

DRAFT FOR PUBLIC REVIEW

Regulatory Amendment for a Catch Sharing Plan For the Pacific Halibut Charter Sector and Commercial Setline Sector in International Pacific Halibut Commission Regulatory Area 2C and Area 3A

Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis

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Lead Agency: North Pacific Fishery Management Council
605 W. 4th Avenue, Suite 306
Anchorage, Alaska 99501

Responsible Official: Dr. James Balsiger, Alaska Regional Administrator
National Marine Fisheries Service
709 W. 9th Street
Juneau, Alaska 99802-1668
(907) 586-7221

Contact:

Jane DiCosimo	Rachel Baker
North Pacific Fishery Management Council	National Marine Fisheries Service
605 W. 4th Avenue, Suite 306	709 W. 9th Street
Anchorage, Alaska 99501	Juneau, Alaska 99802-1668
(907) 271-2809	(907) 586-7245

Abstract: This analysis examines proposed changes to the management of Pacific halibut in the charter fisheries and commercial setline fisheries in International Pacific Halibut Commission (IPHC) Regulatory Areas 2C and 3A in the Gulf of Alaska. The North Pacific Fishery Management Council (Council) identified a need to develop a catch sharing plan (CSP) for the charter and commercial sectors to address conservation and allocation concerns in both areas. These concerns resulted from: 1) increased harvests in the charter halibut fishery, and 2) decreased catch limits in the commercial setline fisheries. There are five proposed alternatives under consideration. The No Action alternative would continue management of the charter halibut sector in these regulatory areas under the Guideline Harvest Level (GHL) Program. Annual amendments to federal regulations have been required in Area 2C to match the management measure(s) to constrain charter halibut harvests to the GHL. The delayed timeline for implementation of the CSP has resulted in overharvest of the GHL in Area 2C, except for 2011 when harvest was under the GHL by 30%.

Alternative 2 is the 2008 Preferred Alternative to replace the GHL Program with a catch sharing plan (CSP) for Areas 2C and 3A. This CSP would: 1) replace the current GHL program; 2) set initial allocations for each sector; and 3) establish a matrix of management measures to control charter halibut harvests to annual allocations; 4) authorize annual transfers of commercial halibut quota to charter halibut permit holders for harvest in the charter fishery to provide flexibility for individual commercial and charter fishery participants; and 5) a prohibition on retention of charter halibut by skippers and crew onboard under all allocations and triggers in both areas. A proposed rule of this alternative was published in July 2011 and comments were accepted through September 21, 2011.

Alternative 3 is the 2012 Preliminary Preferred Alternative for a modified CSP. In addition to the features identified under Alternative 2, Alternative 3 would replace the fixed matrix of management measures under Alternative 2 with a requirement that annually the Council recommend, and the IPHC adopt, management measures to maintain charter halibut harvests within the respective allocations. Alternative 3 differs from Alternative 2 in three ways: 1) it adjusts the 2008 Preferred Alternative allocation by a) eliminating the $\pm 3.5\%$ target range around the allocations, and b) converting from the statewide harvest survey to logbooks with adjustments for crew harvests for estimating catch; 2) clarifies features of the

guided angler fish (GAF) IFQ transfer program; and 3) considers whether to recommend the IPHC GAF program implement separate accountability measures for commercial wastage and charter wastage.

Alternative 4 contains the same elements as Alternative 3, except it would increase the allocation to the charter sector by 3.5% of combined charter and commercial catch limit (CCL) at the two lower CCL levels; no adjustment is made to the highest CCL. In its April 2012 motion, the Council labeled those potential allocations as Option 1 (Area 2C) and Option 2 (Area 3A). They represent the 2008 Preferred Alternative + 3.5% of the CCL.

Alternative 5 contains the same elements as Alternative 3, except it would increase the *2012 Preliminary Preferred Alternative (PPA)* by the same 3.5% of the CCL at lower CCL levels. They are labeled as Option 1 adjusted (Area 2C) and Option 2 adjusted (Area 3A). These options apply a consistent approach to the 2012 PPA that was applied to the 2008 Preferred Alternative under Alternative 4. Their addition applies a consistent, logical approach to identifying the full range of allocation options and notices the public of potential action by the Council when it selects its Final Preferred Alternative in October 2012.

Summary: The proposed range of allocation options follows.

Proposed Area 2C charter allocations

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 1 (2008 Pref Alt + 3.5% of CCL)	Option 1 adjusted (2012 PPA + 3.5% of CCL)*
4.779	0.788	< 5 Mlb	17.3%	18.3%	20.8%	21.8%
5.841	0.931	≥5 Mlb - 9 Mlb	15.1%	15.9%	18.6%	19.4%
6.903	1.074	≥ 9 Mlb	15.1%	15.9%	15.1%	15.9%
7.965	1.217					
9.027	1.432					

Proposed Area 3A charter allocations

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 2 (2008 Pref Alt + 3.5%)	Option 2 adjusted (2012 PPA + 3.5% of CCL)*
11.425	2.008	< 10 Mlb	15.4%	17.2%	18.9%	20.7%
13.964	2.373	≥ 10 Mlb - 20 Mlb	14.0%	15.6%	17.5%	19.1%
16.504	2.734	≥ 20 Mlb	14.0%	15.6%	14.0%	15.6%
19.042	3.103					
21.581	3.650					

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ABBREVIATIONS

ABC	Allowable Biological Catch	NMFS	National Marine Fisheries Service
ADF&G	Alaska Department of Fish and Game	NPFMC	North Pacific Fishery Management Council
BAWM	Bycatch and Wastage Mortality	O26	Over 26 inches
BOF	Alaska Board of Fisheries	OFL	Overfishing Level
CCL	Combined Catch Limit	OMB	Office of Management and Budget
CEY	Constant Exploitation Yield	%	Percent
CFEC	Commercial Fisheries Entry Commission	PSC	Prohibited Species Catch
CFR	Code of Federal Regulations	PSEIS	Programmatic Supplemental Environmental Impact Statement
CI	Confidence Interval	PSR	Pelagic Shelf Rockfish
Council	North Pacific Fishery Management Council	QS	Quota Share
CQE	Community Quota Entity	RAM	NMFS Restricted Access Management Program
CSP	Catch Sharing Plan	RFA	Regulatory Flexibility Act
DSR	Demersal Shelf Rockfish	RIR	Regulatory Impact Review
EA	Environmental Assessment	RP	Residual Percentage
Ebio	Exploitable Biomass	SAFE	Stock Assessment and Fishery Evaluation
EIS	Environmental Impact Statement	SBA	United States Small Business Administration
EPA	Environmental Protection Act	SC	Skipper and Crew
ESA	Endangered Species Act	SE	Standard Error
FCEY	Fishery Constant Exploitation Yield	SSC	NPFMC Scientific and Statistical Committee
FMP	Fishery Management Plan	SUFastD	Slow up fast down
FR	Federal Register	SUFulID	Slow up full down
GAF	Guided Angler Fish	SWHS	Statewide Harvest Survey
GHL	Guideline Harvest Level	TAC	Total Allowable Quota
GOA	Gulf of Alaska	TCEY	Total Constant Exploitation Yield
GSM	Guided Sport Moratorium	U26	Under 26 inches
IFQ	Individual Fishing Quota	U32	Under 32 inches
IPHC	International Pacific Halibut Commission	U95%	Upper 95%
IRFA	Initial Regulatory Flexibility Analysis	USCG	United States Coast Guard
L95%	Lower 95%	USFWS	United States Fish and Wildlife Service
lbs	Pounds	WPUE	Weight Per Unit Effort
LEP	Limited Entry Permit		
MIbs	Millions of Pounds		
NEI	Northern Economics, Inc.		
NEPA	National Environmental Policy Act		

EXECUTIVE SUMMARY

This analysis examines proposed changes to the management of Pacific halibut in the charter fisheries and commercial setline fisheries in International Pacific Halibut Commission (IPHC) Regulatory Areas 2C and 3A in the Gulf of Alaska. The North Pacific Fishery Management Council (Council) identified a need to develop a catch sharing plan (CSP) for the charter and commercial sectors to address conservation and allocation concerns in both areas. These concerns resulted from 1) increased harvests in the charter halibut fishery, and 2) decreased catch limits in the commercial setline fisheries. There are five proposed alternatives addressed in this analysis.

	Alternative 1	Alternative 2 2008 Preferred Alternative	Alternative 3 2012 Preliminary Preferred Alternative	Alternative 4 ("Option 1&2")	Alternative 5 ("Option 1&2" Adjusted)
Type of Council Action	No Action; annual recommendations to IPHC	Regulatory Amendment	Regulatory Amendment; annual recommendations & letter to IPHC	Same as Alternative 3	Same as Alternative 3
Description	Guideline Harvest Level Program continues	Catch Sharing Plan replaces the GHL Program & one fish bag limit in Area 2C	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Type of Allocation	Fixed "Target" Allocation in lbs based on halibut abundance	Sector Allocations that float with halibut abundance (fixed percent)	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Allocation Basis	125% of average 1995-1999 charter halibut harvest	< Lower Abundance: 125% of average 2001-2005 charter harvest divided by combined charter and commercial halibut harvests > Higher abundance: Area 2C - 2005 charter harvest, Area 3A - 125% of 1995-1999 average harvest	Modified Alternative 2 by: 1) eliminating the $\pm 3.5\%$ target range around the allocations, and 2) adjusting allocations for conversion from the statewide harvest survey to logbooks with crew harvests removed.	Modified Alternative 2 allocations to the charter sector by +3.5% of combined catch limit (CCL) at the two lower (of three) CCL levels	Modified Alternative 3 allocations to the charter sector by +3.5% of CCL at the two lower CCL levels
Allocations	See separate breakout table for specific proposed allocation alternatives				
Action Required if Target/ Allocation is Exceeded	None; could result in annual Council action and NMFS rule-making, with delayed feedback loop resulting in likely mismatch of measure and current harvest level	None; overages and underages from projections are expected to balance out in the longer term; management matrix controls charter harvests; however Council has identified inadequacies in the matrix	Annual analysis & recommendation of management measure to the IPHC for implementation for upcoming season (replaces matrix). Use of logbooks to manage fishery may reduce uncertainty in harvest projections and choice of annual management measures.	Same as Alternative 3	Same as Alternative 3
Guided Angler Fish Program	No	Yes	Modified Alternative 2	Same as Alternative 3	Same as Alternative 3
Separate Accountability	No	Yes for direct fishery	Yes for direct fishery and wastage	Same as Alternative 3	Same as Alternative 3
Meets Problem Statement	No	Yes, but with deficiencies	Yes	Same as Alternative 3	Same as Alternative 3

The five alternatives primarily are differentiated by proposed allocation choices, along with other program features that are detailed in the list of alternatives and the chart above. The tables show both the status quo alternative and the alternatives defined in the Council motion. Note that the GHL allocation is based on the Total CEY and the CSP allocations are based on the CCL. The proposed range of allocation options for each area is listed in the tables below. Other components, aside from allocation options, also will be addressed in the EA.

Proposed Area 2C charter allocations in this analysis

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 1 (2008 Pref Alt + 3.5% of CCL)	Option 1 adjusted (2012 PPA + 3.5% of CCL)*
4.779	0.788	< 5 Mlb	17.3%	18.3%	20.8%	21.8%
5.841	0.931	≥5 Mlb - 9 Mlb	15.1%	15.9%	18.6%	19.4%
6.903	1.074	≥ 9 Mlb	15.1%	15.9%	15.1%	15.9%
7.965	1.217					
9.027	1.432					

Proposed Area 3A charter allocations in this analysis

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 2 (2008 Pref Alt + 3.5%)	Option 2 adjusted (2012 PPA + 3.5% of CCL)*
11.425	2.008	< 10 Mlb	15.4%	17.2%	18.9%	20.7%
13.964	2.373	≥ 10 Mlb - 20 Mlb	14.0%	15.6%	17.5%	19.1%
16.504	2.734	≥ 20 Mlb	14.0%	15.6%	14.0%	15.6%
19.042	3.103					
21.581	3.650					

Environmental Assessment

The Environmental Assessment (EA) evaluates the potential biological, social, and economic impacts of proposed regulations to manage the Pacific halibut fisheries in Area 2C and Area 3A. The proposed action would (1) set an initial allocation between the charter and commercial halibut sectors with accompanying harvest restrictions to limit charter harvests to the respective allocations in Area 2C and Area 3A; (2) implement a market-based program for the charter sector to increase its initial allocations through individual transfers of commercial halibut IFQs; (3) identify a process for setting annual management measures for the charter sector to constrain harvests to the sector's allocation, and (4) account for all removals by sector.

The problem statement that was adopted by the Council reads:

The absence of a hard allocation between the commercial longline and charter halibut sectors has resulted in conflicts between sectors, and tensions in coastal communities that are dependent on the halibut resource. Unless a mechanism for transfer between sectors is established, the existing environment of instability and conflict will continue. The Council seeks to address this instability, while balancing the needs of all who depend on the halibut resource for food, sport, or livelihood.

The purpose of the proposed action is, first, to create a catch sharing plan (CSP) that would set an initial allocation between the charter halibut sector and commercial longline halibut sector, and reduce the time lag between occurrence of an overage and a management response; and, second, to allow the charter sector to increase its initial allocation by compensating the commercial sector for any future reallocations above the level set at initial allocation by using a market-based approach. The proposed sector allocations are intended to stop the uncompensated *de facto* reallocation from the commercial sector to the charter sector. The GHL has been exceeded in Area 2C each year since its implementation in 2004, despite restrictive control measures that were recommended by the Council and implemented by NMFS. The GHL was exceeded in Area 3A from 2004 through 2007. Charter halibut harvests have grown at an average annual rate of 6.8 percent in Area 2C and 4.1 percent in Area 3A, from 1998 through 2006. The number of active vessels, the total number of clients, the average number of clients per trip, and the average numbers of trips per vessel, were at their highest levels in the recorded data period of 1998 through 2006 at the time of Council action. The number of clients per trip has increased steadily in recent years. This indicates that client demand for charter services has been met by the charter sector increasing the supply of trips over those years. It is also likely that the recent economic downturn and the one-fish bag limit in Area 2C have decreased demand for charter trips.

Purpose and Need Statement

The Council is concerned about its ability to maintain the stability, economic viability, and diversity of the halibut industry, the quality of the recreational experience, the access of subsistence users, and the socioeconomic well-being of the coastal communities dependent on the halibut resource. Specifically, the Council noted the need for reliable harvest data would increase as the magnitude of harvest expands in the charter sector. The Council identified the following areas of concern, with respect to the recent growth of halibut charter operations.

- The recent growth of charter operations may be contributing to overcrowding of productive grounds and declining harvests per unit of effort for historical sport, commercial, and subsistence fishermen in some areas.
- As there is currently no limit on the annual harvest of halibut in the charter fishery, an open-ended reallocation from the commercial IFQ sector to the charter industry occurs when charter harvest exceeds the GHL. This reallocation may increase, if the projected growth of the charter industry occurs. The economic and social impact on the commercial IFQ fleet of this open-ended reallocation may be substantial.

- In some areas, community stability may be affected as traditional sport, subsistence, and commercial IFQ fishermen are displaced by charter LEP holders. The uncertainty associated with the present situation and the conflicts that are occurring between the various user groups may also be impacting community welfare.
- Information is lacking on the socioeconomic composition of the current charter industry. Information is needed that tracks (a) the effort and harvest of individual charter operations and (b) changes in business patterns.

Description of Alternatives

Alternative 1. Status quo

Alternative 1 (No Action) would continue management of the charter sector under the Guideline Harvest Limit (GHL) program and harvest control measures. The status quo allows the charter sector in Areas 2C and 3A to harvest up to (and beyond) the GHLs. The GHL is established annually for Areas 2C and 3A, and may be adjusted downward, based on the total CEY that is determined by the IPHC. Such adjustments have occurred in recent years in both areas due to a declining halibut Total Constant Exploitation Yield (TCEY). Annual amendments to federal regulations have been required in Area 2C to match the management measure(s) to control charter halibut harvests to the GHL (Table ES-1).

Table ES-1 Management under the GHL Program

Area	Year	GHL (Mlbs)	Management Measure*
2C	2006	1.432	Two fish any size
	2007	1.432	Two fish (1 < 32")
	2008	0.931	Two fish (1 < 32")
	2009	0.788	One fish any size
	2010	0.788	One fish any size
	2011	0.788	One fish < 37"
	2012	0.931	Reverse slot limit (U45 O68)
3A	2006	3.650	Two fish any size
	2007	3.650	Two fish any size
	2008	3.650	Two fish any size
	2009	3.650	Two fish any size
	2010	3.650	Two fish any size
	2011	3.650	Two fish any size
	2012	3.103	Two fish any size

Source: ADF&G, 2012.

*2012 management measures were implemented through the IPHC annual management measures;

2011 measures were implemented through a Secretarial regulatory amendment;

2010 and prior measures were implemented through Council regulatory amendments.

The status quo includes current federal and state regulations that would remain unchanged. Current federal regulations for Area 2C Pacific halibut charters include (1) a one-fish bag limit; (2) a prohibition on the catch and retention of halibut by charter vessel guides, operators, and crew; (3) a limit on the number of lines used to fish for halibut, which must not exceed six or the number of charter vessel clients onboard the charter vessel, whichever is fewer; and (4) a reverse slot limit (U45 O68). The current federal bag limit for Area 3A is two fish of any size per day for Pacific halibut charters. State of Alaska Emergency Order No. 2-R-3-03-09 was issued in 2009 to (1) prohibit the catch and retention of halibut by

charter vessel guides, operators, and crew, while paying clients are on board the vessel; and (2) limit the number of lines used to fish for halibut to no more than the number of charter vessel clients onboard. The emergency order was effective from May 23 through September 1, 2009. The State of Alaska did not issue an Emergency Order for the 2010, 2011, or 2012 fishing seasons.

Alternative 2. (2008 Preferred Alternative) Establish a catch sharing plan that includes sector accountability

Element 1 – Initial allocation and bag limits.

In Area 2C, when the combined charter and commercial setline catch limit is less than 5 Mlb, the charter allocation will be 17.3 percent of the combined charter and commercial setline catch limit. When the combined charter and commercial setline catch limit is 5 Mlb or more the allocation will be 15.1 percent. Management variance not to exceed 3.5 percentage points (plus or minus) may occur around this allocation. The Council's expectation is that the variances will balance over time to ensure IPHC conservation and management objectives are achieved.

Trigger 1: When the combined charter and commercial setline catch limit is < 5 Mlb, the halibut charter fishery will be managed under a 1-halibut daily bag limit. The allocation for the charter sector will be 17.3 percent of the combined charter and commercial setline catch limit. The charter sector's expected catch may vary between 13.8 percent and 20.8 percent. However, if the charter harvest for an upcoming season is projected to exceed 20.8 percent of the combined charter and commercial setline catch limit, then a maximum size limit will be implemented to reduce the projected harvest level to be lower than 17.3 percent of the combined charter and commercial setline catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined commercial and charter catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 2: When the combined charter and commercial setline catch limit is between 5 Mlb and 9 Mlb, the halibut charter fishery shall be managed under a 1-halibut daily bag limit. The charter sector's allocation will be 15.1 percent of the combined catch limit. The charter sector's expected catch may vary between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected harvest level to 15.1 percent of the combined catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 3: When the combined catch limit is between 9 Mlb and 14 Mlb, the charter halibut fishery shall be managed under a 2-halibut daily bag limit (only one of which may be longer than 32 inches). The charter sector's allocation will be 15.1 percent of the combined catch limit. The charter sector's expected catch may vary between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, then the charter fishery will revert back to a 1-halibut daily bag limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 4: When the combined catch limit is greater than 14 Mlb, the halibut charter fishery will be managed under a 2-halibut daily bag limit. The charter sector's allocation will be 15.1 percent of the

combined catch limit. The charter sector's expected catch may range between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, the charter fishery will revert back to a 2-halibut daily bag limit. Only one of the retained halibut may be longer than 32 inches.

Area 2C Combined Catch Limit (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
<5	Comm alloc = 82.7% Charter alloc = 17.3% Charter range = 13.8-20.8%	One Fish	Maximum size limit imposed that brings harvest to <17.3%	One Fish
≥5 - <9	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	One Fish	Maximum size limit imposed that brings harvest to <15.1%	Two fish, but one must be less than 32" in length
≥9 - <14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish, one must be less than 32" in length	One Fish	Two Fish
≥14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two Fish	Two fish, but one must be less than 32" in length	Two Fish

In Area 3A, when the combined charter and commercial setline catch limit is less than 10 Mlb, the charter allocation will be 15.4 percent of the combined charter and commercial setline catch limit. When the combined charter and commercial setline catch limit is 10 Mlb and above, the allocation will be 14.0 percent. Management variance not to exceed 3.5 percentage points (plus or minus) may occur around this allocation. The Council's expectation is that the variances will balance over time to ensure IPHC conservation and management objectives are achieved.

Trigger 1: When the combined charter and setline catch limit is < 10 Mlb, the charter halibut fishery will be managed under a 1-halibut daily bag limit. The charter sector's allocation will be 15.4 percent of the combined charter and setline catch limit. The charter sector's expected catch may vary between 11.9 percent and 18.9 percent of the combined catch. However, if the charter harvest for an upcoming season is projected to exceed 18.9 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected charter harvest below 15.4 percent of the combined harvest. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined commercial and charter catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 2: When the combined catch limit is between 10 Mlb and 20 Mlb, the halibut charter fishery will be managed under a 1-halibut daily bag limit. The charter sector's allocation will be 14.0 percent of the combined catch limit. The charter sector's expected catch may vary between 10.5 percent and 17.5 percent of the combined catch limit. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected charter harvest level to 14 percent of the combined catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 3: When the combined limit is between 20 Mlb and 27 Mlb, the halibut charter fishery will be managed under a 2-halibut daily bag limit (only one of which may be longer than 32 inches). The charter sector's allocation will be 14.0 percent of the combined catch limit. The charter sector's expected catch

may vary between 10.5 percent and 17.5 percent of the combined catch limit. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, then the charter fishery will revert back to a 1-halibut daily bag limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 4: When the combined catch limit is greater than 27 Mlb, the halibut charter fishery will be managed under a 2-halibut daily bag limit. The charter sector’s allocation will be 14.0 percent of the combined catch limit. The charter sectors expected harvest may range between 10.5 percent and 17.5 percent of the combined catch limits. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, the charter fishery will revert back to a 2-halibut daily bag limit. Only one of the retained halibut may be longer than 32 inches.

Area 3A Combined Catch Limit (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
<10	Comm alloc = 84.6% Charter alloc = 15.4% Charter range = 11.9-18.9%	One Fish	Maximum size limit imposed that brings harvest to <15.4%	One Fish
≥10 - <20	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	One Fish	Maximum size limit imposed that brings harvest to <14.0%	Two fish, but one must be less than 32" in length
≥20 - <27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish, one must be less than 32" in length	One Fish	Two Fish
≥27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two Fish	Two fish, but one must be less than 32" in length	Two Fish

In Areas 2C and 3A, no retention of halibut by skipper and crew while paying clients are on board would be allowed.

Element 2 – Annual regulatory cycle/timeline.

The Council did not adopt an annual regulatory cycle for amending federal regulations. It is the Council’s intent to not revisit or readjust bag limits; such bag limit changes will be triggered by changes in combined charter and commercial setline catch limits established annually by the IPHC. Bag limits and maximum size limits would be implemented by the IPHC based upon its determination of the combined catch limits and the bag limit parameters described above.

Element 3 – Supplemental, individual use of commercial IFQ to allow charter limited entry permit holders (LEP) to lease commercial IFQ, in order to provide additional harvesting opportunities for charter anglers, not to exceed limits in place for unguided anglers.

- A. Leasing commercial IFQ for conversion to Guided Angler Fish (GAF).
 - 1. A Charter Halibut Limited Access Program (CHLAP) permit holder may lease IFQ for conversion to GAF for use on the LEP.
 - 2. Commercial halibut QS holders may lease up to 1,500 pounds or 10% (whichever is greater) of their annual IFQ to LEP holders (including themselves) for use as GAF on LEPs. If an IFQ holder chooses to lease to a CQE, then the same limitations apply as if they were leasing to an individual charter operator—1,500 lb or 10 % whichever is greater. With regard to CQE leasing: any quota which a CQE holds, regardless of its origin, could be leased up to 100% to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, lease from another qualified CQE, or leased from an individual, and then lease up to 100% of the quota it holds.

3. No more than 400 GAF may be assigned to an LEP endorsed for 6 or fewer clients.
No more than 600 GAF may be assigned to an LEP endorsed for more than 6 clients.
- B. LEP holders harvesting GAF while participating in the charter halibut fishery are exempt from landing and use restrictions associated with commercial IFQ fishery, but subject to the landing and use provisions detailed below.
- C. GAF would be issued in numbers of fish. The conversion between annual IFQ and GAF would be based on average weight of halibut landed in each region's charter halibut fishery (Area 2C or Area 3A) during the previous year as determined by ADF&G.¹
- D. Subleasing of GAF would be prohibited.
- E. Conversion of GAF back to commercial sector.
Unused GAF may revert back to pounds of IFQ and be subject to the underage provisions applicable to their underlying commercial QS either automatically on November 1 of each year or upon the request of the GAF holder if such request is made to NMFS in writing prior to November 1 of each year.
- F. Guided angler fish derived from commercial QS may not be used to harvest fish in excess of the unguided sport bag limit on any given day.
- G. Charter operators landing GAF on private property (e.g., lodges) and motherships would be required to allow ADF&G samplers/enforcement personnel access to the point of landing.
- H. Commercial and charter fishing may not be conducted from the same vessel on the same day.

Alternative 2 was the 2008 Preferred Alternative to replace the GHM Program with a catch sharing plan (CSP) for Area 2C and Area 3A. This CSP would 1) replace the current GHM program; 2) set initial allocations for each sector; and 3) establish a matrix of management measures to control charter halibut harvests to annual allocations; 4) authorize annual transfers of commercial halibut quota to charter halibut permit holders for harvest in the charter fishery to provide flexibility for individual commercial and charter fishery participants; and 5) prohibit retention of charter halibut by skippers and crew onboard under all allocations and triggers in both areas.

The Council intended that the proposed CSP allocations to both sectors vary with halibut abundance, as indicated in its selection of a fixed percentage allocation under its 2008 Preferred Alternative. It would have required pre-season notice of upcoming management measures to allow an uninterrupted charter halibut season. The allocations for the lowest tier of CCLs are based on 125 percent of the 2001–2005 average charter harvest, which was the same formula selected by the Council to set the GHMs (although in fixed pounds). These percentages were the highest percentage allocation options to the charter sector that were considered by the Council and would yield the largest projected gross revenue each year. The allocations at higher CCLs are the second highest percentage allocation options for each area considered by the Council. The analysis found that these allocations would exceed projected harvests from 2009 through 2011 and that more restrictive management measures would not be required. The Council selected a different percentage of the CCL in each area because the initial allocations could have very different impacts as a result of the size of the current constant exploitation yield (CEY) relative to historical CEYs. The plan also identifies specific management measures that would be triggered at different CCLs and identifies a market-based approach for individual charter LEP holders, who are willing buyers, to increase the charter sector allocation by compensating individual commercial IFQ holders, who are willing sellers, for their transferred quota. The plan would include a prohibition on retention of charter halibut by skippers and crew.

¹The Council's long-term plan may require further conversion to some other form (e.g., angler days) in a future action.

While the Council selected its Preferred Alternative in October 2008, supplemental analyses of aspects of the Council's motion were required to complete the analysis for submission to the Secretary. These were reviewed by the Scientific and Statistical Committee, and accepted by the Council, in February 2009. The draft final analysis was submitted to NMFS in September 2009. Recommended revisions from informal reviews by NMFS, and additional revisions of the analyses of the 2008 Preferred Alternative that were requested by the Council, were incorporated into the draft submitted to the Secretary in July 2011. A proposed rule was published in July 2011 and comments were accepted through September 21, 2011.

In February 2012 the Council reviewed a report by NOAA Fisheries that included 1) requests for clarification of Council intent on its proposed CSP and 2) a summary of public comments. The Council requested additional information and requested that the analysis be revised to reflect its clarifications and to respond to public comments. Based on additional information provided by staffs of the Council, NOAA Fisheries, and ADF&G in April 2012, the Council adopted a new problem statement and revised its previous action (i.e., 2008 Preferred Alternative) by adopting a preliminary preferred alternative (PPA) (which was corrected in June 2012) and additional options for analysis. The Council scheduled a new final action for October 2012.

Alternative 3. (2012 Preliminary Preferred Alternative) Establish a catch sharing plan that includes sector accountability

Alternative 3 is the 2012 Preliminary Preferred Alternative for a modified CSP. In addition to the features identified under Alternative 2 (outlined above), Alternative 3 would replace the fixed matrix of management measures under Alternative 2 with a requirement that the Council recommend, and the IPHC adopt, annual management measures to maintain charter halibut harvests within the respective allocations. Alternative 3 differs from Alternative 2 in the following ways: 1) it adjusts the 2008 Preferred Alternative allocation by a) eliminating the $\pm 3.5\%$ target range around the allocations, and b) using logbooks with adjustments for crew harvests instead of the statewide harvest survey to estimating catch; 2) it clarifies features of the GAF program (see below); 3) it considers whether to recommend to the IPHC that GAF program implement separate accountability for commercial wastage and charter wastage.

In April 2012, the Council amended its previous action on the CSP (Alternative 2). It adopted the following changes that would be incorporated into a new preliminary preferred alternative.

- The Council adopts the March 27, 2012, recommendations of the Halibut Charter Management Implementation Committee and the Advisory Panel to adopt the "2012 Approach" for determining annual charter halibut management measures under the CSP and removing the current matrix of management measures that are included in the current proposed rule. With this change, the Council also removes the target range around the allocations of $\pm 3.5\%$.
- The Council also adopts the unanimous recommendation of the Halibut Charter Management Implementation Committee and the Advisory Panel to use ADF&G logbooks as the primary data collection method. The Council recommends using an adjustment factor based on the 5-year average (2006–2010) of the difference between the harvest estimates provided by the logbooks and the SWHS, with the adjustment factor reduced by the amount of harvest attributed to skipper and crew. The Council's understanding is that applying this adjustment factor would result in the following changes to the CSP allocations, as corrected in June 2012:

Area 2C adjustment factor = 5.6%

Area 2C current CSP allocation in Tier 1 = 17.3%

Adjusted CSP allocation = $(17.3\% * 5.6\%) + 17.3\% = 18.3\%$

Area 2C current CSP allocation in Tiers 2 through 4 = 15.1%

Adjusted CSP allocation = $(15.1\% * 5.6\%) + 15.1\% = 15.9\%$

Area 3A adjustment factor = 11.6%

Area 3A current CSP allocation in Tier 1 = 15.4%

Adjusted CSP allocation = $(15.4\% * 11.6\%) + 15.4\% = 17.2\%$

Area 3A current CSP allocation in Tiers 2 through 4 = 14.0%

Adjusted CSP allocation = $(14.0\% * 11.6\%) + 14.0\% = 15.6\%$

- The Council recommends for consideration of a letter to the IPHC supporting the idea of separate accountability of wastage between halibut sectors, and revising the preamble to the rule describing the method that the Council would expect to be used by the IPHC in setting catch limits.
- Guided Angler Fish Program – all elements of the GAF Program under the 2008 preferred alternative would apply, except as noted below.
 - GAF would be issued in numbers of fish. Conversion of IFQ pounds to numbers of fish would be based on the average weight of GAF from the previous year.
 - In the first year of the GAF program, the GAF weight to number of fish conversion factor would be based on the previous year's data or most recent year without maximum size limit in effect.
 - The leasing limitation for each commercial halibut IFQ shareholder would be limited to 10% or 1,500 pounds of his or her IFQ holdings in Area 2C, and 15% or 1,500 pounds of his or her IFQ holdings in Area 3A, whichever is greater.
 - *Anglers*² would be required to mark GAF by removing the tips of the upper and lower lobes of the tail and report the length of retained GAF halibut to NMFS through the NMFS approved electronic reporting system.
 - A review within five years of the start of the GAF program would be scheduled, which would take into account the economic effects on both sectors.

Alternative 4. Establish a catch sharing plan that includes sector accountability, with adjustment of 2008 PA by +3.5% on two lower levels of combined catch limits

Alternative 4 contains the same elements as Alternative 3, except it would increase the allocation to the charter sector by 3.5% of combined charter and commercial catch limit (CCL) at the two lower CCL levels; no adjustment is made to the highest CCL. In its April 2012 motion the Council labeled those as Option 1 (Area 2C) and Option 2 (Area 3A). The options represent the 2008 Preferred Alternative + 3.5% of the CCL.

Option 1: Area 2C

At a combined catch limit of <5 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (20.8%); at a combined catch limit of $\geq 5 - <9$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (18.6%). At combined catch limits of ≥ 9 Mlbs, maintain the original target CSP allocation of 15.1%.

Option 2: Area 3A

At a combined catch limit of <10 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (18.9%); at a combined catch limit of $\geq 10 - <20$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (17.5%). At combined catch limits of ≥ 20 Mlbs, maintain the original target CSP allocation of 14.0%.

Alternative 5. Establish a catch sharing plan that includes sector accountability, with adjustment of 2012 PPA by +3.5% on two lower levels of combined catch limits

Alternative 5 contains the same elements as Alternative 3, except it would increase the 2012 PPA by the same 3.5% of the CCL at lower CCL levels. They are labeled as Option 1 adjusted (Area 2C) and Option

² An interagency staff working group recommends that Council identify the guide or “skipper” as the responsible party for marking GAF. This language is consistent with a verbal correction to the motion that occurred during the April 2012 Council meeting, but was not incorporated into the written language that was adopted.

2 adjusted (Area 3A). These options apply a consistent approach to the 2012 PPA that was applied to the 2008 Preferred Alternative under Alternative 4. Their addition applies a consistent, logical approach to identifying the full range of allocation options and notices the public of potential action by the Council when it selects its Final Preferred Alternative in October 2012. The range of allocation options are listed in the tables below.

Option 1 adjusted: Area 2C

At a combined catch limit of <5 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (21.8%); at a combined catch limit of $\geq 5 - <9$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (19.4%). At combined catch limits of ≥ 9 Mlbs, maintain the original target CSP allocation of 15.9%.

Option 2 adjusted: Area 3A

At a combined catch limit of <10 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (20.7%); at a combined catch limit of $\geq 10 - <20$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (19.1%). At combined catch limits of ≥ 20 Mlbs, maintain the original target CSP allocation of 15.6%.

Note: Under the 2012 model, the $\pm 3.5\%$ range around the allocation would be removed, and the Council would be annually recommending management measures that minimize the difference between the projected harvest and the target allocation, without exceeding the allocation.

Summary of Proposed Allocations: The result of the Council motion includes the following options to divide the available halibut in Area 2C (Table ES-2) and Area 3A (Table ES-3). The first option is the Council's 2008 preferred alternative. That option would allocate 17.3% of the Area 2C CCL to the charter sector when the CCL is less than 5 Mlbs. This percentage was originally derived as 125% of the 2001 through 2005 average charter harvest (GHL formula updated through 2005). The charter sector would be allocated 15.1% when the CCL is 5 Mlbs or greater. This percentage was originally derived based on the 2005 charter harvest. The 2012 PPA is the 2008 preferred alternative increased by 5.6% to account for using logbooks as the primary data collection mechanism. The third option, "Option 1 (unadjusted)", is the 2008 preferred alternative increased by 3.5% of the CCL. The 3.5% increase equates to the upper bound of the target range in the Council's 2008 preliminary preferred alternative. Finally, the fourth option "Option 1 (adjusted for allocation and logbooks)" is "Option 1 (unadjusted)" plus 3.5% of the CCL.

Effect of Alternatives

The proposed alternatives address allocation of the Pacific halibut resource between the commercial setline and charter sectors. While the alternatives would affect harvest levels and charter fishing practices, total halibut removals would not be affected as any decreases in charter harvests would result in increased commercial harvests. The IPHC factors estimated halibut removals into the halibut stock assessment when setting annual commercial longline catch limits. Therefore, none of the proposed alternatives is expected to significantly impact the halibut stock. None is expected to affect the physical environment, benthic community, marine mammals, seabirds, or non-specified groundfish species. The data are insufficient to quantify whether groundfish stocks may be affected by the alternatives, but any effects on groundfish from the proposed action are expected to be minor. There may be an effect on the human environment, as there are winners and losers under any sector allocation. The Council attempted to mitigate the impacts of the initial allocation on the charter sector by allowing charter limited entry permit holders to acquire additional allocation from the commercial sector, through financial compensation. Charter clients who fish with these permit holders would be allowed to fish under regulations similar to those for non-guided anglers.

Regulatory Impact Review

The economic impacts of the alternatives considered in this analysis are discussed in terms of the status quo (GHL) and the four CSP alternatives (Alternatives 2 through 5) that are being considered by the Council to replace the GHL. As noted in the October 2007 Scientific and Statistical Committee (SSC) report, this analysis does not provide quantitative estimates or confidence intervals for the magnitude of net national benefits. Nor are quantitative estimates provided for regional economic impacts of the alternatives considered in this amendment. Because those estimates cannot be provided, given the information available, the analysis does not identify an optimal allocation. Additional data that is currently unavailable would be needed to provide information on the contribution of each alternative to national welfare associated with all sources of commercial removals (e.g., setline retained catch and wastage, charter catches and release mortality, bycatch in other fisheries, etc.), as well as the effects these may have on users and uses of the resource not associated with commercial fishing activity, both market and non-market. Even if the Council were able to recommend an allocation that maximizes net benefits to the nation under the current conditions, changes that occur within sectors and regions would require frequent modifications to the allocations.

Alternative 1. Status quo (Guideline Harvest Level)

The GHL defines the amount of halibut allocated to the charter and commercial IFQ fisheries in Area 2C and Area 3A. Charter allocations are defined based on the Total CEY, which is the exploitable biomass multiplied by the exploitation rate. The charter harvest level is established in a step-wise fashion when the Total CEY is more than 4.779 Milb in Area 2C. In Area 3A, the charter harvest level is defined when the Total CEY is more than 11.425 Milb. If the Total CEY is less than those amounts, the GHL is not used to determine the charter allocation. When the Total CEY is more than 9.027 Milb in Area 2C the charter harvest level is 1.432 Milb and never increases; in Area 3A the charter limit is always set at 3.650 Milb when the Total CEY is more than 21.581 Milb.

Because the GHL is based on Total CEY the charter catch limit is not affected by other halibut removals. Removals for unguided sport, personal use, waste, and bycatch are deducted from the Total CEY after the GHL is set. Commercial IFQ catch limits are established after other removals have been deducted from the Total CEY and any adjustment to the catch limit have been made by the IPHC. As a result increases in other removals affect the commercial harvest, but not the charter GHL. Because other removals have tended to increase over time they have reduced the commercial IFQ allocation.

Area 2C The Area 2C GHL was reduced from 1.432 Milb to 931,000 lb in 2008 and, subsequently, to 788,000 lb in 2009. The GHL remained at 2009 levels until 2012 when it was increased 931,000 Milb. Management measures in have been more restrictive than the unguided sport bag limit since 2007. Those restrictions on charter angler harvest were insufficient to constrain charter harvest to the GHL until 2011. That year the 37 inch size limit on the one fish bag limit, in addition to weak economic conditions, resulted in the charter sector harvesting only an estimated 388,000 lbs of halibut. Based on early estimates of 2012 charter harvest, it also appears the charter sector will be within their GHL.

Area 3A The GHL was reduced from 3.650 Milb (2004 through 2011) to 3.103 Milb (2012) in Area 3A. A two-fish daily bag limit (of any size) has remained in place over the entire life of the GHL. The charter harvest permit program will also continue to be in place. Charter harvests are not expected to be constrained by the program, because of excess capacity in the fleet. Client demand in Area 3A is assumed not to change as a result of maintaining these management measures.

Economic conditions since 2008 appear to have reduced demand for trips to Alaska, halibut charter trips, and charter angler halibut harvests. The proportion of the decline in charter harvest attributed to economic conditions in Area 2C is not estimated, but are a result of changing management measures, general economic conditions faced by potential charter clients, and biological conditions that have occurred in the halibut biomass and halibut distribution over this time period. Changes in Area 3A harvest are more

directly related to changing economic conditions, since management measures affecting client welfare have been unchanged.

A limited entry program for Area 2C and Area 3A was implemented in January 2010; permits were required to be on board vessels in the charter halibut fishery beginning February 1, 2011. This program limits the number of vessels that may be used by guided fishermen at any time and limits the number of clients that may fish on a permitted vessel during a trip. Vessels are limited by requiring a charter harvest permit (CHP) be onboard a vessel when it is used for a halibut charter trip. There are 582 charter permits for Area 2C. The majority of these permits are issued for use by “traditional” charter business operators (537 permits or 92.3%). All but one of the remaining permits is issued to CQEs. In Area 3A, 503 permits are currently available to provide halibut charter trips. Those permits are primarily held by traditional charter operators (441 or 87.7%). Fifty-six of the remaining permits are held by CQEs and six by military entities. The number of outstanding permits may be reduced slightly over time as the remaining permits that are under dispute are ruled on.

The status quo is not expected to alter the future harvest of halibut. However, the annual management measures implemented under the status quo to limit the charter sector to their GHF will cause catch to vary over time. Worldwide economic conditions will also impact halibut removals by the charter fishery. The number of eligible participants in the fishery is determined by the charter permit program and will be the same under all the alternatives under consideration.

Alternative 2. Catch Sharing Plan

Alternative 2 mirrors the Preferred Alternative that was selected by the Council in 2008, but never approved by the SOC or implemented by NOAA Fisheries. A catch sharing plan would divide a combined commercial and charter catch limit, determined by the IPHC for Areas 2C and 3A independently, between the charter and commercial setline halibut fisheries. The allocation would divide the catch limit such that in Area 2C the charter sector would be allocated 17.3% of the combined catch limit, using estimates for 2012. That equates to a charter catch limit of about 600,000 lbs, or a decrease of about 310,000 lbs relative to the GHF. The impact of that decline on the charter sector will depend on the difference in management measures that must be imposed to constrain the charter sector to their catch limit. Those management measures will affect client demand for trips. The decrease in value associated with decrease in clients will determine the change benefits obtained by charter operators. More restrictive charter client bag limits, are expected to reduce consumer surplus, but the amount cannot be quantified with existing information. Processors of charter caught fish and suppliers of goods and services to charter operators will also be negatively impacted as the charter operator’s demand for those services declines. Crew members may also realize a reduction in pay and tips as a result of fewer trips. Communities that are more reliant on charter businesses than halibut IFQ harvest/landings could also realize a decline in community impacts, both in terms of expenditures within the community and taxes generated. However, most communities are dependent on both the commercial IFQ and charter fisheries, so negative impacts realized by on sector will be offset, to some extent, by increased activity from the other sector.

Management measures will be implemented based on the matrix structure that selects the management measures based on the CCL. The rigid structure of the matrix provides no discretion for managers to select an alternative management measure other than those dictated by the matrix regardless of whether harvests under that alternative measure better achieve the target allocation and have less of a negative effect on charter bookings. Managers and the charter industry have limited experience with the measures included in the matrix. As a result, it is possible that the expected effects of those measures (both in terms of harvests and the effects on the charter sector) may prove inaccurate. In addition, with changing halibut stocks, it is possible that the effects could vary over time. While the matrix is responsive to changes in projected harvests under the default measure, that response is limited to selecting a single back up management measure. By limiting the response to an inadequate default measure, or to the selection of a single back up measure, the matrix provides very little flexibility to respond to new information. The

charter industry has recently suggested a number of unused measures intended to constrain their harvests while minimizing the negative effects on charter demand. The matrix provides no opportunity for consideration of these measures, which may prove far more effective in both addressing the need to constrain harvests of the charter sector and mitigate the negative effects of those constraining measures on the charter industry.

Guided anglers must abide by any possession limits, bag limits, and/or size limits that are in place for the charter sector in an area when harvesting from the common pool. GAF, leased from the commercial sector, may allow CHP holders to offer their clients the opportunity to harvest halibut under the same regulations (when more liberal) that apply to unguided anglers. Any such halibut, harvested outside of the charter fishery regulations, must be identified as GAF (or will be subject to an enforcement action). GAF will not be counted against the common pool harvest, because a member of the commercial sector is compensated to allow the charter harvest to increase by reducing their personal allocation. Because the commercial sector is compensated for the halibut, the catch is deducted from the commercial allocation. GAF may provide a market mechanism to transfer QS from the commercial to the charter sector if the halibut is of greater value to charter clients. Because very limited information is available on the willingness of clients to pay an additional fee for GAF, estimates are not provided on the amount of GAF that would be leased or the prices associated with transfers that would result.

Alternatives 3 through 5. Catch Sharing Plan

The preliminary preferred alternative (Alternative 3) and Alternatives 4 and 5 have the same structure and component, but the sector allocations differ. Based on these alternatives and 2012 data the Area 2C charter catch limit would have been reduced from 931,000 lb under the GHL in 2012 to 633,000 lb under the 2012 PPA (Alternative 3), 720,000 lb under Option 1 (Alternative 4), and 754,000 lb under Option 1 adjusted (Alternative 5). Relative to the GHL the charter catch limit would have been decreased by 298,000 lb under the 2012 PPA, 211,000 lb under Option 1, and 177,000 lb under Option 1 adjusted. That fish would have been directly reallocated to the commercial sector. Based on the average Area 2C exvessel price, from 2011, of \$5.52/lb, those gains equate to an increase in IFQ holder exvessel revenue of about \$977,000 to \$1.16 million – depending on the option selected. The Area 3A charter catch limit would have been reduced from 3.103 Milbs under the GHL in 2012 to 2.343 Milbs under the 2012 PPA (Alternative 3), 2.629 Milbs under Option 2 (Alternative 4), and 2.869 Milbs under Option 2 adjusted (Alternative 5). Relative to the GHL the charter catch limit would have been decreased by 758,000 lb under the 2012 PPA, 474,000 lb under Option 2, and 234,000 lb under Option 2 adjusted. That fish would have been directly reallocated to the commercial sector. Using the average Area 3A exvessel price of \$5.43/lb from 2011, those gross exvessel revenue equate to an increase in IFQ holder exvessel revenue of about \$1.3 million to \$4.1 million, depending on the option.

These estimates represent only gross ex vessel revenues, a portion of which would be distributed to vessel owners, crews, and support industries. In addition, processors of those fish, processor support industries, consumers of commercially harvested halibut, and communities that receive fish tax revenue from the landings would also benefit from this redistribution of allocations. Losses to the charter sector would also arise, but those losses may not be as proportionately related to the pounds of halibut lost in 2012. Charter revenue is determined by client demand for halibut charter trips. Client demand is related to their expectations of the trip attributes and general economic conditions. As charter catch limits affects the management measures (by altering the bag limits and size limits), it changes the client's expectations of the trip. When expectations are decreased to a point the client is no longer willing to take the trip, or will only take the trip at a reduced price, demand is decreased. That decrease in demand reduces the charter operator's gross revenue and likely net revenue. Revenue decrease affects their charter industry suppliers, processors of charter caught halibut, charter crewmembers, other businesses in the community that provide goods and services to clients, and consumer's surplus (the benefit charter clients obtain from the trip). Estimating the loss to the charter operator, let alone all the other sectors, is complex. Those losses

may more than offset the gains to the commercial sector, but because of the limited information available and the assumptions that would be required, those estimates are not generated.

