have a significant impact on the ecosystem (EA/RIR/IRFA section 3.9).

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: No. The potential social and economic impacts related to this action are associated with a redistribution of allocations of Pacific cod to more closely represent historical harvest patterns and are not related to any natural or physical environmental effects (EA/RIR/IRFA section 3.9).

8) Are the effects on the quality of the human environment likely to be highly controversial?

Response: No. The effects of the proposed action on the quality of the human environment are unlikely to be highly controversial. Controversies concerning the proposed action are related to possible economic impacts to sectors that would have a smaller allocation of Pacific cod if the proposed action is approved and are not related to environmental impacts effects (EA/RIR/IRFA section 3.11).

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

Response: No. Because this action takes place in offshore waters of the GOA, this action is not expected to result in substantial impacts to historic or cultural resources, park land, prime farmlands, wetlands, or wild and scenic rivers. The marine waters where the Pacific cod fishery occurs contains ecologically critical areas EFH. Effects on the unique characteristics of these areas are not anticipated to occur with this action (EA/RIR/IRFA section 3.8).

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: No. A well developed body of science exists related to the effects of managing the Pacific cod fishery on the marine environment. The impacts of the reallocation of harvest among sectors are primarily a socioeconomic concern that is well understood. Enough information is available to make decisions on potential impacts of the proposed action on the human environment (EA/RIR/IRFA section 3.11).

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: No past, present, or reasonably foreseeable future actions were identified that would combine with the effects of this action to result in cumulatively significant impacts. (EA/RIR/IRFA section 3.11).

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: No. Because this action occurs in offshore waters of the GOA, no impacts will occur on districts, sites, highways, structures, or objects listed or eligible for listing in the National Register of Historic Places, nor cause loss or destruction of significant scientific, cultural, or historical resources.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

Response: No. This action will not affect the introduction or spread of non-indigenous species, because it does not change fishing practices that may introduce such organisms into the marine environment.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

Response: No. Future actions related to this action are likely to be allocative in nature and are likely to have similar impacts as this action. The decision making for future allocations will likely continue to be made based on the best scientific information available and the deliberative process normally used in developing such decisions. This action may be a consideration in future actions but is not likely to constrain future decision making. Pursuant to NEPA for all future Federal actions, appropriate environmental analysis documents (EA or EIS) will be prepared to inform the decision makers of potential impacts to the human environment and to implement mitigation measures to avoid significant adverse impacts. (EA/RIR/IRFA section 2.3.6).

15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Response: No. This action poses no known violation of Federal, State, or local laws or requirements for the protection of the environment.

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: No additional cumulative adverse effects were identified that would result in a significant adverse effect on the human environment. Cumulative adverse effects have been identified and discussed for target and non-target species, but these did not reach the level of significance (EA/RIR/IRFA section 3.11).

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the final rule implementing Amendment 83 to the Fishery Management Plan for Groundfish of the GOA to allocate Pacific cod among harvesting sectors, it is hereby determined that this action will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

9/22/11

For James W. Balsiger, Ph.D — Date
Administrator, Alaska Region