The $\pm 3.5\%$ harvest allowance would be excluded from these options. The SSC has commented that the range is too narrow to meet the stated objective of accounting for management error. If the provision is retained the Council should consider developing a stronger rationale for its inclusion.

These alternatives also contain three modifications to the GAF program.

- Include a requirement for skippers to mark GAF by removing the tips of the upper and lower lobes of the tail and report the length of the retained GAF halibut to NMFS through the NMFS approved electronic reporting system.

It is critical that enforcement officers can easily distinguish GAF from fish harvested under the charter bag limit. Marking each GAF by removing the upper and lower lobes of the tail allow anyone on the vessel to distinguish GAF fish from other halibut that were caught. It is the responsibility of the skipper to ensure that the GAF fish are properly marked. Failure to properly mark GAF will result in the skipper being subject to appropriate enforcement action, as determined by the actual circumstances of the violation.

- A complete review within five years of the start of the GAF program, taking into account the economic effects of both sectors

This provision implements a timeline for the Council to conduct a review of the GAF program. The review must be completed within five years of the start of the program so four or fewer years of data will be available for the study. NMFS will collect data from GAF transfers to the charter sector and any GAF that is returned to the commercial IFQ fishery on November 1. NMFS will also collect data on GAF transfer prices. That information will be the primary source of quantitative economic data available for the review. Data on the overall harvest and bag limits in place during the first years of the program will also be available. These data, along with qualitative information collected from participants in the fishery will likely form the bulk of this analysis. At this time the charter industry has not been requested to report trip revenues or how clients will compensate charter operators for the use of GAF. Unless that information is collected, the analysis will provide only a qualitative discussion.

- An increase in the Area 3A IFQ lease limits from 1,500 lbs or 10% of IFQ issued (whichever is greater) to 1,500 lbs or 15% of IFQ issued (whichever is greater).

Increasing the percentage of IFQ that holders of more than 10,000 lbs of IFQ in Area 3A may lease, results in about 300,000 lbs of additional IFQ being available as GAF. Whether these additional fish are needed will ultimately depend on charter client's demand for GAF and charter operator's willingness to participate in the program. Insufficient information is currently available to determine demand for GAF.

Alternatives 3 through 5 contain a provision where the Council could request the IPHC to implement a separate accountability provision for commercial and charter wastage of O26 inch halibut. During full down years, implementing SA results in gains/losses of equal magnitude but opposite sign being realized by the charter and commercial fleet. The sector that increases their catch limit had a smaller ratio of waste to allocation percentage than the other sector. When a slow up year occurs, it is possible that the SUFD adjustment changes the combined limit sufficiently that both sector's allocation is increased. This would have occurred in Area 2C during 2012.

Finally, the analysis of each of the CSP alternatives provides information on a potential method to eliminate the vertical drop in the charter allocation when the percentage of the CCL is adjusted. The methodology used in the analysis would remove the charter allocation drop by holding the charter allocation steady, at a fixed poundage, until the CCL increases to the point the charter allocation does not decline.

Economic Impacts of the Alternatives

For the proposed alternatives, the analysis assumes that the charter sector allocations would be a common pool of fish that clients of CHP holders would be allowed to harvest. Bag limits, seasons, and other management measures would be set pre-season to achieve the allocation, and there would be no inseason harvest monitoring (of common pool fish), other than the current logbook program or other monitoring methods required by NMFS. Adjustments to the bag limits and size limits would be made for the next fishing season, so that the common pool allocation would not be exceeded. The leasing of commercial IFQ also would be allowed. Leasing of IFQs allows individual CHP holders that hold GAF to use those fish for clients to exceed charter harvest bag and size limits (up to those limits in place for the unguided angler).

Quantitative estimates or confidence intervals for the magnitude of net national benefits under each alternative are unavailable. Determining which allocation would maximize net national benefits would require detailed information on costs and expenditures in both the commercial and charter sectors. In addition to cost information, demand for charter trips and angler willingness-to-pay for trips would also be required. Even if these data were available and current, changes in the halibut biomass will impact the optimal sustainable yield and the optimal allocation of halibut. Because of these ongoing changes to the resource, any allocation that is optimal when it is made (if the Council felt an “optimal” allocation was appropriate) likely would be suboptimal in the future. Leasing IFQ from the commercial sector in the form of GAF could adjust the amount of halibut available to charter clients and benefit both the commercial and charter sector. The benefits of the leasing provision for the charter sector will depend on the bag limits in place for charter and unguided anglers, availability of IFQ for lease, and the market price for those IFQs. The leasing of IFQs would tend to benefit both sectors if IFQs are available, and clients are willing to incur higher costs for a trip to harvest an additional halibut (under a one-fish bag limit, for example). Stakeholders from the commercial and charter sectors have testified in support of the proposed GAF Program, as a market-based mechanism for attaining a more nearly optimal allocation.

Quantitative estimates of regional economic impacts and their distribution, accruing from the proposed alternatives, are also unavailable. Nonetheless, this analysis recognizes and attempts to reflect, to the fullest extent practicable, the contributions that commercial fixed-gear halibut fishing and charter halibut fishing make to local and regional economic and social welfare and stability.

Charter Sector

The charter sector is comprised of business operators who are licensed by the State of Alaska to provide charter trips. The alternatives assume that charter operators must hold a CHP to legally operate in the fishery. It is not presently possible to provide the charter sector’s net revenue, but estimates over a range of trip prices and clients are provided.

If management measures restrict charter harvests to its allocation, increased demand for charter trips would be offset by those more restrictive measures. In this case, increases in demand for charter trips would not be expected to directly impact the commercial sector, unless the shortage of charter seats induced a large increase in “unguided” effort. The commercial sector would be impacted if the charter sector were not constrained to its allocation or if the growth in demand for charter services by the public results in the Council recommending, and the Secretary of Commerce increasing that sector’s allocation. It is also possible the commercial sector could petition the Council in the future to modify the charter allocation (although this is not the Council’s intent).

The preferred alternative also would allow charter LEP holders to lease GAF from the commercial sector. It is not possible to predict the quantity of IFQs that would be available for transfer each year. However, both the charter operator and the commercial IFQ holder must be willing parties for IFQs to be leased and converted into GAFs (i.e., the charter operator must pay a sufficient amount for the IFQs to compensate the commercial QS holder for forgone net revenues) (Criddle 2006a).

Charter LEP holders who lease IFQs from the commercial sector would realize increased costs. Those costs would be passed on, in whole or in part, to charter clients, through higher trip prices. The increased costs and prices are expected to allow charter LEP holders to earn normal profits in the long run.

Commercial Halibut Fishery

Impacts of moderate fluctuations in stock abundance would lead to changes in the commercial quota under either a fixed or a percentage based charter allocation. Changes in the amount of halibut harvested by the commercial sector could impact ex-vessel prices, commercial net revenue, and post-harvest surplus. Given research conducted by Herrmann et al. (1999) on the price flexibility of Alaska halibut, the changes in ex-vessel price that result from increasing or decreasing the amount of commercial harvest in Areas 2C and 3A are expected to be very small under the preferred alternative. An allocation to the charter sector that decreases the commercial allocation is expected to result in a small increase in ex-vessel price, but an overall decline in the net revenue of commercial harvesters. Post-harvest surplus is directly related to the quantity of halibut on the market, so a decrease in commercial harvests would lead to a decrease in post-harvest surplus (Criddle 2006b), *ceteris paribus*. If the allocation to the charter sector is set at a level that reduces its harvest during periods when the combined catch limit is steady, the commercial harvest would be increased and post-harvest surplus would increase. Criddle 2006b also provides a summary of how to conduct an analysis that would determine the net benefits to the commercial and charter sector under various allocations. While the analysis provides a description of how the analysis should be conducted, it does not provide a solution to the optimal allocation between the charter and commercial sectors. The data needed to complete that analysis are not available and economic changes that occur would alter the optimal allocation.

Halibut stock fluctuations may impact the asset value of QS held by commercial harvesters. If the changes to halibut stocks in Areas 2C and 3A occur frequently and are relatively small, they are not expected to impact QS values. However, if the stock size is expected to increase or decrease for a longer period of time, it would impact QS asset values. In that situation, a decrease in stock size would reduce QS values and an increase in stock size would increase QS values. Redistributing the amount of halibut that is assigned to the commercial sector could have a similar impact on QS values.

Because commercial QS are expected to generate lower net revenues over the next six years (based on IPHC CEY projections), the asset value of Area 2C QS is also expected to decline.³ Persons that sell their QS could expect to receive less compensation. Shares would be acquired by “eligible” persons who believe stock abundance will increase over the longer-term. As a result, Area 2C QS holdings could be further concentrated (up to use caps). For QS holders that stay in the fishery, constraints on charter harvest growth would help preserve their portion of the combined catch limit.

The Area 2C commercial allocation is projected to be smaller (during the years considered in this amendment) under the fixed poundage allocations, relative to the percentage based allocations. This is because the projected CEY is smaller during those years, relative to the base years used to determine the allocations. Because the preferred alternative is a percentage based option, it is expected to allocate more halibut to the commercial sector than the fixed poundage options considered.

Because the commercial allocations in Area 3A are projected to be at or above historical levels in the near future, the QS values are not expected to change dramatically as a result of near-term declines in net revenue. If the trend of higher than historical average allocations is realized, the QS values may increase.

Increased demand for charter trips does not affect participants in the commercial fishery when expansion of the charter sector is constrained (Criddle 2006b). The proposed harvest restrictions are assumed to constrain the amount of halibut the charter sector can harvest to its heir allocation, so the commercial allocation would not be reduced to accommodate increased charter harvests. It is also important to note

³ If demand for charter trips is greater than the supply in Area 2C, the use of GAF may help stabilize both sectors.

that unless there are conservation concerns, charter overages would have a minor impact on future combined catch limits.

The commercial sector, however, would have been directly impacted by a charter allocation that is larger than the charter sector would harvest under the status quo. That scenario would allow the charter sector to increase its harvest, as client demand increases, until it reaches the allocation. From that point forward, the allocation would constrain the charter client harvests and the commercial sector would not be impacted by further increases in charter demand.

If some amount of halibut allocated to charter anglers are unused and is not reassigned to the commercial sector, that excess allocation to the charter sector would reduce the commercial allocation more than is necessary. Forgoing that harvest would reduce post-harvest surplus in that year. There may be off-setting “gains” to be had in the future, as halibut not removed through either charter or commercial fisheries, continue to grow, reproduce, and contribute to the halibut biomass. Determining the net effect of growth and reproductive rates, natural mortality rates, market demand for halibut, charter demand for halibut trips, and the appropriate discount rate(s), among other consideration, exceed current data and analytical capabilities. Nonetheless, these issues counsel care in drawing conclusions about “net benefits”.

Leasing of GAF would allow commercial QS holders to transfer IFQ to the charter sector. Theory suggests that the commercial sector would only be expected to lease IFQ to the charter sector if they receive sufficient compensation to offset the net revenue they would expect to derive from harvesting the fish themselves.⁴ Because individual commercial harvesters generate different amounts of net revenue from their allocation, the commercial operations that generate the lowest marginal net revenue would be most likely to lease halibut, all else equal. Charter operations that have the highest net revenue per fish are expected to be the most willing buyers, if their net “benefit” per fish is greater than or equal to the lease cost per fish. It is possible that an operator could “lose” money on a GAF, but would only knowingly do so in order to “benefit” in other than net revenue terms (e.g., “client good will”, advertising “loss leader”, etc.). Leases are only projected to provide additional harvesting opportunities for charter anglers in Area 2C, through 2015, so in the short term the leasing of GAF is not anticipated to have a substantial impact in Area 3A.

Charter Clients

Charter trips hired by clients would not be constrained by the amount of halibut available to its sector in-season under the status quo or the proposed alternatives. However, demand for charter trips could decline, as more restrictive management measures are imposed (e.g., a one-fish bag limit in Area 2C) to keep the sector’s harvest within its proposed allocation. Demand for trips could also decline as a result of weak economic conditions. Because excess capacity is expected to continue under the proposed CHP program, at least in the short term, a charter client would be expected to pay a price for a trip that would allow the “average” charter operator to earn normal profits (NPFMC 2006a).⁵

Status quo regulations are expected to be more restrictive in Area 2C, than in Area 3A. The continuation of current regulations was assumed in both areas (including a one-fish bag limit and possession limit of two daily bag limits in Area 2C). Those management measures are expected to reduce both consumer demand and consumer surplus, relative to regulations in place for Area 3A. Area 3A charter clients would remain under a two-fish bag limit and a possession limit of four fish. The numbers of halibut that may be harvested by a client during the year are not further restricted. Because of the different management measures assumed to be in place for the two areas, clients may choose to take a trip in Area 3A, instead of

⁴ The implicit assumption here is that anonymous actors in a competitive marketplace make individual, economically rational decisions concerning trade; however, in the real-world, sector conflicts, inter- and intra-community stressors, and personal animosities (alliances) will undoubtedly influence the relative “efficiency” of this market.

⁵ With surplus capacity and declining demand, the marginal operator will see all rents dissipated. Over time, all else equal, these conditions will drive excess capacity out of the sector.

Area 2C. This behavior would shift demand from Area 2C to Area 3A. If non-residents increase the percentage of trips they take in Area 3A, it may increase overall consumer surplus, relative to what it would be if participation patterns remained static. A variety of attributes associated with Area 2C clientele make a sweeping transfer of demand “unlikely.”⁶

Differential trip pricing would, almost certainly, result if clients wanted to use GAF to relax their harvest restrictions. For example, if a client wanted to harvest two fish of any size in Area 2C, the client may need to compensate the charter operator for the additional cost associated with the lease of the required GAF. It is not possible to know how CHP holders would develop price structures for various types of trips. However, the use of GAF would increase trip costs and those costs are expected to be passed on to the client.

The CHP is assumed to not constrain clients booking a charter halibut trip. Competition for clients is expected to keep trip prices at a level that would, on average, allow CHP holders to only earn normal profits. All else being equal, the price of trips should not increase as a result of the common pool management measures. Trip prices would increase only for those clients that use GAF to increase the bag limit, if individuals are charged for the use of GAF. Seasonal discounts may continue to be offered, especially in Area 3A, as CHP holders attempt to attract clients during the non-peak seasons. Discounted trips have historically been available before mid-June and after mid-August. Discounted trips were widespread in 2009, presumably, owing to the worldwide economic downturn.

Halibut Processors

Halibut processors process both commercial and charter harvest. Processors may generate income from both sources or specialize in one or the other. Commercial halibut processors produce a variety of product forms and sell to a variety of markets. Representatives of the commercial sector have indicated that processors may receive from \$1.35 to \$2.00 per pound for “value added” custom processing of halibut (e.g., filleting, packaging, freezing). The analysis assumed \$1.75 per pound. They also indicated that halibut is important, because it helps keep product flowing through the plants when other fisheries are closed or deliveries are slow. Without a sufficient supply of halibut, processors may find it difficult to keep plants open as many days as they are currently.

Processors of sport-caught halibut provide a service to sport fishermen. They typically portion, package, and freeze halibut for a fee of \$1.00 to \$1.75 per pound, incoming weight. Halibut is also an important part of their income, especially in areas that have a large sportfishing presence.

Consumers of Commercial Halibut

Decreases in the amount of halibut available to consumers would result in increases in halibut prices, all else being equal. As stated earlier, increases in ex-vessel price as a result of decreased supply are expected to be modest, given the price-flexibility of halibut. Even though price increases are expected to be relatively small, the combination of increased prices and reduced availability could decrease post-harvest surplus (Criddle 2006a). The decrease in post-harvest surplus cannot be estimated for the various common pool allocation options. However, the options that generate the smallest charter allocation would result in the largest post-harvest surpluses accruing to consumers of commercially caught halibut, *ceteris paribus*. Alternatively, allowing the charter sector to lease commercial IFQ would, all else being equal, reduce the amount of halibut delivered to the commercial market, thus, reducing consumer surplus accruing to these consumers, if transfers occur. The actual impact on consumers will depend on the

⁶ A very substantial portion of those utilizing charter halibut fishing services in Area 2C are passengers aboard cruise ships, traversing the inside-passage. Halibut fishing is one, among many, possible “supplemental activities” they may choose during port-calls (i.e., charter halibut fishing is unlikely their primary purpose for the trip). These “inside-passage” cruises generally do not call on ports in Area 3A, effectively precluding easy transference of charter demand by these individuals during their cruise.

amount of halibut in the market from other areas of Alaska and Canada, in addition to the substitution effects of other species.

Communities

Economic activity resulting from the charter and commercial halibut fisheries generates income for residents of the communities where the economic activity occurs. Employment is also created in communities that provide goods and services to the fishing sectors.

The regional economic impacts under the status quo would likely differ from those under an allocation to the charter sector that imposes additional management constraints in future years. However, changes in regional economic impacts are not reflected in net national benefits.

Under the status quo, ignoring for the present the effects of the recent global economic contraction, the contribution to personal income and employment attributable to the charter sector is expected to increase in Area 3A, in the long-run. In Area 2C, the sector would experience declines in the short-term, as a result of stricter management measures imposed to keep the sector within its GHL (one-fish bag limit). If the CEY increases to higher levels in the future, the charter sector would be expected to increase its contribution to personal income and employment, above the 2009 levels.

No options are being considered that would further limit the harvest of the charter sector within a fishing season, once the season's allocation is established. However, the one-fish bag limit in Area 2C will likely reduce client demand for trips in all Area 2C communities. When the number of trips taken is reduced, the charter sector would need fewer input supplies (e.g., bait, fuel) and it would reduce expenditures within the communities that supply those inputs. When they purchase fewer goods and services within the community, it has a negative impact on that economy, if the reductions are not offset by increased purchases by other sectors (e.g., commercial halibut fishermen).

The allocations considered here would shift the respective amounts of halibut available to the commercial sector and charter sectors. The overall near-term CEY reductions are likely to have a larger impact on the Area 2C regional economies, than shifting the available halibut among sectors. However, shifts in the commercial/charter allocations would impact individuals and/or individual businesses within those communities more intensively than it would the aggregate regional economy, because spending by the two sectors would, to some extent, offset each other. However, because the port-of-origin and the composition of consumable inputs of the two sectors are not precisely equivalent, there will be "winners" and "losers" among and within communities. The attributable reduction in trips, by halibut fishing sector, by community, cannot be estimated, given available data. Information on the expenditures, by halibut fishing sector, by community, is also unavailable.

Rural communities that can take advantage of the more liberal CQE quota leasing provisions could benefit from the preferred alternative. Residents of communities associated with a CQE would have more flexibility in moving halibut from the commercial sector to the charter sector and vice versa. This is because IFQ held by CQEs are not limited by the 1,500 lb or 10 percent leasing restrictions that are placed upon other entities that hold QS.

Unguided anglers and subsistence harvesters

Continuation of the status quo is not expected to directly impose costs or provide additional benefits to unguided anglers, nor to personal-use or subsistence harvesters. Because halibut removals by these groups are deducted from the CEY, prior to determination of the catch limit, the amount of halibut harvested by the commercial and charter sectors does not impact the halibut available to these groups.

Any change in costs would be related to the charter operations increased fishing radius or commercial operations decreasing their fishing radius from coastal towns seaward as they deplete the more accessible fishing grounds or attempt to reduce fishing costs. This forces resident sport and subsistence fishermen to

travel farther in search of halibut, which increases fuel costs, heightens the risk of fishing in more exposed areas of the ocean, and potentially increases the number of trips needed to find halibut.

Imposing a limit on the amount of halibut that charter clients may harvest could result in some individuals that have access to a private boat fishing for halibut without a guide, when they would have used a guide service, all else being equal. Public comments for this action and prior Council actions pertaining to charter halibut fishing have included concerns about an increase in unguided or “bareboat” rentals. “Bareboat” rental companies provide vessels without crew, for the private uses of their clients. They do supply other equipment required for a successful fishing trip, such as maps, GPS locators, and fishing equipment. Public comment raised both safety and enforcement concerns about the effect of these businesses. The safety concerns focus on inexperienced boaters navigating in Alaska’s challenging marine environment. Enforcement concerns have focused on the suggestion that some businesses would claim that a boat rental is unguided, but then provide a guide who would not identify himself as such, if intercepted by enforcement staff. The NOAA Office of Law Enforcement and the USCG has informed the Council that they do not have concerns under the preferred alternative about boater safety. They will continue to enforce the current regulations regarding boater safety, and those regulations are anticipated to provide adequate protections. If problems do occur in the future, the USCG will bring those issues to the Council’s attention and they can be addressed through the Council processor or through USCG regulations

1 ENVIRONMENTAL ASSESSMENT

1.1 Introduction

This Environmental Assessment (EA) assesses the potential biological, social, and economic impacts of implementing regulations to revise management of the Pacific halibut (*Hippoglossus stenolepis*) fisheries in International Pacific Halibut Commission (IPHC) Regulatory Area 2C and Area 3A. It provides an analysis of alternatives to the status quo, which would implement federal regulations to replace the Pacific halibut Guideline Harvest Level (GHL) Program for the charter sector with a catch sharing plan (CSP) for the commercial Individual Fishing Quota (IFQ) and charter sectors. This analysis considers regulatory changes to (1) set a sector allocation between the charter and commercial IFQ fisheries for halibut through a catch sharing plan (CSP), (2) allow holders of Charter Halibut Limited Entry Permit, Community Charter Halibut Permits, and Military Charter Halibut Permits (collectively referred to as LEPs throughout this analysis) to lease commercial halibut IFQ in order to increase opportunities for harvesting halibut by anglers in the charter sector, (3) identify a process for setting annual management measures for the charter sector to constrain harvests to the sector's allocation, and (4) account for removals by each sector separately.

The National Environmental Policy Act (NEPA) requires a description of the purpose and need for the proposed action, as well as a description of alternative actions that may address the problem.

- The purpose and need for the proposed action are addressed in section 1.3;
- Section 1.7 describes the alternatives considered for analysis;
- Section 1.8 describes the affected environment and the approach taken to evaluate the biological and environmental impacts of the alternatives as required by NEPA, as well as impacts on endangered species, including seabirds and marine mammals;
- Section 2 presents the Regulatory Impact Review (RIR), which describes potential economic impacts from the alternatives;
- Section 3 presents the Initial Regulatory Flexibility Analysis (IRFA), which evaluates the impacts on directly regulated small entities;
- Section 4 contains the references; and
- Section 5 contains the list of preparers.

1.2 Background

1.2.1 North Pacific Halibut Treaty

The IPHC was established in 1923 by a Convention between the governments of Canada and the United States of America⁷. Its mandate is research on and management of the stocks of Pacific halibut within the Convention waters of both nations. The IPHC consists of three government-appointed commissioners for each country who serve their terms at the pleasure of the President of the United States and the Canadian government respectively. As an international fisheries organization, the IPHC receives monies from both the U.S. and Canadian governments to support a director and staff. Annually, the IPHC meets to conduct the business of the IPHC. At this annual meeting the budgets, research plans, biomass estimates, catch recommendations, as well as regulatory proposals are discussed and approved then forwarded to the respective governments for implementation.

The IPHC conducts numerous projects annually to support both major mandates: stock assessment and basic halibut biology. Current projects include standardized stock assessment fishing surveys from northern California to the end of the Aleutian Islands, as well as field sampling in major fishing ports to collect scientific information from the halibut fleet. In conjunction with these ongoing programs, the

⁷ Source: <http://www.iphc.int/about-iphc.html>

IPHC conducts numerous biological and scientific experiments to further the understanding and information about Pacific halibut.

The Halibut Convention between Canada and the United States has been revised several times to extend the IPHC's authority and meet new conditions in the fishery (Bell, 1969). The most recent change occurred in 1979 and involved an amendment to the 1953 Halibut Convention. The amendment, termed a "protocol", was precipitated in 1976 by Canada and the United States extending their jurisdiction of fisheries resources to 200 miles. The 1979 Protocol, along with the U.S. legislation that gave effect to the Protocol (Northern Pacific Halibut Act of 1982), has affected the way the fishery is conducted and redefined the role of IPHC in the management of the fishery since its adoption. The IPHC promulgates regulations governing the Pacific halibut fishery, in compliance with the terms of the Convention between the United States and Canada for the Preservation of the halibut fishery of the North Pacific Ocean and Bering Sea, signed at Washington, D.C., on March 29, 1979. The IPHC promulgates regulations on an annual basis that are approved by the Secretary of State of the United States, under section 4 of the Northern Pacific Halibut Act (Halibut Act, 16.U.S.C. 773–773k). Pursuant to regulations at 50 CFR 300.62, the approved IPHC regulations are published in the *Federal Register* to inform persons subject to the regulation.

Additional management regulations that are not in conflict with those adopted by the IPHC are implemented by the Secretary of Commerce and may be developed by the Regional Fishery Management Council to allocate harvest privileges among U.S. fishermen. The halibut fishery in waters off Alaska (0–200 miles) is under the jurisdiction of the Secretary of Commerce, represented by the National Marine Fisheries Service (NMFS), and advised by the North Pacific Fishery Management Council (Council). These waters comprise IPHC Regulatory Areas 2C (Southeast Alaska), 3 (Southcentral Alaska), and 4 (Bering Sea/Aleutian Islands).

Each year, using a combination of harvest data from the commercial, recreational, and subsistence fisheries and information collected during scientific surveys, the IPHC determines the abundance of halibut in each area (the exploitable biomass). The biological target level for total removals in a regulatory area is the product of a fixed harvest rate and the estimate of exploitable biomass. This is called the “total constant exploitation yield” (Total CEY), and is the target level for total removals (in net pounds) for an area in the coming year. In Area 2C, the IPHC subtracts from the Total CEY estimate the total “non-commercial” removals for the upcoming year. These removals include recreational harvest, subsistence harvest, wastage in the directed halibut commercial fishery, and bycatch mortality occurring in non-halibut commercial fisheries. The portion of the Total CEY remaining after these removals are subtracted is the CEY available for the commercial longline fishery (i.e., the “Fishery CEY”).⁸ The actual commercial longline catch limit is set with reference to this Fishery CEY.

With the exception of the charter fishery and a small increase in subsistence harvest, other non-commercial removals are believed to have remained stable in recent years. However, the increase in growth for the charter fishery has resulted in an increase in harvest. As the charter fishery removals increase, its harvests reduce the pounds available for the commercial halibut fishery. The area’s Fishery CEY is allocated between quota share (QS) holders in the Individual Fishing Quota (IFQ) Program. Each QS holder receives a percentage of the total poundage available for commercial harvest within a year. This poundage comprises an individual’s fishing quota.

⁸The IPHC does not currently account for mortality which results from the release of fish in the sport fishery but in 2012 it requested development of discard mortality rates from the U.S. and Canada.

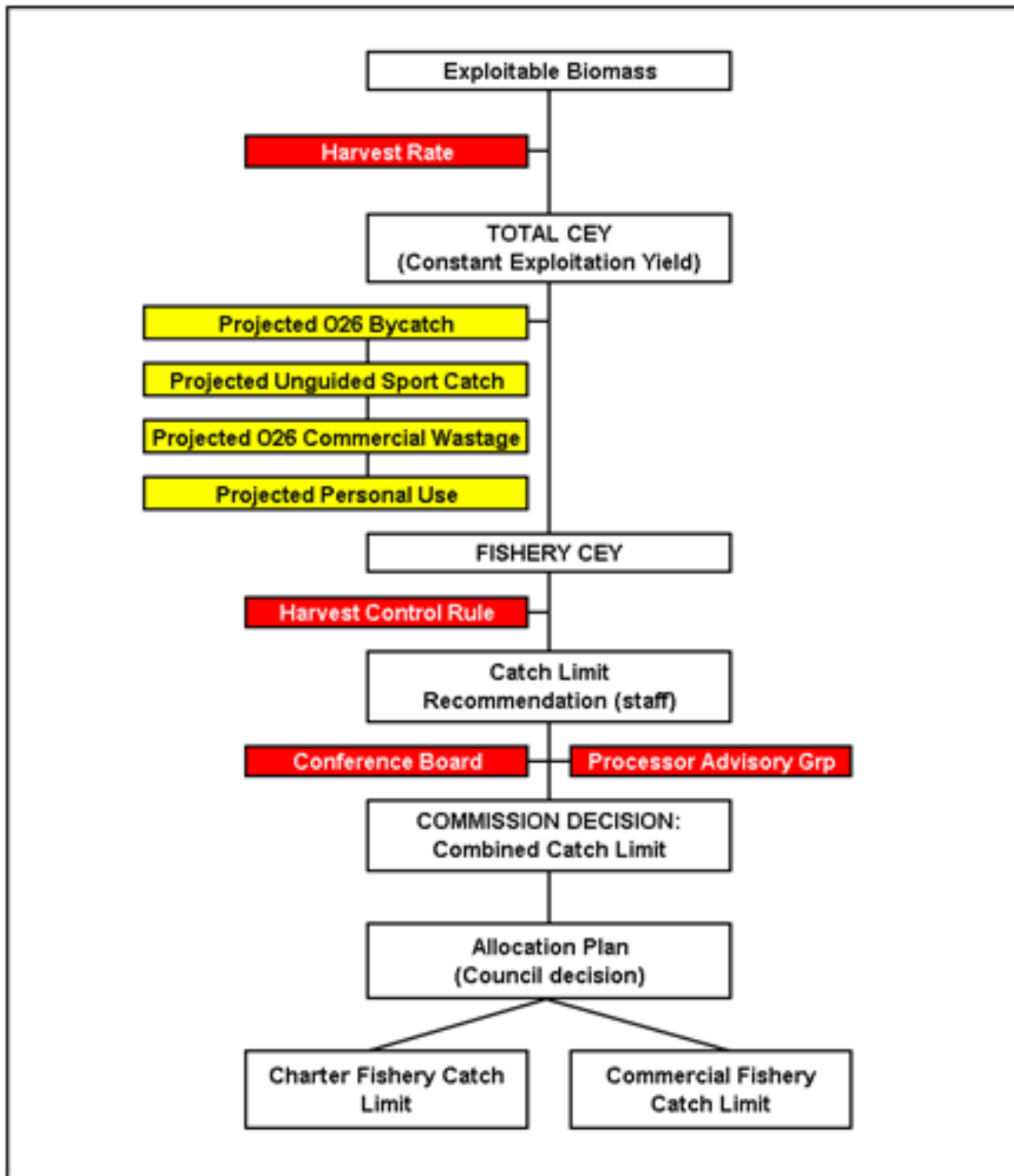


Figure 1-1 IPHC process for setting combined commercial and charter catch limit under proposed Pacific Halibut Catch Sharing Plan (Source: IPHC)

1.2.2 The Guideline Harvest Level

The Council has discussed the expansion of the charter halibut sector since 1993. The issue gained prominence when some coastal Alaskan communities, in particular Sitka, expressed concerns about local depletion of the halibut resource and the potential reallocation of greater percentage of the Total CEY, from the IFQ fishery, to the charter fishery. In response to these concerns, the Council developed a GHM policy intended to control total removals of halibut in the charter sector. In 1995, the Council adopted a problem statement recognizing that the increasing amount of harvest in the charter fishery may change the stability, economic viability, and diversity of the halibut industry, the quality of the recreational

experience, access for subsistence users, and the socioeconomic well-being of the coastal communities dependent on the halibut resource. This policy statement led to the development of a guideline harvest level (GHL) policy to address the allocative issues between the commercial and charter sectors. In September 1997, the Council took final action on two management actions affecting the halibut fishery: (1) approval of recordkeeping and reporting requirements for the charter fishery, which were subsequently implemented by Alaska Department of Fish and Game (ADF&G); and (2) recommendation of GHLs for Areas 2C and 3A. Subsequently, the Council revised its GHL actions and submitted its recommendations to the Secretary. On January 28, 2002, NMFS published a proposed rule (67 FR 3867) that specified GHLs, and a system of harvest reduction measures that could be used to maintain the charter halibut harvest in Areas 2C and 3A, at or below the GHLs. The GHLs established an estimated amount of halibut harvest that may be taken annually in the charter fishery for Areas 2C and 3A.

The proposed rule also described management measures that would be implemented by NMFS, to take effect the year following an overage of a GHL. However, the harvest measures as described in the proposed rule could not be implemented. On April 2, 2002, NMFS informed the Council, through a letter, that the measures could not be implemented in the year following a GHL overage, because of the time lag associated with receiving recreational harvest data from ADF&G, and legal requirements for a notice and comment period under the Administrative Procedures Act, including an Environmental Analysis, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) of the harvest control measure.

The final rule implementing the GHL was promulgated by NMFS on August 8, 2003 (68 FR 47256). The rule removed the problematic harvest control measures, described in the proposed rule, because of the timeline associated with meeting the legal requirements of the Administrative Procedures Act. The final rule established the GHLs as a level of acceptable annual harvests for the 2004 charter halibut fishery in Areas 2C and 3A. The 2004 GHLs were 1,432,000 lb net weight in Area 2C, and 3,650,000 lb net weight in Area 3A. Charter harvest exceeded the GHL in Area 2C from 2004 through 2009. Charter harvest exceeded the GHL in Area 3A from 2004 through 2007. Preliminary harvest estimates for the 2010 charter fishing season indicate the GHL was exceeded by 62 percent (491,000 lb) in Area 2C; charter harvests in Area 3A were under the GHL by 18 percent (658,000 lb).

Growth of charter halibut harvest is effectively unrestricted, because the GHL is not a “hard” cap. The commercial allocation is a hard cap, calculated after deducting estimates of other removals, including charter harvest. Therefore, as the charter fishery expands, its harvests reduce the allocation to the commercial halibut fishery, meaning the amount of IFQ available for harvest is reduced.

While commercial quotas fluctuate directly with stock abundance, the fixed GHLs for Areas 2C and 3A are established annually, in pounds, and only respond to a decline in stock abundance. Regulations at 50 CFR 300.65 define five GHL levels in relation to halibut stock abundance (total CEY). The GHLs are reduced if the area-specific total CEY declines by at least 15 percent below the average 1999-2000 total CEY, as determined by the IPHC. For example, if the total CEY in Area 2C was to fall by between 15 percent and 24 percent below its 1999–2000 average, then the GHL would have been reduced from 1,432,000 lb to 1,217,000 lb. If the total CEY declined by between 25 percent and 34 percent, then the GHL would have been reduced from 1,432,000 lb to 1,074,000 lb. If the total CEY continued to decline by at least 10 percent, the GHL would have been reduced from 1,074,000 lb by an additional 10 percent to 931,000 lb. If the total CEY declined by an additional 10 percent or more, the GHL would have been reduced by an additional 10 percent from 931,000 lb to the baseline level of 788,000 lb. The Area 2C GHL would not be reduced below 788,000 lb. If the area halibut biomass increased, the GHL could be increased only to its initial level of 1,432,000 lb, but no higher.

The initial GHL formula was calculated as estimated charter harvests in pounds from 1995-1999 plus 25 percent of estimated charter harvests in pounds from 1995-1999 to allow for some growth in charter harvest under the GHL. The charter sector requested that a fixed poundage allocation be provided, to

enhance predictability for bookings for the next summer’s fishing season. The overall intent was to maintain a stable charter fishing season of historical length, using area-specific measures to control harvests to the GHL. The GHL in Area 3A was reduced for the first time in 2012. The Area 2C GHL has been adjusted each year since 2006 (Table 1-1).The Area 2C GHL was exceeded for the first time in 2004, its first year of implementation, and has been exceeded in each successive year (Table 1-2).

While the charter halibut fishery in Area 3A was at or slightly above its GHL (except for a 10 percent GHL overage in 2007) from 2004 through 2008, the Area 2C fishery clearly exceeded its GHL in recent years. A management response to the excess halibut harvests in Area 2C was initiated in 2006 by the Council, and subsequently by the IPHC, NMFS, ADF&G. At its annual meeting in January 2007, the IPHC adopted a motion to recommend reducing the daily bag limit for clients on charter vessels in Areas 2C and 3A from two halibut to one halibut during certain time periods. Specifically, for Area 2C, the IPHC recommended that the one-fish daily bag limit should apply to charter vessel anglers from June 15 through July 30. The IPHC recommended this temporary bag limit reduction because it believed its management goals were at risk by the magnitude of the charter halibut harvest in excess of the GHL, especially in Area 2C. This action was not explicitly designed to manage the charter fishery to the GHLs but rather to initiate some control on what appeared to be a constantly increasing charter vessel harvest.

Table 1-1 Management under the GHL Program

Area	Year	GHL (Mlbs)	Management Measure*
2C	2006	1.432	Two fish any size
	2007	1.432	Two fish (1 < 32")
	2008	0.931	Two fish (1 < 32")
	2009	0.788	One fish any size
	2010	0.788	One fish any size
	2011	0.788	One fish < 37"
	2012	0.931	Reverse slot limit (U45O68)
3A	2006	3.650	Two fish any size
	2007	3.650	Two fish any size
	2008	3.650	Two fish any size
	2009	3.650	Two fish any size
	2010	3.650	Two fish any size
	2011	3.650	Two fish any size
	2012	3.103	Two fish any size

Source: ADF&G, 2012.

*2012 management measures were implemented through the IPHC annual management measures;

2011 measures were implemented through a Secretarial regulatory amendment;

2010 and prior measures were implemented through Council regulatory amendments.

In a letter to the IPHC on March 1, 2007, the Secretary of State, with concurrence from the Secretary of Commerce, rejected the recommended one-fish daily bag limit in Areas 2C and 3A and indicated that appropriate reduction in the charter vessel harvest in these areas would have been achieved by a combination of ADF&G and NMFS regulatory actions. For Area 2C, the State of Alaska Commissioner of Fish and Game (State Commissioner) issued an emergency order to prohibit retention of fish by charter vessel guides and crew members (No. 1-R-02-07). This emergency order was similar to one issued for 2006. This action was intended, in conjunction with other measures, to reduce the 2007 charter vessel harvest of halibut to levels comparable to the IPHC-recommended bag limit reduction, which was estimated to range from 397,000 lb to 432,000 lb.

In June 2007, the Secretary of Commerce, through NMFS, developed regulations independent of the Council process to reduce charter Area 2C charter harvest to a level comparable to the level that would have been achieved by the one-fish daily bag limit recommended by the IPHC. The 2008 preferred alternative selected by NMFS maintained the traditional two-fish daily bag limit provided that at least one of the harvested halibut has a head-on length of no more than 32 inches. If a charter vessel angler retained only one halibut in a calendar day, that fish may be of any length. NMFS published regulations implementing this partial maximum size limit on June 4, 2007 (72 FR 30714).

Table 1-2 Area 2C and 3A charter catch of Pacific halibut (all pounds are net weight).

Area 2C			
Year	Guided Harvest (Mlb)	Guided Harvest (percent of GHL)	GHL
1995	0.986	69	1.432
1996	1.187	83	1.432
1997	1.034	72	1.432
1998	1.584	111	1.432
1999	0.939	66	1.432
2000	1.130	79	1.432
2001	1.202	84	1.432
2002	1.275	89	1.432
2003	1.412	99	1.432
2004	1.750	122	1.432
2005	1.952	136	1.432
2006	1.804	126	1.432
2007	1.918	134	1.432
2008	1.999	215	0.931
2009	1.249	158	0.788
2010	1.086	138	0.788
2011	NA	NA	0.788
2012	NA	NA	0.931
Area 3A			
Year	Guided Harvest (Mlb)	Guided Harvest (percent of GHL)	GHL
1995	2.845	78	(3.650)
1996	2.822	77	(3.650)
1997	3.413	94	(3.650)
1998	2.985	82	(3.650)
1999	2.533	69	(3.650)
2000	3.140	86	(3.650)
2001	3.132	86	(3.650)
2002	2.724	75	(3.650)
2003	3.382	93	(3.650)
2004	3.668	100	(3.650)
2005	3.689	101	(3.650)
2006	3.664	100	3.650
2007	4.002	110	3.650
2008	3.378	93	3.650
2009	2.734	75	3.650
2010	2.698	74	3.650
2011	NA	NA	3.650
2012	NA	NA	3.103

The Council also was considering management alternatives for the charter vessel halibut fishery in Area 2C during the first half of 2007. Unlike the IPHC, ADF&G, and NMFS actions, however, the alternatives were designed specifically to maintain the charter vessel fishery to its GHL. In June 2007, the Council adopted a 2008 preferred alternative that contained two options. The Council recommended that the selection between the options depend on whether the CEY decreased substantially for 2008. As explained above, the GHLS for Area 2C and 3A are linked to the CEY determined annually by the IPHC as a basis for setting the commercial fishery catch limits in these areas. A substantial decrease in the CEY could cause the GHL for Area 2C to decrease from its previous 1.432 million lb (649.5 mt) level. Not knowing in June 2007 how the GHL may be affected by IPHC action in January 2008, the Council recommended a suite of charter vessel fishery restrictions if the GHL in Area 2C remained the same in 2008 (Option A) and a different, more restrictive, suite of restrictions if the GHL decreased in 2008 (Option B). The Council recommended no change in management of the charter vessel fishery in Area 3A because that fishery appeared stable at about its GHL. A proposed rule was published December 31, 2007 (72 FR 74257), soliciting comments on both options for management of the charter vessel fishery in Area 2C.

At its annual meeting in January 2008, the IPHC set the 2008 total CEY for Area 2C at 6.5 Mlb. This was a 4.3 Mlb reduction from the 2007 total CEY of 10.8 Mlb which triggered a reduction in the Area 2C GHL to 931,000 lb. This reduction in the GHL compelled selection of the more restrictive Option B for the Area 2C final rule. Option B imposed a daily bag limit of one halibut for each charter vessel angler, prevented charter vessel guides, operators and crew from harvesting halibut, restricted the number of lines used to fish for halibut on a charter vessel, and added certain recordkeeping and reporting requirements. These regulations were published in the Area 2C final rule on May 28, 2008 (73 FR 30504), and effective on June 1, 2008.

On June 2, 2008, the Option B regulations were challenged in U.S. District Court for the District of Columbia by eleven plaintiffs requesting a temporary restraining order and preliminary injunction on implementing the regulations, particularly the one-halibut daily bag limit. On June 10, 2008, the court granted the plaintiff's request for a temporary restraining order concluding that plaintiffs demonstrated a likelihood of success on the merits of their claims and enjoined NMFS from enforcing the one-halibut daily bag limit. Instead, the court ordered that the previous (2007) rule become effective which allowed a two-fish daily bag limit provided that at least one of the harvested halibut has a head-on length of no more than 32 inches. On June 19, the court granted plaintiffs a preliminary injunction which continued the effect of the temporary restraining order.

The court's decision was based largely on the argument that the one-fish bag limit was designed to achieve the reduced 2008 GHL in Area 2C and NMFS could not know in June 2008 whether this GHL was exceeded. This would not be known until ADF&G produced its final estimate of the 2008 sport fishing harvest in October of 2009. Hence, the plaintiffs argued, and the court agreed, that NMFS had violated its 2003 GHL rule by acting to impose restrictions before knowing that the new GHL was exceeded.

NMFS subsequently withdrew the May 28, 2008, rule that was the basis for the legal challenge, and on December 22, 2008, proposed a separate rulemaking to implement the one fish daily bag limit (73 FR 78276). NMFS proposed the one halibut daily bag limit in Area 2C to give effect to the Council's intent to keep the harvest of charter vessel anglers as close to the established GHL as the Council's proposed management measures will allow. The final rule implementing this action (74 FR 21194, May 6, 2009) was effective on June 5, 2009.

On June 25, 2009, the U.S. District Court for the District of Columbia denied a request for a preliminary injunction to prevent implementation of the May 6, 2009, rule (Van Valin v. Locke, Civil Action No. 1:09-cv-961). On November 23, 2009, the U.S. District Court for the District of Columbia granted summary judgment in favor of the Secretary and upheld the May 6, 2009, final rule. The one halibut per day bag limit for charter vessel anglers remains in effect for Area 2C.

The Area 2C charter harvest has exceeded its GHL every year since 2004 notwithstanding the previously described management measures that were designed to control harvest in this area. During 2004 through 2007, the GHL was 1,432,000 lb. During that time period, charter harvests were approximately 1,750,000 lb in 2004, 1,952,000 lb in 2005, 1,804,000 lb in 2006, and 1,918,000 lb in 2007. In 2008, the GHL was 931,000 lb and charter harvests were approximately 1,999,000 lb. In 2009 through 2011 the GHL was 788,000 lb; the charter harvest was approximately 1,249,000 lb in 2009 and 1,086,000 in 2010. Final 2010 sport halibut estimates will be provided to the Council at its October 2012 meeting.

The Total CEY was 5,390,000 lb in Area 2C in 2011, when this analysis was submitted to the Secretary. The corresponding GHL was 788,000 lb in Area 2C. Because NMFS imposed no additional charter restrictions in 2011, the IPHC believed that charter harvest was likely to exceed the GHL and result in total harvest exceeding the total CEY. As such, the IPHC recommended and the Secretary adopted a daily bag limit for charter vessel anglers in Area 2C of one halibut with a maximum length of 37 inches per day (76 FR 14300, March 16, 2011). The IPHC recommended this additional management measure in the Area 2C charter fishery to limit charter halibut harvest to the GHL and achieve the IPHC's overall conservation objective for Area 2C.

The Total CEY is 5,865,000 lb in Area 2C, with a corresponding GHL of 931,000 lb for 2012. The Council adopted a new approach for implementing management measures to constrain the harvest to that (increased) GHL this year. Under the 2012 GHL Program the Council considered recommendations from its Charter Halibut Management Implementation Committee and Advisory Panel on a measure to adopt for the next sport season for each area to constrain harvest to the respective GHL. The Council and its advisors reviewed a staff analysis of potential measures that were proposed by the committee⁹. For Area 2C in 2012 the Council recommended one fish ≤ 45 inches or ≥ 68 inches ("U45/068") based on a GHL that increased from 788,000 lb in 2011 to 931,000 lb in 2012. This "reverse slot limit" would allow the retention of halibut approximately ≤ 32 lb and ≥ 123 lb (dressed weight). For Area 3A the Total CEY is 19,779,000 lb for 2012, compared to 23,520,000 lb in 2011. The Council recommended status quo (2 fish of any size) based on a decreased GHL from 3.651 Mlb in 2011 to 3.103 Mlb in 2012 and projected harvests. The IPHC implemented the Council recommendations at its January 2012 meeting for the 2012 season.

This brief management history of the charter halibut fishery demonstrates the contentiousness of sector allocations. Charter vessel operators and anglers generally resist anything more restrictive than the traditional two-fish daily bag limit or traditional season length, but the GHL management program in the charter sector has allowed charter halibut harvests to exceed the GHL since its implementation in Area 2C and by very small amounts in some years in Area 3A. The commercial IFQ sector views these GHL overages as an uncompensated reallocation of fishing privileges. The IPHC balances such charter harvest overages by decreases in the commercial halibut catch limit. To assure the future productivity of the halibut resource, the IPHC must maintain the total halibut harvest within the total CEY. Pursuant to the Halibut Act, the Council has a duty to ensure that any allocation of fishing privileges among various U.S. fishermen is fair and equitable.

1.3 Purpose and Need

The Council is concerned about its ability under the status quo to maintain the stability, economic viability, and diversity of the halibut industry, the quality of the recreational experience, the access of subsistence users, and the socioeconomic well-being of the coastal communities dependent on the halibut resource. Specifically, the Council noted the need for reliable harvest data would increase as the magnitude of harvest expands in the charter sector. The Council identified the following areas of concern, with respect to the recent growth of halibut charter operations.

⁹ <http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/2012MgmtMeasures2C.pdf>

- The recent growth of charter operations may be contributing to overcrowding of productive grounds and declining harvests per unit of effort for historical sport, commercial, and subsistence fishermen in some areas.
- As there is currently no limit on the annual harvest of halibut in the charter fishery, an open-ended reallocation from the commercial IFQ sector to the charter industry occurs when charter harvest exceeds the GHL. This reallocation may increase, if the projected growth of the charter industry occurs. The economic and social impact on the commercial IFQ fleet of this open-ended reallocation may be substantial.
- In some areas, community stability may be affected as traditional sport, subsistence, and commercial IFQ fishermen are displaced by charter LEP holders. The uncertainty associated with the present situation and the conflicts that are occurring between the various user groups may also be impacting community welfare.
- Information is lacking on the socioeconomic composition of the current charter industry. Information is needed that tracks (a) the effort and harvest of individual charter operations and (b) changes in business patterns.

The Council adopted the following management objectives for this proposed action in December 2007.

In establishing this catch sharing plan for the commercial and sport charter halibut sectors, the Council intends to create a management regime that provides separate accountability for each sector. The management of the commercial sector remains unchanged under the plan, and new management measures are provided for the sport charter sector.

These new measures for the sport charter sector are designed to address the specific need of the sport charter sector for advance notice and predictability with respect to the management tools and length of season that will be used to achieve the allocation allotted to that sector under the plan. In order to achieve the allocation, it is the Council's intent that management tools and season length would be established during the year prior to the year in which they would take effect, and that the tools selected and season length would not be changed in season.

The Council will evaluate its success in achieving the sport charter sector allocation, and specific needs for predictability, advance notice, and season length each year, and will adjust its management tools as needed. In designing this regime for the sport charter sector the Council recognizes that providing advance notice and predictability may result in a charter harvest that does not precisely meet the sector allocation for that particular year. Therefore, the Council intends to adjust its management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages, so long as such overages or underages do not exceed [0, 5, or 10 percent¹⁰] of the charter sector allocations. In meeting its conservation mandate while accommodating the charter industry's need for predictability and stability, the Council will necessarily err on the side of conservation in the selection of management tools and season length, with the result that the sport charter sector may not be able to harvest its entire allocation.

The Council adopted the following Problem Statement in June 2007, and reaffirmed the language in October 2007, December 2007, and April 2008.

The absence of a hard allocation between the longline and the charter halibut sectors has resulted in conflicts between sectors and tensions in coastal communities dependent on the halibut resource. Unless a mechanism for transfer between sectors is established, the existing

¹⁰ The Council did not include its December 2007 overage/underage policy in its preferred alternative. Instead, it allowed a management variance not to exceed 3.5 percent (plus or minus) around the charter sector allocations.

environment of instability and conflict will continue. The Council seeks to address this instability, while balancing the needs of all who depend on the halibut resource for food, sport, or livelihood.

The Council adopted its preferred alternative for a catch sharing plan for Area 2C and Area 3A in October 2008; upon its implementation the plan would replace the GHM Program. Additional analyses of certain features of the preferred alternative were conducted in 2009. NMFS provided informal technical and economic reviews of the draft EA/RIR/IRFA in 2009. The EA/RIR/IRFA was revised and resubmitted to NMFS in 2010 in response to those review comments and other consultations with NMFS staff. The EA/RIR/IRFA was revised and resubmitted to NMFS again in May 2011 with additional revisions.

1.4 Action Area

The action considered in the analysis would occur in IPHC regulatory Area 2C and Area 3A (Figure 3).

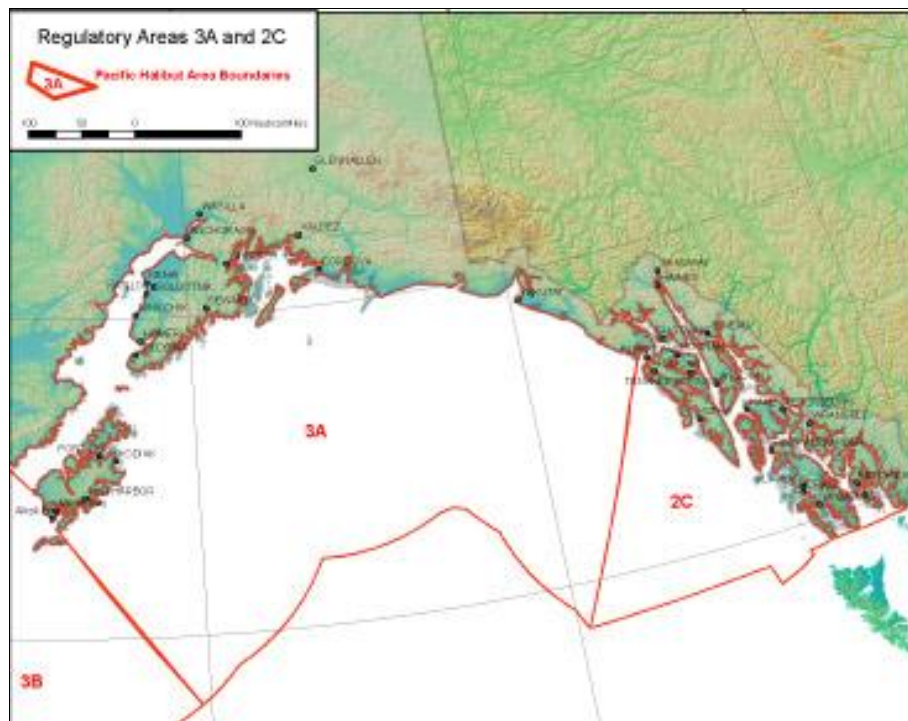


Figure 1-2 IPHC regulatory areas.

1.5 Relationship of This Action to Federal Law

While NEPA and the Regulatory Flexibility Act (RFA) are the primary laws directing the preparation of this document, a variety of other federal laws and policies require environmental, economic, and socio-economic analysis of proposed federal actions. This document contains the required analysis of the proposed federal action to ensure that the action complies with these additional federal laws and executive orders:

- Convention between the United States and Canada for the Preservation of the Halibut Fishery of the North Pacific Ocean and Bering Sea (Convention). Northern Pacific Halibut Act (Halibut Act, 16 U.S.C. 773-773k);
- Endangered Species Act;
- Marine Mammal Protection Act;
- Administrative Procedure Act;
- Executive Order 12866 (as amended); and
- Information Quality Act.

1.6 Related NEPA Documents

The NEPA documents listed below have detailed information on the halibut fishery, groundfish fisheries with halibut bycatch, and on the natural resources, the economic and social activities, and communities affected by those fisheries:

- Groundfish Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004);
- Essential Fish Habitat Environmental Impact Statement (EIS) (NMFS 2005b);
- The Harvest Specifications Environmental Impact Statement (EIS)(NMFS 2007);
- Guideline Harvest Level Environmental Assessment (EA) (NPFMC 2003a);
- EA for a regulatory amendment to implement Guideline Harvest Level measures in Area 2C (NPFMC 2007b); and
- EA for a regulatory amendment to define subsistence halibut fishing in Convention Waters (NPFMC 2003b).

1.7 Alternatives

The National Environmental Policy Act (NEPA) requires that EAs consider a range of reasonable alternatives. There are five proposed alternatives under consideration. The No Action alternative would continue management of the charter halibut sector in these regulatory areas under the Guideline Harvest Level (GHL) Program. Alternative 2 is the 2008 preferred alternative for a Halibut CSP. Alternative 3 is the 2012 PPA. Alternatives 4 and 5 provide different allocation options to the 2012 PPA.

1.7.1 Alternative 1. No action

Alternative 1 is the No Action Alternative. It would continue management of the charter sector in Area 2C and Area 3A under the GHL Program. It includes current federal and state regulations that would otherwise remain unchanged. Current federal regulations for Area 2C include (1) a daily bag limit of one halibut per day; (2) a prohibition on charter vessel guides, operators, and crew from catching and retaining halibut; and (3) a limit on number of lines used to fish for halibut, which must not exceed six or the number of charter vessel anglers onboard the charter vessel, whichever is less. The size limit for the one fish per day is now adjusted annually, as needed, by a recommendation from the Council, adoption by the IPHC, and implementation by NMFS. Current federal regulations for Area 3A include a daily bag limit of two halibut of any size.

The GHL Program set a fixed allocation in pounds to the charter sector in Area 2C and Area 3A in 2004, which included step-wise reductions as the halibut biomass decreased. Since then, the GHL has been exceeded each year in Area 2C and has been achieved in Area 3A. The delay between the year in which an overage occurs and when a management response is implemented by NMFS has been referred to as a “delayed feedback loop.” For instance, the GHL overage in 2004 was not identified by management agencies until September 2005. The Council initiated an analysis to implement restrictive management measures in October 2005. The Council selected an annual limit of five fish as its preferred alternative for Area 2C in April 2006 (NPFMC 2006). The Council rescinded this preferred alternative in October 2006, upon request of NMFS because of high implementation and enforcement costs. At that same meeting, ADF&G reported that charter halibut harvests in 2005 and 2006 exceeded the Area 2C GHL by increasing levels in those two years. The Council added several management options to Alternative 2, which resulted in a revised analysis in April 2007 and selection of a new preferred alternative in June 2007 for implementation for the 2008 charter season. Because the Council action could not be implemented in time for the 2007 charter season, NMFS initiated its own analysis of alternatives to be implemented for the 2007 charter season. NMFS implemented its preferred alternative of a season-long two halibut daily bag limit, with a maximum size limit of 32 inches for one of the two halibut on June 1, 2007. In summary, the delayed feedback resulted in restrictive action in 2007 for an overage in 2004. For 2012 the Council adopted a new approach which requires annual analysis and recommendation of

management measure to the IPHC for implementation for the upcoming season (this has been dubbed the “2012 approach”).

The 2012 approach outlines Council intent to engage in an annual process for determining charter halibut management measures. Upon analysis, and through the Council process, the Council would select the management measure that best minimizes the difference between the annual projected harvest and target allocation, without exceeding the charter halibut allocation. This would allow the Council and public to engage in an effective and transparent process for considering both stakeholder input and the most current information regarding the charter fishery and its management. The Council would then be able to determine annual management measures that achieve the harvest goal necessary for halibut conservation while also providing the most favorable charter fishing opportunity. Annual management measures recommended by the Council would be provided to the IPHC for implementation during the subsequent fishing year.

The Council recognizes that management measures are imprecise; therefore, a small variance can be expected to occur around the target allocation. The Council’s expectation is that these variances will balance over time, to ensure IPHC conservation and management objectives are achieved, and that harvest projections will improve over time as fishery information improves. A number of conditions have changed in the last several years that resulted in the adoption of the 2012 approach as the preferred system for selecting annual management measures to constrain charter halibut harvests to their respective targets (under the GHL Program) or allocations (under a CSP).

The No Action Alternative would not create a catch sharing plan between the charter and commercial halibut sectors and would not set an annual cycle intended to reduce the delayed feedback between an overage and when restrictive management measures may be implemented. Status quo also includes continuation of state regulations. Prior to state actions in 2006¹¹ and federal action in 2007 in Area 2C, charter halibut harvests had been effectively unrestricted because the GHL is not a “hard” cap; that is, the fishery is not closed when the GHL is reached.

Taking no action would continue management under GHLs in Areas 2C and 3A. It may require annual adjustments to optimally match charter halibut harvests to the respective GHLs. The Council has acknowledged the inefficiency of managing the charter sector under the GHLs by its initiation of this analysis.

1.7.2 Alternative 2 (2008 Preferred Alternative) Establish a catch sharing plan that includes sector accountability

Element 1 – Initial allocation and bag limits.

In Area 2C, when the combined charter and commercial setline catch limit is less than 5 Milb, the charter allocation will be 17.3 percent of the combined charter and commercial setline catch limit. When the combined charter and commercial setline catch limit is 5 Milb and above the allocation will be 15.1 percent. Management variance not to exceed 3.5 percentage points (plus or minus) may occur around this allocation. The Council’s expectation is that the variances will balance over time to ensure IPHC conservation and management objectives are achieved.

Trigger 1: When the combined charter and commercial setline catch limit is < 5 Milb, the halibut charter fishery will be managed under a 1 halibut daily bag limit. The allocation for the charter sector will be 17.3 percent of the combined charter and commercial setline catch limit. The charter sector’s expected catch may vary between 13.8 percent and 20.8 percent. However, if the charter harvest for an upcoming season

¹¹ Emergency orders have been issued by ADF&G to prohibit sport fishing guides and crew members on a charter vessel from retaining fish while clients are onboard the vessel during the fishing season for Area 2C Area 3A. State regulations for Southeast Alaska also limit the number of lines in the water to the number of paying clients, with a maximum of six.

is projected to exceed 20.8 percent of the combined charter and commercial setline catch limit, then a maximum size limit will be implemented to reduce the projected harvest level to be lower than 17.3 percent of the combined charter and commercial setline catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined commercial and charter catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 2: When the combined charter and commercial setline catch limit is ≥ 5 Mlb and < 9 Mlb, the halibut charter fishery shall be managed under a 1 halibut daily bag limit. The charter sector's allocation will be 15.1 percent of the combined catch limit. The charter sector's expected catch may vary between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected harvest level to 15.1 percent of the combined catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 3: When the combined catch limit is ≥ 9 Mlb and < 14 Mlb, the charter halibut fishery shall be managed under a 2 halibut daily bag limit (only one of which may be longer than 32 inches). The charter sector's allocation will be 15.1 percent of the combined catch limit. The charter sector's expected catch may vary between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, then the charter fishery will revert back to a 1 halibut daily bag limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 4: When the combined catch limit is ≥ 14 Mlb, the halibut charter fishery will be managed under a 2 halibut daily bag limit. The charter sector's allocation will be 15.1 percent of the combined catch limit. The charter sector's expected catch may range between 11.6 percent and 18.6 percent. However, if the charter harvest for an upcoming season is projected to exceed 18.6 percent of the combined catch limit, the charter fishery will revert back to a 2 halibut daily bag limit. Only one of the retained halibut may be longer than 32 inches.

Area 2C Combined Catch Limit (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
<5	Comm alloc = 82.7% Charter alloc = 17.3% Charter range = 13.8-20.8%	One Fish	Maximum size limit imposed that brings harvest to <17.3%	One Fish
≥ 5 - <9	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	One Fish	Maximum size limit imposed that brings harvest to <15.1%	Two fish, but one must be less than 32" in length
≥ 9 - <14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish, one must be less than 32" in length	One Fish	Two Fish
≥ 14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two Fish	Two fish, but one must be less than 32" in length	Two Fish

In Area 3A, when the combined charter and commercial setline catch limit is <10 Mlb, the charter allocation will be 15.4 percent of the combined charter and commercial setline catch limit. When the combined charter and commercial setline catch limit is 10 Mlb and above, the allocation will be 14.0 percent. Management variance not to exceed 3.5 percentage points (plus or minus) may occur around this allocation. The Council's expectation is that the variances will balance over time to ensure IPHC conservation and management objectives are achieved.

Trigger 1: When the combined charter and setline catch limit is < 10 Mlb, the charter halibut fishery will be managed under a 1 halibut daily bag limit. The charter sector's allocation will be 15.4 percent of the combined charter and setline catch limit. The charter sector's expected catch may vary between 11.9 percent and 18.9 percent of the combined catch. However, if the charter harvest for an upcoming season is projected to exceed 18.9 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected charter harvest below 15.4 percent of the combined harvest. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined commercial and charter catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 2: When the combined catch limit is \geq 10 Mlb and < 20 Mlb, the halibut charter fishery will be managed under a 1 halibut daily bag limit. The charter sector's allocation will be 14.0 percent of the combined catch limit. The charter sector's expected catch may vary between 10.5 percent and 17.5 percent of the combined catch limit. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, then a maximum size limit will be implemented to reduce the projected charter harvest level to 14 percent of the combined catch limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 3: When the combined limit is \geq 20 Mlb and < 27 Mlb, the halibut charter fishery will be managed under a 2 halibut daily bag limit (only one of which may be longer than 32 inches). The charter sector's allocation will be 14.0 percent of the combined catch limit. The charter sector's expected catch may vary between 10.5 percent and 17.5 percent of the combined catch limit. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, then the charter fishery will revert back to a 1 halibut daily bag limit. If the projected charter harvest results in a catch rate (percentage of projected charter harvest divided by the combined catch limit for that Area) that is lower than the lowest charter harvest percentage in that trigger range, then the charter harvest shall be managed under the daily bag limit of the next higher trigger, so long as the projected charter harvest percentage of the combined catch limit falls within the percentage range included under that trigger.

Trigger 4: When the combined catch limit is \geq 27 Mlb, the halibut charter fishery will be managed under a 2 halibut daily bag limit. The charter sector's allocation will be 14.0 percent of the combined catch limit. The charter sectors expected harvest may range between 10.5 percent and 17.5 percent of the combined catch limits. However, if the charter harvest for an upcoming season is projected to exceed 17.5 percent of the combined catch limit, the charter fishery will revert back to a 2 halibut daily bag limit. Only one of the retained halibut may be longer than 32 inches.

Area 3A Combined Catch Limit (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
<10	Comm alloc = 84.6% Charter alloc = 15.4% Charter range = 11.9-18.9%	One Fish	Maximum size limit imposed that brings harvest to <15.4%	One Fish
≥10 - <20	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	One Fish	Maximum size limit imposed that brings harvest to <14.0%	Two fish, but one must be less than 32" in length
≥20 - <27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish, one must be less than 32" in length	One Fish	Two Fish
≥27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two Fish	Two fish, but one must be less than 32" in length	Two Fish

In Areas 2C and 3A, no retention of halibut by skipper and crew while paying clients are on board would be allowed.

Element 2 – Annual regulatory cycle/timeline.

The Council did not adopt an annual regulatory cycle for amending federal regulations. It is the Council’s intent to not revisit or readjust bag limits; such bag limit changes will be triggered by changes in combined charter and commercial setline catch limits established annually by the IPHC. Bag limits and maximum size limits would be implemented by the IPHC based upon its determination of the combined catch limits and the bag limit parameters described above.

Element 3 – Supplemental, individual use of commercial IFQ to allow charter limited entry permit holders (LEP) to lease commercial IFQ, in order to provide additional harvesting opportunities for charter anglers, not to exceed limits in place for unguided anglers.

A. Leasing commercial IFQ for conversion to Guided Angler Fish (GAF).

1. An LEP holder may lease IFQ for conversion to GAF for use on the LEP.
2. Commercial halibut QS holders may lease up to 1,500 pounds or 10% (whichever is greater) of their annual IFQ to LEP holders (including themselves) for use as GAF on LEPs. If an IFQ holder chooses to lease to a CQE, then the same limitations apply as if they were leasing to an individual charter operator—1,500 lb or 10 % whichever is greater. With regard to CQE leasing: any quota which a CQE holds, regardless of its origin, could be leased up to 100% to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, lease from another qualified CQE, or leased from an individual, and then lease up to 100% of the quota it holds.
3. No more than 400 GAF may be assigned to an LEP endorsed for 6 or fewer clients.
No more than 600 GAF may be assigned to an LEP endorsed for more than 6 clients.

B. LEP holders harvesting GAF while participating in the charter halibut fishery are exempt from landing and use restrictions associated with commercial IFQ fishery, but subject to the landing and use provisions detailed below.

C. GAF would be issued in numbers of fish. The conversion between annual IFQ and GAF would be based on average weight of halibut landed in each region’s charter halibut fishery (Area 2C or Area 3A) during the previous year as determined by ADF&G.

D. Subleasing of GAF would be prohibited.

E. Conversion of GAF back to commercial sector.

Unused GAF may revert back to pounds of IFQ and be subject to the underage provisions applicable to their underlying commercial QS either automatically on November 1 of each year or

upon the request of the GAF holder if such request is made to NMFS in writing prior to November 1 of each year.

- F. Guided angler fish derived from commercial QS may not be used to harvest fish in excess of the unguided sport bag limit on any given day.
- G. Charter operators landing GAF on private property (e.g., lodges) and motherships would be required to allow ADF&G samplers/enforcement personnel access to the point of landing.
- H. Commercial and charter fishing may not be conducted from the same vessel on the same day.

Alternative 2 is the 2008 Preferred Alternative to replace the GHM Program with a catch sharing plan for Area 2C and Area 3A. This CSP would 1) replace the current GHM program; 2) set initial allocations for each sector; and 3) establish a matrix of management measures to control charter halibut harvests to annual allocations; 4) authorize annual transfers of commercial halibut quota to charter halibut permit holders for harvest in the charter fishery to provide flexibility for individual commercial and charter fishery participants; and 5) prohibit retention of charter halibut by skippers and crew onboard under all allocations and triggers in both areas.

The EA retains the management measure matrix of the 2008 PA under Alternative 2 to allow for a full comparison of discrete alternatives. The allocation percentages could be retained and other management measures that the Council has identified as having deficiencies could be modified at final action. For example, the matrix of annual management measures could be replaced with the 2012 approach, the ± 3.5 percent range could be deleted, and the proposed GAF modifications could be included at final action.

Under Alternative 2 the Council would request that the IPHC annually set a combined charter and commercial setline catch limit to which the allocation percentage for each area will be applied to establish the domestic harvest targets for each sector and use the ADF&G charter halibut harvest projections for the estimate of charter removals for determining the combined catch limit. This action would also establish the management measures for the charter sector at identified tiers of halibut abundance and combined catch limits. The Council recognizes that management measures are imprecise; therefore, a small variance can be expected to occur around the allocation. The Council's expectation is that the variances will balance over time to ensure Council and IPHC conservation and management objectives are achieved. The 2008 preferred alternative includes a prohibition on the retention of halibut by skipper and crew while paying clients are onboard under all allocations and triggers. Each year the IPHC would adopt the Council's CSP for Area 2C and Area 3A, as it currently does for the Council's Areas 4C/4D/4E CSP, and the allocations and management measures for that year would be implemented by NMFS under final rulemaking for IPHC annual measures¹². The process for determining the annual management measures is depicted in Figure 1-3.

¹² <http://www.alaskafisheries.noaa.gov/frules/77fr16740.pdf>

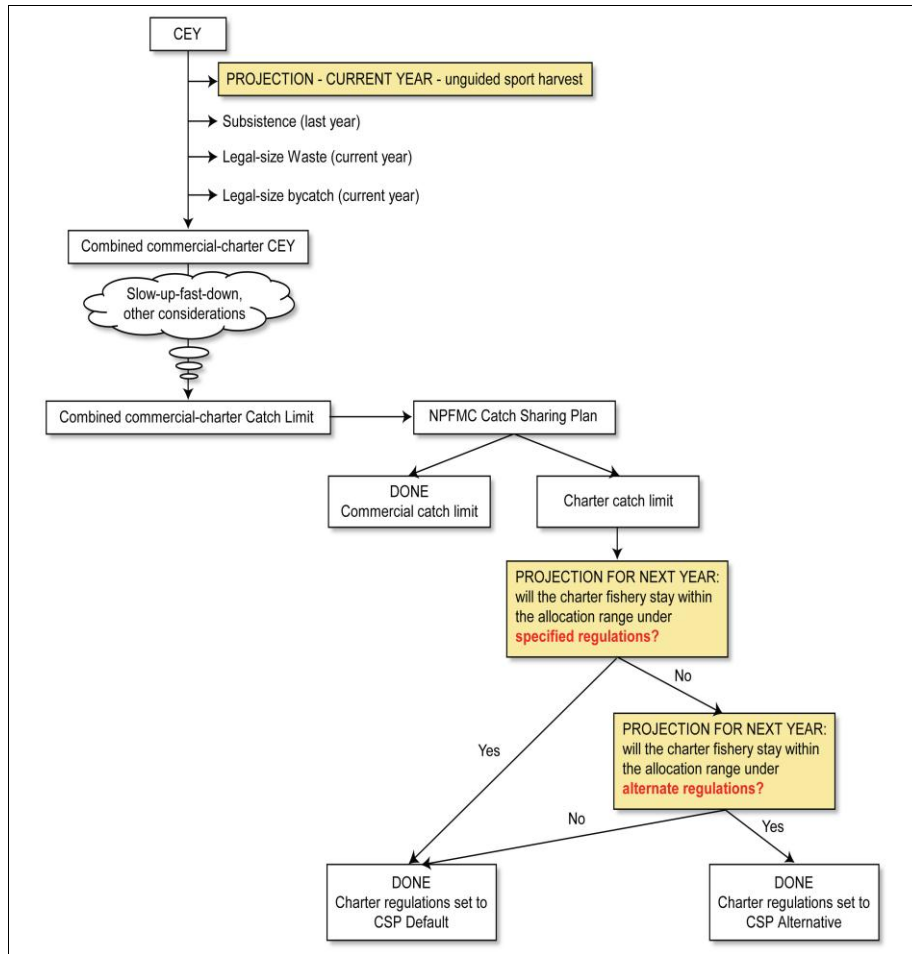


Figure 1-3 Annual regulatory process as proposed under the 2008 Preferred Alternative

Supplemental, individual use of commercial IFQ would allow charter LEP holders to lease commercial IFQ, in order to provide anglers with additional harvesting opportunities, not to exceed limits in place for unguided anglers. This feature of the CSP mitigates the initial allocation by providing a market-based mechanism for the charter sector to increase its allocation, while compensating the commercial sector for reduced removals.

The Council intended that the proposed CSP allocations to both sectors vary with halibut abundance, as indicated in its selection of a fixed percentage allocation under its 2008 PA and its rejection of numerous proposed fixed allocation options (see description of rejected alternatives below). It would require pre-season notice of upcoming management measures to allow an uninterrupted charter halibut season. The initial charter sector allocation would be 17.3 percent of the Area 2C combined commercial and charter catch limit when it is determined by the IPHC to be less than 5 Mlb; the allocation would be 15.1 percent when the CCL is 5 Mlb or more. The initial charter sector allocation would be 15.4 percent of the Area 3A CCL when it is determined by the IPHC to be less than 10 Mlb; the allocation would be 14 percent when the CCL is 10 Mlb or more. The allocations for the lowest tier of CCLs are based on 125 percent of the 2001–2005 average charter harvest, which was the same formula selected by the Council to set the GHs (although in fixed pounds). These percentages were the highest percentage allocation options to the charter sector that were considered by the Council and would yield the largest projected gross revenue each year. The allocations at higher CCLs are the second highest percentage allocation options for each area considered by the Council. The analysis found that these allocations would exceed projected harvests from 2009 through 2011 and that more restrictive management measures would not be required. The

Council selected a different percentage of the CCL in each area because the initial allocations could have very different impacts as a result of the size of the current constant exploitation yield (CEY) relative to historical CEYs. The plan also identifies specific management measures that would be triggered at different CCLs and identifies a market-based approach for individual charter LEP holders, who are willing buyers, to increase the charter sector allocation by compensating individual commercial IFQ holders, who are willing sellers, for their transferred quota. The plan would include a prohibition on retention of charter halibut by skippers and crew.

While the Council selected its Preferred Alternative in October 2008, supplemental analyses of aspects of the Council's motion were required to complete the analysis for submission to the Secretary. These were reviewed by the Scientific and Statistical Committee, and accepted by the Council, in February 2009. The draft final analysis was submitted to NMFS in September 2009. Recommended revisions from informal reviews by NMFS, and additional revisions of the analyses of the 2008 Preferred Alternative that were requested by the Council, were incorporated into the draft submitted to the Secretary in July 2011. A proposed rule was published in July 2011 and comments were accepted through September 21, 2011.

On September 29, 2011, NMFS informed the Council that it would not proceed with implementation of the 2008 Preferred Alternative until the Council provided additional guidance on several issues that were identified during the public comment period for the CSP proposed rule.¹³

At its December 2011 meeting, the Council adopted the following statement:

“The Council continues to support implementation of the Halibut Catch Sharing Plan (CSP) as the best approach to resolve longstanding allocation and management issues between the commercial and charter halibut sectors, as currently identified in the CSP Problem Statement.

The Council also recognizes that there are deficiencies in the current analysis that must be addressed before implementation can take place. Additionally, since 2008, changes in halibut management and the condition of the halibut stock have occurred, which will impact the effective implementation of the CSP as envisioned by the Council.”

The Council also requested additional analysis of the management matrix that it adopted in October 2008 under its Preferred Alternative for the proposed CSP. The Council also requested this review to determine whether proposed management measures and the data employed are still appropriate in each tier, given current charter harvests relative to combined fishery constant exploitation yield (CEY), particularly in Area 3A. Given the myriad components involved in commercial and charter halibut management, the Council recognized that there are management options available that were not included as part of the Halibut CSP Preferred Alternative. The Council noted that it is not the wish of the Council to delay implementation of the Halibut CSP any further than necessary.

The Council's December 2011 motion suggested that it still unanimously supported the proposed CSP, but it also wished to review the proposed CSP management matrix approach and specific management measures included in the CSP matrix itself in order to identify if any immediate or longer term action is warranted. Based on an analysis of 2012 conditions (which were not envisioned in 2008) under Part 4 of the March 2012 Agenda C-4(b)¹⁴ and supplemental CSP analysis under Part 3 of the March 2012 Agenda C-4(b)¹⁵, the Council could choose to revise its current CSP Preferred Alternative. Following NMFS guidance under Part 2 of the March 2012 Agenda C-4(b)¹⁶, it could consider revisions to the 2008 Preferred Alternative, but any revisions would require a new proposed rule and public comment period. Or it could initiate additional analysis for future action.

¹³ <http://www.alaskafisheries.noaa.gov/newsreleases/2011/halibut092911.htm>

¹⁴ <http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/CSPDiscussionPaper312.pdf>

¹⁵ <http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/CSPSupplementalAnalysis312.pdf>

¹⁶ <http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/CSPNMFSreport312.pdf>

The Council also requested analysis of 1) limits, including a) annual limits allowing for the retention of at least one fish of any size, b) trip limits, c) reverse slot limits, and d) two fish of a maximum size; 2) the appropriateness of the current proposed CSP management matrix, including the current set of management measures and those proposed for consideration above, and 3) alternate implementation pathways.

In February 2012 the Council reviewed a report by NOAA Fisheries that included 1) requests for clarification of Council intent on its proposed CSP and 2) a summary of public comments from stakeholders. The Council requested additional information and requested that the analysis be revised to reflect its clarifications and to respond to public comments. Based on additional information provided by staffs of the Council, NOAA Fisheries, and ADF&G in April 2012^{10, 11, 12} in response to its December 2011 requests, the Council amended its previous action (i.e., 2008 Preferred Alternative) by adopting a preliminary preferred alternative (PPA) (details of which were corrected in June 2012) and additional allocation options for analysis; the motion can be found under Section 3.

1.7.3 Alternative 3 (2012 Preliminary Preferred Alternative). Establish a catch sharing plan that includes sector accountability

Alternative 3 is the 2012 PPA for a modified CSP. In addition to the features identified under Alternative 2 (outlined above), Alternative 3 would replace a fixed matrix of management measures under Alternative 2 with a requirement that the Council recommend, and the IPHC adopt, annual management measures to maintain charter halibut harvests within the respective allocations. Alternative 3 differs from Alternative 2: 1) adjusts the 2008 Preferred Alternative allocation by a) eliminating the $\pm 3.5\%$ target range around the allocations and b) converting from the statewide harvest survey to logbooks with adjustments for crew harvests; 2) clarifies features of the GAF program (see below); 3) considers whether to recommend to the IPHC that the latter implement separate accountability for commercial wastage and charter wastage.

In April 2012, the Council amended its previous action on the CSP (Alternative 2); the exact language of the Council's motion is reproduced in Section 3. The Council adopted the following changes that would be incorporated into a new preliminary preferred alternative. The Council scheduled a new final action for October 2012.

- The Council adopted the March 27, 2012, recommendations of the Halibut Charter Management Implementation Committee and the Advisory Panel to adopt the "2012 Model" for determining annual charter halibut management measures under the CSP and removing the current matrix of management measures that are included in the current proposed rule. With this change, the Council also removes the target range around the allocations of $\pm 3.5\%$.
- The Council also adopted the unanimous recommendation of the Halibut Charter Management Implementation Committee and the Advisory Panel to use ADF&G logbooks as the primary data collection method. The Council recommends using an adjustment factor based on the five-year average (2006 – 2010) of the difference between the harvest estimates provided by the logbooks and the SWHS, with the adjustment factor reduced by the amount of harvest attributed to skipper and crew. The Council's understanding is that applying this adjustment factor would result in the following changes to the CSP allocations, as corrected in June 2012:

Area 2C adjustment factor = 5.6%

Area 2C current CSP allocation in Tier 1 = 17.3%

Adjusted CSP allocation = $(17.3\% * 5.6\%) + 17.3\% = 18.3\%$

Area 2C current CSP allocation in Tiers 2 through 4 = 15.1%

Adjusted CSP allocation = $(15.1\% * 5.6\%) + 15.1\% = 15.9\%$

Area 3A adjustment factor = 11.6%

Area 3A current CSP allocation in Tier 1 = 15.4%

Adjusted CSP allocation = $(15.4\% * 11.6\%) + 15.4\% = 17.2\%$

Area 3A current CSP allocation in Tiers 2 through 4 = 14.0%
Adjusted CSP allocation = (14.0% * 11.6%) + 14.0% = 15.6%

- The Council recommended for consideration of a letter to the IPHC supporting the idea of separate accountability of wastage between halibut sectors, and revising the preamble to the rule describing the method that the Council would expect to be used by the IPHC in setting catch limits.
- Guided Angler Fish Program – all elements of the GAF Program under the 2008 PA would apply, except as noted below.
 - Issue GAF in numbers of fish. Conversion of IFQ pounds to numbers of fish would be based on the average weight of GAF from the previous year.
 - In the first year of the GAF program, the GAF weight to number of fish conversion factor would be based on the previous year's data or most recent year without maximum size limit in effect.
 - Define the leasing limitation for each commercial halibut IFQ shareholder to 10% of his/her IFQ holdings or 1,500 pounds in Area 2C and 15% of his/her IFQ holdings or 1,500 pounds in Area 3A, whichever is greater.
 - *Guides*² would be required to mark GAF by removing the tips of the upper and lower lobes of the tail and report the length of retained GAF halibut to NMFS through the NMFS approved electronic reporting system.
 - A review within five years of the start of the GAF program would be scheduled, which would take into account the economic effects on both sectors.

1.7.4 Alternative 4. Establish a catch sharing plan that includes sector accountability, with adjustment of 2008 PA by +3.5% on two lower levels of combined catch limits

Alternative 4 contains the same elements as Alternative 3, except it would increase the allocation to the charter sector by 3.5% of combined charter and commercial catch limit (CCL) at the two lower CCL levels; no adjustment is made to the highest CCL. In its April 2012 motion the Council labeled those as Option 1 (Area 2C) and Option 2 (Area 3A). The options represent the 2008 Preferred Alternative + 3.5% of the CCL.

Option 1: Area 2C

At a combined catch limit of <5 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (20.8%); at a combined catch limit of ≥ 5 - <9 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (18.6%). At combined catch limits of ≥ 9 Mlbs, maintain the original target CSP allocation of 15.1%.

Option 2: Area 3A

At a combined catch limit of <10 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (18.9%); at a combined catch limit of ≥ 10 - <20 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (17.5%). At combined catch limits of ≥ 20 Mlbs, maintain the original target CSP allocation of 14.0%.

1.7.5 Alternative 5. Establish a catch sharing plan that includes sector accountability, with adjustment of 2012 PPA by +3.5% on two lower levels of combined catch limits

Alternative 5 contains the same elements as Alternative 3, except it would increase the 2012 PPA by the same 3.5% of the CCL at lower CCL levels. They are labeled as Option 1 adjusted (Area 2C) and Option 2 adjusted (Area 3A). These options apply a consistent approach to the 2012 PPA that was applied to the 2008 Preferred Alternative under Alternative 4. Their addition applies a consistent, logical approach to identifying the full range of allocation options and notices the public of potential action by the Council

when it selects its Final Preferred Alternative in October 2012. The range of allocation options are listed in the tables below.

Option 1 adjusted: Area 2C

At a combined catch limit of <5 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (21.8%); at a combined catch limit of $\geq 5 - <9$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (19.4%). At combined catch limits of ≥ 9 Mlbs, maintain the original target CSP allocation of 15.9%.

Option 2 adjusted: Area 3A

At a combined catch limit of <10 Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (20.7%); at a combined catch limit of $\geq 10 - <20$ Mlbs, establish the CSP allocation at the upper end of the original range proposed for the CSP (19.1%). At combined catch limits of ≥ 20 Mlbs, maintain the original target CSP allocation of 15.6%.

Note: Under the 2012 model, the $\pm 3.5\%$ range around the allocation would be removed, and the Council would be annually recommending management measures that minimize the difference between the projected harvest and the target allocation, without exceeding the allocation.

Summary of Proposed Alternatives: Table 1.3 shows both the status quo alternative and four alternatives defined by the Council. Note that the GHL allocation is based on the Total CEY and the CSP allocations are based on the CCL. The result of the Council motion includes the following options to divide the available halibut in IPHC Area 2C (Table 1-4) and Area 3A (Table 1-5). The allocations under Alternative 2 contain the Council's 2008 preferred alternative. For example it would allocate 17.3% of the Area 2C CCL to the charter sector when the CCL is less than 5 Mlbs. This percentage was originally derived as 125% of the 2001 through 2005 average charter harvest (GHL formula updated through 2005). The charter sector would be allocated 15.1% when the CCL is 5 Mlbs or greater. This percentage was originally derived based on the 2005 charter harvest. Alternative 3 is the 2012 PPA, which is the 2008 Preferred Alternative increased by 5.6% to account for using logbooks as the primary data collection mechanism. Alternative 4 is "Option 1 (unadjusted)" from the Council's April 2012 motion, as corrected by its June 2012 motion, which is the 2008 preferred alternative increased by 3.5% of the CCL. The 3.5% increase equates to the upper bound of the target range in the Council's 2008 preliminary preferred alternative. Finally, Alternative 5 or "Option 1 (adjusted for allocation and logbooks)" is "Option 1 (unadjusted)" plus 3.5% of the CCL. The same description applies to the Area 3A alternatives.

Table 1-3 Proposed Catch Sharing Plan Alternatives

	Alternative 1	Alternative 2 2008 Preferred Alternative	Alternative 3 2012 Preliminary Preferred Alternative	Alternative 4 ("Option 1&2")	Alternative 5 ("Option 1&2" Adjusted)
Type of Council Action	No Action; annual recommendations to IPHC	Regulatory Amendment	Regulatory Amendment; annual recommendations & letter to IPHC	Same as Alternative 3	Same as Alternative 3
Description	Guideline Harvest Level Program continues	Catch Sharing Plan replaces the GHL Program & one fish bag limit in Area 2C	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Type of Allocation	Fixed "Target" Allocation in lbs based on halibut abundance	Sector Allocations that float with halibut abundance (fixed percent)	Same as Alternative 2	Same as Alternative 2	Same as Alternative 2
Allocation Basis	125% of average 1995-1999 charter halibut harvest	< Lower Abundance: 125% of average 2001-2005 charter harvest divided by combined charter and commercial halibut harvests > Higher abundance: Area 2C - 2005 charter harvest, Area 3A - 125% of 1995-1999 average harvest	Modified Alternative 2 by: 1) eliminating the $\pm 3.5\%$ target range around the allocations, and 2) adjusting allocations for conversion from the statewide harvest survey to logbooks with crew harvests removed.	Modified Alternative 2 allocations to the charter sector by +3.5% of combined catch limit (CCL) at the two lower (of three) CCL levels	Modified Alternative 3 allocations to the charter sector by +3.5% of CCL at the two lower CCL levels
Allocations	See separate breakout table for specific proposed allocation alternatives				
Action Required if Target/ Allocation is Exceeded	None; could result in annual Council action and NMFS rule-making, with delayed feedback loop resulting in likely mismatch of measure and current harvest level	None; overages and underages from projections are expected to balance out in the longer term; management matrix controls charter harvests; however Council has identified inadequacies in the matrix	Annual analysis & recommendation of management measure to the IPHC for implementation for upcoming season (replaces matrix). Use of logbooks to manage fishery may reduce uncertainty in harvest projections and choice of annual management measures.	Same as Alternative 3	Same as Alternative 3
Guided Angler Fish Program	No	Yes	Modified Alternative 2	Same as Alternative 3	Same as Alternative 3
Separate Accountability	No	Yes for direct fishery	Yes for direct fishery and wastage	Same as Alternative 3	Same as Alternative 3
Meets Problem Statement	No	Yes, but with deficiencies	Yes	Same as Alternative 3	Same as Alternative 3

Table 1-4 Proposed Area 2C charter allocations in this analysis

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 1 (2008 Pref Alt + 3.5% of CCL)	Option 1 adjusted (2012 PPA + 3.5% of CCL)*
4.779	0.788	< 5 Mlb	17.3%	18.3%	20.8%	21.8%
5.841	0.931	≥5 Mlb - 9 Mlb	15.1%	15.9%	18.6%	19.4%
6.903	1.074	≥ 9 Mlb	15.1%	15.9%	15.1%	15.9%
7.965	1.217					
9.027	1.432					

Table 1-5 Proposed Area 3A charter allocations in this analysis

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHL in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 2 (2008 Pref Alt + 3.5% of CCL)	Option 2 adjusted (2012 PPA + 3.5% of CCL)*
11.425	2.008	< 10 Mlb	15.4%	17.2%	18.9%	20.7%
13.964	2.373	≥ 10 Mlb - 20 Mlb	14.0%	15.6%	17.5%	19.1%
16.504	2.734	≥ 20 Mlb	14.0%	15.6%	14.0%	15.6%
19.042	3.103					
21.581	3.650					

1.7.6 Rejected Alternative

The Council previously considered and rejected several alternatives to address its problem statement. One alternative would have allowed compensated reallocation shifts between the commercial IFQ and charter sectors. Options considered would have allowed the development of a common pool management system and/or an individual private management system. Three suboptions included potential common pool management systems: (1) federal Common Pool; (2) State Common Pool; or (3) Regional Non-Profit Association Common Pool. Each common pool suboption would require federal and/or State of Alaska legislation, plus a regulatory amendment to the commercial halibut individual fishing quota program. Legislative authorization places portions of the final program outside the Council process. The individual management option would require only a regulatory amendment. The analysis identified numerous overarching issues that likely would have impeded implementation of both types of systems.¹⁷ The Council rejected the compensated reallocation alternative in October 2007 because a draft analysis identified a number of hurdles to its successful and timely implementation. These hurdles include (1) the need for both federal and state legislation to authorize the proposed actions; (2) the need for funding the purchase of commercial QS; (3) controversy regarding the proposed pro rata reduction of the value of commercial halibut QS; and (4) the additional time required to allow various facets of the proposed program to be implemented (NPFMC 2007c). The Council replaced the compensated reallocation alternative with Alternative 2. That alternative is a simpler, more limited approach that would allow voluntary, in-season leasing of commercial halibut IFQs to individual charter halibut LEP holders while the Council considers a permanent management solution. Alternative 3 refined the proposed action into its 2008 preferred alternative.

¹⁷ http://www.alaskafisheries.noaa.gov/npfmc/current_issues/halibut_issues/HalibutReallocation907.pdf

The Council also rejected an option that would have allowed charter LEP holders to transfer (i.e., purchase) commercial halibut QS (rather than leasing IFQ) because the proposal was not supported by the charter halibut sector.

As part of its selection of the 2008 Preferred Alternative, the Council also rejected Alternative 2 from its 2008 CSP analysis¹⁸ which included an alternative, with numerous elements and options for Council consideration; the Council selected its 2008 Preferred Alternative from those elements and options. It would have set a CSP for an initial allocation of halibut harvests between the charter sector and commercial IFQ sector in Area 2C and Area 3A and allow charter halibut LEP holders to lease commercial halibut IFQ to increase their share of the allocation within a fishing season. It also affirms a policy under which the Council commits to annually consider changes to federal regulations (as needed) to limit charter halibut harvests to its allocation.

The Council considered 10 options under Alternative 2, Element 1 for initial sector allocations in each area. These included four fixed percentage options, three fixed poundage options that included suboptions to step the allocations up or down depending on halibut biomass, and three options that match 50 percent of one of the fixed pound and one of the percentage options. Element 2 would have defined the annual regulatory cycle, focusing on how the halibut charter fishery's common pool of halibut would be regulated in the current and future years. Element 3 would have defined the management 'tool box' to be available to the Council to adjust future harvest levels. Element 4 provided examples of how the timeline for management decisions and actions to adjust the charter sector's harvests would have been applied, if they are needed. Element 5 defined how charter LEP holders would have acquired and used commercial IFQ to supplement the halibut available from a common pool. Finally, Element 6 provided a discussion of the catch accounting system that would have been needed to monitor two classes of halibut that would have been harvested by the charter sector under Alternative 2.

The rejected alternative (see next page), and its more expansive range of elements and options, from the 2008 analysis is reproduced here for reference, but is not analyzed again.

¹⁸ <http://www.alaskafisheries.noaa.gov/sustainablefisheries/halibut/analyses/cspea062011.pdf>

Establish a Catch Sharing Plan that Includes Sector Accountability

Element 1 – Initial allocation

Option 1: Fixed percentage¹⁹

	Area 2C	Area 3A	Based on²⁰:
a.	13.1 %	14.0%	125% of the 1995-1999 avg. charter harvest (current GHF formula)
b.	17.3 %	15.4 %	125% of the 2001-2005 avg. charter harvest (GHF formula updated thru 2005)
c.	11.7 %	12.7%	current GHF as percent of 2004 charter harvest
d.	15.1 %	12.7%	2005 charter harvest

Option 2: Fixed pounds²¹

	Area 2C	Area 3A	Based on²¹:
a.	1.43 Milb	3.65 Milb	125% of the 1995-1999 avg. charter harvest (current GHF)
b.	1.69 Milb	4.01 Milb	125% of the 2000-2004 avg. charter harvest (GHF updated thru 2004)
c.	1.90 Milb	4.15 Milb	125% of the 2001-2005 avg. charter harvest (GHF updated thru 2005)

Suboption to Options 2a, 2b, and 2c:

Stair step up and down. The fixed poundage allocation in each area (e.g., Option 2a - 13.1% in Area 2C) could be increased or reduced in stepwise increments based on a change in the total CEY or a change in the combined commercial and charter catch limit. If the halibut stock were to increase or decrease by 15 percent to 24 percent from its average total CEY during the base period selected for the initial allocation at the time of final action (e.g., 1995-1999 for Option 2a), then the allocation would be increased or decreased by 15 percent from the base allocation. For example, if the initial allocation was 13.1% for Area 2C and the 1995-1999 average total CEY decreased by 20 percent, the Area 2C allocation would be decreased by 0.02%, from 13.1% to 11.1%. Likewise, if the total CEY were to increase or decrease by 25 percent to 34 percent from its average for the base period selected for the initial allocation at the time of final action, then the allocation would be increased or decreased by 25 percent from the base allocation. If the stock continued to increase or decrease by at least 10 percent increments, the allocation would be increased or decreased by commensurate 10 percent increments.

Suboption under Suboption to Options 2a, 2b, and 2c:

Stair step provision would be tied to:

- 1) Baseline years as proposed under Suboption to Options 2a, 2b, and 2c
- 2) CEY:
 - a) 2006 through 2008
 - b) 2008
- 3) Baseline of combined commercial and charter catch limit in:
 - a) 2006 through 2008
 - b) 2008

¹⁹ Under Option 1, the Council would request that the IPHC set a combined charter and commercial catch limit and apply the catch sharing plan allocations to the two sectors.

²⁰ Baseline formula for allocation options are provided only for reference as to how the percentages were derived.

²¹ Under Option 2, the Council would request that the IPHC use the fixed pound allocation as the number for charter halibut removals from Areas 2C and 3A that is included each year in its “Other Removals” deduction from the Total Constant Exploitation Yield (CEY).

The suboption to Options 2a, 2b, and 2c would increase or decrease the charter allocation in predefined steps, whenever the halibut CEY changes by specified amounts with respect to the average total CEY for the base period selected for the initial allocation at the time of final action. The Council requested that those steps be based on changes to either the proposed baseline years, the total CEY, or the baseline of the CCL. The suboption does not apply to Option 1 or Option 3, because those allocations are already directly linked to changes in a CCL. Selecting the Option 2 suboption would result in an allocation to the charter sector that behaves more like Option 1 than a fixed poundage allocation. Anytime the CEY (or the combined commercial and charter catch limit in Suboption 3 under the Suboption to Options 2a, 2b, and 2c) changes by a predetermined amount, the charter allocation would have been revised to the corresponding allocation. Allowing the charter allocation to vary with CEY (or the combined commercial and charter catch limit) removes the security of having a fixed-poundage allocation. For example, if the fixed-poundage allocation was implemented with 2007 as the base year, the 2008 CEY would have triggered a substantial reduction in the Area 2C allocation. However, if Option 2 was not modified to include the stair step up and down suboption, the commercial sector would have been required to absorb the entire reduction of available halibut.

Option 3: 50 percent fixed/50 percent floating allocation²²

	Area 2C		Area 3A	
	50 percent of:	and 50 percent of:	50 percent of:	and 50 percent of:
a.	13.1 %	1.43 Mlb	14.1 %	3.65 Mlb
b.	16.4 %	1.69 Mlb	15.9 %	4.01 Mlb
c.	17.3 %	1.90 Mlb	15.4 %	4.15 Mlb

Element 2 – Annual regulatory cycle

The Council has announced that its policy under Element 2 would be to allow the charter halibut season to remain open and fishing to continue for the specified season, operating under whatever restriction(s) were adopted preseason by the Council. In other words, the Council does not seek to monitor the harvest inseason, and close the fishery when the allocation is reached. Rather, it believes its restrictions will be sufficient to achieve the sector allocation. Any overages or underages would be accounted in the IPHC stock assessment and halibut biomass estimate. Operationally, overages would result in a modest decrease in the combined charter and commercial longline IFQ allocation in the following year. Underages would accrue to the benefit of the halibut biomass and all user groups but would not be reallocated to the charter sector in the subsequent fishing year.

Management of the charter halibut sector to its allocation would be achieved, if necessary, through an annual regulatory analysis of management measures that takes into account the projected CEY for the following year and any overages by the charter industry in the past year(s). The Council could choose a policy for selecting a preferred alternative that would reduce the time between a charter allocation overage and implementation of regulations to eliminate the overage. Alternate policies are discussed under Element 4.

The Council has wrestled with the confines of State of Alaska data availability and the federal rulemaking process; this has been described as a “delayed feedback loop.” Three to four years may elapse between the year in which (1) an overage occurs; (2) the year in which ADF&G data report that an overage has occurred; (3) the year in which the Council selects a preferred alternative to address the overage; and (4) the year in which new regulations are in effect.

²² Under Option 3, the Council could select either of two approaches: (1) as stated under footnote 1 or (2) the Council could request that the IPHC deduct the fixed portion of the allocation from “Other Removals” and deduct the floating portion of the allocation from a combined charter and commercial sector fishery catch limit.

Element 3 – Management toolbox

The Council has announced that its policy under this element would be to select a preferred alternative from the list of possible management measures from its “toolbox” for a future analysis and rulemaking after it has been notified that a charter sector allocation has been exceeded. The estimated effects of potential management measures are provided only to illustrate how the Council’s policy may be implemented in the future. The Council would select the tool (or tools) that allow it to reduce charter harvest to the allocation.

Element 3 would establish two tiers of measures that the Council may utilize to manage the charter common pool allocation (Table 1-6). Tier 1 measures would be considered by the Council to manage the charter common pool allocation for a season of historical length and a two-fish daily harvest limit. Tier 2 measures would be used if Tier 1 measures are inadequate to constrain charter harvest to its allocation. The estimated effects of management measures are summarized in Table 1-7. Due to the inherent delay in implementation of regulations after an overage, management measures may be disproportionately restrictive to the estimated level of reduction, to ensure that the charter sector allocation is not exceeded in the future. In providing predictability and stability for all those that use this resource, the full charter allocation may not be harvested in every year and/or every area. No regulations would be generated under Element 3.

Table 1-6 Proposed Management Measures by Tier

Tier 1	Tier 2
One Trip per Vessel per Day	Annual Catch Limits
No Retention of Halibut by Skipper and Crew	One-fish bag limit for all or a portion of the Season
Line Limits	Closing the charter fishery for all or a portion of the Season
Second Fish of a Minimum Size	
Second Fish at or below a Specific Length	

Table 1-7 Estimated Effect of Management Measures

Tier	Management Measure	Sub-Option	Estimated Harvest Reduction	
			Area 2C	Area 3A ¹
Tier 1	One Trip per Vessel per Day	None	1.8% – 2.4%	5.5% – 6.3%
	No Retention by Skipper and Crew	None	4.3% – 4.7%	10.4%
	Line Limits ²	None	Not Analyzed	Not Analyzed
	Second Fish of a Minimum Size ³	45"	18.8% – 27.0%	32.5% – 39.3%
		50"	23.1% – 30.8%	36.9% – 43.3%
	Second Fish at or below a Length Limit ⁴	32 Inches	19.7% – 26.1%	18.2% – 24.5%
		34 Inches	Not Analyzed	15.2% – 21.1%
36 Inches		Not Analyzed	12.1% – 18.3%	
Annual Catch Limits	Four Fish	16.4%	6.5%	
	Five Fish	9.3%	4.1%	
	Six Fish	4.3%	2.1%	
Tier 2	One-fish bag limit for All or a Portion of the Season ⁵	Full Season	39.7% – 57.8%	47.1% – 62.9%
		May	1.8% – 2.6%	5.0% – 6.6%
		June	10.0% – 14.6%	12.4% – 16.5%
		July	14.5% – 21.1%	17.8% – 23.8%
		August	12.0% – 17.5%	9.9% – 13.2%
		September	1.4% – 2.0%	1.8% – 2.9%
Season Closure ⁶	Full Season	100.0%	100.0%	
	May	5.2%	10.5%	
	June	25.7%	26.0%	
	July	35.4%	37.7%	
	August	29.9%	21.2%	
	September	3.7%	4.0%	

1. Numbers for Area 3A reflect the Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for a Regulatory Amendment to Implement Guideline Harvest Level Measures in the Halibut Charter Fishery in IPHC Regulatory Area 3A (NPFMC 2007c) updated with ADF&G's final 2006 harvest estimates.

2. Neither the Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for a Regulatory Amendment to Implement Guideline Harvest Level Measures in the Halibut Charter Fisheries in IPHC Regulatory Area 2C (NPFMC 2007b) nor NPFMC 2007c analyzed line limits as an individual option.

3. Upper estimates for each Area include an assumption of a 10 percent reduction in the demand for halibut charter trips.

4. Upper estimate assumes that anglers catch the average fish below the length limit based on biomass. Lower estimate assumes that anglers are able to high-grade by one two-inch size class. These estimates do not account for changes in demand that have occurred since 2006 including those changes resulting from a weak or recessionary national economy.

5. Upper estimates include an assumption of a 30 percent reduction in the demand for halibut charter trips. The analysis did not make any adjustments for anglers rescheduling their trips to other parts of the season which do not include the one-fish bag limit.

6. Estimates based on ADF&G data provided for NPFMC 2007b and NPFMC 2007c. Estimates do not include the effect of anglers migrating to other months or otherwise adapting to the closure.

Source: NPFMC 2007b and NPFMC 2007c.

Element 4 – Timeline.²³ Element 4 would identify a preferred alternative for the timing of future regulatory actions. It would not be implemented in regulation.

Element 4 is linked to discussions of an annual regulatory cycle under Element 2 and a management toolbox under Element 3. The Council has announced that it would identify its policy for setting a timeline for initiating new rulemaking once it has been notified of a charter allocation overage. The preferred regulatory timeline would be identified in the text of the CSP. No regulations would be generated as a result of Element 4. The estimated effects of potential timelines are provided to illustrate how the Council’s preferred policy may be implemented in the future.

The Council may select from one or more of the approaches described below or identify a new approach.

- A. Schedule final action in December. The Council could save one meeting cycle by basing its new RIR/IRFA on the previous, final analysis and proceeding straight to final action; it would not schedule an initial review of the analysis (which is Council policy and not a federal requirement). The Council could review the previous RIR/IRFA in the context of the ADF&G report on the latest calendar year estimates of sport halibut removals and consider that its initial review of the proposed action.

The RIR/IRFA would incorporate the most recent year of data and undergo a routine update. Final action would be scheduled in December to incorporate ADF&G charter halibut harvest estimates, which are released in early to mid-September each year. It is not possible to prepare a revised RIR/IRFA for either one or both regulatory areas in the two weeks between the time when ADF&G releases the data and the October Council meeting. A December final action would allow two to four weeks for public review of the analysis.

A critical problem with this approach is that NMFS does not believe that receiving the analysis from the Council in mid to late December allows sufficient time to implement the rule in time for the next charter halibut season. To address this problem, the Council could forego SSC review of the revised RIR/IRFA and NMFS would use the updated RIR/IRFA completed before the December Council meeting to develop a rule to implement management restrictions for the charter sector. Foregoing SSC review of the revised RIR/IRFA is reasonable because the analytical methodology would have previously been approved by the SSC and Council, and the revised analysis would include only an additional year’s data and harvest projections. Or the Council could schedule SSC review in December, take final action in December, and task staff with addressing SSC comments prior to submitting the analysis to the Secretary of Commerce.

- B. Prepare a supplemental analysis (only) prior to Council action. The Council could select its preferred alternative based on a supplemental analysis since the preparation of an RIR/IRFA prior to the selection of a preferred alternative is a Council policy only. The supplemental analysis could be a 2-3 page document provided to the Council prior to the October Council meeting. It would be similar to that prepared for Area 2C GHM measures in 2007.²⁴ A complete, revised EA/RIR/IRFA would be prepared by Council staff immediately after final action and submitted to the Secretary of Commerce.
- C. Dual preferred alternative. The Council could select alternate preferred alternatives for management restrictions for the charter sector prior to the determination of the allocation by the IPHC (in January) using the CSP. A proposed rule could be published prior to IPHC action and solicit comments on both preferred alternatives or the proposed rule could be published after IPHC action and solicit comments on the remaining preferred alternative that would result from application of the CSP to the combined charter and commercial longline IFQ allocation, which was determined by the IPHC. It is possible

²³ The Council has identified its preference for a three-year timeline that includes an opportunity for adequate public comment period of the analysis prior to final action.

²⁴ http://alaskafisheries.noaa.gov/npfmc/current_issues/halibut_issues/Area2CHalibut507.pdf

that more than two preferred alternatives could be selected by the Council, depending on the CSP formula for sector allocations of the combined charter and commercial IFQ allocation.

- D. Rulemaking would not depend on IPHC action under a fixed allocation. Public confusion would be minimized if the identification of the preferred alternative for future management restrictions was not dependent on the actions of the IPHC (in setting the combined charter and commercial IFQ allocations). Clarity in the supplemental analysis, Secretarial draft of the RIR/IRFA, proposed rule, and final rule would facilitate Secretarial action.
- E. Separate rulemaking for management measures. Development of separate rulemakings for restrictive charter halibut management measures and annual commercial halibut harvest measures would facilitate the implementation of measures that are necessary to start the commercial IFQ fishery. Some stakeholders have suggested that charter halibut management measures be included in the rulemaking for IPHC actions to speed its implementation; however, the requirement to respond to what may be numerous comments to possibly controversial, proposed charter halibut regulations could jeopardize timely implementation of commercial regulations. Further, only a final rule is published for annual commercial halibut regulations that are recommended by the IPHC; publication of a proposed rule for restrictive management measures is still required.

Element 5 – Supplemental, individual use of commercial IFQ

Charter limited entry permit holders would be allowed to lease commercial IFQ, in order to provide additional anglers with harvesting opportunities, not to exceed limits in place for unguided anglers.

- A. Leasing commercial IFQ for conversion to Guided Angler Fish (GAF).
 - 1. An LEP (Limited Entry Permit) holder may lease IFQ for conversion to GAF for use on the LEP.
 - 2. Commercial halibut QS holders may lease up to 1500 lb or 10% (whichever is greater) of their annual IFQ to LEP holders (including themselves) for use as GAF on LEPs. A CQE may lease up to 100% of its annual IFQ for use as GAF on their own LEPs.
 - 3. No more than 200–400 fish may be leased per LEP.
Suboption: LEPs w/endorsement for more than 6 clients may not lease more than 400–600 fish.
- B. LEP holders harvesting GAF while participating in the charter halibut fishery are exempt from landing and use restrictions associated with commercial IFQ fishery, but subject to the landing and use provisions detailed below.
- C. GAF would be issued in numbers of fish. The conversion between annual IFQ and GAF would be based on average weight of halibut landed in each region’s charter halibut fishery (2C or 3A) during the previous year as determined by ADF&G. The long-term plan may require further conversion to some other form (e.g., angler days).
- D. Subleasing of GAF would be prohibited.
- E. Conversion of GAF back to commercial sector
 - 1. GAF holders may request NMFS convert unused GAF into IFQ pounds for harvest by the owner of the Quota Share in compliance with commercial fishing regulations.
 - 2. Unused GAF may revert back to pounds of IFQ and be subject to the underage provisions applicable to their underlying commercial QS
 - Option a: automatically on October 1 of each year; or
 - Option b: upon the request of the GAF holder if such request is made to NMFS in writing prior to October 1 of each year.
- F. Guided angler fish derived from commercial QS may not be used to harvest fish in excess of the non-charter bag limit on any given day.
- G. Charter LEP holders landing GAF on private property (e.g., lodges) and motherships would be required to allow ADF&G samplers/enforcement personnel access to the point of landing.

H. Commercial and charter fishing may not be conducted from the same vessel on the same day.

Element 6 – Catch accounting system

1. The current Statewide Harvest Survey and/or logbook data would be used to determine the annual harvest.
2. A catch accounting system would need to be developed for the GAF landed by the charter industry.
3. As part of data collection, recommend the collection of length measurements when supplemental IFQs are leased for use, and compare to the annual average length to assure accurate catch poundage is accounted for, and to allow gathered length measurement information to be used in the formulation of the average weight used in the conversion of IFQs to GAF.

1.8 Affected Environment

Potential environmental impacts

Differences between direct and indirect effects are primarily linked to the time and place of impact. Direct effects are caused by the action and occur at the same time and place. Indirect effects occur later in time and/or are further removed in distance from the direct effects (40 CFR 1508.27). For example, the direct effects of an alternative which lowers the harvest level of a target fish in each sector could include a beneficial impact to the targeted stock of fish, a neutral impact on the ecosystem, and an adverse impact on net revenues to fishermen, while the indirect effects of that same alternative could include beneficial impacts on the ability of Steller sea lions to forage for prey, neutral impacts on incidental levels of PSC, and adverse impacts in the form of economic distribution effects, for example, reducing employment and tax revenues to coastal fishing communities.

Methodology for impacts analysis

This analysis addresses the potential effects of proposed CSPs on the halibut stock and halibut fisheries. The Council’s problem statement posits that the status of the halibut stock has changed (e.g., total biomass and abundance varied, exploitable biomass and size at age declined), commercial halibut IFQ catch limits have declined, charter halibut GHL and bag limits have declined, and halibut are less available for subsistence users. The criteria listed in Table 1-8 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 1-8 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.

The proposed CSP for Area 2C and Area 3A is limited in scope and would not likely affect all environmental components within the areas. Table 1-9 shows the three potentially affected components: groundfish, halibut, and the socioeconomic environment. The potential direct effects of the alternatives on the resources could be caused by changes to the amount of incidental catch of groundfish species (principally rockfishes) and halibut mortality in the charter fishery through changes in the amount of halibut available for harvest by anglers under various allocation options.

Negative impacts on non-halibut species caught in the charter halibut fishery, including salmon are not expected, because current ADF&G and federal management closely monitors stock health and allocation, and restricts harvest from all sectors to biological management goals. The alternatives would not significantly change the amount of these species harvested, fishing methodology, areas fished, seasons fished, or fishing intensity in the charter halibut fishery. Salmon is the primary species other than halibut targeted in the sport fishery. Information is not available to predict small changes in harvest patterns of due to the alternatives; however, given the magnitude of the charter fishery, angler preferences, specialized gear to target halibut, and current regulations to control sport harvest, any increase in salmon removals is likely to be small and would be regulated within biological limits.

Table 1-9 Resource components potentially affected by the proposed alternatives

Alternatives	Potentially Affected Component							
	Physical Environment	Benthic Community	Groundfish	Marine Mammals	Seabirds	Non specified Species	Halibut	Socioeconomic
Alt 1	NA	NA	NA	NA	NA	NA	NA	NA
Alt 2 (2008 PA)	N	N	N	N	N	N	Y	Y
Alt 3 - 5 (2012 PPA)	N	N	N	N	N	N	Y	Y

N = no impact beyond status quo anticipated by the option on the component.

Y = an impact beyond status quo is possible if the option is implemented.

The socioeconomic environment may be directly affected through changes in the amount of halibut available for harvest by anglers under various allocation options. The socioeconomic environment for the charter and commercial sectors may also be directly and indirectly affected by allocation conflicts for fully utilized species such as halibut, rockfish, and salmon. A detailed discussion of potential socioeconomic impacts is provided in Section 2.5 of the RIR.

No direct or indirect effects are expected on the physical environment, benthic community, EFH, non-specified and forage species, marine mammals, and sea bird components of the environment. No effect is expected for these components because none of the alternatives would change current fishing practices (e.g., season and gear types) harvest limits, or regulations protecting habitat, EFH, and important breeding areas as described in previous NEPA documents. No effects are expected for marine mammals because neither existing protection measures nor allowable harvest amounts for important prey species would be changed. None of the alternatives would change total TAC amounts, methods, season closure dates, or areas closed to fishing.

Because this action affects fishing activity at sea, the alternatives would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. The current halibut fisheries do not cause loss or destruction of significant scientific, cultural, or historical resources in the affected area. This action is not likely to adversely affect significant scientific, cultural, or historical resources in the affected area because none of the alternatives would change current fishing practices (e.g., season and gear types), harvest limits, or regulations protecting habitat, EFH, and important breeding areas.

This action would not introduce or spread a nonindigenous species into the Gulf of Alaska beyond those previously identified because it does not change fishing, processing, or shipping practices that may lead to the introduction of nonindigenous species.

This action poses no known violation of federal, state, or local laws or requirements for the protection of the environment. On July 1, 2011, the federally approved Alaska Coastal Management Program expired, resulting in a withdrawal from participation in the Coastal Zone Management Act's National Coastal Management Program. The Coastal Zone Management Act Federal consistency provision in section 307 no longer applies in Alaska

1.8.1 Pacific Halibut

Pacific halibut is one of the largest species of fish in the world, with many individuals growing to over eight feet in length and over 500 lb. The range of Pacific halibut that the IPHC manages covers the continental shelf from northern California to the Aleutian Islands (AI) and throughout the Bering Sea (BS). Pacific halibut are also found along the western north Pacific continental shelf of Russia, Japan, and Korea.

The depth range for halibut is up to 250 fathoms (460 m) for most of the year and up to 500 fathoms (920 m) during the winter spawning months. During the winter, the eggs are released, move up in the water column, and are caught by ocean currents. Prevailing currents carry the eggs north and west. The young fish settle to the bottom in bays and inlets. Research has shown that the halibut then begin what can be called a journey back. This movement runs counter to the currents that carried them away from the spawning grounds and has been documented at over 1,000 miles for some fish. Pacific halibut are generally pre-teens (8 to 12 years old) when they are large enough to meet the minimum size limit for the commercial fishery of 32 inches.

1.8.1.1 Life History

1.8.1.1.1 *Reproduction and Development*

Most male halibut are sexually mature by about 8 years of age, while half of the females are mature by about age 12. Most halibut spawn during the period November through March, at depths of 300 to 1,500 feet. Female halibut release a few thousand eggs to several million eggs, depending on the size of the fish. Eggs are fertilized externally by the males. About 15 days later, the eggs hatch and the larvae drift with deep ocean currents. As the larvae mature, they move higher in the water column and ride the surface currents to shallower, more nourishing coastal waters. In the GOA, the eggs and larvae are carried generally westward with the Alaska Coastal Current and may be transported hundreds of miles from the spawning ground.

Halibut larvae start life in an upright position like other fish, with an eye on each side of the head. The left eye moves to the right side of the head when the larvae are about one inch long. At the same time, the coloration on the left side of the body fades. The fish end up with both eyes on the pigmented (olive to dark brown), or right, or upper side of the body, while their underside is white. By the age of 6 months, young halibut settle to the bottom in shallow nearshore areas.

Halibut feed on plankton during their first year of life. Young halibut (1 to 3 years old) feed on euphausiids (small shrimp-like crustaceans) and small fish. As halibut grow, fish make up a larger part of their diet. Larger halibut eat other fish, such as herring, sand lance, capelin, smelt, pollock, sablefish, cod, and rockfish. They also consume octopus, crabs, and clams.

1.8.1.1.2 *Growth*

Female halibut grow faster and reach larger sizes than male halibut. The growth rate of halibut has changed over time. The growth rate was highest in the 1980s and lowest in the 1920s and 2000s. By the 2000s, 12-year-old halibut were about three-quarters

Why are halibut so much smaller now?

One or more of following:

- Density dependence (competition with halibut and other flatfish, especially arrowtooth flounder)
- Environmental changes – food, temperature
- Effects of size-selective fishing
 - Annual cropping of faster growing fish leaves smaller ones behind
 - Fishery induced evolution – genetic truncation
- Other unidentified processes
- Any/all of these may be working together

~ IPHC Staff

the length and about one-half the weight they were in the 1980s. The growth rate is believed to decrease due to competition among halibut or between halibut and other species, such as arrowtooth flounder, that have a similar diet.

For at least the past 15 years, halibut growth rates have been depressed to levels that have not been seen since the 1920s. Both females and male halibut have the potential to grow rapidly until about age 10, about 2 inches per year for males and 2.5 inches for females. Thereafter, females have the potential to grow even faster, while males generally would slow down relative to female growth. Growth rates for these larger fish in the last 10 or so years are more on the order of one inch or less per year. This translates into a much smaller fish at any given age.

There was a dramatic increase in halibut growth rates in the middle of this century, especially in Alaska. Sometime around 1980, growth rates started to drop, and now Alaska halibut of a given age and sex are about the same size as they were in the 1920s. For example, in the northern GOA, an 11-year-old female halibut weighed about 20 pounds in the 1920s, nearly 50 pounds in the 1970's, and now again about 20 pounds. In the late 2000s, 15 year old female halibut in the central GOA have averaged 28 pounds – a decline of 70 percent in 30 years. Similar, though slightly smaller, declines have been noted in all areas. The declines in size at age occur at all ages and for both sexes; the declines increase markedly with age. The reasons for both the increase and the decrease are not yet known but may be tied to increased abundance of other species, such as arrowtooth flounder, and availability of food supply.

1.8.1.1.3 Movements (Migration²⁵)

Juvenile and adult halibut migrate generally eastward and southward, into the GOA coastal current, countering the westward drift of eggs and larvae (Figure 1-4). Halibut tagged in the BS have been caught as far south as the coast of Oregon, a migration of over 2,000 miles. Because of the extensive movements of juvenile and adult halibut, the entire eastern Pacific population is treated as a single stock for purposes of assessment. Research is continuing to determine if there are spawning sub-stocks of varying productivity.

There is a continuing and predominantly eastward migration of halibut from the west to east.

Halibut also move seasonally between shallow waters and deep waters. Mature fish move to deeper offshore areas in the fall to spawn, and return to nearshore feeding areas in early summer. It is not yet clear if fish return to the same areas to spawn or feed year after year.

Halibut abundance changes along its geographic range, with the current center of abundance located around Kodiak Island (Area 3A) in the GOA. During summer, halibut are distributed on the continental shelf but during the winter mature halibut migrate to spawning grounds located in deeper waters. Recent archival tagging has identified winter spawning migrations as long as 1200 km as well as some degree of site fidelity to summer areas. After spawning, halibut eggs and larvae are carried by prevailing currents north and westward towards the western GOA and the BS. Juvenile halibut undertake an ontogenetic eastward-southward migration that counters the drift of eggs and larvae.

²⁵ <http://www.iphc.int/publications/rara/2010/2010.261.Evaluationoftheimpactofmigrationonlostyield.pdf>

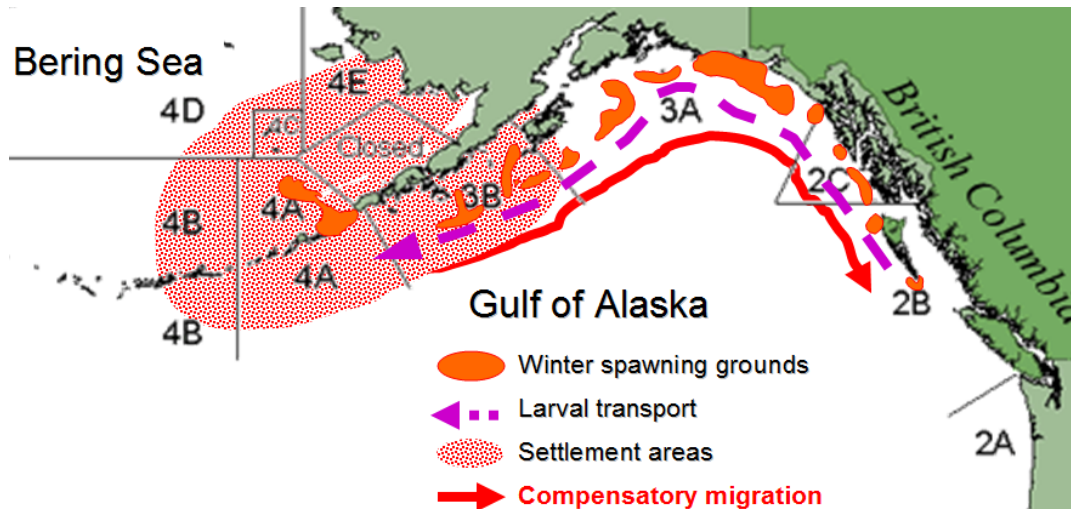


Figure 1-4 Conceptual model of Pacific halibut migration patterns (Source: IPHC)

1.1.1.1 Removals

Total removals from the halibut population come from seven categories: commercial catch (IPHC survey catch is included in this category), sport catch, O32 (halibut over 32 inches in length) mortality (from a variety of fisheries targeting species other than halibut), personal use, O32 wastage from the commercial IFQ fishery, U32 (halibut under 32 inches in length) mortality from non-target fisheries, and U32 wastage from the commercial IFQ fishery.

Methods used by IPHC to apportion mortality among the U26, O26-U32, and O32 size categories beginning with the 2010 stock assessment, the IPHC split halibut “bycatch” among the U26 and O26 (i.e., O26/U32 + O32) size categories according to the halibut mortality length composition data collected by observers. This procedure allows alternate treatments of U26 and O26 halibut in the determination of yield for the directed fishery, FCEY. Mortality that is larger than 26 inches, i.e., O26, is deducted from the total CEY in the area where the mortality occurred. This allows for similar treatment of commercial fishery wastage, and sport and subsistence harvests, based on their similar length compositions. The change was made to provide a consistent treatment of these mortalities in the fishery yield determination process. U26 mortality is accounted in the harvest rate policy, whereby the harvest rate is adjusted downward in all areas to compensate for the loss of recruitment. This effectively distributes the effect of U26 mortality in relation to Ebio distribution. Details that support this approach are in Hare (2011b).

The 2011 total removals by regulatory area are listed in Table 1-10 and illustrated in Figure 1-5, coastwide total removals from 1935 to 2011 are illustrated in Figure 1-6 through Figure 1-9, in increasing amounts of detail. Total removals by regulatory area for 1974-2011 are illustrated for the three GOA regulatory areas in Figure 1-10 (Area 2C) and Figure 1-11 (Area 3A). On a coastwide basis, total removals are at their lowest level since 1984 and commercial removals at their lowest point since 1983. For temporal context, total removals are about 40% below the peak of the 1990s and about double the lowest value seen in the late 1970s. The pattern of changes between the mid-1980s removals and 2011 removals has been quite different among regulatory areas, however. In 2011, the removals from all sources totaled 60.5 Mlbs. Total removals have declined from 90-100 Mlbs, which occurred during 1998-2007, and are now at a level similar to the mid-1980s.

Table 1-10 The 2011 estimates of total removals, 2011 catch limits and catch of Pacific halibut by regulatory area, and 2011 sport guideline harvest level and sport harvest (thousands of pounds, net weight). (Source: IPHC).

Area	2C	3A	3B
Commercial	2,293	14,266	7,336
Sport	1,313	4,541	25
Bycatch Mortality:			
O32 fish	214	1,035	430
U32 fish	127	1,863	755
<i>Breakdown of U32</i>			
<i>U32/O26</i>	88	846	402
<i>U26 fish</i>	39	1,017	353
Personal Use²	425	313	23
Wastage Mortality:			
O32 fish	5	29	7
U32 fish	65	881	752
<i>Breakdown of U32</i>			
<i>U32/O26</i>	61	840	678
<i>U26 fish</i>	4	41	74
IPHC Research	91	291	102
Total Removals	4,533	23,219	9,430
2011 Catch Limits⁵	2,330	14,360	7,510
2011 Catch	2,293	14,266	7,236
2011 Sport GHL	788	3,650	
2011 guided harvest	388	2,837	

¹ Area 2A bycatch is the 2010 estimate as the 2011 estimate will not be available until 2012.

² Includes 2010 Alaskan subsistence harvest estimates.

³ Treaty Indian ceremonial and subsistence fish authorized in the 2011 catch sharing plan.

⁴ Includes 17,000 lbs of sublegal halibut retained in the 2011 Area 4DE Community Development Quota.

⁵ Does not include poundage from the underage/overage programs in Area 2B or Alaska

⁶ Includes commercial, sport, and treaty subsistence catch

⁷ Includes commercial and sport catch

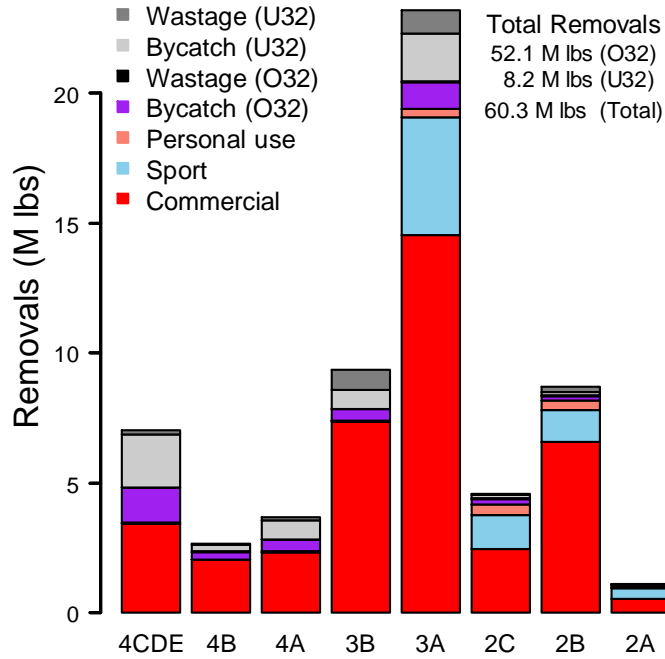


Figure 1-5 Total halibut removals, 2011 (Source: IPHC)

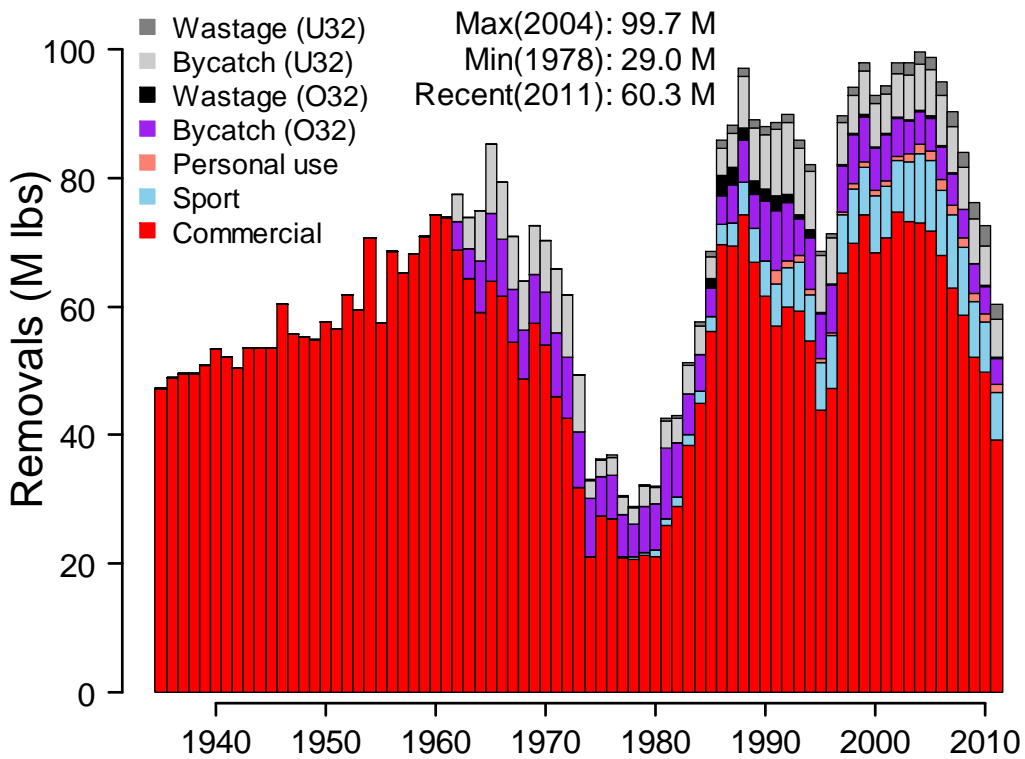


Figure 1-6 Total removals coastwide for the period 1935-2011. Year and amount of minimum, maximum, and most recent removals are also listed.

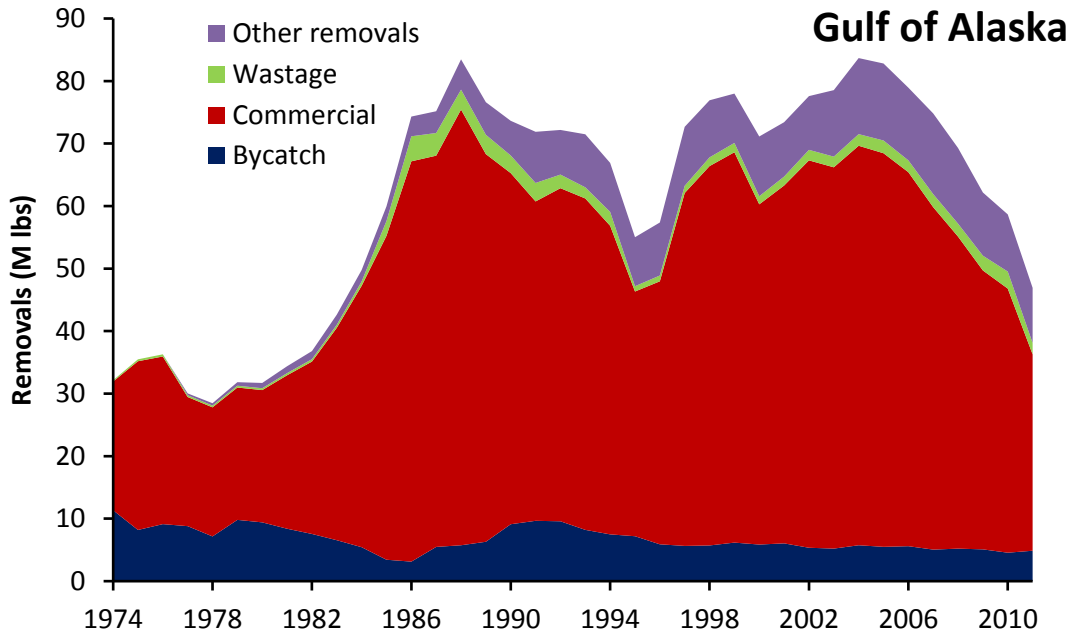


Figure 1-7 Total removals for the Gulf of Alaska, 1935-2011 (Source: IPHC)

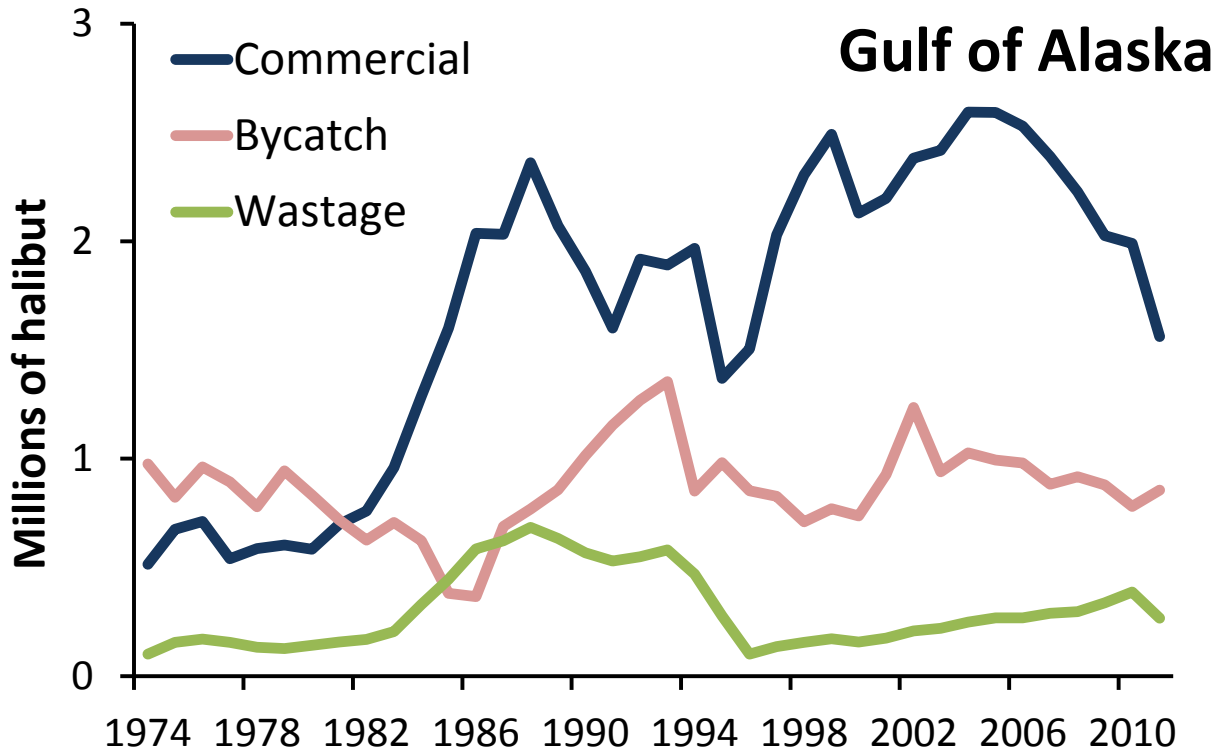


Figure 1-8 Total removals in numbers for the Gulf of Alaska, 1935-2011 (Source: IPHC)

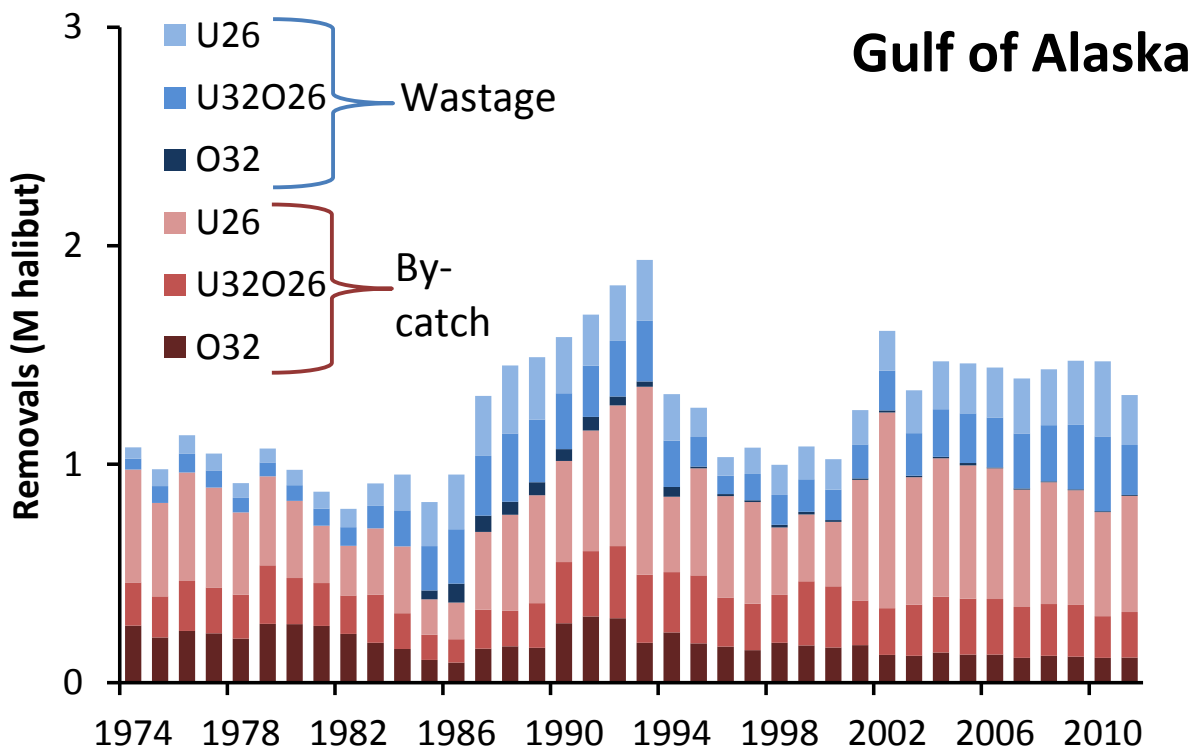


Figure 1-9 Total removals in numbers by size for the Gulf of Alaska, 1935-2011 (Source: IPHC)

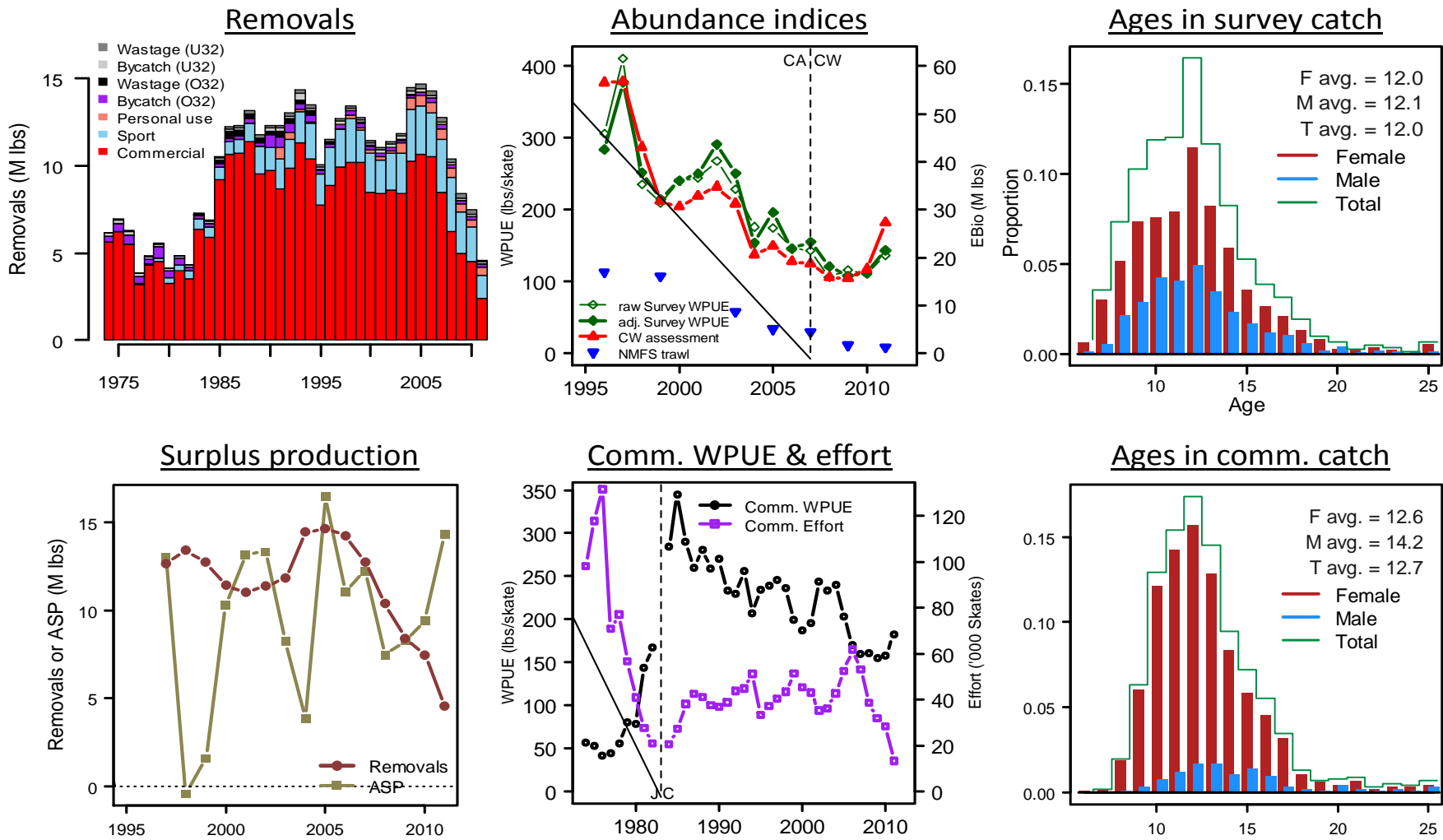


Figure 1-10 Summary of removals, abundance indices, age structures, surplus production, and commercial effort for Area 2C in 2011 (Source: IPHC)

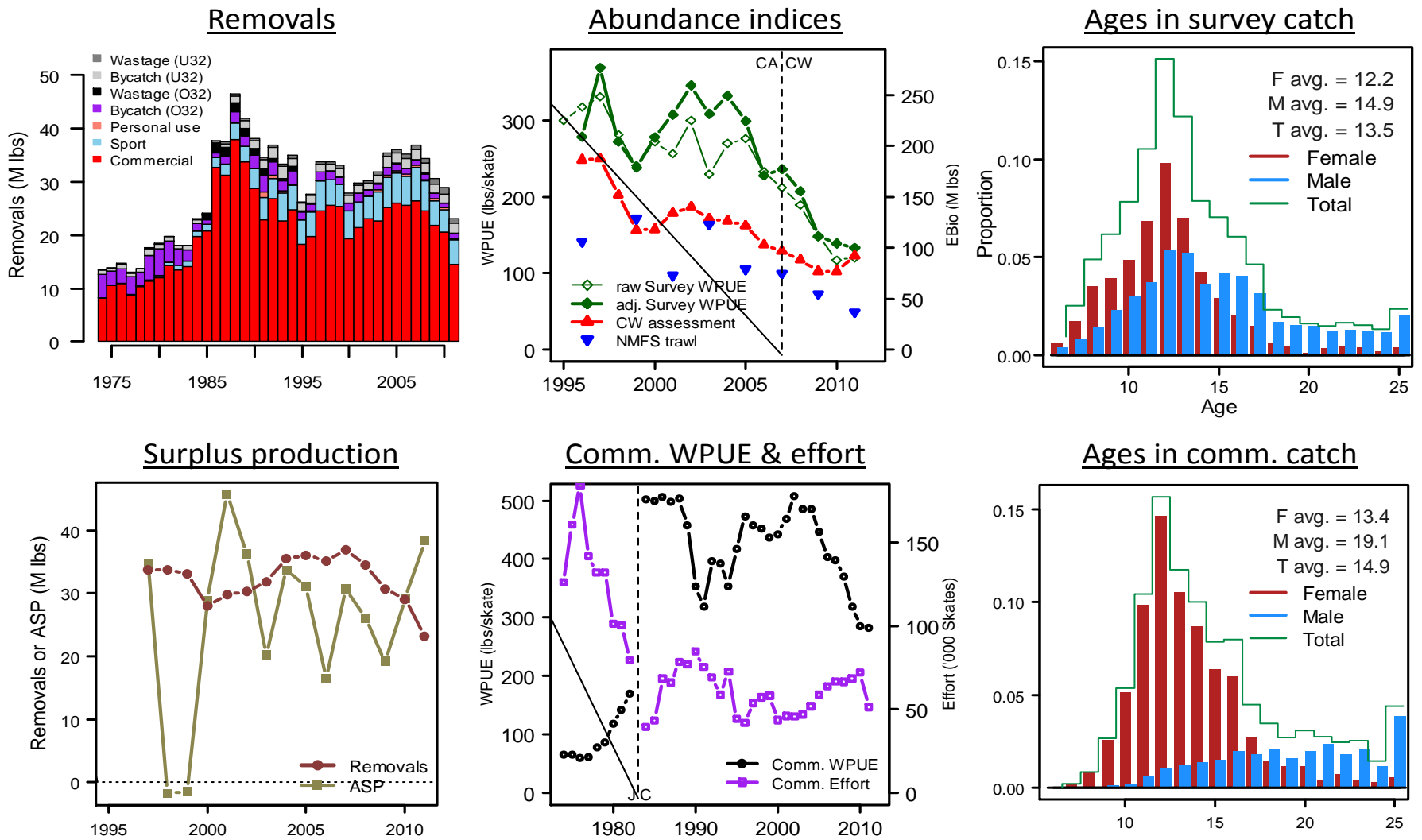


Figure 1-11 Summary of removals, abundance indices, age structures, surplus production, and commercial effort for Area 3A in 2011. (Source: IPHC)

1.8.1.1.3.1 Area 2C

Area 2C indices are illustrated in Figure 1-10. Between 1997 and 2006, total removals were stable, at 12.4 Mlbs in Area 2C. Removals declined sharply between 2007 and 2010, in response to the change from closed-area to coastwide assessment and the resultant revised view of relative halibut abundance in Area 2. Prohibited species catch of U32 fish in Area 2, and subsequent lost yield to constant Exploitation Yield (CEY), is estimated to be rather low, however yield lost due to “upstream” PSC mortality of U32 halibut is estimated to be much greater than yield lost to “local” U32 mortality (Valero and Hare 2011). O32 PSC mortality in Area 2C is relatively low. Surplus production estimates suggest that removals exceeded surplus production in Area 2 for most of the past decade. In Area 2C commercial effort has steadily declined for the past four to five years.

The main indices of abundance all suggest a steady decline in exploitable biomass from the mid-1990s to the late 2000s. While it appears that Area 2C declines have been arrested, the stabilized level is the lowest on record and at least 60% lower than its highest level.

Survey partitioning of the coastwide biomass suggests that the beginning of year 2011 EBio is level in Area 2C with 2010 values. Generally much younger age structure of fish is caught in Area 2. Mean age is around 11 years of age, with little difference between males and females. In particular, the catch of females is concentrated on ages where maturity at age is low thus removing females from the population before many have the opportunity to contribute to the spawning biomass.

All the indices are consistent with a picture of a steadily declining exploitable biomass up to at least 2007. The reasons for the decline are likely twofold. The first is the passing through of the two very large year classes (i.e., 1987 and 1988). Every assessment over the past decade has shown that those two year classes were very strong in comparison to the surrounding year classes. Now that those two year classes are 20 years old, their contribution to the exploitable biomass and catches has sharply declined and the drop in exploitable biomass was to be expected as they are replaced by year classes of lesser magnitude. Secondly, realized harvest rates were substantially higher than the target rate of 20%, and for a few years were in excess of 50% of EBio. Harvest rates have been reduced in Area 2C in recent years.

Removals have been generally larger than surplus production and that stalled rebuilding of regulatory area stocks. The reduced removals now appear to have arrested decline of the regulatory area biomass. Area 2C appears stabilized but at a low level that limits available yield. There are multiple signs that two or three large year classes are set to enter the exploitable biomass, though this is dependent both on reducing harvest rates that are above target as well as on the growth rate. It is encouraging that removals have been brought down over the past few years. Realized harvest rates remain above target in all of Area 2 but are closer to target than at any time in the past decade.

1.8.1.1.3.2 Area 3A

Areas 3A indices are illustrated in Figure 1-11. While these two areas occupy the current central area of distribution of the halibut stock, they have substantially different exploitation and biomass histories over the past 10-20 years.

Area 3A removals, both the total as well as the individual components (commercial, sport, PSC) have been relatively stable over the past 15 years. Commercial effort has also seen relatively little variation. During the past decade when IPHC setline survey catch rates (WPUE) indices were falling sharply coastwide, Area 3A generally showed the most stability. However, Area 3A survey WPUE has now shown five consecutive years of decline and the 2010 value of 117 lb/skate is by far the lowest on record and is about 40% of the level seen in the late 1990s. Commercial WPUE is also at its lowest point since the change from “J” to “C” hooks in 1984 and is at about 66% of its late 1990s level. Paralleling the declines in survey and commercial WPUE, EBio has declined steadily in Area 3A since 2005.

For a long time, Area 3A had the appearance of being the most stable of the IPHC regulatory areas. The area has been fully exploited for many decades and there is a wealth of data detailing its population dynamics. The area also sits at the current center of halibut distribution and it appears that emigration is roughly equal to immigration. Like Area 2, Area 3A benefited from the very large year classes of 1987 and 1988 and the slow decline in exploitable biomass is the result of those year classes dying off. The exploitable biomass remains by far the largest of any of the regulatory areas however the sharp declines of the past several years are a sign that exploitation rates may be too high, though IPHC staff are not yet considering Area 3A as an area of particular concern. Should this trend not reverse soon, staff may reconsider applying that designation. Until the exploitable biomass decline has ended, recommended catch limits will trend downwards in Area 3A.

1.8.1.2 Status of the Stock

The IPHC annually publishes a summary of current management, research, and harvest recommendations for its annual meeting²⁶. Coastwide exploitable biomass at the beginning of 2012 is estimated to be 260 M lbs, down from the end of 2010 estimate of 317 M lbs. The model chosen for the assessment in 2012 differed from the version used for the past few years. Treatment of survey catchability is the only difference between the two models. The downward revision reflects weaker recruitment of the 1989-1997 cohorts, revised weight per unit effort indices based on late-season data in 2010, and the ongoing retrospective behavior shown in the model. Female spawning biomass is estimated at 319 M lbs at the start of 2012, a decline of nearly 9% over the beginning of 2011 estimate of 350 M lbs. The female spawning biomass shows somewhat lesser retrospective behavior, possibly lending credence to the belief that the ongoing declines in size at age, which strongly affect selectivity-at-age, is one of the root causes of the retrospective behavior. Trawl estimates of abundance are similar to assessment estimates in most areas, and also provide evidence that while exploitable biomass and numbers continue to decline, the total biomass and number of halibut remains level, or slightly increasing.

The halibut stock has declined due to reduced recruitment, reduced size at age, and harvest rates higher than the target rates in most areas. The sharply declining exploitable biomass over the past decade has resulted from small incoming year classes, in combination with reduced growth rates, replacing earlier year classes that were much larger, especially the 1987 and 1988 year classes. Changes to the total biomass can be attributed, in large part, to the incoming 1998 through 2003 year classes that are estimated to be well above average, particularly the 1999 and 2000 year classes. The extent to which these year classes will contribute to EBio over the next few years depends on size at age which continues to decline.

Projections based on the currently estimated age compositions suggest that both exploitable and spawning biomass may increase over the next several years as these strong year classes recruit to the fishable and spawning components of the population. Projected increases are tempered both by potential ongoing decreases in size-at-age, as well as realized harvest rates which continue to be above target in several regulatory areas. Trawl estimates of abundance are similar to assessment estimates in most areas, and also provide evidence of very large numbers of small halibut as recorded in the eastern Bering Sea Trawl survey.

The time series of abundance illustrates the strength of the celebrated 1987, and to a lesser extent 1988, year classes. As was true for the last several years, the current assessment suggests that three large year classes – 1998, 1999, and 2000 – are poised to enter the exploitable biomass over the next few years. Presently, these year classes look to be larger – in terms of numbers of fish – than the 1987 and 1988 year classes. However, it is important to note again that size at age is much smaller now than it was 20 years ago. This has two important ramifications – first it means that the three strong year classes are only just beginning to reach the exploitable size range and, therefore, their true numbers in the population are still uncertain. Secondly, it also means that for a given number of halibut, their collective biomass will be lower.

²⁶ <http://www.iphc.int/meetings-and-events.html>

Currently, a large fraction of males never reach the minimum size limit and thus never enter the EBio. It remains to be seen just how well these year classes may develop into the exploitable component of the stock. If size at age remains at current values, then the projections for both the EBio and SBio are optimistic and indicate that the declines over the past decade are on the verge of reversing.

The continued problem of reductions in previous estimates of biomass as additional data are obtained has the effect of increasing the realized historical harvest rates on the stock. For 2012, the IPHC approved a 21.5% harvest rate for use in Areas 2A through 3A and a 16.1% harvest rate for Areas 3B through 4. These continued declining harvest rates in several areas has resulted in the IPHC taking aggressive action to reduce harvests. Commercial catch limits adopted by the IPHC for 2012 were lower than in 2011 in all regions of the stock except Areas 2A and 2C.

1.8.1.3 Harvest Policy

One component of the IPHC harvest policy has been the use of a Slow Up – Fast Down (SUFastD) harvest control rule. This rule, in which 33 percent of increases or 50 percent of reductions in Fishery Constant Exploitation Yield (FCEY) are incorporated in the staff's catch limit recommendations, has been generally applied since 2001. Following the 2006 Center for Independent Expert (CIE) review, the SUFastD adjustment was formally investigated as part of the harvest policy and became official IPHC policy in 2008. The SUFastD was designed to avoid rapid increases or decreases in catch limits, which can arise from a variety of factors including true changes in stock level as well as perceived changes resulting from changes in the assessment model, as well as to apply a more precautionary approach to catch limit setting. The SUFastD approach is estimated to leave approximately 3 percent more stock biomass in the water, over the long term, than a straight FCEY approach to catch limit setting.

Over the past few years, however, as biomass declines have persisted, there has been a growing concern by the IPHC staff about continued use and application of the SUFastD adjustment because some of the current stock conditions were not included in the original evaluation of the SUFastD. The effect of its application on a declining stock is that the target harvest rate is never achieved. Instead, the procedure of taking only 50 percent of the identified reductions in FCEY has meant that the target harvest rate is consistently exceeded and the stock cannot realize the benefits of the harvest policy. The IPHC's adopted catch limits have often resulted in even greater departures from the target harvest rates.

IPHC staff analysis of the effect of using SUFastD, when biomass is declining and when the policy is initiated at a harvest rate that is well above target, shows exaggerated biomass declines and realized harvest rates continuing to be above targets. This is the case for any combination of biological and management processes which results in removals exceeding surplus production. Considering the recent history of the stock, the application of the SUFastD harvest control rule and the subsequent IPHC decisions on catch limits has resulted in a failure to achieve the IPHC's stated harvest policy goals. For 2011, the IPHC staff recommended modifying the SUFastD policy to specify an adherence to the FCEY values for identified reductions in yield, i.e., a Slow Up – Full Down (SUFullD) policy. This means that 100 percent of any identified decreases in yield (i.e., when the current FCEY is lower than the previous year's catch limit) are recommended compared with only 50 percent of identified decreases under a SUFastD policy.

Beginning in 2011 the IPHC replaced the SUFastD catch limit adjustment with a "Slow Up Full Down" adjustment. In brief, the simulations that gave support to SUFastD did not capture the current conditions faced by the stock. Since implementation of the SUFastD adjustment, EBio has been in a constant downward trajectory. As removals have been in excess of 20% of EBio and each subsequent EBio estimate is lower than the previous year's estimate, the target harvest rate can never be met as only 50% of the intended reduction in removals is taken. Additionally, size-at-age of halibut has continued to decline and this always affects performance of the adjustment. Staff Catch Limit Recommendations (CLR) in 2011 were based on a "Slow Up Full Down" adjustment, i.e., one third of potential increases are

taken and 100% of decreases are taken, but catch numbers are also present for the standard “Slow Up Fast Down” adjustment as well as an approach that suspends SUFD (i.e., CLR = fishery CEY).

1.8.1.4 Coastwide assessment

Since 2006, the IPHC stock assessment model has been fitted to a coastwide dataset to estimate total exploitable biomass. Coastwide exploitable biomass at the beginning of 2012 is estimated to be 260 M lbs, down from the end of 2010 estimate of 317 M lbs. The model variant chosen for the assessment this year differs from the production version of the past few years. Termed “WobbleSQ” (as opposed to the earlier “Trendless”), its treatment of survey q is the only difference between the two models. The downward revision reflects weaker recruitment of the 1989-1997 cohorts, revised WPUE indices based on late-season data in 2010, and the ongoing retrospective behavior shown in the model. Female spawning biomass is estimated at 319 Mlbs at the start of 2012, a decline of nearly 9% over the beginning of 2011 estimate of 350 Mlbs. The female spawning biomass shows somewhat lesser retrospective behavior, possibly lending credence to our belief that the ongoing declines in size at age, which strongly affect selectivity-at-age, is one of the root causes of the retrospective behavior. Trawl estimates of abundance are similar to assessment estimates in most areas, and also provide evidence that while exploitable biomass and numbers continue to decline, the total biomass and number of halibut remains level, or slightly increasing. The coastwide exploitable biomass was apportioned among regulatory areas in accordance with survey estimates of relative abundance, modified by adjustments for hook competition and survey timing. Weighting of the survey indices follows a Kalman filter analysis, resulting in weights of 75:20:5 for the last three years.

The IPHC has developed, refined, and utilized a constant harvest rate policy since the 1980’s. Stated succinctly, the policy is to harvest 20% of the coastwide exploitable biomass when the spawning biomass is estimated to be above 30% of the unfished level. The harvest rate is linearly decreased towards a rate of zero as the spawning biomass approaches 20% of the unfished level. This combination of harvest rate and precautionary levels of biomass protection have, in simulation studies, provided a large fraction of maximum available yield while minimizing risk to the spawning biomass. Since the early 2000s, and similar to many fisheries management agencies, the harvest policy has incorporated a measure designed to avoid rapid increases or decreases in catch limits, which can arise from a variety of factors including true changes in stock level as well as perceived changes resulting from changes in the assessment model. The SUFastD adjustment is based on a target harvest rate but the realized rate usually a bit different (Figure 1-12). The SUFastD approach is somewhat different from similar phased-change policies of other agencies in that it is asymmetric around the target value, i.e., the catch limit responds more strongly to estimated decreases in biomass than to estimated increases. This occurs for two reasons: first, the assessment generally has a better information base for estimating decreasing biomass compared with increasing biomass; and second, such an asymmetric policy follows the Precautionary Approach.

The unfished female spawning biomass (B_{unfished}) is computed by multiplying spawning biomass per recruit (SBR, from an unproductive regime) and average coastwide age-six recruitment (from an unproductive regime). The recruitment scaling uses the ratio of high to low recruitments based on long term recruitment estimates from Areas 2B, 2C and 3A and applied to the current coastwide average recruitment (Clark and Hare 2006) which we believe to represent a productive regime. The SBR value, computed from Area 2B/2C/3A size at age data from the 1960s and 1970s is 118.5 lbs per age-six recruit. Average coastwide recruitment for the 1990-2002 year classes (computed at age-six) is 20.39 million, and the estimate of unproductive regime average recruitment is 6.48 million recruits. This gives a B_{unfished} of 768 Mlbs, a B_{20} of 154 million, a B_{30} of 230 Mlbs, and the 2012 female spawning biomass value of 319 Mlbs establishes B_{current} as 42% of B_{unfished} (Figure 1-13, left panel) down slightly from the 2011 beginning of year estimate of B_{current} of 43%. The revised trajectory of SBio suggests that the female spawning biomass did drop below the B_{30} level between 2006 and 2009, which, had it been so estimated at the time, would have triggered a reduction in the harvest rate. On an annually estimated basis, however, the initially estimated stock size has not been that low; it is only retrospectively that the revised estimate of

spawning biomass is estimated to have gone below to the reference point threshold. One problem with this method of establishing reference points is that the threshold and limit are dynamic, changing each year as the estimate of average recruitment changes.

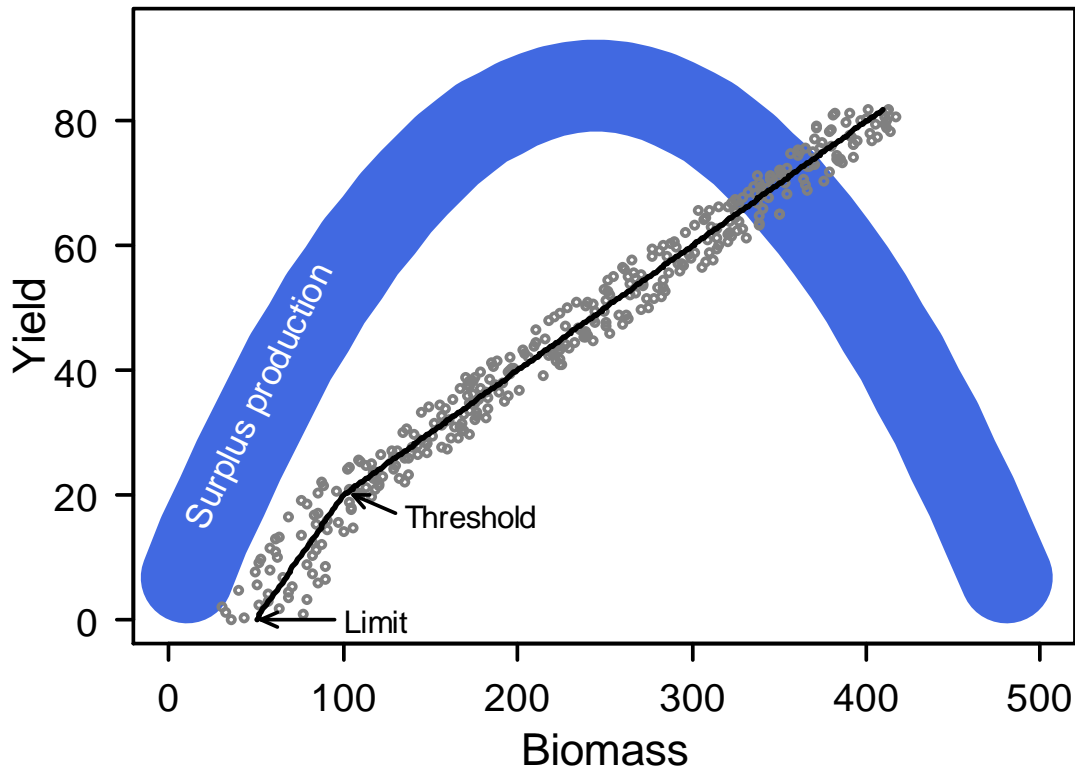


Figure 1-12 Representation of the IPHC harvest policy.

The background curve illustrates theoretical relationship between biomass and surplus production, taken as yield. The slope of the straight line is a 20% harvest rate, and the harvest rate decreases linearly to zero as the biomass approaches established reference points, termed the female spawning biomass threshold and limit. The scatter about the harvest rate indicates the effect of the “Slow Up Fast Down” adjustment to catch limits in terms of realized harvest rate. (Source: IPHC)

In addition to monitoring the status of the female spawning biomass relative to reference points, success at achieving the harvest rate is also documented (Figure 1-13, right panel). The target harvest rate over the past decade for halibut has generally been 0.20. Exceptions include a briefly increased rate to 0.225 and 0.25 between 2004 and 2006, and a lowered rate of 0.15 in Areas 3B and 4. In 2011, the target harvest rates were set at 0.215 (Areas 2 and 3A) and 0.161 (Areas 3B and 4); however, it is important to note that these were not actual target harvest rate increases. These new rates reflected a change in the method by which O26/U32 mortality and wastage are accounted in determining fishery CEY (Hare 2011a). On a coastwide basis, however, recent realized harvest rates have hovered around 0.25 (Figure 1-14). A sizable portion of this above-target harvest rate comes from the retrospective revision of exploitable biomass estimates. Thus, while the intended rate has been around 0.20, with staff recommended catch limits based on such a rate, a retrospective downwards revision of early exploitable biomass estimates, when combined with unchanged estimates of total removals generates higher realized harvest rates (Valero 2012b).

Estimates of realized harvest rate among individual regulatory areas require use of an apportionment method to calculate the underlying exploitable biomass. The apportionment method used by the staff uses survey timing and hook competition adjustments to the (0-400 fm) bottom area-weighted survey WPUE,

which are then time-averaged using Kalman weights (discussed below) for apportionment purposes. The adjusted and Kalman-weighted WPUE time series is used in most of our data comparisons, e.g., WPUE trends over time, comparisons with trawl estimates of abundance, etc. The adjusted and Kalman-weighted survey WPUEs are used to apportion biomass to estimate recent realized harvest rates (described below). Realized harvest rates (Figure 1-14) tend to increase from west (below or at the target harvest rate during the last decade) to east (up to three times above target for a number of years during the last decade in Areas 2B and 2C) though the eastern area realized harvest rates have declined sharply towards the target harvest rate during the last few years, in part due to lower catch limits. Also, until last year, another portion of the above-target performance resulted from the SUFD adjustment which prevented catch limits dropping fully to the target level indicated by contemporary estimates of exploitable biomass, in those areas where declines in catch limits were proposed.

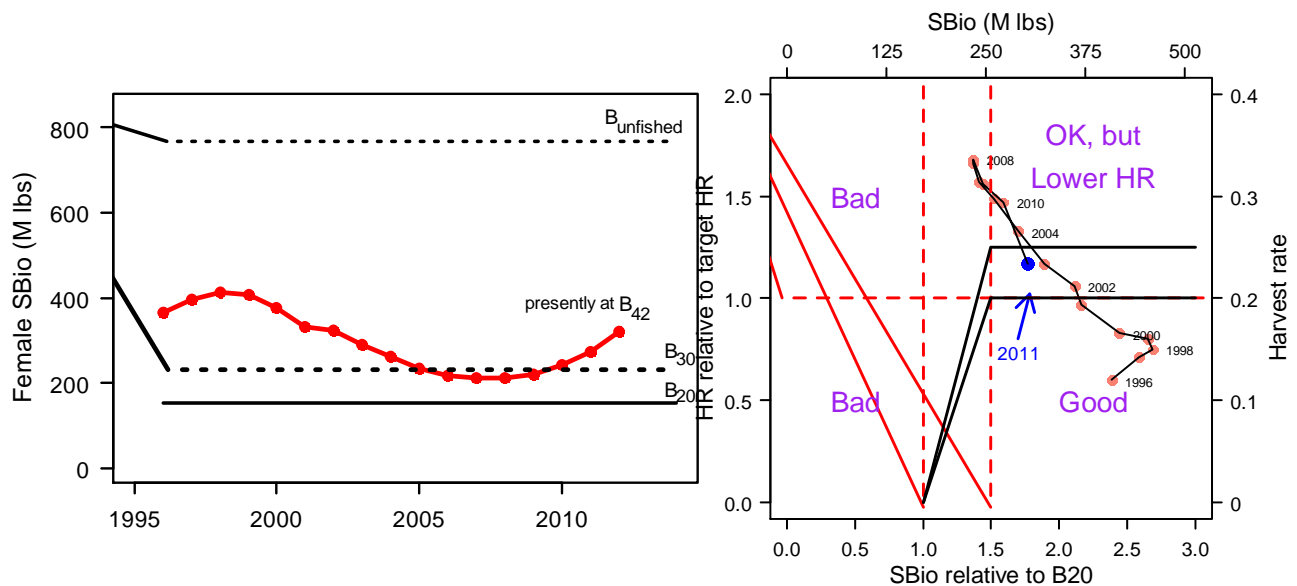


Figure 1-13 Pacific halibut stock report cards for 2011 (Source: IPHC)

The time series of abundance shown in Figure 1-15 illustrates the strength of the celebrated 1987, and to a lesser extent 1988, year classes. As was the case year, the current assessment indicates that three large year classes – 1998, 1999, and 2000 – have entered the exploitable biomass and should be the largest contributors to the EBio and catch over the next few years. Presently, all three year classes are estimated to be larger – in terms of numbers – than the 1987 and 1988 year classes but their strength is not well determined and retrospective downward revisions of initial estimates are common to this class of models. However, size at age is much smaller now than it was 20 years ago. This has two important ramifications – first it means that the three strong year classes are only just beginning to reach the exploitable size range and, therefore, their true numbers in the population are still quite uncertain. Second, it also means that for a given number of halibut, their collective biomass will be far smaller than the 1987 and 1988 year classes (Figure 1-15, right panel). Currently, a large fraction of males never reach the minimum size limit and thus never enter the exploitable biomass. It remains to be seen just how these year classes will develop into the exploitable component of the stock.

The estimated age composition of the coastwide spawning biomass shows a broad range of ages including 4% females age 20 and older (Figure 1-16). While the age distribution is certainly truncated due to the size-selective effects of fishing, it is encouraging that production of eggs is not confined to a narrow range of ages and should ensure that adequate reproductive potential remains in the ocean for the foreseeable future. On an area-by-area basis, there are some departures from this pattern, particularly in Areas 2 and 3B which show a lower percentage of older females.

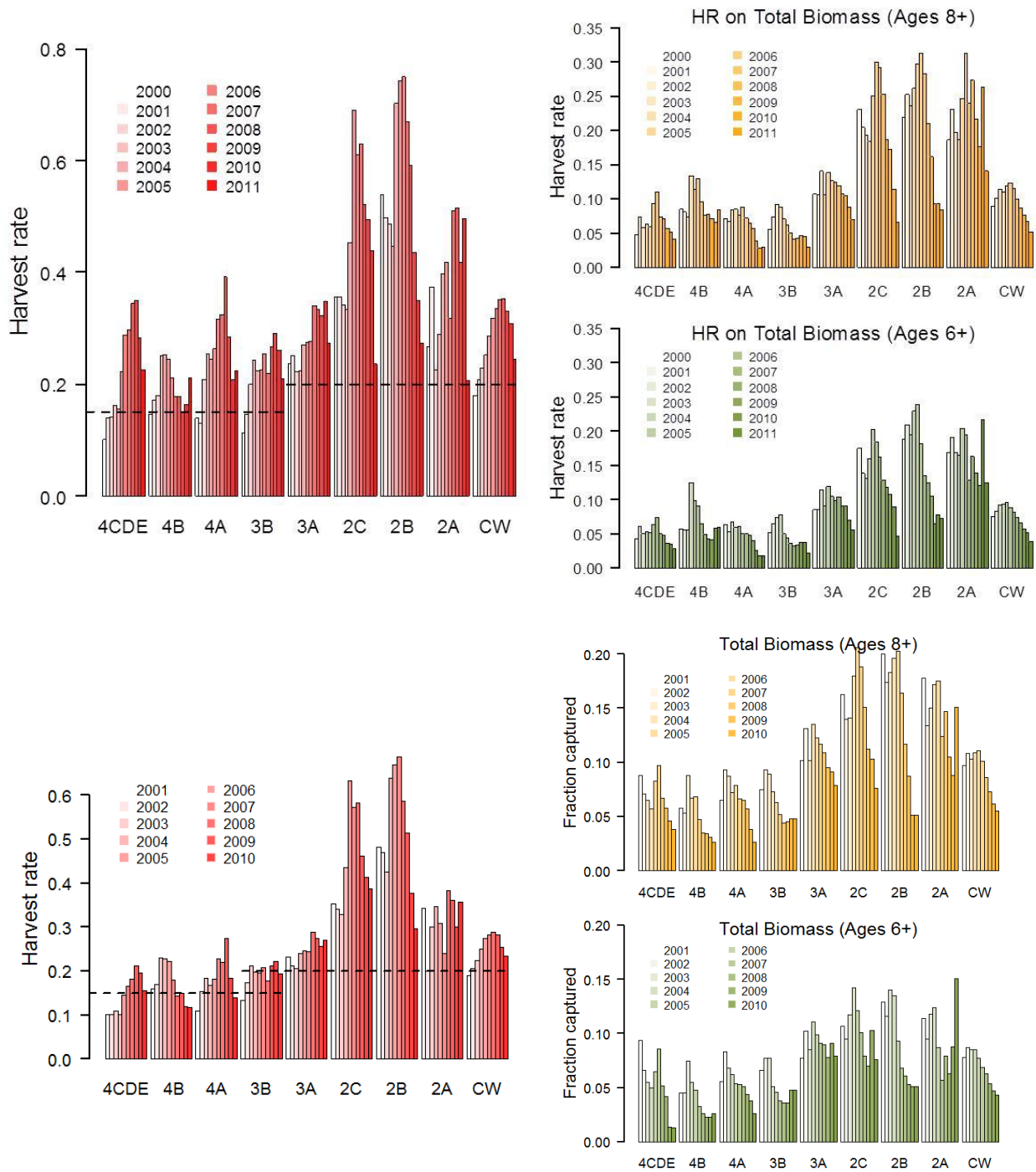


Figure 1-14 Harvest rates of halibut by area, 2001 - 2011 (Source: IPHC)

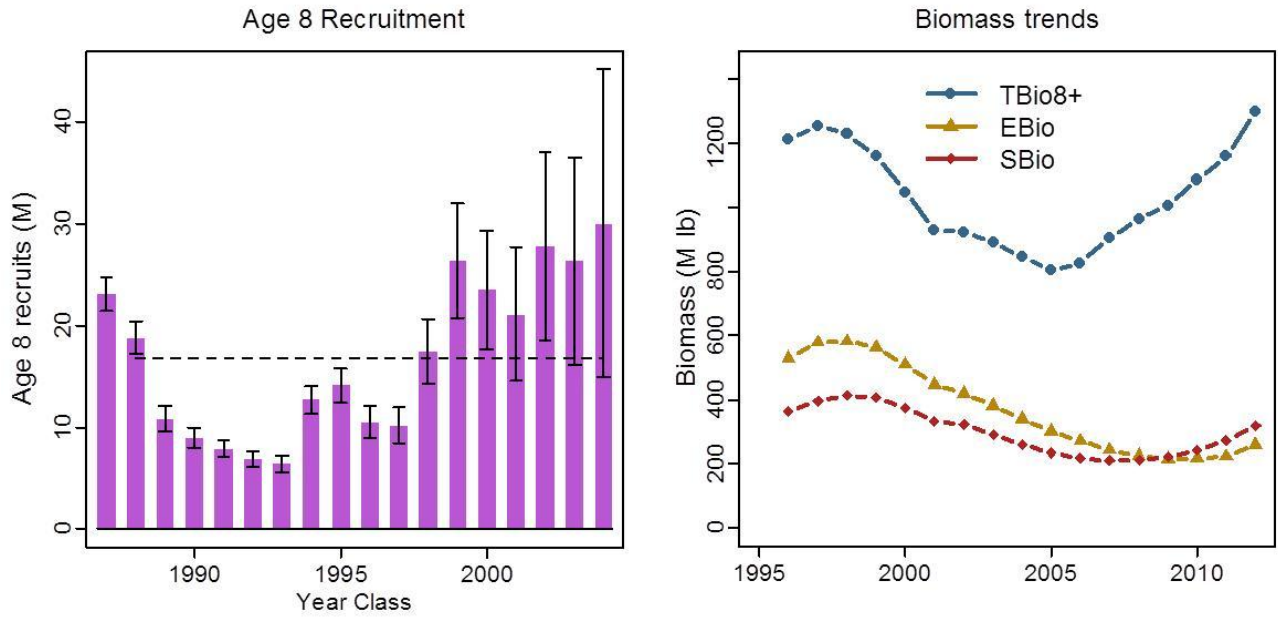
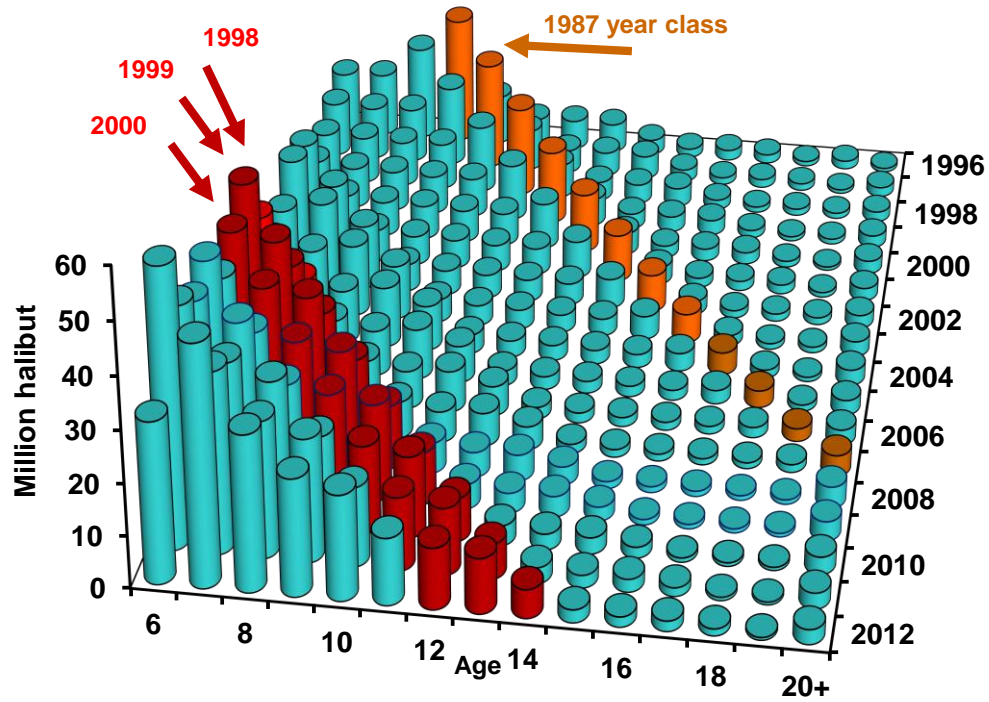


Figure 1-15 Recruitment and biomass estimated trends from 2011 IPHC stock assessment (Source: IPHC)

a) Total numbers in the population



b) Exploitable biomass in the population

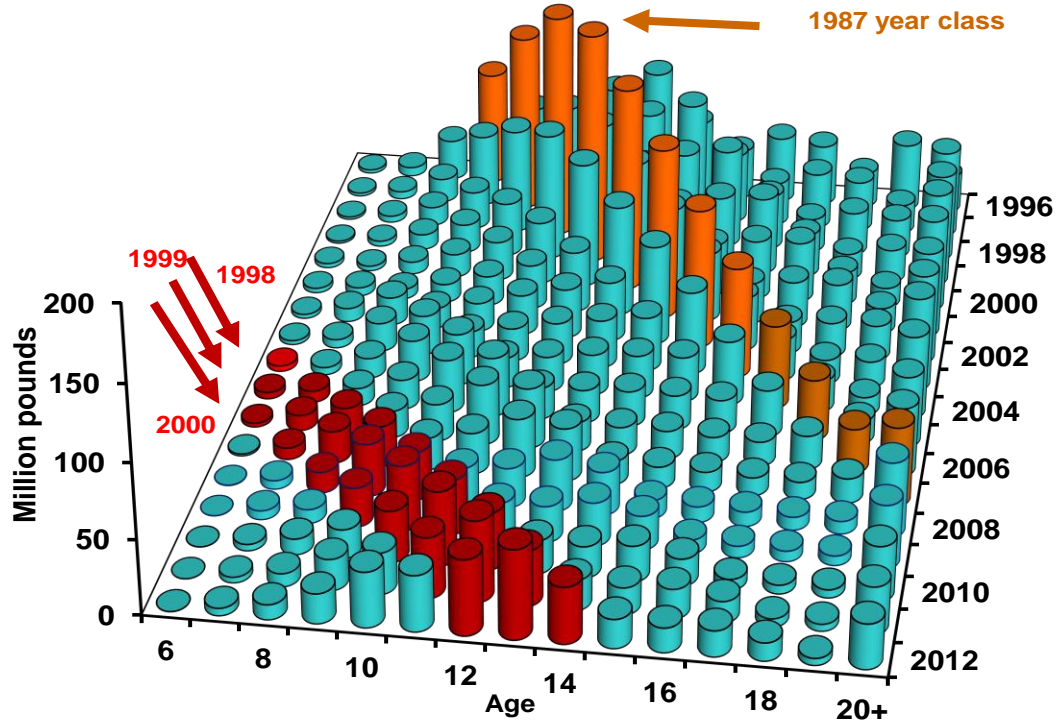


Figure 1-16 Coastwide population estimates in total numbers of halibut (panel a) and as EBio (panel b). Several large year classes are highlighted. (Source: IPHC)

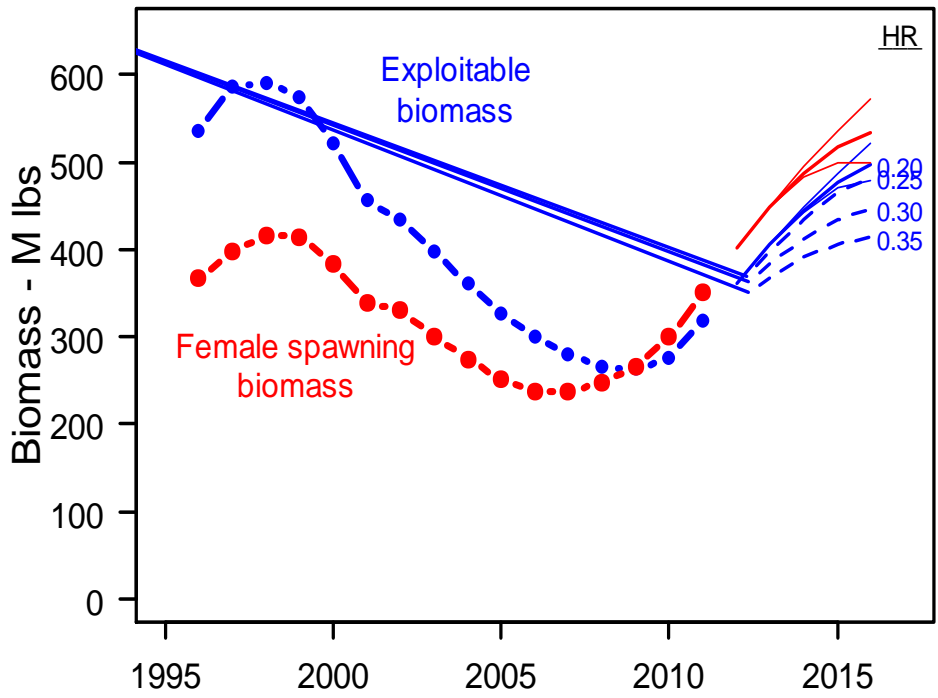


Figure 1-17 Coastwide halibut Ebio projections (Source: IPHC)

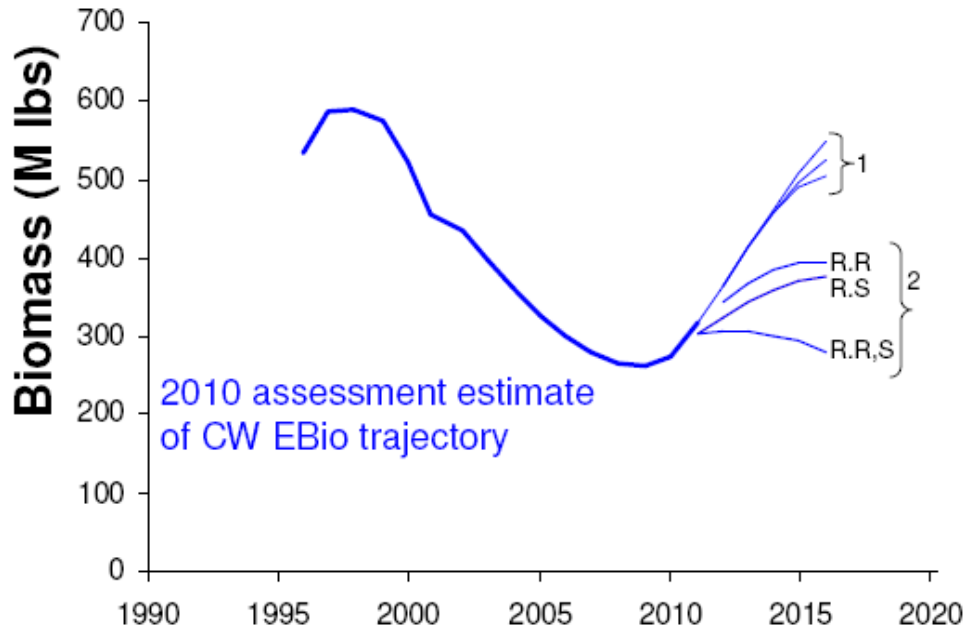


Figure 1-18 Coastwide halibut Ebio projections using alternative methods and assumptions.

1: Status quo method shown in Figure 3-20. 2: Downwards revisions of past recruitment estimates (R.R), reduced size at age (R.S) and both (R.R,S). These projections assume no uncertainty on 2011 initial numbers and a harvest rate of 0.2.
 Source: http://www.iphc.int/meetings/2011am/AltProjections_Juan_v4_web.pdf

How Are Halibut Catch Limits Determined?

A fishery catch limit is the result of a multi-step process which has the objective of determining how much can be harvested by the directed fishery, given the IPHC's goals for stock conservation. The process starts with the IPHC staff determining the size of the coastwide exploitable biomass (Ebio) and then apportioning it into regulatory area Ebio using objective scientific procedures. Ebio is defined as the fraction of the total biomass, or Tbio, which is catchable by hook and line gear. Generally, this is composed of fish > 32 inches.

Next, the amount of yield available for harvest is calculated by applying the IPHC's target harvest rate to the Ebio estimate. This resulting yield is referred to as the Total Constant Exploitation Yield, or TCEY (Ebio times target harvest rate). The target harvest rate differs between Areas 2A-3A and Areas 3B-4, with the latter being lower. In addition, any given harvest rate responds to two stock reference points, the threshold and limit reference points. Harvest rates are constant above the threshold reference point (30% of estimated unfished spawning biomass) and decrease linearly to zero if the spawning biomass decreases to the limit reference point (20% of estimated unfished spawning biomass).

The third step is to subtract Other Removals from TCEY in order to determine the Fishery CEY or FCEY. The FCEY forms the basis of the directed fishery catch limits. Other Removals include catches which either have no explicit limits on the amount of harvest, or catches which IPHC has no authority to manage. The former category includes sport and subsistence/personal use harvest, and wastage from the commercial halibut fishery; the latter includes bycatch mortality. Exceptions occur for Areas 2A and 2B because of the allocation plans among fishery sectors in those areas. Additionally, for bycatch and wastage, only that portion of the catch which is > 26 inches is included in this step, because of the impact those sizes have on the removals from the stock, which essentially equal removals > 32 inches.

The next step is for the IPHC staff to determine its recommendation for an area's catch limit, i.e., Catch Limit Recommendation (CLR), based on the current year's FCEY and the trajectory of the stock since the preceding year. Within its Harvest Policy, the IPHC has a harvest control rule termed Slow Up/Full Down (SUFULLD). It works in the following manner: if the current FCEY is greater than the previous year's catch limit, the staff's CLR would be the previous year's Catch Limit PLUS one third of the difference between the two; if the Fishery CEY is less than the previous year's Catch Limit, then the CLR is equal to the Fishery CEY.

The IPHC staff distributes its CLRs in advance of the IPHC Annual Meeting, allowing the halibut industry to discuss and provide comment back to the IPHC. Once the Annual Meeting commences, the Conference Board and Processor Advisory Group further discuss the CLRs, which results in formal recommendations to the IPHC. The IPHC considers all of the input – public comments, recommendations from its advisory bodies, and staff CLRs – and then adopts fishery catch limits and other measures which seek to balance the advice it has received, with stock conservation being the primary consideration.

1.8.1.5 Commercial Halibut IFQ Hook-and-Line Fishery

Commercial fishing for Pacific halibut began in the late 1880s with the movement of the Atlantic halibut fleet to the Pacific to pursue the large stocks found along the coast of Washington and Vancouver Island. From a small fishery off Cape Flattery, WA and the southern end of Vancouver Island, B.C., it expanded rapidly in protected inside waters, and by 1910, extended some 700 miles northward to Cape Spencer in southeastern Alaska. Since the late 1950s, annual coastwide commercial removals ranged from about 20 Mlbs in the mid-1970s to about 75 late 1980s and early 2000s).

The Pacific halibut longline fishery was one of the first fully domestic fisheries to become established off Alaska. By 1990, the halibut and sablefish longline fisheries were exhibiting significant problems created by open access derby-style fisheries. With the constant influx of new entrants into the fishery, the fishing seasons had been reduced to several short seasons each year, with halibut seasons lasting only a day or two in some areas. The short seasons created a number of problems, including allocation conflicts, gear conflicts, dead loss from lost gear, increased halibut removals in non-directed fisheries and discard mortality, excess harvesting capacity, decrease in product wholesomeness, safety concerns, and economic instability in the fisheries and fishing communities.

The Council allocates Pacific halibut in Areas 2C, 3A, 3B (and Area 4) based on catch limits set by the IPHC. The Council adopted IFQ programs in 1992 for the Pacific halibut fixed gear fisheries, which were implemented in 1995. The IFQ system was put into place to end the "race for fish" caused by too many boats fishing during restricted seasons of a few days. The IFQ system has resulted in longer seasons, improved vessel safety, and fresh halibut being available about 8 months per year. The IFQ programs assign the privilege of harvesting a percentage of the sablefish and halibut quotas to specific

individuals with a history of harvest in the fisheries. The fishing privileges assigned to each person are proportional to their fixed gear halibut and sablefish landings during the qualifying period and are represented as quota shares (QS). Only persons holding QS are allowed to make fixed gear landings of halibut and sablefish in the regulatory areas identified on the permits.

General Description of the IFQ Program As described in the 2011 NMFS Report to the Fleet²⁷, eligible persons under the IFQ Program were issued QS based on halibut and sablefish landings made aboard vessels that they owned or leased during 1988, 1989, or 1990. Applications for initial issuance of QS were received and processed by RAM. The application deadline was July 1994, and most applications were received in 1994. Issuance of QS to eligible applicants began in November of 1994.

To determine how many pounds of fish a QS holder may harvest during each year's fishing season (i.e., the person's annual IFQ), RAM first establishes the QS Pool (QSP) for each species and each regulatory area combination. There are eight halibut regulatory areas and six sablefish regulatory areas. The QSP is the sum of all the QS units that have been issued in a given area for each species. RAM calculates the QSP annually (on or about January 31), which may vary slightly from year to year due to administrative adjustments and civil penalties.

After fisheries managers determine what the annual Total Allowable Catch (TAC) will be, each QS holder's QS for the area is divided by that area's QSP and the resulting fraction is then multiplied by the area "IFQ TAC." This equation yields the number of pounds of IFQ that a QS holder may harvest that year, before adjustments for the previous year's fishing activity. Put simply, the above explanation can be expressed in this equation: $QS \div QSP \times TAC = IFQ$

Note that although a person's QS remains the same, and the QSP may vary by a slight amount from year to year, the TAC may change significantly annually, depending on the condition of the stocks. As the TAC rises, so does each person's IFQ; as it declines, each person's IFQ likewise decreases.

In this manner, the total annual TAC is divided up; those to whom IFQ permits have been issued may then harvest their allocation at any time during the eight plus-month IFQ halibut and sablefish seasons. Those who do not hold QS are generally excluded from the fisheries, although the program contains several very limited provisions for "leasing" IFQ. Administrative actions provide for some limited adjustments to annual IFQ permit amounts resulting from underages or overages of IFQ the prior year; however, significant fishing in excess of an IFQ permit is a violation.

Other Significant Program Elements As noted above, the Council took steps to insure that QS would not eventually be consolidated into a very few hands. To accomplish this goal, strict limits on how much QS can be held by any person are imposed on QS holders (persons who received more than the "cap" by initial issuance were "grandfathered" in; however, they may not receive more QS by transfer). Caps on vessel use ensure continued participation by at least a minimum number of vessels. Catcher vessel QS categories help maintain the size stratification of the fleet. Refer to Section 1 in this report for a breakdown of the annual QS use and vessel IFQ caps.

The effect of implementation of the halibut and sablefish IFQ programs in 1995 was an immediate reduction in halibut PSC allowances to the hook-and-line sector of 400 mt, or 882,000 lb, each year. Instead of being caught and potentially discarded, these catches are retained using IFQs.

In addition to the caps, the Council has provided for QS blocking provisions. Under this program element, QS that originally yielded less than 20,000 pounds of IFQ (using the 1994 QSPs and TACs) was issued as a block, and such blocks may not be subdivided upon transfer. Further, there is a limit on the number of blocks a person may hold for the same species in any regulatory area. In this way, smaller amounts (blocks) of QS will always be available for those who wish to enter the fishery by acquiring QS by

²⁷ <http://alaskafisheries.noaa.gov/ram/ifq/rtf11.pdf>

transfer. Very small blocks may be “swept up” to result in one larger block up to a maximum size specified for each area. This promotes usefulness of small blocks otherwise uneconomic to fish.

To meet the goal of an owner-operated fleet, upon change of a QS-holding business, catcher vessel QS must be transferred only to individuals who must be aboard the vessel when the fish are harvested and landed. In recognition of historical fishing practices, initial recipients may hire skippers (with some exceptions) to fish their annual IFQ. Currently, the QS holder must demonstrate that she or he holds at least a 20 percent ownership interest in the vessel on which the IFQ is to be fished.

Leasing of catcher vessel IFQ is extremely limited. A Community Purchase Program allows authorized GOA communities to form nonprofit organizations that acquire and hold QS for use by community residents. A special “surviving heir” provision allows an immediate family member to receive QS on the death of an individual holder and to lease out the IFQ for three years. A medical transfer provision allows persons temporarily incapacitated to lease IFQ. Finally, members of the National Guard and military reserves who are mobilized to active duty may temporarily transfer their annual halibut and sable-fish IFQ to other eligible IFQ recipients.

Quota share and the annual IFQ that it yields are classified by species, regulatory area, vessel category, and whether it may be fished on a vessel in another size category (“fish up” or “fish down”). A variety of restrictions regarding harvesting, processing IFQ and non-IFQ species, landing, and reporting IFQ fish are also in place.

The commercial longline fishery accounts for the majority of halibut removals. Annual commercial catches coastwide rose to a peak of 69 Mlbs in 1915, fell to 44 Mlbs in 1931, increased to a second peak of over 70 Mlbs in 1962, and then dropped to the historical low of around 21 Mlbs during the 1970s (Figure 1-19). Commercial harvest then rose steadily and peaked at over 70 Mlbs in the late 1980s, late 1990s, and early 2000s, and has declined since then. The total 2009 catch from the IFQ/CDQ halibut fishery for the waters off Alaska was 41.7, 1% under the catch limit (not adjusted for IFQ overages/underages). For Area 2C, the commercial QS catch was within 1% (Table 1-11). For Areas 3A and 3B, the commercial QS catches were actually over the catch limits by less than one percent. However the catches in these areas were still within the adjusted catch limits.

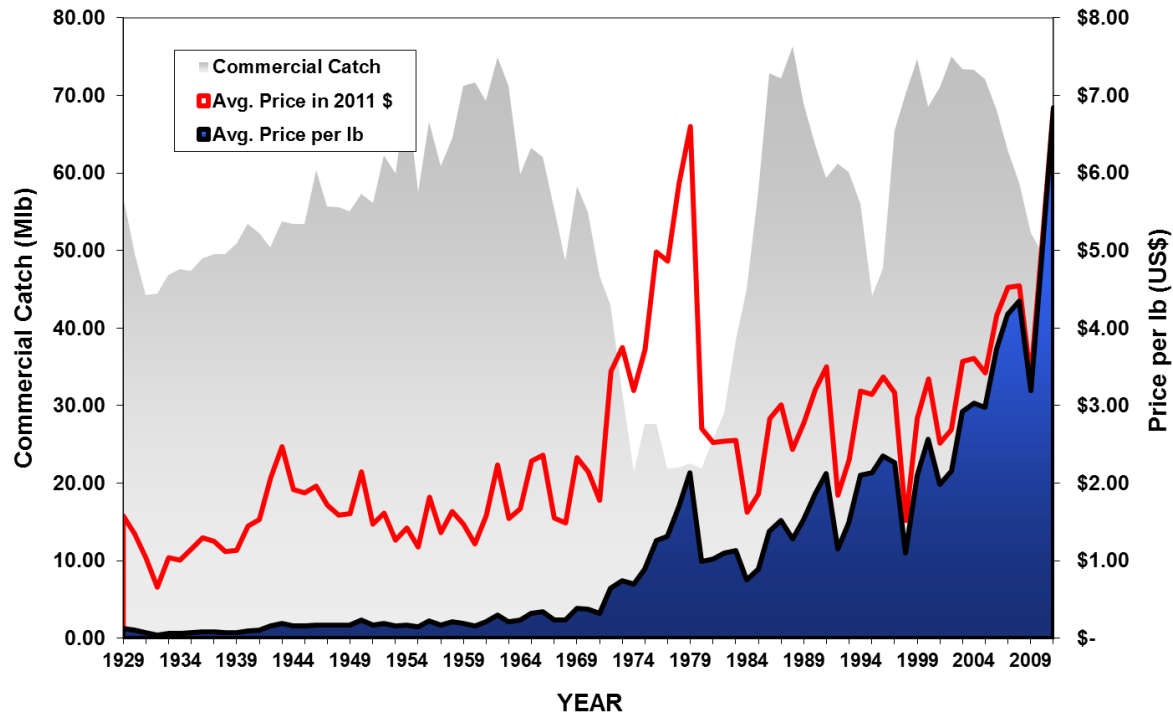


Figure 1-19 Commercial halibut catch and average price/lb, 1928 - 2011. (Source: IPHC).

The 2011 IFQ season opened at noon (ALT) on March 12 and ended at noon ALT on November 18. A total of 5,422 IFQ permits (as defined by unique combinations of species, areas, and vessel categories), including 3,903 halibut permits and 1,519 sablefish permits, were active as of year-end 2011. When the season ended November 18, those permits had been used by IFQ holders to report 4,453 vessel landings of IFQ halibut and 1,838 of sablefish, for a total harvest of approximately 98 percent of the IFQ halibut TAC and 90 percent of the IFQ sablefish TAC. Table 1-11 displays landings by species, regulatory area, and IFQ pounds as reported by Registered Buyers. Table 1-12 illustrates the transfer of QS/IFQ between Alaskans and Non-Alaskans. The distributive effects have not been dramatic (at least with respect to net gains and losses of QS/IFQ by Alaskans compared to Non-Alaskans).

Table 1-13 displays “Alaskan” and “Non-Alaskan” IFQ Crewmember holdings of QS at year-end 2011 (as expressed in 2011 IFQ pound equivalents and as a percentage of the 2011 area TACs). Over time more QS holders left than entered the halibut IFQ fisheries. As a result, QS has consolidated into the hands of fewer persons than the number that received QS by initial issuance. Table 3 6 and Table 3 7 display reductions in the numbers of QS holders and vessels participating in the halibut IFQ fisheries, compared with years just prior to program implementation. After an immediate steep decrease at the start of the IFQ Program, the numbers of vessels continue to decline slowly over time.

Table 1-11 2011 IFQ halibut allocations and fixed-gear IFQ landings

Species/Area	Vessel Landings ^a	Area IFQ TAC ^b	Total Harvest	Percent Harvested ^{c,d}
Halibut 2C	1,292	2,330,000	2,292,926	98
3A	1,898	14,360,000	14,265,007	99
3B	758	7,510,000	7,336,170	98

^a Vessel landings include the number of reported landings by participating vessels reported by IFQ regulatory area; each such landing may include harvests from multiple IFQ permit holders.

^b Halibut weights are in net (headed and gutted) pounds.

^c Due to over- or underharvest of TAC and rounding, percentages may not total 100 percent.

^d Permit holders may fish IFQ designated for Area 4C in either Areas 4C or 4D. This resulted in an apparent, but allowable, “excessive harvest” in Area 4D.

Table 1-12 Halibut QS holdings at year-end 2011

Area	Alaskan		Non-Alaskan ^a	
	Number of persons	QS Units	Number of persons	QS Units
2C	925	48,987,507	205	10,564,532
3A	1,074	111,979,192	357	72,932,123
3B	337	27,900,110	157	26,303,066

^a Designation of “Alaskan” or Non-Alaskan” is premised on self-reported business mailing address; NMFS/RAM makes no effort to verify residency. Changes over time between “Alaskan” and “Non-Alaskan” QS holdings result from QS transfers and QS holders’ address changes. Persons with unknown addresses are excluded from this table.

Table 1-13 Quota acquired by “IFQ Crewmembers” by species, area, and residence, year-end 2011^a

Species/Area	Pounds	Area IFQ TAC ^a	Total Harvest	Percent Harvested
2C	683,830	217,051	900,881	38.7
3A	2,670,982	1,415,102	4,086,084	28.4
3B	1,419,305	1,006,940	2,426,245	32.3

Table 1-14 Consolidation of halibut QS, initial issuance through year-end 2011; numbers of persons holding halibut QS by area and size of holdings, expressed in 2009 IFQ pounds.

Area ^{a,b}	Size of IFQ Holdings ('09 IFQ Pounds)	Number Initial Recipients	Holders End of 1995 ^c	Holders End of 1996	Holders End of 1997	Holders End of 1998	Holders End of 1999	Holders End of 2000	Holders End of 2001	Holders End of 2002	Holders End of 2003	Holders End of 2004	Holders End of 2005	Holders End of 2006	Holders End of 2007	Holders End of 2008	Holders End of 2009	Holders End of 2010	Holders End of 2011
2C	3,000 or less	1,830	1,581	1,350	1,186	1,135	1,068	1,029	984	964	918	861	824	792	732	667	651	906	867
	3,001-10,000	475	448	436	441	439	441	442	437	430	430	432	439	447	445	431	424	235	241
	10,001-25,000	82	94	105	109	105	108	104	107	109	110	112	113	115	117	118	120	21	22
	over 25,000	1	2	4	5	6	6	7	8	8	8	8	8	8	8	9	10		
	2C Total	2,388	2,125	1,895	1,741	1,685	1,623	1,582	1,536	1,511	1,466	1,413	1,384	1,362	1,302	1,225	1,205	1,162	1,130
3A	3,000 or less	1,839	1,617	1,424	1,254	1,164	1,087	1,032	984	958	907	847	794	750	634	536	494	567	541
	3,001-10,000	656	568	509	507	501	487	488	490	487	489	489	483	483	466	441	434	481	471
	10,001-25,000	338	324	334	326	328	325	323	320	319	318	313	320	316	322	321	324	264	269
	over 25,000	238	243	248	251	250	257	255	255	253	250	248	245	246	245	249	249	150	150
	3A Total	3,071	2,752	2,515	2,338	2,243	2,156	2,098	2,049	2,017	1,964	1,897	1,842	1,795	1,667	1,547	1,501	1,462	1,431
3B	3,000 or less	525	472	374	272	238	207	191	171	161	151	135	130	114	111	93	90	98	96
	3,001-10,000	255	213	180	162	148	136	133	131	127	136	131	124	123	124	114	114	161	166
	10,001-25,000	153	142	135	140	143	146	142	141	143	142	145	144	139	131	137	139	135	140
	over 25,000	123	128	135	135	137	141	143	143	146	148	146	148	150	153	151	150	95	92
	3B Total	1,056	955	824	709	666	630	609	586	577	577	557	546	526	519	495	493	489	494

Table 1-15 Number of vessels with IFQ halibut harvests by area and year, 1992–2011

Species/ Area	Pre-Program			IFQ Program																
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
2C	1,775	1,562	1,461	1,105	1,029	993	836	840	827	736	718	706	678	672	682	653	609	569	575	546
3A	1,924	1,529	1,712	1,145	1,104	1,076	899	892	842	806	750	712	696	670	644	623	600	576	549	551
3B	478	401	320	332	350	357	325	323	342	329	316	328	303	302	287	287	281	269	271	270

Table 1-16 lists the annual prices for halibut QS and IFQ transfers by area and year. Media reports prices have exceeded last year's high of \$28 per pound for halibut QS. Area 2C and 3A halibut QS now range from \$30 per pound to \$36 per pound.²⁸

Table 1-16 Annual Prices for Halibut QS and IFQ Transfers by Area and Year

Area	Year	Mean Price \$/IFQ	Stan Dev Price \$/IFQ	Total IFQs Transferred Used for Pricing	Mean Price \$/QS	Stan Dev Price \$/QS	Total QS Transferred Used for Pricing	Number of Transactions Used for Pricing
2C	1995	7.58	1.21	996,874	1.14	0.18	6,629,554	315
	1996	9.13	2.71	681,056	1.37	0.41	4,539,813	289
	1997	11.37	2.53	517,715	1.92	0.43	3,057,477	211
	1998	10.14	2.11	220,894	1.79	0.37	1,253,771	106
	1999	NA	NA	NA	NA	NA	NA	NA
	2000	8.20	1.88	423,347	1.15	0.26	3,006,920	95
	2001	9.22	1.97	412,990	1.36	0.29	2,806,238	100
	2002	8.97	1.94	363,474	1.28	0.28	2,550,052	84
	2003	9.76	1.97	274,537	1.39	0.28	1,926,434	93
	2004	13.70	3.48	365,513	2.41	0.61	2,073,407	93
	2005	18.06	5.01	311,907	3.31	0.92	1,699,765	72
	2006	18.43	3.57	246,540	3.29	0.64	1,380,274	77
	2007	19.62	4.95	183,297	2.8	0.71	1,282,693	76
2008	25.90	10.47	206,440	2.7	1.09	1,979,395	96	
2009	20.14	4.94	75,636	1.7	0.42	897,261	30	
3A	1995	7.37	1.44	1,792,912	0.79	0.15	16,658,196	355
	1996	8.40	4.07	1,582,609	0.90	0.44	14,724,748	352
	1997	9.78	2.45	1,276,525	1.32	0.33	9,443,198	294
	1998	8.55	3.04	666,649	1.20	0.43	4,743,875	157
	1999	NA	NA	NA	NA	NA	NA	NA
	2000	7.94	1.64	614,960	0.79	0.17	6,212,009	120
	2001	8.63	2.79	771,815	1.02	0.33	6,519,428	145
	2002	8.35	1.94	711,255	1.02	0.24	5,810,732	124
	2003	9.81	2.56	565,653	1.20	0.31	4,629,364	126
	2004	13.88	4.22	875,829	1.88	0.57	6,463,336	157
	2005	18.07	4.83	385,893	2.49	0.66	2,803,054	96
	2006	18.09	3.14	586,035	2.46	0.43	4,301,567	116
	2007	20.53	6.72	814,949	2.91	0.95	5,750,520	169
2008	26.83	8.06	498,864	3.51	1.06	3,808,709	126	
2009	25.52	8.34	183,766	3.00	0.98	1,565,934	71	

As of 2010, the commercial halibut fishery had a gross ex-vessel value of \$192 M (Figure 1-19). The fleet delivered to 34 different ports, Kodiak and Homer were the top two ports and received 33% of the landings. The average ex-vessel price per pound for halibut was \$3.65, an increase of \$1.26 from the prior year. Ex-vessel price per pound was highest for sablefish and halibut, and lower for Pacific cod, pollock, and other species landed by participating vessels. When extrapolated to a retail value the fishery increases to over \$400 M in direct product value. As an integral component of the North Pacific fisheries landscape, the halibut industry provides significant employment aboard the vessels, in fishing plants, and within the related dockside industries. Alaska has recognized that the fishing industry is one of the top three employers for the entire state with employment numbers and related value lower than only the oil industry and government related activities. As a nearly nine-month long commercial fishery, the halibut industry provides opportunity for consistent employment as well as a continuous market supply of an excellent food product recognized world-wide.

Table 1-17 displays the top ten Alaska ports in which IFQ halibut was landed. During 2011 the top four ports remained unchanged, while Sand Point rose from seventh to fifth port, pushing Sitka to sixth. Atkutan rose from tenth to seventh, and Juneau and Petersburg, respectively, slipped to eighth and ninth.

²⁸ http://www.alaskajournal.com/stories/080511/fis_pqpsl.shtml

Cordova ranked tenth, a position it also held in 2006 and 2007. The percentage of IFQ halibut landed outside Alaska has steadily decreased; primary “outside” ports include Seattle and Bellingham.

Table 1-17 Top ten Alaska IFQ halibut ports in rank order for 2009 performance, 1995–2011

Port ^a	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
Homer	18.91	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2
Kodiak	18.76	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
Seward	3.99	3	3	3	3	3	3	3	3	3	4	4	3	3	4	3	5
Dutch/ Unalaska	9.31	4	4	4	5	5	4	4	4	4	3	3	4	4	2	4	4
Sitka	*	5	10	6	4	4	5	6	6	7	5	6	6	5	5	5	3
Juneau	0.04	6	5	8	7	6	6	7	7	6	6	5	5	7	8	8	13
Petersburg	*	7	8	7	6	7	7	8	8	8	7	7	7	6	6	6	6
Akutan	3.61	8	6	9	11	14	13	14	17	27	32	30	29	26	22	25	30
Yakutat	3.11	9	7	12	9	9	11	19	27	14	10	13	10	10	10	13	10
Sand Point	2.96	10	11	5	8	8	8	5	5	5	11	10	14	13	13	15	15
All ports																	NA ^e

^a “All ports” includes all ports used by the fleet.

^b Halibut weights are in net (headed and gutted) pounds.

^c Asterisk represents confidential data.

^d Sum includes all port data.

^e NA = nonapplicable

1.8.1.6 Sport Halibut Fisheries²⁹

The State of Alaska annually reports on unguided sport, charter, and subsistence halibut fisheries. Management of sport halibut fisheries is the responsibility of NMFS, though data collection, fishery sampling and harvest estimation is conducted by the ADF&G Division of Sport Fish. Final harvest estimates are based in part on the Statewide Mail Survey, but those estimates aren’t available until September of the following year. ADF&G uses different methods to make preliminary projections of guided (charter) and private (unguided) halibut harvest estimates for the current year. Guided fishery harvests are projected using partial-year data reported by the ADF&G mandatory charter logbook program. The unguided (private) fishery harvest is projected using time series methods applied to estimates from the Statewide Harvest Survey (SWHS). Average weight data from creel sampling were then used to estimate the pounds caught in both sectors. Final Sport Halibut Harvest Estimates are provided by ADF&G Sport Fish Division at each October or December Council meeting. The most recent complete data set available for this analysis was released in December 2011.

2010 Final estimates For Area 2C and Area 3A, sport fishery harvest (pounds net weight) was calculated separately for the charter and non-charter (unguided) fisheries as the product of the number of fish and average weight of harvested halibut. Estimates of the number of fish harvested were provided by the ADF&G statewide harvest survey (SWHS). The SWHS is currently the preferred method for estimating charter harvest and the only method available for estimating non-charter harvest. Average net weight was estimated from length measurements of halibut harvested at representative ports in Areas 2C and 3A. Ports sampled in Area 2C in 2010 included Ketchikan, Craig, Klawock, Petersburg, Wrangell, Juneau, Sitka, Gustavus, and Elfin Cove. Ports sampled in Area 3A included Yakutat, Valdez, Whittier, Seward, Homer, Deep Creek, Anchor Point, and Kodiak. The estimate of charter average weight for Homer was

²⁹ Source: ADF&G Sport Fish Division and IPHC

stratified to account for differences in sizes of halibut cleaned at sea versus cleaned onshore. Bootstrapping was used to estimate standard errors of harvest (in number of fish) and average weight.

ADF&G may have final 2011 estimates by mid- to late September to be presented at the October 2012 Council meeting. However, projections for 2012 will not be available until after the meeting. Those projections will be available once we have provided them to the IPHC for stock assessment purposes, usually in late October or early November.

Area 2C The Area 2C overall sport harvest biomass (yield) in 2010 was estimated at 1.971 M lb (Table 1-18). The charter harvest estimate was 1.086 M lb and the non-charter harvest estimate was 0.885 M lb. Charter harvest accounted for 55% of the Area 2C sport harvest by weight. Average net weight was estimated at 26.4 lb in the charter harvest, 16.7 lb for the non-charter harvest, and 20.9 lb overall. Sample sizes for estimation of average weight were 3,291 and 3,047 for the charter and non-charter fisheries.

Table 1-18 Area 2C sport halibut harvest history.

Year	Charter				Non-Charter			Total Sport Harvest		
	No. Fish	Avg. Wt.	Yield (M lb)	GHL (M lb)	No. Fish	Avg. Wt.	Yield (M lb)	No. Fish	Avg. Wt.	Yield (M lb)
1995	49,615	19.9	0.986		39,707	19.3	0.765	89,322	19.6	1.751
1996	53,590	22.1	1.187		41,307	22.8	0.943	94,897	22.4	2.129
1997	51,181	20.2	1.034		53,205	21.4	1.139	104,386	20.8	2.172
1998	54,364	29.1	1.584		42,580	21.5	0.917	96,944	25.8	2.501
1999	52,735	17.8	0.939	No GHL	44,301	20.4	0.904	97,036	19.0	1.843
2000	57,208	19.7	1.130		54,432	20.6	1.121	111,640	20.2	2.251
2001	66,435	18.1	1.202		43,519	16.6	0.721	109,954	17.5	1.923
2002	64,614	19.7	1.275		40,199	20.3	0.814	104,813	19.9	2.090
2003	73,784	19.1	1.412	1.432	45,697	18.5	0.846	119,481	18.9	2.258
2004	84,327	20.7	1.750	1.432	62,989	18.8	1.187	147,316	19.9	2.937
2005	102,206	19.1	1.952	1.432	60,364	14.0	0.845	162,570	17.2	2.798
2006	90,471	19.9	1.804	1.432	50,520	14.3	0.723	140,991	17.9	2.526
2007	109,835	17.5	1.918	1.432	68,498	16.5	1.131	178,333	17.1	3.049
2008	102,965	19.4	1.999	0.931	66,296	19.1	1.265	169,261	19.3	3.264
2009	53,602	23.3	1.249	0.788	65,549	17.3	1.133	119,151	20.0	2.383
2010	41,202	26.4	1.086	0.788	52,896	16.7	0.885	94,098	20.9	1.971

The 2010 estimated charter yield in Area 2C was down 13 percent from 2009 (Table 1-18). Although the charter average weight increased 13%, the number of fish harvested decreased by 23%. The non-charter removal was down 22 percent, the result of a 3% drop in average weight combined with a 19% drop in the number of fish harvested (Figure 3-22). The reasons for the declines in harvest are unknown, but probably due mostly to the economic recession and a reduction in the bag limit from one halibut of any size for the charter fishery (in 2009 and 2010) to one fish \leq 37 inches (Table 1-19) (along with longstanding prohibition on retention of halibut by skippers and crew and a limit on the number of lines to be actively fished at one time. Two fish of any size remained in place for the non-charter fishery. Charter captains and crew were not allowed to retain fish in Area 2C.

Table 1-20 provides sport halibut harvests in Area 2C by subarea.

Table 1-19 Area 2C charter regulation history.

Year	Charter Regulations
1995-2005	Two-fish bag limit (no size restrictions), no limit on crew retention.
2006	Two-fish bag limit (no size limit), state EO prohibiting crew harvest 5/26-12/31.
2007	Two-fish bag limit (1 under 32 inch eff. 6/1), no crew retention 5/1-12/31 (State EO and Federal Rule).
2008	Two-fish bag limit (1 under 32 inch), except one-fish bag limit Jun 1-10 (halted by injunction).
2009	One fish (no size limit), no harvest by skipper & crew, line limit (effective June 5).
2010	One fish (no size limit), no harvest by skipper & crew, line limit.
2011	One fish <37 inches, no harvest by skipper & crew, line limit.

Table 1-20 Area 2C sport halibut harvest estimates by harvest survey area, 2009.

Area	Charter			Non-Charter		
	Avg. Wt (lb) ^a	No. Fish	Yield (lb)	MeanWt (lb)	No. Fish	Yield (lb)
Ketchikan	22.1	3,174	70,164	13.5	7,254	97,933
Prince of Wales Island	14.8	9,480	140,415	11.7	11,933	140,040
Petersburg/Wrangell	34.6	3,731	129,276	21.2	7,920	167,865
Sitka	25.3	14,762	373,855	20.7	4,162	86,321
Juneau	16.2	3,302	53,518	15.0	11,993	180,378
Haines/Skagway	16.2	51	827	15.0	704	10,588
Glacier Bay	47.4	6,702	317,984	22.6	8,930	201,547
Area 2C	26.4	41,202	1,086,038	16.7	52,896	884,672

^a – Average net weight, rounded to the nearest 0.1 lb.

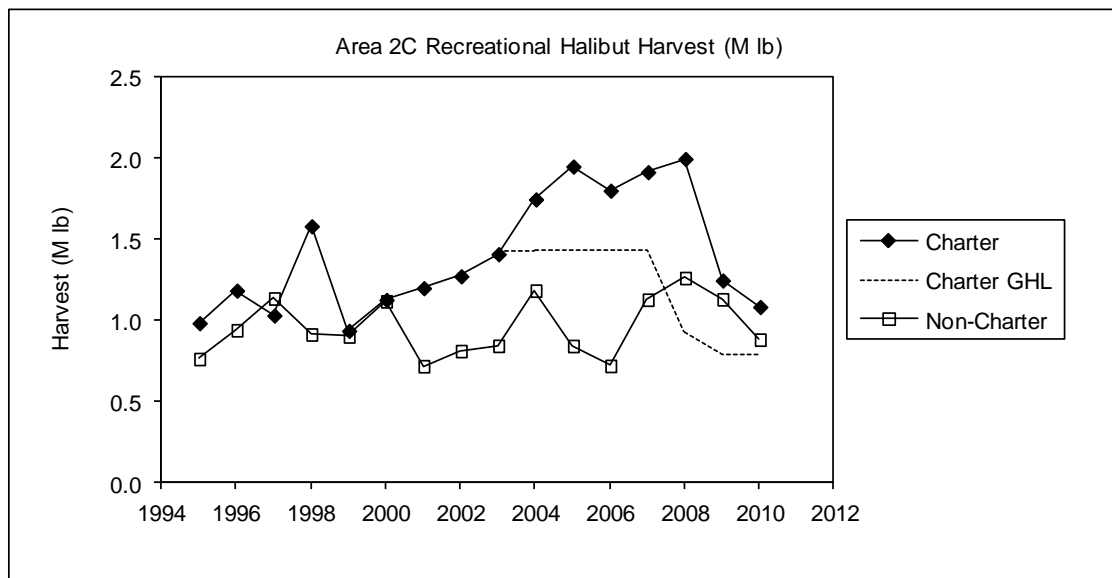


Figure 1-20 Area 2C charter and non-charter halibut harvests.

Area 3A The Area 3A sport harvest was estimated at 4.285 M lb. Charter harvest was estimated at 2.698 M lb and non-charter harvest at 1.587 M lb (Table 1-21). The charter fishery accounted for about 63% of the Area 3A sport harvest. Average net weight was estimated at 15.2 lb for the charter fishery, 12.8 lb for the non-charter fishery, and 14.2 lb overall. Average weight was estimated from samples of 3,391 charter halibut and 2,396 non-charter halibut.

Two fish of any size remained in place for both the charter fishery and the non-charter fishery (Table 1-22). While charter captains and crew were not allowed to retain fish for most of the season in Area 3A during 2007 through 2009, this ban was not in effect in 2010 or 2011.

The estimated Area 3A charter yield was down about 1% from 2009 (Table 1-21), the net result of a 1.1 lb decrease in average weight combined with a 6% increase in the number of fish harvested. The non-charter yield was down 22%. Average weight in the non-charter harvest declined only about 0.7 lb, but the number of fish harvested declined 17%. There were no regulation changes in 2010. The daily bag limit was two halibut of any size for all sport anglers.

The 2010 final harvest estimates were considerably lower than the projections made last year for the charter and non-charter fisheries in both areas (Table 1-21). Last year's projections were too high by about 18% for the 2C charter fishery, 43% for the 2C non-charter fishery, 11% for the 3A charter fishery, and 31% for the 3A non-charter fishery. The discrepancies in charter projections are explained largely by variation in the relationship between SWHS estimates and reported logbook harvest. The magnitude of projection errors for the non-charter fisheries is not surprising given the high variation in harvest from year to year.

Table 1-23 provides additional information regarding sport halibut harvests in Area 3A by subarea. Figure 1-21 depicts annual sport harvest relative to the GHl benchmark.

Table 1-21 Area 3A sport halibut harvest history.

Year	Charter				Non-Charter			Total Sport Harvest		
	No. Fish	Avg. Wt.	Yield (M lb)	GHl (M lb)	No. Fish	Avg. Wt.	Yield (M lb)	No. Fish	Avg. Wt.	Yield (M lb)
1995	137,843	20.6	2.845		95,206	17.5	1.666	233,049	19.4	4.511
1996	142,957	19.7	2.822		108,812	17.6	1.918	251,769	18.8	4.740
1997	152,856	22.3	3.413		119,510	17.6	2.100	272,366	20.2	5.514
1998	143,368	20.8	2.985	No GHl	105,876	16.2	1.717	249,244	18.9	4.702
1999	131,726	19.2	2.533		99,498	17.0	1.695	231,224	18.3	4.228
2000	159,609	19.7	3.140		128,427	16.9	2.165	288,036	18.4	5.305
2001	163,349	19.2	3.132		90,249	17.1	1.543	253,598	18.4	4.675
2002	149,608	18.2	2.724		93,240	15.9	1.478	242,848	17.3	4.202
2003	163,629	20.7	3.382	3.650	118,004	17.3	2.046	281,633	19.3	5.427
2004	197,208	18.6	3.668	3.650	134,960	14.4	1.937	332,168	16.9	5.606
2005	206,902	17.8	3.689	3.650	127,086	15.6	1.984	333,988	17.0	5.672
2006	204,115	17.9	3.664	3.650	114,887	14.6	1.674	319,002	16.7	5.337
2007	236,133	16.9	4.002	3.650	166,338	13.7	2.281	402,471	15.6	6.283
2008	198,108	17.0	3.378	3.650	145,286	13.4	1.942	343,394	15.5	5.320
2009	167,599	16.3	2.734	3.650	150,205	13.5	2.023	317,804	15.0	4.758
2010	177,460	15.2	2.698	3.650	124,088	12.8	1.587	301,548	14.2	4.285

Table 1-22 Area 3A charter regulation history.

Year	Charter Regulations
1995-2006	Two-fish bag limit (no size restrictions), no limit on crew retention
2007	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/1-12/31.
2008	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/24-9/1.
2009	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/23-9/1.
2010	Two-fish bag limit (no size restrictions), no limit on crew retention
2011	Two-fish bag limit (no size restrictions), no limit on crew retention

Table 1-23 Area 3A sport halibut harvest estimates by harvest survey area, 2009.

Area	Charter			Non-Charter		
	Avg. Wt (lb) ^a	No. Fish	Yield (lb)	MeanWt (lb)	No. Fish	Yield (lb)
Central Cook Inlet	15.5	45,781	708,126	12.5	29,022	363,626
Lower Cook Inlet	15.0	63,629	952,877	11.9	54,271	646,582
Kodiak	14.9	13,381	199,489	19.1	9,682	185,132
North Gulf Coast	12.0	33,359	401,486	10.8	16,618	179,244
Eastern PWS	24.4	8,843	216,121	12.2	5,503	67,294
Western PWS	12.0	8,511	102,160	16.3	6,468	105,452
Yakutat	29.7	3,956	117,523	15.6	2,524	39,442
Area 3A	15.2	177,460	2,697,783	12.8	124,088	1,586,772

^a – Average net weight, rounded to the nearest 0.1 lb.

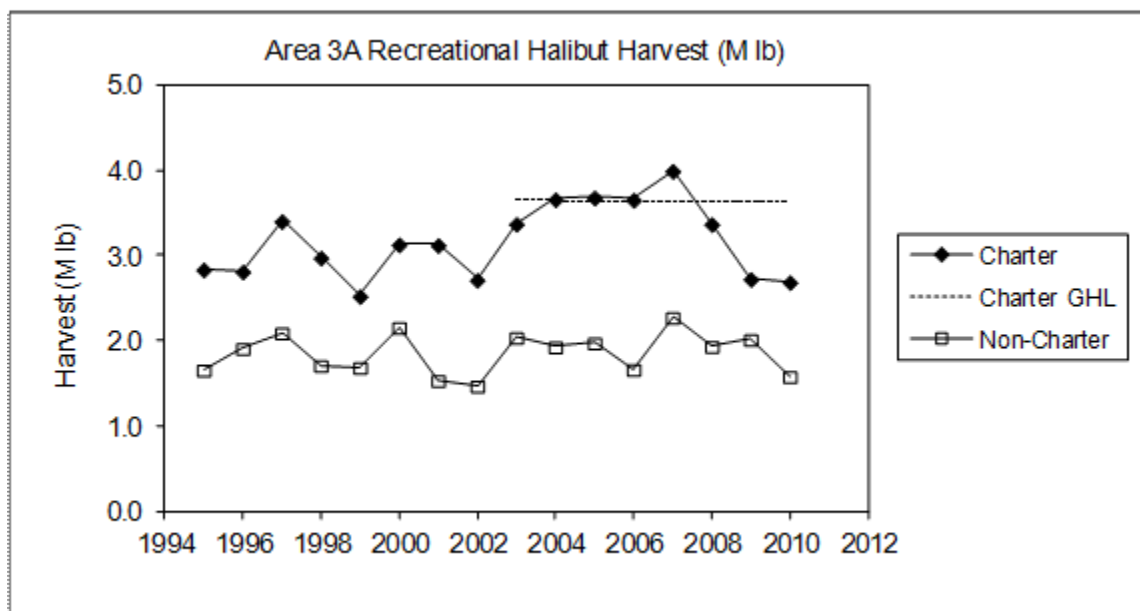


Figure 1-21 Area 3A charter and non-charter halibut harvests.

1.8.1.7 Subsistence Fisheries³⁰

Halibut is a widely used subsistence resource in Alaskan coastal communities (NMFS 2007). Management of subsistence halibut fisheries is the responsibility of NMFS, but data collection and harvest estimation is performed by the ADF&G Division of Subsistence Fisheries under contract to NMFS. Halibut have been harvested for centuries by the indigenous coastal peoples of Southeast, Southcentral, and Western Alaska. Long ago, hooks were made of wood or bone, and often ornately carved with spirit figures to attract halibut. Lines were made of twisted fibers of cedar, animal sinew, or kelp. Halibut meat was preserved by drying or smoking.

Despite a long history of harvest, federal halibut fishing regulations did not officially recognize and authorize the subsistence fishery until 2003. Members of federally recognized tribes as well as residents of designated rural areas and communities are now eligible to obtain a Subsistence Halibut Registration Certificate (SHARC) in order to participate in this fishery. Special permits for community harvest, ceremonial, and educational purposes also are available to qualified Alaska communities and Alaska Native Tribes.

³⁰ Source: ADF&G Subsistence Division and IPHC

Subsistence harvest has been estimated in recent years using a survey of SHARC holders. The statewide subsistence harvest in recent years has averaged around 1 annually, with most of the harvest coming from Southeast and Southcentral Alaska.

Through a grant from NMFS, ADF&G Division of Subsistence conducted a study to estimate the subsistence harvests of Pacific halibut in Alaska in 2010. (http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/Subsistence_report2010.pdf). Key points in the report include the following:

In May 2003, the NMFS published final federal regulations for a subsistence halibut fishery in Alaska. Residents of 118 rural communities and designated rural areas, and members of 123 tribes are eligible to participate. Fishers must obtain a subsistence halibut registration certificate (SHARC) from NMFS before fishing (www.fakr.noaa.gov/ram/subsistence/halibut.htm; 800-304-4846).

- 2010 was the eighth year in which subsistence halibut fishing took place under these regulations. Information about subsistence halibut harvests in 2003–2009 is reported in Division of Subsistence Technical Papers 288, 304, 320, 333, 342, 348, and 357, respectively.
- To estimate the 2010 harvests, a one-page survey form was mailed to SHARC holders in early 2011 or administered in person. After two mailings and community visits, 6,670 of 10,953 SHARC holders (61%) responded. Participation in the survey was voluntary.
- An estimated 4,991 individuals subsistence fished for halibut in 2010 (Figure 8).
- The estimated subsistence harvest was 43,332 halibut for 797,560 pounds net weight.
- Of this total, 77% was harvested with setline (stationary) gear (longline or skate) and 23% was harvested with hand-operated gear (handline or rod and reel).
- The largest subsistence harvests occurred in Southeast Alaska (Halibut Regulatory Area 2C), at 53% of the total, followed by Southcentral Alaska (Area 3A) at 39%. Table 6 and Figure 17 from the final report give more details on harvests by gear type and area.
- Based on place of residence of SHARC holders, communities with the largest subsistence halibut harvests in 2010 were Kodiak and Sitka (the largest eligible communities) (Figure 22).
- An estimated 12,851 rockfish were harvested by 1,322 fishers in the subsistence halibut fishery in 2010. Most (60%) were harvested in Southeast Alaska.
- An estimated 2,864 lingcod were harvested by 732 fishers in the subsistence halibut fishery in 2010. Most (63%) were harvested in Southeast Alaska.
- Based on preliminary data from the International Pacific Halibut Commission and this study, the estimated halibut removal in Alaska in 2010 was 63.773 Mlbs, net weight. Subsistence harvests accounted for 1.3% of this total (Figure 33).
- The report concludes that the project was, overall, a success, with good response rates and a reliable estimate of subsistence halibut harvests. However, analysis suggests that a significant number of fishers may not have renewed their SHARCs. Additional outreach among eligible tribes and rural areas is necessary to maximize enrollment of fishers in the SHARC program.
- The report also recommends that monitoring of the Alaska subsistence halibut harvest continue in order to evaluate trends in the fishery.

Table 1-24 Estimated harvests of halibut in numbers of fish and pounds net (dressed, head-off) weight by regulatory area and subarea, 2010.

Subarea	Regulatory area	Estimated subsistence harvest by gear type ^a												
		Set hook gear			Hook and line or handline			All gear			Estimated sport harvest			
		Number of SHARCs fished ^c	Estimated respondents fished	Estimated halibut harvested	Estimated pounds halibut harvested ^b	Estimated respondents fished	Estimated halibut harvested	Estimated pounds halibut harvested ^b	Estimated respondents fished	Estimated halibut harvested	Estimated pounds halibut harvested ^b	Estimated respondents fished	Estimated halibut harvested	Estimated pounds halibut harvested ^b
Southern Southeast Alaska	2C	1,618	1,373	9,797	207,535	671	2,927	46,831	1,618	12,725	254,366	833	2,928	47,523
Sitka Lamp Area	2C	718	657	3,118	68,532	229	586	8,456	718	3,704	76,988	236	529	8,960
Northern Southeast Alaska	2C	776	686	4,084	77,223	263	1,007	16,241	776	5,091	93,464	296	855	14,880
Subtotal, Area 2C		3,013	2,625	16,999	353,290	1,118	4,521	71,528	3,013	21,520	424,818	1,313	4,312	71,364
Yakutat Area	3A	66	53	543	13,296	29	191	4,768	66	734	18,064	15	76	1,198
Prince William Sound	3A	291	260	1,767	35,004	143	364	7,274	291	2,132	42,279	139	361	7,905
Cook Inlet	3A	228	138	2,780	36,870	157	2,607	28,939	228	5,386	65,809	126	579	9,008
Kodiak Island road system	3A	687	564	4,429	82,139	315	1,146	20,928	687	5,575	103,066	450	1,871	35,599
Kodiak Island–Other	3A	592	466	2,854	56,642	285	1,346	26,790	592	4,201	83,432	310	1,055	18,534
Subtotal, Area 3A		1,631	1,283	12,374	223,951	807	5,654	88,699	1,631	18,028	312,650	887	3,943	72,244
Chignik Area	3B	42	20	132	2,912	35	183	2,945	42	315	5,857	5	6	103
Lower Alaska Peninsula	3B	130	65	696	8,845	96	514	8,306	130	1,210	17,152	51	143	2,248
Subtotal, Area 3B		171	84	829	11,757	130	697	11,251	171	1,525	23,009	56	148	2,351
Eastern Aleutians–East	4A	99	61	429	7,046	66	409	6,297	99	838	13,343	53	217	2,682
Eastern Aleutians–West	4A	8	7	32	665	3	27	540	8	55	1,205	6	8	132
Subtotal, Area 4A		101	62	461	7,711	67	431	6,837	101	892	14,548	57	225	2,814
Western Aleutians–East	4B	10	6	22	210	4	14	240	10	36	450	3	21	432
Western Aleutians–Other	4B	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal, Area 4B		10	6	22	210	4	14	240	10	36	450	3	21	432
St. George Island	4C	6	5	23	563	5	8	158	6	30	720	0	0	0
St. Paul Island	4C	19	13	468	9,555	6	16	584	19	485	10,139	0	0	0
Subtotal, Area 4C		25	17	491	10,118	11	24	742	25	515	10,859	0	0	0
St. Lawrence Island	4D	4	2	32	843	2	6	328	4	38	1,171	0	0	0
Area 4D–Other	4D	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal, Area 4D		4	2	32	843	2	6	328	4	38	1,171	0	0	0
Bristol Bay	4E	4	4	0	0	0	0	0	4	0	0	2	2	35
Yukon Delta	4E	60	15	170	2,542	56	571	6,942	60	741	9,484	0	0	0
Norton Sound	4E	6	6	38	571	0	0	0	6	38	571	0	0	0
Kotzebue Sound	4E	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal, Area 4E		70	25	208	3,113	56	571	6,942	70	779	10,055	2	2	35
Total, Alaska^c		4,991	4,071	31,416	610,992	2,183	11,916	186,567	4,991	43,332	797,560	2,297	8,651	149,241

Source ADF&G Division of Subsistence, SHARC survey, 2011.

a. “Setline” = longline or skate. “Hand-operated gear” = rod and reel, or handline.

b. Weights given are “net weight.” Pounds net (dressed, head off) weight = 75% of round (whole) weight.

c. Because fishers may fish in more than one area, subtotals for regulatory areas and the state total might exceed the sum of the subarea values. Includes subsistence and sport fishing.

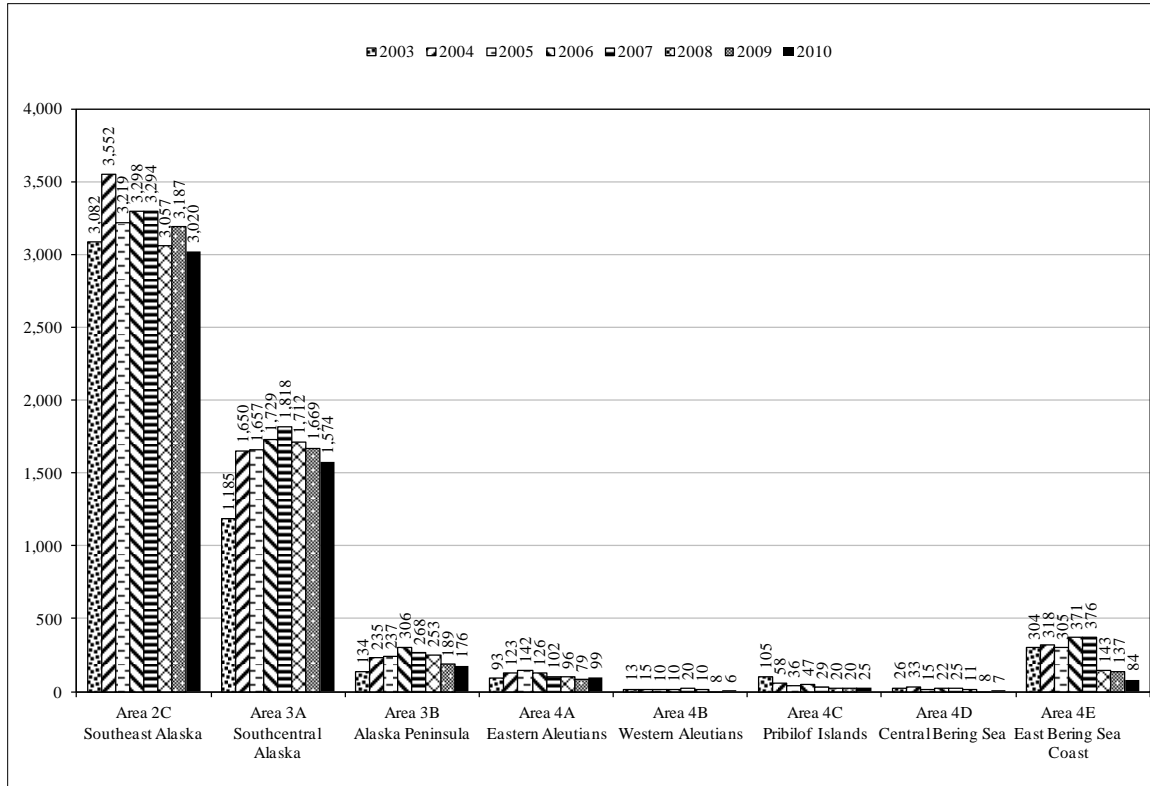


Figure 1-22 Estimated number of Alaska subsistence halibut fishers, 2003–2010 by regulatory area of tribe or rural community.

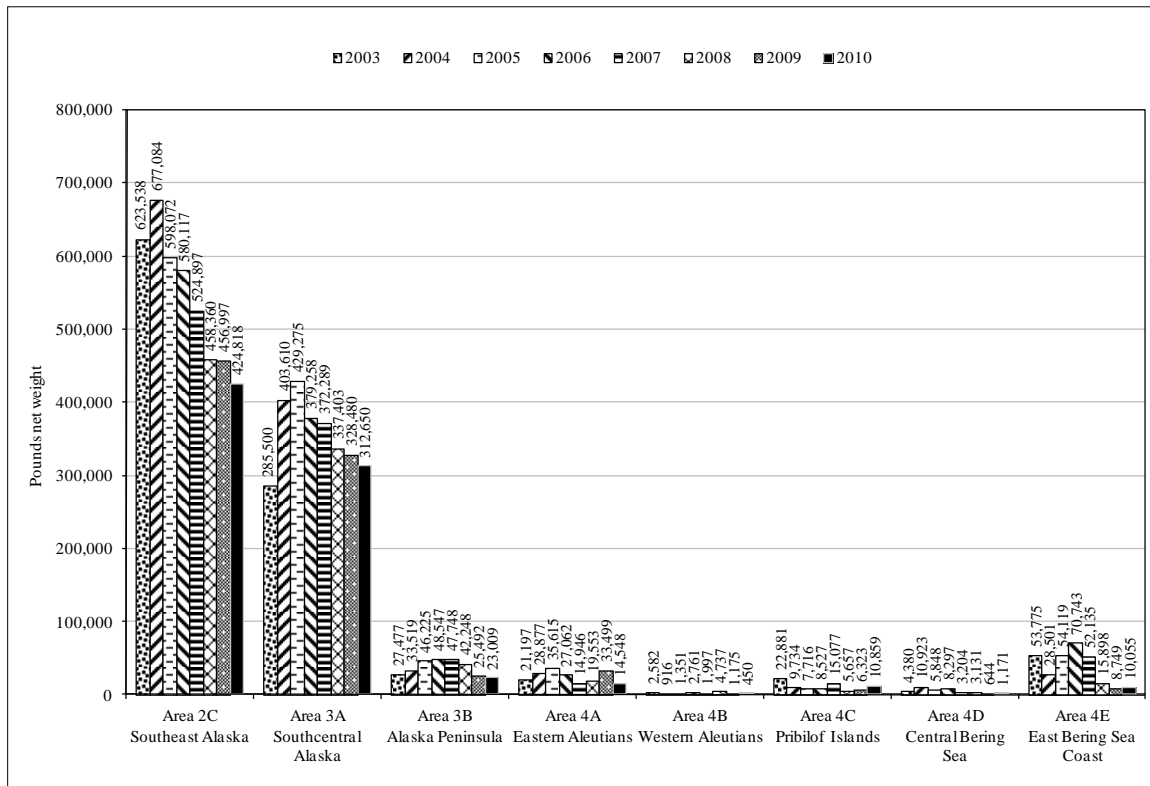


Figure 1-23 Estimated subsistence halibut harvests, pounds net weight, by regulatory area fished, 2003–2010.

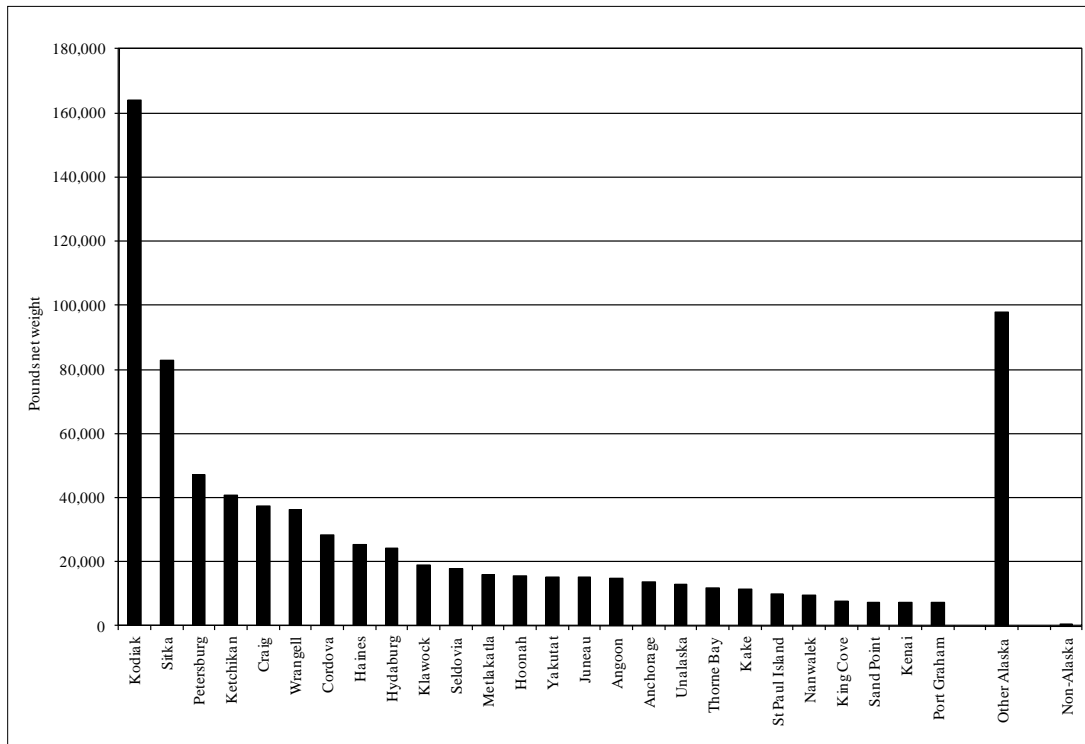


Figure 1-24 Alaska subsistence halibut harvests by place of residence, 2010.

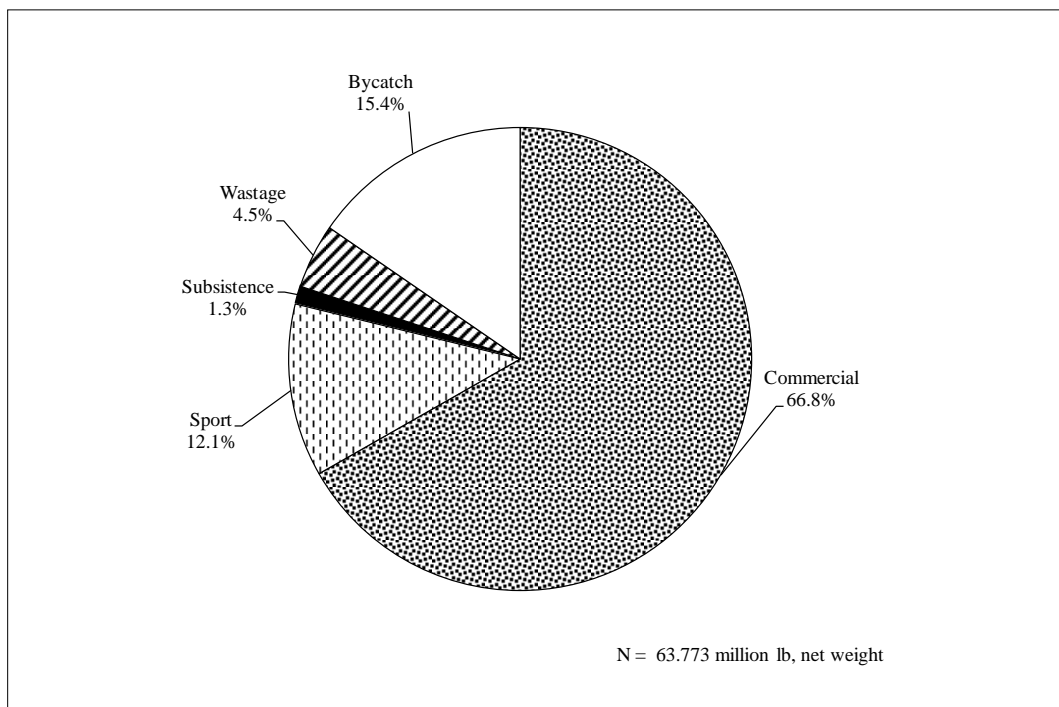


Figure 1-25 Subsistence halibut removals relative to other removals, Alaska, 2010.

1.8.1.8 Impacts of the Alternatives

1.8.1.8.1 Alternative 1: Status quo

The status quo alternative would continue management of charter harvest under the GHL program. While the GHL serves as a target harvest level for the charter sector, it does not include accompanying harvest restrictions to limit charter harvest to the GHL. Taking no action may result in continued overages of the charter GHL, particularly in Area 2C. Past attempts at initiating new analyses and rulemaking to address past overages have been ineffective due to the delay between the overage and implementation of a more constraining management measure. When the Council previously adopted its 2008 Preferred Alternative it would have maintained a “delayed feedback loop” for managing charter halibut fisheries in Area 2C and Area 3A. Under the status quo three to four years may have elapsed between the time in which (1) a charter harvest overage occurs; (2) ADF&G reports that an overage has occurred; (3) the Council selects a preferred alternative to address the overage; and (4) new regulations are in effect. The halibut resource could have been negatively impacted if charter harvest overages continued to occur during the delay.

The effectiveness of a new “2012 approach” that relies on eliminating the delay by implementing more constraining management measure through advice provided by the Council to the IPHC for its adoption for the next fishing season will be evident, perhaps as soon as September 2012. At that time ADF&G will release preliminary estimates of 2012 sport harvests along with final estimates of 2011 sport harvests.

The status quo does not respond to conservation concerns that the IPHC has expressed to the Council concerning the effect that GHL overages have on the halibut stock, given how the IPHC accounts for charter harvests in determining the commercial fishery CEY (i.e., it deducts the GHL and not the charter harvest before determining the commercial catch limit).

Maintaining the status quo would continue to negatively affect the economic state of commercial halibut IFQ fishermen because these excess removals diminish the halibut stock, and therefore, commercial catch limits that are tied to the condition of those stocks. The status quo may also negatively affect charter businesses, the guided angler’s consumer surplus, and the communities in which they occur. These entities will continue to harvest the halibut allocated to them under the current (and it is assumed in the future under the proposed catch sharing plan) regulations. While the amount of halibut available to these sectors has declined, especially in Area 2C, those declines are a result of factors other than potential allocation shifts between sectors, or even charter overages because they are minor relative to changes in biomass.

1.8.1.8.2 Alternatives 2–5

The proposed alternatives to implement a CSP address resource allocation issues identified by the Council as a high priority to address the problem it identified in its problem statement for this action. They also would more closely align charter harvests with the objective to promote optimum yield for the commercial halibut fisheries.

The Council recommended charter allocations that vary with the abundance of halibut stocks under Alternatives 2 – 5. While the Council considered establishing fixed poundage allocations to the charter sector under a proposed alternative that the Council rejected in 2008, the Council determined that use of allocations that vary with halibut stock abundance would establish a clear allocation between the charter and commercial halibut sectors. The calculation of sector catch limit would be a simple calculation and both the commercial and guided sport sector allocations adjust directly with changes in halibut exploitable biomass.

Alternative 2 would establish a charter sector allocation and a suite of specific management measures to limit charter halibut harvest to the allocation. It eliminated the delayed feedback loop by annually implementing specified harvest restrictions that are based on halibut stock estimates, catch limits established by the IPHC, and charter harvest projections for the upcoming year. These harvest restrictions are intended to limit projected charter halibut harvest to that sector’s allocation. The management

measures specified under the 2008 Preferred Alternative are more restrictive at lower levels of halibut stock abundance to ensure that charter harvest is more closely aligned with the sector allocation. The most restrictive management measure under the 2008 Preferred Alternative limits charter anglers to retention of one halibut per day of a maximum length limit. The maximum length would be calculated specifically to enable anglers to retain the largest halibut possible while limiting charter harvest to the sector allocation. The maximum length limit calculation would use conservative assumptions about projected charter harvest to establish a length limit that would limit charter harvest equal to or below the sector allocation.

The Council determined its 2008 Preferred Alternative would be more likely to limit the charter halibut fishery to its allocation over time than the status quo because it would eliminate the delayed feedback loop. It likely would have a more beneficial impact on halibut stocks in Area 2C and Area 3A than the status quo because the pre-season implementation of charter harvest restrictions would be more timely and responsive to changes in halibut abundance. Because it anticipates that only the amount of halibut supported by annual halibut exploitable biomass is removed from the water, the 2008 Preferred Alternative promotes conservation of the halibut stock.

While this analysis concludes that Alternative 2 better achieves the Council's objectives, Alternatives 3 – 5 improves on the gains achieved by Alternative 2 over the status quo by replacing the management matrix of specific measures with an annual process of using the best, and more timely, information on the halibut stock, charter harvests, and an evaluation of the performance of the management measures implemented for the previous year. Alternative 3 – 5 also include clarifications of the GAF Program to enhance its performance and separate accountability of directed fishery removals and wastage by each sector.

1.8.1.8.3 Summary

No significant adverse impacts on the halibut stock or fisheries are identified for the any of the alternatives considered. Total removals from the halibut resource are set by the IPHC at a level determined to be sustainable. The action alternatives could change the amount of halibut available for harvest between the charter and commercial halibut fisheries and the amount of halibut harvested in the charter and commercial halibut fisheries. However, they would not affect total harvest, fishing practices of individuals participating in the halibut fishery, or the health of the halibut stock. Alternatives 3 – 5, which include the 2012 approach for setting management measures for the upcoming season through the IPHC process and from a wider range of potential management measures, improvements to the GAF Program, and separate accountability however are more likely to minimize potential CSP overages. Alternatives 3 – 5 differ in the allocations to each sector which is a policy decision and not one of conservation, given the elements contained with these alternatives (compared to the status quo or Alternative 2).

1.8.2 Groundfish

1.8.2.1 Life History, Removals, Harvest Policy, Resource

The Council recommends annual catch limits and allocations for commercial groundfish fisheries for 121 species/complexes and 25 management categories in the GOA (Figure 1-26). Commercial groundfish quotas in the GOA are set at about 300,000 mt, or 660 Mlbs, each year. Some flatfish quotas are set well below the acceptable biological levels (ABCs) due to halibut PSC constraints. The GOA groundfish harvest specification (target) categories are: walleye pollock, Pacific cod, sablefish, shallow-water flatfish, deep-water flatfish, rex sole, arrowtooth flounder, flathead sole, POP, northern rockfish, shortraker rockfish, other rockfish, PSR, rougheye and blackspotted rockfish, thornyhead rockfish, DSR, Atka mackerel, big skate, longnose skate, other skates, squids, sharks, octopuses, and sculpins. A profile of GOA groundfish species can be found at: http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/resources/Species_Profiles2011.pdf.

Gulf of Alaska Species Complex History

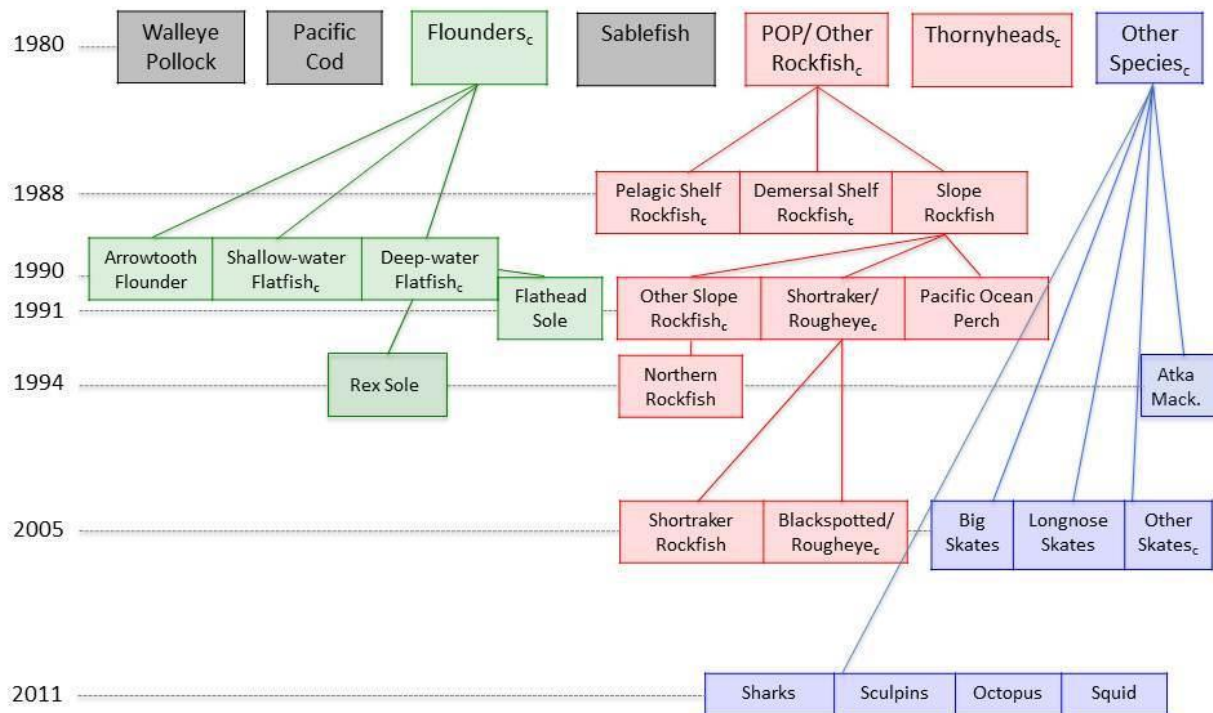


Figure 1-26 Gulf of Alaska Species Complex History

Strict annual catch limits for every target fishery have proven an effective management tool for achieving sustainable fisheries. In the North Pacific, a rigorous process in place for over 30 years ensures that annual quotas are set at conservative, sustainable levels for each of our managed groundfish stocks.

Three reference points are used for management of groundfish fisheries in the North Pacific (Figure 1-27). The overfishing level (OFL) is the catch limit which should never be exceeded. It is based on the fishing mortality rate associated with producing the maximum sustainable yield on a continuing basis. The acceptable biological catch (ABC) is the annual sustainable catch limit, and is set lower than the OFL. The buffer between these reference points allows for scientific uncertainty in single species stock assessments, ecosystem considerations, and operational management of the fishery. The total allowable catch (TAC) is the annual catch target that incorporates economic considerations and management uncertainty. The fishery management plans prescribe that TAC may equal but never exceed ABC, such that $TAC \leq ABC < OFL$. The sum of TACs for all groundfish stocks must also remain within the optimum yield range defined in the FMP. In the BSAI, the upper limit is 2 million mt, which can be constraining. TAC may be set lower than ABC for a variety of reasons, such as to remain under the 2 million mt optimum yield limit; to increase a rebuilding rate or address other conservation issues; to limit incidental bycatch; or to account for state water removals. Fisheries are managed in-season to achieve the TACs without exceeding the ABC or OFL. All catch taken in directed fisheries or caught incidentally in other fisheries, whether retained or discarded, accrues towards the TAC.

The catch limits are specified annually through an established public process (Figure 1-28). The annual process of determining OFL and ABC specifications begins with the assignment of each stock to one of six “tiers” based on the availability of information about that stock. Stocks in Tier 1 have the most information, and those in Tier 6, the least. Application of a control rule for each tier prescribes the resulting OFL and maximum ABC for each stock. For many groundfish stocks, the estimate of $F_{40\%}$ is used as a surrogate for F_{ABC} . $F_{40\%}$ is the fishing mortality rate at which the spawning biomass per recruit is reduced to 40% of its value in the equivalent unfished stock. The control rules for Tiers 1-3 also provide

for automatic rebuilding, because if a stock falls below target biomass levels, ABC and OFL are drastically reduced.

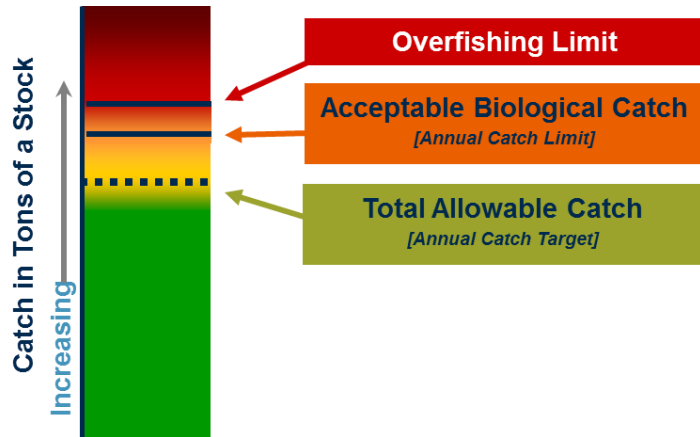


Figure 1-27 Groundfish reference points

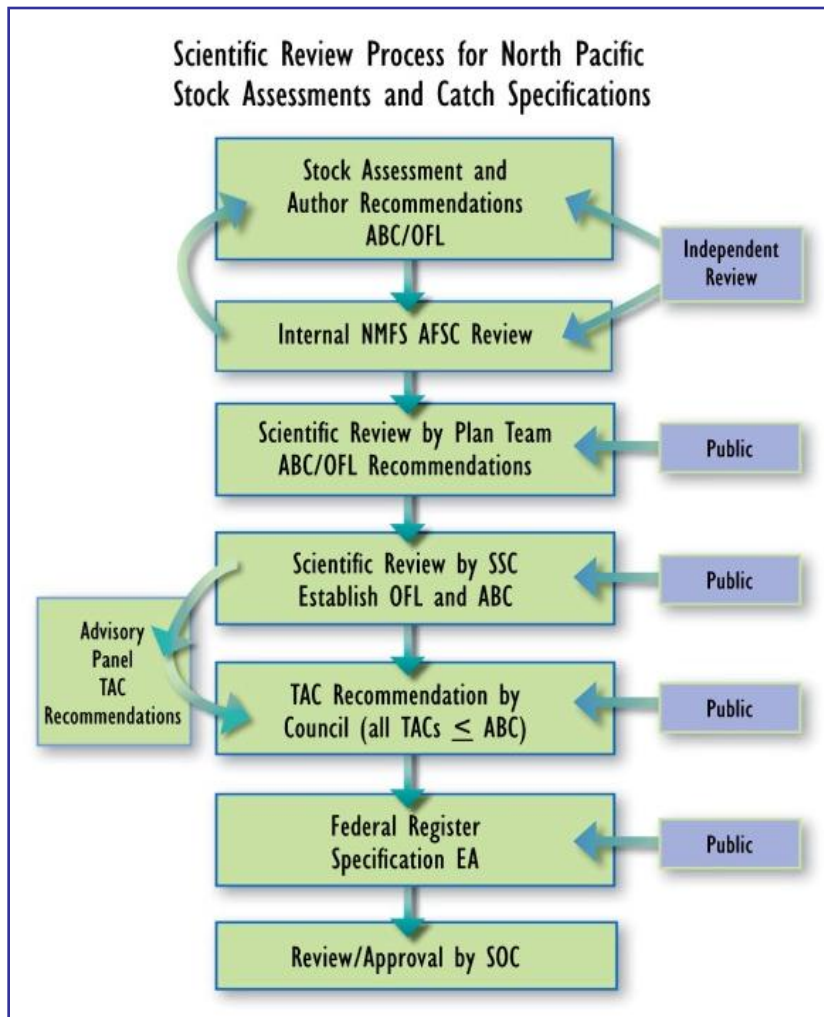


Figure 1-28 Review process for setting annual catch limits

Scientists prepare an assessment of the status of each stock (or stock complex), and include alternate model simulations and tier assignments to arrive at recommendations for OFLs and ABCs (see Figure 1-29). The Groundfish Plan Teams compile these assessments into Stock Assessment and Fishery Evaluation (SAFE) reports, develop their own OFL and ABC recommendations (which may or may not agree with the stock assessment author), and present this information to the Council and its Scientific and Statistical Committee (SSC) and Advisory Panel (AP). The SSC is responsible for setting the Council's OFL and ABC limits, using the SAFE reports and Plan Team recommendations. The SSC retains the flexibility to adjust ABC and OFL values from the control rule, based on factors such as multispecies interactions, ecosystem considerations, and additional scientific uncertainty. The Council then sets the TAC levels at or below the ABC levels, incorporating recommendations from the Advisory Panel and industry stakeholders.

<p>Tier 1: Reliable point estimates of B and B_{MSY} and pdf of F_{MSY}.</p> <p>1a) Stock status: $B/B_{MSY} > 1$ $F_{OFL} = mA$, the arithmetic mean of the pdf $F_{ABC} \leq mH$, the harmonic mean of the pdf</p> <p>1b) Stock status: $\alpha < B/B_{MSY} \leq 1$ $F_{OFL} = mA \times (B/B_{MSY} - \alpha)/(1 - \alpha)$ $F_{ABC} \leq mH \times (B/B_{MSY} - \alpha)/(1 - \alpha)$</p> <p>1c) Stock status: $B/B_{MSY} \leq \alpha$ $F_{OFL} = 0$; $F_{ABC} = 0$</p> <p>Tier 2: Reliable point estimates of B, B_{MSY}, F_{MSY}, $F_{35\%}$, and $F_{40\%}$.</p> <p>2a) Stock status: $B/B_{MSY} > 1$ $F_{OFL} = F_{MSY}$ $F_{ABC} \leq F_{MSY} \times (F_{40\%}/F_{35\%})$</p> <p>2b) Stock status: $\alpha < B/B_{MSY} \leq 1$ $F_{OFL} = F_{MSY} \times (B/B_{MSY} - \alpha)/(1 - \alpha)$ $F_{ABC} \leq F_{MSY} \times (F_{40\%}/F_{35\%}) \times (B/B_{MSY} - \alpha)/(1 - \alpha)$</p> <p>2c) Stock status: $B/B_{MSY} \leq \alpha$ $F_{OFL} = 0$; $F_{ABC} = 0$</p> <p>Tier 3: Reliable point estimates of B, $B_{40\%}$, $F_{35\%}$, and $F_{40\%}$.</p> <p>3a) Stock status: $B/B_{40\%} > 1$ $F_{OFL} = F_{35\%}$; $F_{ABC} \leq F_{40\%}$</p> <p>3b) Stock status: $\alpha < B/B_{40\%} \leq 1$ $F_{OFL} = F_{35\%} \times (B/B_{40\%} - \alpha)/(1 - \alpha)$ $F_{ABC} \leq F_{40\%} \times (B/B_{40\%} - \alpha)/(1 - \alpha)$</p> <p>3c) Stock status: $B/B_{40\%} \leq \alpha$ $F_{OFL} = 0$; $F_{ABC} = 0$</p> <p>Tier 4: Reliable point estimates of B, $F_{35\%}$, and $F_{40\%}$. $F_{OFL} = F_{35\%}$; $F_{ABC} \leq F_{40\%}$</p> <p>Tier 5: Reliable point estimates of B and natural mortality rate M. $F_{OFL} = M$; $F_{ABC} \leq 0.75 \times M$</p> <p>Tier 6: Reliable catch history from 1978 through 1995. OFL = the average catch, unless an alternative value is established by the SSC. $ABC \leq 0.75 \times OFL$</p>

Figure 1-29 Catch Limit Control Rules for North Pacific Groundfish

Groundfish stock groupings for establishing catch limits have evolved over time as new scientific information has become available and new markets have developed for certain species. The original fishery management plans set catch limits for the few major target species (e.g., pollock, cod, sablefish), with the remaining species managed in a few complex groups (e.g., flounders, rockfish, other species).

Over time, with new information and new fisheries developing, species were separated out from the complexes and assigned their own catch limits. Currently, there are nearly 50 separate single species groundfish stocks or species complexes that are assigned annual catch limits. For many of these stocks, catch limits are further subdivided into each regulatory area as a precautionary measure to prevent disproportionate exploitation rates in small areas, in case the stock consists of multiple populations.

The Harvest Specifications EA (NMFS 2007) reported that harvest control rules for pollock, Pacific cod, and Atka mackerel have been established so that fishing rates drop abruptly at low biomass levels, in order to account for Steller sea lion prey needs (NMFS 2007). TACs and harvests, especially in the GOA, are often set lower than they would be otherwise, in order to protect other species, especially halibut, which may be taken as incidental removals (**Error! Reference source not found.**). Directed fishing for any species is frequently restricted before TACs are reached, in order to comply with PSC limits. Inseason management closes directed fisheries when TACs are harvested, and restricts fishing in other fisheries taking the species as incidental removals when OFLs are approached.

The Council’s conservative catch limit policies, combined with favorable environmental conditions, have resulted in abundant fish stocks and sustainable fisheries. No groundfish stock is overfished or undergoing overfishing. Further, most stocks are well above target biomass levels that produces maximum sustainable yield (B_{msy}).

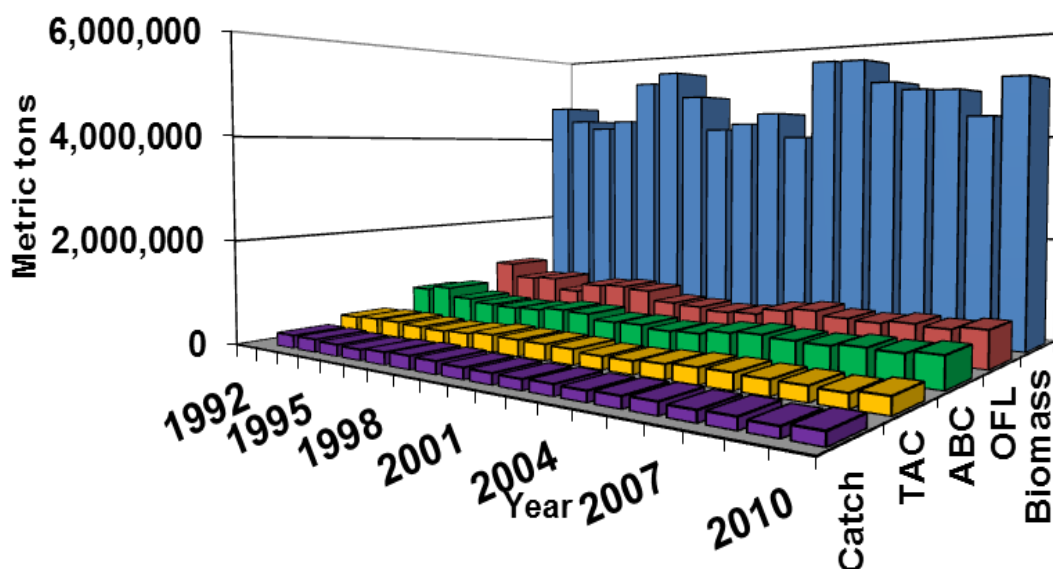


Figure 1-30 GOA Groundfish Harvest Specifications, 1992-2010

At each December meeting, the Council specifies catch limits for a two-year period, which when implemented (in early March) supersede the limits that were set the prior year to start the fishery (which opens January 1). For example, the adjacent specification tables adopted by the Council in December 2010 will be implemented for 2011 and 2012 fisheries, effectively replacing the catch limits that were recommended in December 2009. The catch limits specified for the start of the 2012 season will be superseded by those limits set by the Council in December 2011. The 2-year cycle allows for the use of the most recent biological information in the stock assessment while eliminating any potential delay or gap in setting the second year’s limits.

For the purpose of setting halibut PSC limits, the FMP sets separate PSC limits for trawl fisheries: 2,000 mt and hook-&-line (HAL) fisheries: 300 mt. The Pacific halibut PSC HAL limits are apportioned between demersal shelf rockfish (typically, 10 mt) and all species other than demersal shelf rockfish

(typically, 290 mt). In June 2012 the Council recommended that these caps be reduced. If approved by the Secretary of Commerce, the preferred alternative would reduce the GOA halibut PSC limit for the 1) groundfish trawl gear sector and 2) groundfish catcher vessel (CV) hook-and-line gear sector by 15%. The proposed reduction would be phased in over three years: 7% in year 1, 5% in year 2 (to 12%), and 3% in year 3 (to 15%). The proposed reduction for the 3) catcher processor (CP) hook and line gear would be 7% which would be implemented in one step in year 1. The Council intends that year 1 would occur in 2014 and that all reductions would occur by 2016.

The June 2012 Council action would result in a new cap of 1,848 mt (in 2014), 1,759 mt (in 2015), and 1,705 mt (in 2016 and later years) for the trawl sector. The new hook-and-line halibut PSC limit may change annually, so the numbers reported are illustrative of what may occur in the future, based on the GOA Pacific cod split formula. Based on 2012 Pacific cod TACs in the Western and Central GOA the hook-and-line CP sector would fish under a 109 mt halibut PSC limit. The hook-and-line CV sector PSC limit would be 161 mt (in 2014), 152 mt (in 2015), and 147 mt (in 2016 and beyond). . Note that the Council used 1,973 mt as the baseline for its proposed trawl PSC limit reduction, which results after deducting a 27.4 mt PSC limit reduction, which was implemented in 2012 under the Central Gulf Rockfish Program, from the 2,000 mt overall trawl cap. The preferred alternative also reduced the demersal shelf rockfish fishery halibut PSC limit from 10 mt (22,000 lb) to 9 mt (19,840 lb). Given limited observer coverage in this fishery NMFS does not anticipate managing the fishery to that limit.

The PSC trawl limits are apportioned between the deep-water species complex and the shallow-water species complex. The deep-water species complex includes: sablefish, rockfish, deep-water flatfish, rex sole, and arrowtooth flounder. The shallow-water species complex includes: walleye pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, and “other species” (which includes sharks, skates, squids, sculpins, and octopuses).

For the purpose of setting halibut PSC limits, the FMP identifies specific criteria to be considered by the Council [listed in Section 1.5]. The criteria include (e) expected change in target groundfish catch and (f) estimated change in target groundfish biomass. These issues are addressed in greater detail in the annual GOA Groundfish SAFE Report which will be considered by the Council during its December 2011 meeting for its determination of 2012 and 2013 harvest specifications. A summary of the 2010 status of individual groundfish stocks is presented in Figure 1-31.

For the GOA specifications, NMFS conducted a summer bottom-trawl survey in 2011 thus full assessments were presented for all 22 stocks and stock complexes under the GOA FMP. The sum of the ABCs increased by 3% (15,927 t) compared with last year. This was primarily driven by increases in pollock 20,229 t (21%) and sablefish 1,670 t (15%). Based on projections, ABC levels for groundfish (pollock, Pacific cod, and sablefish) are up by 22,699 t (12%) whereas flatfish declined by 8,685 t (-3%). Rockfish ABCs increased 3% (1,197 t) and the largest percentage increase was seen for octopus at 53% (501 t). Combined, the skates ABC increased by 2% (149 t). The Prince William Sound pollock GHL was increased from 1,650 t to 2,770 t and this amount was deducted from the central and western pollock ABC prior to apportionments.

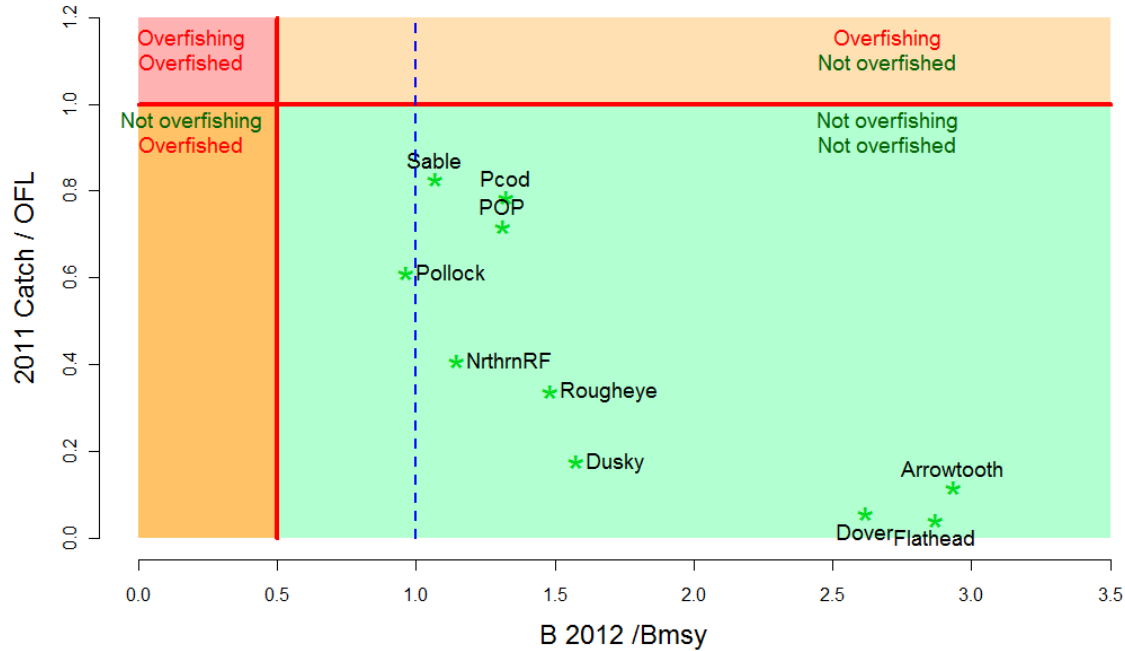


Figure 1-31 Summary status of age-structured GOA species relative to 2011 catch levels (vertical axis) and projected 2012 spawning biomass relative to Bmsy levels. Note that the 2010 MSY level is defined as the 2011 catch at FOFL.

1.8.2.1.1 State GHL Fisheries

The State of Alaska has separate groundfish fisheries for pollock, Pacific cod, and Southeast Inside District DSR. These fisheries are often referred to as guideline harvest level (GHL) fisheries. GHL fisheries for Pacific cod and pollock occur within 3 nm of shore. The state DSR fishery occurs in the Southeast Inside District. The state has full management authority extending throughout the EEZ for black rockfish (*Sebastes melanops*) and blue rockfish (*S. mystinus*) not covered by a federal FMP.

The GHL pollock fishery is located in Prince William Sound. The directed pelagic trawl season for the Prince William Sound (PWS) Management Area's Inside District typically opens January 20. In 2010, the guideline harvest level (GHL) was set at 3.64 Milbs. The Inside District is divided into three sections: Hinchinbrook, Knight Island, and Bainbridge with harvest from any section limited to 60% of the GHL. The Hinchinbrook Section closed February 25 with a harvest of 1.98 Milbs or 54.5% of the GHL. The directed pelagic trawl pollock season in the Knight Island and Port Bainbridge Sections of the PWS Management Area were closed on March 3, 2010 for the remainder of the calendar year.

State-waters fisheries for Pacific cod began in 1997 in the Prince William Sound, Cook Inlet, Chignik, Kodiak, and the South Alaska Peninsula districts. Vessels participating in the South Alaska Peninsula and Chignik areas are limited to no more than 58 feet in length. Catches are allocated on a percentage basis to various gear types. Guideline harvest limits (GHLs) for each of the 5 state-waters district are set by ADF&G as a percentage (2.25% to 15%) of the GOA Pacific cod allowable biological catch (ABC) set by the NPFMC for federal fisheries. If the GHL is attained it may be increased in increments of the ABC in successive years. Pacific cod are also harvested under state regulations in Southeast Alaskan waters independent of the federal fishery.

The State of Alaska established Pacific cod GHL fisheries in 2011 for the Kodiak, Chignik, and South Alaska Peninsula areas. Legal gears in these fisheries are pot, mechanical jig, and hand troll gear. The Prince William Sound Pacific cod fishery allows pot, jig, and longline gear to be used. The State of Alaska also has management authority over Pacific cod in the state waters of Southeast Alaska.

In 1998 management jurisdiction for black and blue rockfish was transferred to the State of Alaska. In the pelagic shelf rockfish assemblage, management emphasis is placed on black rockfish as it is the only species in this group with directed fisheries in state waters.

Fisheries targeting black rockfish occur in Kodiak, Chignik and the South Alaska Peninsula in the Westward region, in Lower Cook Inlet in Central Region, and in Southeast Alaska. Pelagic shelf or black rockfish may be harvested with hand troll or mechanical jig in all regions, and in Southeast Alaska dingle bar is an additional legal gear type.

1.8.2.2 Impacts of the Alternatives

In the charter fishery, anglers may switch to target species other than halibut if halibut fishing is poor. The charter operator wants to satisfy the client and may do so by landing any species (S. Meyer, ADF&G Sportfish Division, personal communication). Thus, a regulatory constraint on halibut may influence the amount of other groundfish species caught in the charter fishery. The harvest of State-managed groundfish observed in the ADF&G port sampling program is usually inversely related to halibut harvest, but it is unknown if anglers switch target species when halibut fishing is poor or expend more effort to target other species. No in-depth analysis of these data has been conducted, and it may be impossible given the lack of information. It is likely that harvest of State-managed species would increase if the halibut stock declines in abundance or if the charter halibut allocation is less than demand.

A regulatory measure to restrict halibut harvest to either the GHM (the No Action Alternative) or under any of the proposed allocation options under Alternatives 2 through 5 would have the same effect as a decline in abundance. For certain anglers, halibut fishing may become less desirable the more difficult it is to optimize the poundage of fish harvested or to harvest two fish. The decision process for anglers is complex, and data are not available to predict removals from the groundfish fishery that may occur under the proposed alternatives.

The primary groundfish bycatch taken in the halibut charter fishery includes limited amounts of Pacific cod and rockfishes (primarily yelloweye and black), with lesser amounts of spiny dogfish, salmon shark, and lingcod. These species may be recorded in ADF&G data as having been caught on a halibut targeted trip, but they may become the target species during the trip because the halibut bag limit has been reached or fishing is poor. Some halibut trips may catch rockfish incidentally. State regulations require rockfish to be retained up to the bag limit; however, incidentally caught rockfish beyond an individual's bag limit must be released. Assessment of these released rockfish and associated bycatch mortality is difficult. Identification of rockfish species that are similar in appearance is difficult, and calculation of a mortality rate is dependent on the depth at which a rockfish was caught, handling and release techniques, etc.

The 2007 SAFE (NMFS 2007) summarized an action taken by the State of Alaska Board of Fisheries (BOF) in February 2006 that allocated the demersal shelf rockfish complex (DSR) in the Southeast Outside management area between the sport fishery (unguided and charter) and the commercial fishery (directed DSR and directed halibut) in 2006. A daily bag limit of three non-pelagic rockfish, of which only one could be a yelloweye rockfish, with a possession limit of six fish of which only two may be a yelloweye rockfish, was established for both resident and nonresident unguided and charter sport anglers in Southeast Alaska. All non-pelagic rockfish caught had to be retained until the bag limit was reached. Non-resident unguided and charter sport anglers also had an annual limit of three yelloweye rockfish. Charter operators and crew members could not retain non-pelagic rockfish while clients were on board the vessel. The 2008 OFL for DSR is 650 mt, and the ABC and TAC are 410 mt. Under the BOF decision, 84 percent of the TAC (344 mt) was allocated to the commercial fishery and the remaining 16 percent (66 mt) was allocated to unguided and charter sport fishermen. The TAC

The 2010 SAFE report (NPFMC 2006b) indicated that only the Southern Southeast Outside (SSEO) waters management area was opened to a directed DSR fishery in 2010, as the TAC apportioned to other management areas was insufficient to conduct and adequately manage a directed fishery. In SSEO, a total of 30.3 mt was available to the directed commercial DSR fishery, 29.5 mt of which were harvested.

Commercial halibut fishermen took an incidental catch of 162 mt of DSR. Approximately 52 mt of DSR were harvested in the charter and unguided sport fishery, with 4 mt released. The unguided and guided sport fishery exceeded its allocation by about 9 mt, while the commercial DSR and halibut fisheries took significantly less than the commercial DSR allocation. Combined, the two commercial fisheries removed approximately 252 mt of DSR, which was 84 percent of the 300 mt combined TAC.

Unguided and guided sport anglers targeting halibut also catch pelagic shelf rockfish (PSR) including dusky, yellowtail, and black rockfish. Sport fishing for these species is managed under ADF&G fishing regulations. Commercial harvest amounts for this species group are under its respective OFL and ABC in 2011. The ABC for the assemblage in the western Yakutat region and Eastern Alaska/Southeast Outside district was 1,160 mt in 2010 and 1,091 mt in 2011. The commercial catch totaled 86 mt in 2010, which was below the TAC which is set equal to the ABC. The 2010 OFL was 6,142 mt for the GOA, with 2,865 mt of commercial catch for the entire GOA. Harvest in the unguided and guided sport fishery targeting halibut is not at a level high enough to cause PSR to exceed the OFL. An increase in sport harvest may constrain the commercial fishery; however, rockfish stocks would still be managed within their biological benchmarks. For the previously described reasons, the impact of the 2008 preferred alternative is likely to be insignificant for PSR stocks.

The impacts of the alternatives on rockfish removals are difficult to project, because behavioral changes under a new restrictive halibut harvest policy are unknown. Due to lack of data, it is unknown whether a shift in halibut removals between the commercial and charter sectors under the proposed alternative would result in a proportionate shift in rockfish or ling cod removals. Small increases in rockfish removals would increase sport harvest beyond its TAC; however, given the overall joint commercial and sport harvest, it is unlikely these removals would be of a magnitude to exceed the OFL or ABC. A future directed commercial fishery would be managed under the OFL. For this reason, the impacts on rockfish from the alternatives are not expected to be significant.

Lingcod is also a commercial and sport fishery target species. Harvest levels in recent years have remained constant under strict sport fishery slot limit regulations and seasons, and commercial quota limits (Table 1-25). A harvest increase in the sport sector resulting from the alternatives would likely be small given the existing regulatory constraints.

Table 1-25 Estimated rockfish and lingcod harvest (number of fish) by charter anglers by area and year.

Year	Area 2C		Area 3A	
	Number of charter harvested rockfish	Number of charter-harvested lingcod	Number of charter harvested rockfish	Number of charter-harvested lingcod
1996	14,591	10,588	17,640	5,137
1997	13,077	9,355	17,036	6,737
1998	15,516	11,690	16,884	5,070
1999	24,815	11,264	18,756	5,150
2000	26,292	11,805	25,690	7,609
2001	29,509	8,961	28,273	6,813
2002	25,346	5,749	30,946	5,830
2003	27,991	6,551	28,415	7,836
2004	45,908	9,549	41,400	9,576
2005	57,381	16,281	38,722	11,047
2006	51,847	12,237	40,306	13,542
2007	56,024	8,008	47,057	18,880
2008	76,008	6,394	52,727	17,525
2009	51,071	4,784	49,492	13,997
2010	61,857	3,947	64,008	16,791

Source: ADF&G, Statewide Harvest Survey data.

Harvest levels for lingcod in recent years have remained constant under strict sport fishery slot limit and season regulations, and commercial quota limits. A small increase in lingcod harvest would have an

insignificant impact on the stock, because of ADF&G regulations for the sport and commercial sectors. For these reasons, the impact of the alternatives on these species is expected to be insignificant.

The interaction of halibut catch and harvest of other groundfish species is poorly documented and not well understood. Any discussion of impacts from the proposed alternatives would be highly speculative. Other species taken incidentally in sport charter halibut fisheries include sculpin, arrowtooth flounder and several other flatfishes, spiny dogfish, sleeper shark, salmon shark, and greenling. No sport fish harvest estimates are available for these species for Area 2C. However, the commercial catch limit is set for these species, and none of the catches of these species has historically exceeded their respective OFLs. The impact of the alternatives on these species is expected to be insignificant.

1.8.2.2.1 Summary

Demersal shelf rockfish (DSR, e.g., yelloweye rockfish), pelagic shelf, and lingcod are species commonly harvested in the sport fishery. Commercial and sport catch limit limits are set for these species and none of the catches of these species exceeded their respective ABC or OFL in 2010. DSR and pelagic shelf rockfish harvest in 2010 was well under the OFL, ABC, and TAC for the commercial and sport fisheries combined.

Insignificant changes in GOA groundfish stocks or fisheries would be expected under any program for constraining charter halibut harvests in Area 2C and Area 3A. As groundfish abundances increase, particularly for Pacific cod and flatfish species, the relatively low GHGs do not impede attainment of OY for groundfish stocks.

1.8.3 Endangered or Threatened Species

The Endangered Species Act of 1973 as amended [16 U.S.C. 1531 et seq; ESA], provides for the conservation of endangered and threatened species of fish, wildlife, and plants. It is administered jointly by NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by the U.S. Fish and Wildlife Service (USFWS) for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through the U.S. Fish and Wildlife Service (USFWS), is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to the listing of a species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the “maximum extent prudent and determinable” [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, that were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA have not received critical habitat designations.

After reviewing the current status of the listed species, designated critical habitat, and the potential effects of the halibut fisheries, NMFS Sustainable Fisheries concludes that this fishery off Alaska (which uses gear unlikely to generate bycatch of finfish, seabirds or marine mammals) would not affect ESA-listed species or designated critical habitat, pursuant to section 7 of the Endangered Species Act. Therefore, the ESA does not require a consultation for this fishery. Halibut do not interact with any listed species and do not comprise a measurable portion of the diet of any listed species nor do any of the species compose a

measurable portion of their diet. No interactions between the charter halibut fisheries and any listed species have been reported.

Table 1-26 identifies the species listed as endangered and threatened under the ESA.

Table 1-26 ESA listed and candidate species that range into the BSAI and GOA groundfish management areas.

Common Name	Scientific Name	ESA Status
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Bowhead Whale	<i>Balaena mysticetus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Right Whale ¹	<i>Balaena glacialis</i>	Endangered
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Steller Sea Lion (Western Population)	<i>Eumetopias jubatus</i>	Endangered
Steller Sea Lion (Eastern Population)	<i>Eumetopias jubatus</i>	Threatened
Chinook Salmon (Lower Columbia R.)	<i>Oncorhynchus tshawytscha</i>	Threatened
Chinook Salmon (Upper Columbia R. Spring)	<i>Oncorhynchus tshawytscha</i>	Endangered
Chinook Salmon (Upper Willamette)	<i>Oncorhynchus tshawytscha</i>	Threatened
Chinook Salmon (Snake River spring/summer)	<i>Oncorhynchus tshawytscha</i>	Threatened
Chum Salmon (Hood Canal Summer run)	<i>Oncorhynchus keta</i>	Threatened
Coho Salmon (Lower Columbia R.)	<i>Oncorhynchus kisutch</i>	Threatened
Steelhead (Snake River Basin)	<i>Oncorhynchus mykiss</i>	Threatened
Steller's Eider ²	<i>Polysticta stelleri</i>	Threatened
Short-tailed Albatross ²	<i>Phoebastria albatrus</i>	Endangered
Spectacled Eider ²	<i>Somateria fishcheri</i>	Threatened
Kittlitz's Murrelet ²	<i>Brachyramphus brevirostris</i>	Candidate
Northern Sea Otter ²	<i>Enhydra lutris</i>	Threatened
Olive Ridley turtle	<i>Lepidochelys olivacea</i>	Threatened/Endangered
Loggerhead turtle	<i>Caretta caretta</i>	Threatened
Green turtle	<i>Chelonia mydas</i>	Threatened/Endangered
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered

¹ NMFS designated critical habitat for the northern right whale on July 6, 2006 (71 FR 38277).

² The Steller's eider, short-tailed albatross, spectacled eider, and Northern sea otter are species under the jurisdiction of the USFWS. For the bird species, critical habitat has been established for the Steller's eider (66 FR 8850, February 2, 2001) and for the spectacled eider (66 FR 9146, February 6, 2001). The Kittlitz's murrelet has been proposed as a candidate species by the USFWS (69 FR 24875, May 4, 2004). Critical habitat has been established for the northern sea otter (74 FR 51988, October 8, 2009).

1.8.3.1 Seabirds

Thirty-eight species of seabirds breed in Alaska. Breeding populations are estimated to contain 36 million individual birds in Alaska, and total population size (including subadults and nonbreeders) is estimated to be approximately 30% higher. Five additional species that breed elsewhere but occur in Alaskan waters during the summer months contribute another 30 million birds.

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, Whiskered 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

As noted in the PSEIS (NMFS 2004a), seabird life history includes low reproductive rates, low adult mortality rates, long life span, and delayed sexual maturity. These traits make seabird populations extremely sensitive to changes in adult survival and less sensitive to fluctuations in reproductive effort. The problem with attributing population changes to specific impacts is that, because seabirds are long-lived animals, it may take years or decades before relatively small changes in survival rates result in observable impacts on the breeding population.

More information on seabirds in Alaska's EEZ may be found in several NMFS, Council, and USFWS documents:

- The URL for the USFWS Migratory Bird Management program is at: <http://alaska.fws.gov/mbsp/mbm/index.htm>
- Section 3.7 of the PSEIS (NMFS 2004a) provides background on seabirds in the action area and their interactions with the fisheries. This may be accessed at http://www.alaskafisheries.noaa.gov/sustainablefisheries/seis/final062004/Chaps/chpt_3/chpt_3_7.pdf
- The annual Ecosystems Considerations chapter of the SAFE reports has a chapter on seabirds. Back issues of the Ecosystem SAFE reports may be accessed at <http://www.afsc.noaa.gov/REFM/REEM/Assess/Default.htm>.
- The Seabird Fishery Interaction Research webpage of the Alaska Fisheries Science Center: <http://www.afsc.noaa.gov/refm/reem/Seabirds/Default.htm>
- The NMFS Alaska Region's Seabird Incidental Take Reduction webpage: <http://www.alaskafisheries.noaa.gov/protectedresources/seabirds.html>
- The BSAI and GOA groundfish FMPs each contain an "Appendix I" dealing with marine mammal and seabird populations that interact with the fisheries. The FMPs may be accessed from the Council's home page at <http://www.alaskafisheries.noaa.gov/npfmc/default.htm>
- Washington Sea Grant has several publications on seabird takes, and technologies and practices for reducing them: <http://www.wsg.washington.edu/publications/online/index.html>
- The seabird component of the environment affected by the groundfish FMPs is described in detail in Section 3.7 of the PSEIS (NMFS 2004a).

- Seabirds and fishery impacts are also described in Chapter 9 of the Alaska Groundfish Harvest Specifications EIS (NMFS 2007a).

1.8.3.1.1 ESA-Listed Seabirds in the GOA

Several species of conservation concern occur in the GOA (Table 1-27). Short-tailed albatross is listed as endangered under the ESA, and Steller’s eider is listed as threatened. 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 albatross.

Table 1-27 ESA-listed and candidate seabird species that occur in the GOA.

Common Name	Scientific Name	ESA Status
Short-tailed Albatross	<i>Phoebastria albatrus</i>	Endangered
Steller’s Eider	<i>Polysticta stelleri</i>	Threatened
Kittlitz’s Murrelet	<i>Brachyramphus brevirostris</i>	Candidate
Black-footed Albatross	<i>Phoebastria nigripes</i>	FWS working on 12 month finding

Short-tailed Albatross

Short-tailed albatross (*Phoebastria albatrus*) is currently listed as endangered under the ESA. Short-tailed albatross populations were decimated by hunters and volcanic activity at nesting sites in the early 1900s, and the species was reported to be extinct in 1949. In recent years, the population has recovered at a 7% to 8% annual rate. The world population of short-tailed albatross in 2009 was estimated at 3,000 birds. The majority of nesting occurs on Torishima Island in Japan, where an active volcano threatens the colony. As part of a 5-year project, chicks have been translocated from Torishima Island to a new breeding colony on Mukojima in the Ogasawara Islands, without the volcanic threat. In February 2011, researchers noted the first return of a short-tailed albatross chick to its hand-reared home on Mukojima.

No critical habitat has been designated for the short-tailed albatross in the United States, since the population growth rate does not appear to be limited by marine habitat loss (NMFS 2004b). Short-tailed albatross feeding grounds are continental shelf breaks and areas of upwelling and high productivity. Short-tailed albatross are surface feeders, foraging on squid and forage fish.

Steller’s Eider

Steller’s eider (*Polysticta stelleri*) is listed as threatened under the ESA. While designated critical habitat for Steller’s eiders does overlap with fishing grounds, there has never been an observed take of this species off Alaska (USFWS 2003a, 2003b; NMFS 2008a), and no take estimates are produced by AFSC. Therefore, impacts to Steller’s eider are not analyzed in this document.

Black-footed Albatross

The black-footed albatross (*Phoebastria nigripes*) is a species of concern because some of the major colony population counts may be decreasing or are of unknown status. World population estimates range from 275,000 to 327,753 individuals (Brooke 2004), with a total breeding population of 58,000 pairs (USFWS 2006). In 2004, a petition was filed to list the black-footed albatross under the ESA. USFWS found that the petition was warranted and is currently working on a 12-month finding. Black-footed albatrosses occur in Alaska waters mainly in the northern GOA (Figure 1-32). Naughton et al. (2007) published a conservation plan for Laysan and black-footed albatrosses that lists fisheries takes as the most significant source of mortality for both species, but notes that fishery takes off Alaska are a small fraction of the worldwide taking of these species. There have not been reported takes of black-footed albatross with trawl gear in Alaska.

Kittlitz's Murrelet

Kittlitz's murrelet (*Brachyramphus brevirostris*) is a small diving seabird that forages in shallow waters for capelin, Pacific sandlance, zooplankton, and other invertebrates. It feeds near glaciers, icebergs, and outflows of glacial streams, sometimes nesting up to 45 miles inland on rugged mountains near glaciers. Most recent population estimates indicate that it has the smallest population of any seabird considered a regular breeder in Alaska (9,000 to 25,000 birds). This species appears to have undergone significant population declines in several of its core population centers. USFWS believes that glacial retreat and oceanic regime shifts are the factors that are most likely causing population-level declines in this species. Kittlitz's murrelet is currently a candidate species for listing under the ESA. No Kittlitz's murrelets were reported taken in the observed groundfish fisheries between 1993 and 2001 (NMFS 2004a).

1.8.3.1.2 Status of ESA Consultations on Seabirds

FWS 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 and 2003b). Both Biological Opinions concluded that the groundfish fisheries off Alaska, including the GOA pollock fishery, are unlikely to jeopardize populations of listed species or adversely modify or destroy critical habitat for listed species. The current population status, life history, population biology, and foraging ecology of these species, as well as a history of ESA Section 7 consultations and NMFS actions carried out as a result of those consultations are described in detail in Section 3.7 of the PSEIS (NMFS 2004a).

In 1997, NMFS initiated a Section 7 consultation with USFWS on the effects of the Pacific halibut fishery off Alaska on the short-tailed albatross. USFWS issued Biological Opinion in 1998 that concluded that the Pacific halibut fishery off Alaska was not likely to jeopardize the continued existence of the short-tailed albatross. USFWS issued an Incidental Take Statement of two short-tailed albatross in a 2-year period (e.g., 1998/1999, 2000/2001, 2002/2003), reflecting what the agency anticipated the incidental take could be from the fishery action. Under the authority of ESA, USFWS identified non-discretionary reasonable and prudent measures that NMFS must implement to minimize the impacts of any incidental take.

Two updated USFWS biological opinions were published in 2003:

- Section 7 Consultation Biological Opinion on the Effects of the Total Allowable Catch-Setting Process for the GOA and BSAI Groundfish Fisheries to the Endangered Short-tailed Albatross (*Phoebastria albatrus*) and Threatened Steller's Eider (*Polysticta stelleri*) (USFWS 2003b).
- Section 7 Consultation Programmatic Biological Opinion on the Effects of the Fishery Management Plans for the GOA and BSAI Groundfish Fisheries on the Endangered Short-tailed Albatross (*Phoebastria albatrus*) and Threatened Steller's Eider (*Polysticta stelleri*) (USFWS 2003a).

Although USFWS has determined that the short-tailed albatross is adversely affected by hook-and-line Pacific halibut and groundfish fisheries off Alaska, both USFWS opinions concurred with NMFS and concluded that the GOA and Bering Sea and Aleutian Islands Management Area fishery actions are not likely to jeopardize the continued existence of the short-tailed albatross or Steller's eider or result in adverse modification of Steller's eider critical habitat. USFWS also concluded that these fisheries are not likely to adversely affect the threatened spectacled eider. The Biological Opinion on the TAC-setting process updated incidental take limits to—

- four short-tailed albatross taken every 2 years in the hook-and-line groundfish fishery off Alaska, and
- two short-tailed albatross taken in the groundfish trawl fishery off Alaska while the biological opinion is in effect (approximately 5 years).

These incidental take limits are in addition to the previous take limit set in 1998 for the Pacific halibut hook-and-line fishery off Alaska of two short-tailed albatross in a 2-year period. The 2003 Biological Opinion on the TAC-setting process also included mandatory terms and conditions that NMFS must follow in order to be in compliance with the ESA. These include implementation of seabird deterrent measures, outreach and training of fishing crews on proper deterrence techniques, training observers in seabird identification, and retention of all seabird carcasses until observers can identify and record takes, continued analysis and publication of estimated incidental take in the fisheries, collection of information regarding the efficacy of seabird protection measures, cooperation in reporting sightings of short-tailed albatross, and continued research and reporting on the incidental take of short-tailed albatross in trawl gear.

USFWS also released a short-tailed albatross recovery plan in September 2008 (USFWS 2008). This recovery plan describes site-specific actions necessary to achieve conservation and survival of the species, downlisting and delisting criteria, and estimates of time and cost required to implement the recovery plan. Because the primary threat to the species recovery is the possibility of an eruption of Torishima Island, the most important recovery actions include monitoring the population and managing habitat on Torishima Island, establishing two or more breeding colonies on non-volcanic islands, monitoring the Senkaku population, and conducting telemetry and other research and outreach. Translocation of chicks to new colonies has begun. USFWS estimates that short-tailed albatross may be delisted in the year 2030, if new colony establishment is successful.

1.8.3.1.3 Seabird Distribution in the Gulf of Alaska

Figure 1-32 depicts the observed distributions of several seabird species from the North Pacific Pelagic Seabird Database (NPPSD 2004). The NPPSD represents a consolidation of pelagic seabird data collected from the Central and North Pacific Ocean, the Bering Sea, the Chukchi Sea, and the Beaufort Sea. The NPPSD was created to synthesize numerous disparate datasets including at-sea boat based surveys, stations, land-based observations, and fixed-wing and helicopter aerial surveys collected since 1972 (Drew and Piatt 2004). There are very few observations of short-tailed albatross in the NPPSD, so Figure 1-33 is included to show observed locations on short-tailed albatross on surveys from 2002 through 2004 (Melvin et al. 2006). Melvin et al. (2006) provides the most current and comprehensive data on seabird distribution patterns off Alaska. Seabird data were collected during International Pacific Halibut Commission halibut surveys, NMFS sablefish surveys, ADF&G Southeast Inside sablefish surveys, and ADF&G Prince William Sound sablefish surveys.

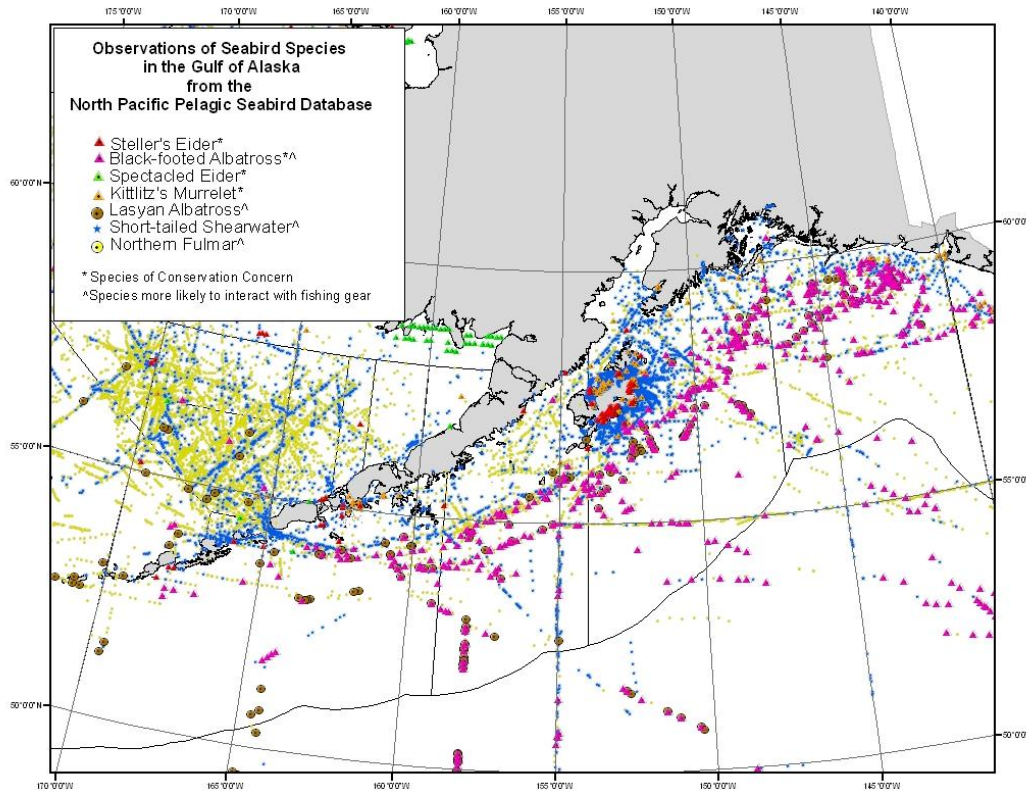


Figure 1-32 Observations of seabird species with conservation status and/or likely to interact with fishing gear in the Gulf of Alaska (NPPSD 2004).

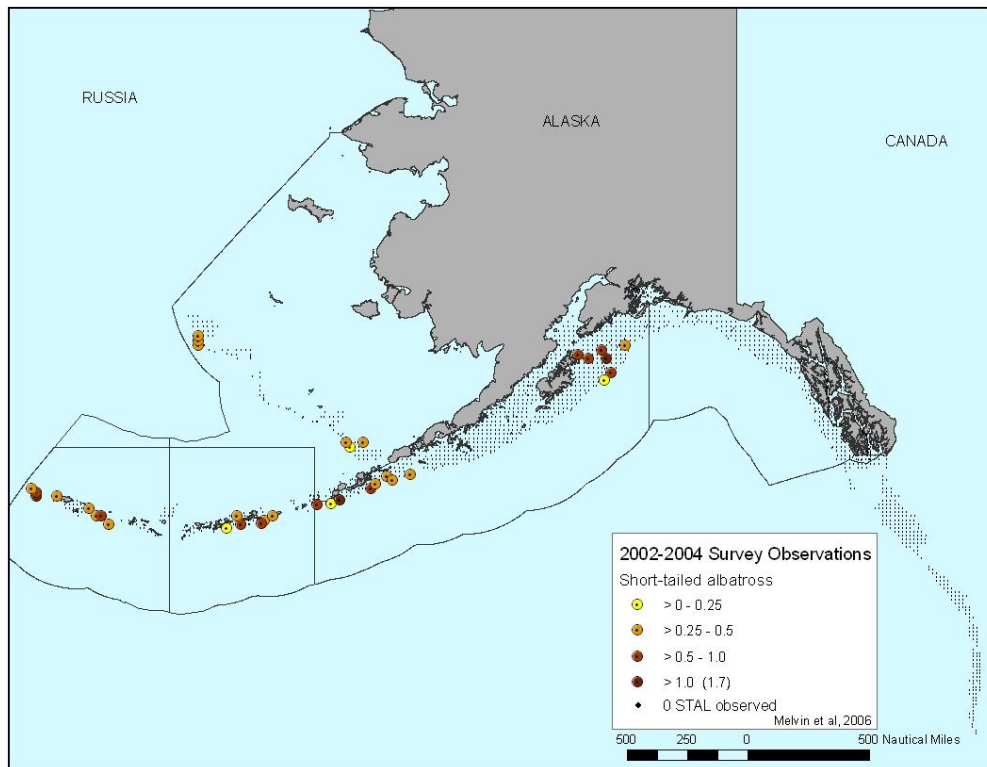


Figure 1-33 Observations of short-tailed albatrosses (Melvin et al. 2006).

Satellite Tracking of Short-tailed Albatross

USFWS and Oregon State University placed 52 satellite tags on Laysan, black-footed, and short-tailed albatrosses in the Central Aleutian Islands to study movement patterns of the birds in relation to commercial fishing activity and other environmental variables. From 2002 to 2006, 21 individual short-tailed albatrosses (representing about 1% of the entire population) were tagged, including adults, sub-adults, and hatch-year birds. During the non-breeding season, short-tailed albatross ranged along the Pacific Rim from southern Japan through Alaska and Russia to northern California, primarily along continental shelf margins (Suryan et al. 2006).

Eleven of the 14 birds had sufficient data to analyze movements within Alaska. Within Alaska, albatrosses spent varying amounts of time among NMFS reporting areas, with six of the areas (521, 524, 541, 542, 543, 610) being the most frequently used (Suryan et al. 2006). Non-breeding albatross concentrate foraging in oceanic areas characterized by gradients in topography and water column productivity. The primary hot spots for short-tailed albatrosses in the Northwest Pacific Ocean and Bering Sea occur where a variety of underlying physical processes enhance biological productivity or prey aggregations. The Aleutian Islands, in particular, were a primary foraging destination for short-tailed albatrosses.

1.8.3.1.4 Short-tailed Albatross Takes in Alaska Fisheries

Table 1-28 lists the short-tailed albatrosses reported taken in Alaska fisheries since 1983. With the exception of one take in the Western GOA, all takes occurred along the shelf break in the Bering Sea. The Western GOA take was in the hook-and-line halibut fishery. No takes were reported from 1999 through 2009. No takes with trawl gear have been reported.

Table 1-28 Reported takes of short-tailed albatross in Alaska fisheries.

Date of take	Location	Fishery	Age when taken
July 1983	BS	brown crab	juvenile (4 mos)
1 Oct 87	GOA	halibut	juvenile (6 mos)
28 Aug 95*	EAI	hook-and-line	sub-adult (16 mos)
8 Oct 95	BS	hook-and-line	sub-adult
27 Sept 96	BS	hook-and-line	sub-adult (5 yrs)
21 Sept 98	BS	Pacific cod hook-and-line	adult (8 yrs)
28 Sept 98	BS	Pacific cod hook-and-line	sub-adult
27 Aug 2010	BS	Pacific cod hook-and-line	Sub-adult (7 yrs 10 mos)
14 Sept 2010	BS	Pacific cod hook-and-line	Sub-adult (3 yrs 10 mos)

Source: AFSC.

While the incidental take statement take limits for short-tailed albatross have never been met or exceeded, two short-tailed albatrosses were taken in the BSAI hook-and-line Pacific cod fishery in 2010 (Table 1-28 and Figure 1-34). The first bird was taken on August 27, 2010, at 56 37' N and 172 57' W in NMFS reporting area 523. The second bird was also taken in the BSAI, on September 14, 2010, at 59 20' N and 176 33' W in NMFS reporting area 521. The last short-tailed albatross take, previous to these two, occurred in 1998. NMFS is working closely with industry and the observer program to understand the specific circumstances of these incidents, and to help prevent future takes.

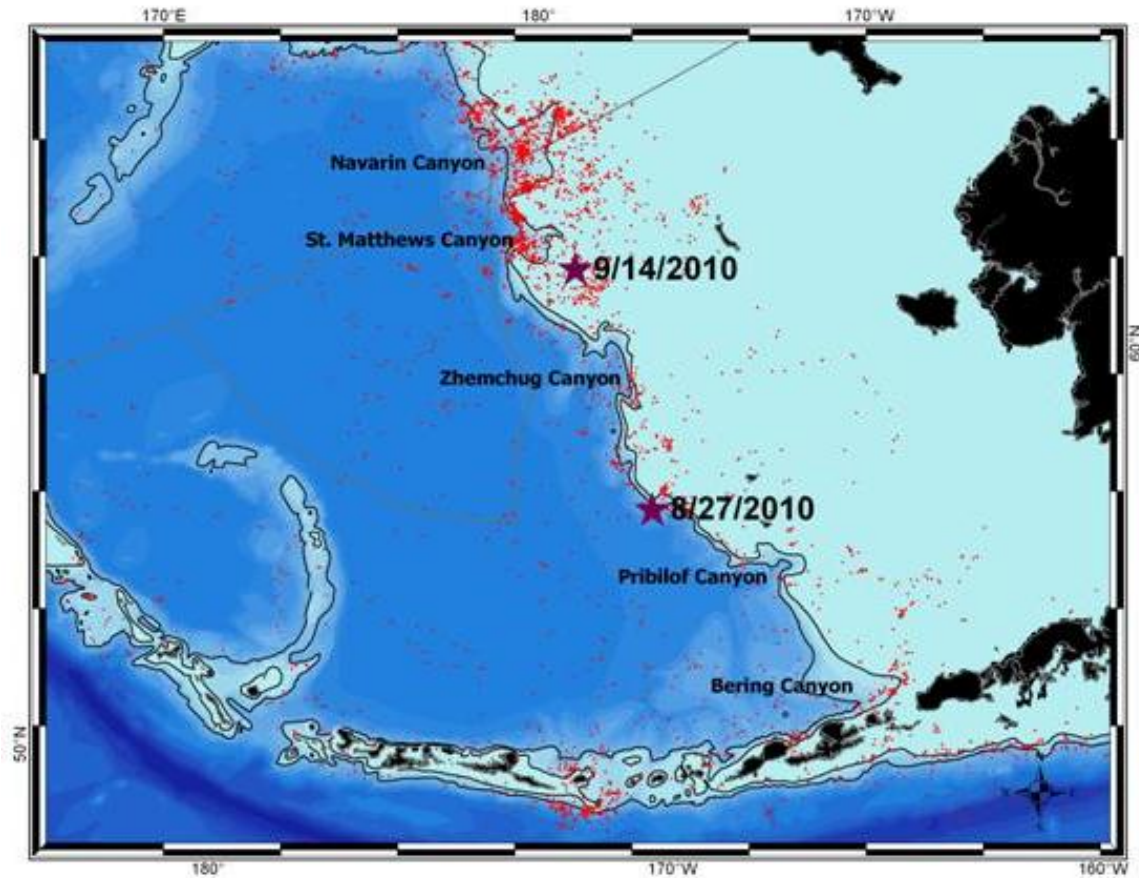


Figure 1-34 Map of two recent short-tailed albatross takes in Alaska hook-and-line fisheries (purple stars). Red dots indicate satellite tagging data from birds tagged between 2001 and 2010.

Credits: Yamashina Institute for Ornithology, Oregon State University, USFWS, and Ministry of Environment Japan.

1.8.3.1.5 Impacts of the Alternatives

The PSEIS identifies how the GOA groundfish fisheries activities may directly or indirectly affect seabird populations (NMFS 2004a). Direct effects may include incidental take in fishing gear and vessel strikes. Indirect effects may include reductions in prey (forage fish) abundance and availability, disturbance to benthic habitat, discharge of processing waste and offal, contamination by oil spills, presence of nest predators in islands, and disposal of plastics, which may be ingested by seabirds.

Table 1-29 explains the criteria used in this analysis to evaluate the significance of the effects of fisheries on seabird populations in the GOA. These criteria are used in the analysis of alternatives and options that follows, and are from the 2006–2007 groundfish harvest specifications EA/FRFA (NMFS 2006b). These criteria are applicable to this action because this analysis and the harvest specifications analysis both analyze the effects of groundfish fisheries on seabirds, and are the most recent criteria available. The first criterion in the table was further refined for this analysis from NMFS (2006b) to clearly provide a criterion for “insignificant impact” and to be consistent with other analyses of environmental components in this EA/RIR.

Table 1-29 Criteria used to determine significance of impacts on seabirds.

	Incidental take	Prey availability	Benthic habitat
Insignificant	No substantive change in takes of seabirds during the operation of fishing gear.	No substantive change in forage available to seabird populations.	No substantive change in gear impact on benthic habitat used by seabirds for foraging.
Adverse impact	Non-zero take of seabirds by fishing gear.	Reduction in forage fish populations, or the availability of forage fish, to seabird populations.	Gear contact with benthic habitat used by benthic feeding seabirds reduces amount or availability of prey.
Beneficial impact	No beneficial impact can be identified.	Availability of offal from fishing operations or plants may provide additional, readily accessible, sources of food.	No beneficial impact can be identified.
Significantly adverse impact	Trawl and hook-and-line take levels increase substantially from the baseline level, or level of take is likely to have population level impact on species.	Food availability decreased substantially from baseline such that seabird population level survival or reproduction success is likely to decrease.	Impact to benthic habitat decreases seabird prey base substantially from baseline such that seabird population level survival or reproductive success is likely to decrease. (ESA-listed eider impacts may be evaluated at the population level).
Significantly beneficial impact	No threshold can be identified.	Food availability increased substantially from baseline such that seabird population level survival or reproduction success is likely to increase.	No threshold can be identified.
Unknown impacts	Insufficient information available on take rates or population levels.	Insufficient information available on abundance of key prey species or the scope of fishery impacts on prey.	Insufficient information available on the scope or mechanism of benthic habitat impacts on food web.

Table 1-30 Seabirds in the Gulf of Alaska: foraging habitats and common prey species (USFWS 2006; Dragoo et al. 2010).

Species	Foraging habitats	Prey
Short-tailed albatross	Surface seize and scavenge	Squid, shrimp, fish, fish eggs
Black-footed albatross	Surface dip, scavenge	Fish eggs, fish, squid, crustaceans, fish waste
Laysan albatross	Surface dip	Fish, squid, fish eggs and waste
Spectacled eider	Diving	Mollusks and crustaceans
Steller's eider	Diving	Mollusks and crustaceans
Black-legged kittiwake	Dip, surface seize, plunge dive	Fish, marine invertebrates
Murrelet (Kittlitz's and marbled)	Surface dives	Fish, invertebrates, macroplankton
Shearwater spp.	Surface dives	Crustaceans, fish, squid
Northern fulmar	Surface fish feeder	Fish, squid, crustaceans
Murres spp.	Diving fish-feeders offshore	Fish, crustaceans, invertebrates
Cormorants spp.	Diving fish-feeders nearshore	Bottom fish, crab, shrimp
Gull spp.	Surface fish feeder	Fish, marine invertebrates, birds
Auklet spp.	Surface dives	Crustaceans, fish, jellyfish
Tern spp.	Plunge, dive	Fish, invertebrates, insects
Petrel spp.	Hover, surface dip	Zooplankton, crustaceans, fish
Jaeger spp.	Hover and pounce	Birds, eggs, fish
Puffin spp.	Surface dives	Fish, squid, other invertebrates

Because halibut fisheries are federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings³¹ that may occur are subject to ESA section 7 consultation. NOAA Fisheries Service initiates the consultation and the resulting biological opinions are issued to NOAA Fisheries Service. The Council may be invited to participate in the compilation, review, and analysis of data used in the consultations. The determination of whether the action “is likely to jeopardize the continued existence of” endangered or threatened species or to result in the destruction or modification of critical habitat is the responsibility of the appropriate agency (NMFS or USFWS). If the action is determined to result in jeopardy, the opinion includes reasonable and prudent measures that are necessary to alter the action so that jeopardy is avoided. If an incidental take of a listed species is expected to occur under normal promulgation of the action, an incidental take statement is appended to the biological opinion.

In addition to those species listed under the ESA, other seabirds occur in Alaskan waters that may interact with halibut fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murre, auklets, and puffins. These groups and others represent 38 species of seabirds that breed in Alaska. Eight species of Alaska seabirds breed only in Alaska and in Siberia. Populations of five other species are concentrated in Alaska but range throughout the North Pacific region. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not breed in Alaska but migrate to Alaska during summer, and for other species that breed in Canada or Eurasia and overwinter in Alaska. Additional discussion about seabird life history, predator-prey relationships, and interactions with commercial fisheries can be found in the 2004 FPSEIS. Since charter halibut gear are typically rod-and-reel with a maximum of two hooks, interactions with seabirds are unlikely. There are no known reported takes of seabirds in charter fisheries off Alaska, based on best available information.

None of the alternatives under consideration would affect the prosecution of the halibut fisheries in a way not previously considered in consultations. The Alternatives 2 – 5 would limit charter halibut removals and any associated bycatch, although seabirds are not a known incidental harvest in this fishery. A likely result of the proposed alternatives is that commercial halibut harvests may increase if charter halibut removals are reduced. The commercial halibut fishery is subject to strict seabird avoidance requirements.³² None of the alternatives would affect takes of listed species and therefore, none of the alternatives is expected to have a significant impact on endangered or threatened species. Any redirection of sport effort on DSR as a result of reduced allocation of halibut to the charter sector would not have an effect on marine mammals, as sport fishing gear for DSR also has no reported takes of seabirds.

Short-tailed albatross. In 1997, NOAA Fisheries Service initiated a section 7 consultation with USFWS on the effects of the halibut fishery off Alaska on the short-tailed albatross. USFWS issued a Biological Opinion in 1998 that concluded that the halibut fishery off Alaska was not likely to jeopardize the continued existence of the short-tailed albatross (USFWS 1998). USFWS also issued an Incidental Take Statement of two short-tailed albatross in two years (1998 and 1999), reflecting what the agency anticipated the incidental take could be from the fishery action. Although commercial halibut harvests may increase under proposed alternatives, this harvest is unlikely to increase to a level beyond that already analyzed. No other seabirds interact with the halibut fisheries. Under the authority of ESA, USFWS identified non-discretionary reasonable and prudent measures that NOAA Fisheries Service must implement to minimize the impacts of any incidental take.

1.8.3.2 Marine Mammals

The charter halibut fishery in the EEZ of Alaska is classified under the Marine Mammal Protection Act as a Category III fishery, that is, one that interacts only with non-strategic stocks and whose level of take has insignificant impact on the stocks. No takes of marine mammals by the charter halibut fishery off Alaska

³¹ The term “take” under the ESA means “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct” (16 U.S.C. § 1538(a)(1)(B)).

³² <http://www.alaskafisheries.noaa.gov/protectedresources/seabirds/guide.htm>

have been reported; therefore, none of the alternatives is expected to have a significant impact on marine mammals.

A number of concerns may be related to marine mammals and potential impacts of commercial fishing, although none are identified in this analysis for the proposed action. For individual species, these concerns include—

- listing as endangered or threatened under the Endangered Species Act (ESA);
- protection under the Marine Mammal Protection Act (MMPA);
- announcement as candidate or being considered as candidates for ESA listings;
- declining populations in a manner of concern to state or federal agencies;
- experiencing large bycatch or other mortality related to fishing activities; or
- being vulnerable to direct or indirect adverse effects from some fishing activities.

Marine mammals have been given various levels of protection under the GOA Groundfish FMP and are the subjects of continuing research and monitoring to further define the nature and extent of fishery impacts on these species. The Alaska groundfish harvest specifications EIS (NMFS 2007a) provides the information regarding fisheries interactions with marine mammals. The most recent status information is available in the 2010 Marine Mammal Stock Assessment Reports (SARS) (Allen and Angliss 2011).

Marine mammals, including those currently listed as endangered or threatened under the ESA, that may be present in the action area are listed in Table 1-31. All of these species are managed by NMFS, with the exception of the northern sea otter, which is managed by U.S. Fish and Wildlife Service. ESA Section 7 consultations with respect to the actions of the federal groundfish fisheries have been completed for all of the ESA-listed species, either individually or in groups. Of the species listed under the ESA and present in the action area, several species may be adversely affected by commercial groundfish fishing. These include Steller sea lions, humpback whales, fin whales, and sperm whales (NMFS 2006a and NMFS 2010a). In 2000, a Biological Opinion concluded that the FMPs are likely to jeopardize the continued existence of the Western distinct population segment (DPS) of Steller sea lions and adversely modify its designated critical habitat (NMFS 2000). In 2001, a Biological Opinion was released that provided protection measures that did not jeopardize the continued existence of the Steller sea lion or adversely modify its designated critical habitat; that opinion was supplemented in 2003.

Table 1-31 Marine mammals likely to occur in the Gulf of Alaska

	Species	Stocks
NMFS Managed Species		
Pinnipedia	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	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		
Mustelidae	Northern sea otter* ³	Southeast Alaska, Southcentral Alaska, Southwest Alaska
Source: Allen and Angliss 2011.		
*ESA-listed species; **Listed as depleted under the MMPA.		
¹ Steller sea lions are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.		
² NMFS designated critical habitat for the northern right whale on July 6, 2006 (71 FR 38277).		
³ Northern sea otters are under the jurisdiction of the USFWS		

1.8.3.2.1 Marine Mammals Status

The GOA supports one of the richest assemblages of marine mammals in the world. Twenty-two species are present from the orders Pinnipedia (seals and sea lions), Carnivora (sea otters), and Cetacea (whales, dolphins, and porpoises). Some marine mammal species are resident throughout the year, while others migrate into or out of Alaska fisheries management areas. Marine mammals occur in diverse habitats, including deep oceanic waters, the continental slope, and the continental shelf (Lowry et al. 1982).

The PSEIS (NMFS 2004a) provides descriptions of the range, habitat, diet, abundance, and population status for marine mammals. The most recent marine mammal stock assessment reports for the strategic GOA marine mammal stocks (Steller sea lions, northern fur seals, harbor porpoise, North Pacific right whales, humpback whales, sperm whales, and fin whales) were updated in the 2010 SARs (Allen and Angliss 2011). Northern sea otters were assessed in 2008. The information from NMFS (2004a) and Allen and Angliss (2011) are incorporated by reference. The SARs provide population estimates, population trends, and estimates of the potential biological removal (PBR) levels for each stock.³³ The SARs also identify potential causes of mortality and whether the stock is considered a strategic stock under the MMPA.

The Alaska Groundfish Harvest Specifications EIS provides information on the effects of the groundfish fisheries on marine mammals (NMFS 2007a). Direct and indirect interactions between marine mammals and groundfish fishing vessels may occur due to overlap in the size and species of groundfish harvested in

³³ <http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2010.pdf>

the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities. This discussion focuses on those marine mammals that may interact with or be affected by the GOA pollock fishery. These species are listed in Table 1-32 and Table 1-33. Note that Table 1-33 includes Southern Resident killer whales. This stock does not occur in the GOA, but this analysis considers the potential effects of Chinook salmon PSC in the GOA pollock fishery on prey availability for this population of killer whales. The GOA pollock fishery takes Chinook salmon from Pacific Northwest stocks, which are important prey for the Southern Resident killer whales. Additional background information is provided here on the status of ESA-listed species.

Steller Sea Lion

The Steller sea lion inhabits many of the shoreline areas of the GOA, using these habitats as seasonal rookeries and year-round haulouts. The Steller sea lion has been listed as threatened under the ESA since 1990. In 1997, the population was split into two stocks or DPS based on genetic and demographic dissimilarities, the Western and eastern stocks. Because of a pattern of continued decline in the Western DPS, was listed as endangered on May 5, 1997 (62 FR 30772), while the eastern DPS remains listed as threatened. NMFS is currently considering delisting the EDPS (75 FR 77602, December 13, 2010). The western DPS inhabits an area of Alaska approximately from Prince William Sound westward to the end of the Aleutian Island chain and into Russian waters (west of 144° W longitude).

Throughout the 1990s, particularly after critical habitat was designated, various closures of areas around rookeries, haulouts, and some offshore foraging areas were designated. These closures affect commercial harvests of pollock, Pacific cod, and Atka mackerel, which are important components of the western DPS of Steller sea lion diet. In 2001, a Biological Opinion was released that provided protection measures that would not jeopardize the continued existence of the Steller sea lion or adversely modify its designated critical habitat; that opinion was supplemented in 2003, and after court challenge, these protection measures remain in effect today (NMFS 2001, Appendix A). A detailed analysis of the effects of these protection measures is provided in the Steller Sea Lion Protection Measures Final Supplemental EIS (NMFS 2001).

In the GOA, extensive closures are in place for Steller sea lions including no transit zones and closures of critical habitat around rookeries and haulouts. Pollock is an important prey species for Steller sea lions (NMFS 2010b). The harvest of pollock in the GOA is temporally dispersed into 4 seasons (§ 679.23). Based on the most recent completed biological opinion, these harvest restrictions on the pollock fishery decrease the likelihood of disturbance, incidental take, and competition for prey to ensure the groundfish fisheries do not jeopardize the continued existence or adversely modify the designated critical habitat of Steller sea lions (NMFS 2000, NMFS 2001, and NMFS 2010b).

In 2006, NMFS reinitiated a FMP-level Section 7 consultation on the effects of the groundfish fisheries on Steller sea lions, humpback whales, and sperm whales to consider new information on these species and their interactions with the fisheries (NMFS 2006a). A draft Biological Opinion (BiOp) was released in July 2010 (NMFS 2010b). The draft opinion found that the effects of the groundfish fisheries may be likely to jeopardize the continued existence and adversely modify designated critical habitat (JAM) for Steller sea lions. The draft BiOp also found that the groundfish fisheries were not likely to jeopardize the continued existence of humpback or sperm whales. Because the draft BiOp found that the groundfish fisheries may cause JAM for Steller sea lions, a reasonable and prudent alternative (RPA) was included. The final BiOp was released in November 2010, and NMFS implemented the Steller sea lion protection measures in the RPA on January 1, 2011 (NMFS 2010b) by interim final rule (75 FR 77535, December 13, 2010, corrected 75 FR 81921, December 29, 2010). The RPA did not change the Steller sea lion protection measures in the GOA. Incidental take statements for Steller sea lions, humpback whales, fin whales, and sperm whales were completed on February 10, 2011 (Balsiger 2011).

Table 1-32 Status of Pinnipedia and Carnivora stocks potentially affected by the action.

Pinnipedia and Carnivora species and stock	Status under the ESA	Status under the MMPA	Population trends	Distribution in action area
Steller sea lion – Western (W) and Eastern (E) Distinct Population Segment (DPS)	Endangered (W) Threatened (E)	Depleted & a strategic stock	For the WDPS, regional increases in counts in trend sites of some areas have been offset by decreased counts in other areas so that the overall population of the WDPS appears to have stabilized (NMFS 2010a). The EDPS is steadily increasing and is being considered for delisting.	WDPS inhabits Alaska waters from Prince William Sound westward to the end of the Aleutian Island chain and into Russian waters. EDPS inhabit waters east of Prince William Sound to Dixon Entrance. Occur throughout AK waters, terrestrial haulouts and rookeries on Pribilof Islands, Aleutian Islands, St. Lawrence Island, and off the mainland. Use marine areas for foraging. Critical habitat designated around major rookeries, haulouts, and foraging areas.
Northern fur seal Eastern Pacific	None	Depleted & a strategic stock	Recent pup counts show a continuing decline in the number of pups surviving in the Pribilof Islands. NMFS researchers found an approximately 9% decrease in the number of pups born between 2004 and 2006. The pup estimate decreased most sharply on St. Paul Island.	Fur seals occur throughout Alaska waters, but their main rookeries are located in the Bering Sea on Bogoslof Island and the Pribilof Islands. Approximately 55% of the worldwide abundance of fur seals is found on the Pribilof Islands (NMFS 2007b). Forages in the pelagic area of the Bering Sea during summer breeding season, but most leave the Bering Sea in the fall to spend winter and spring in the N. Pacific.
Harbor seal – Gulf of Alaska	None	None	A moderate to large population decline has occurred in the GOA stock.	GOA stock found primarily in the coastal waters and may cross over into the Bering Sea coastal waters between islands.
Ribbon seal Alaska	None*	None	Reliable data on population trends are unavailable.	Widely dispersed throughout the Bering Sea and Aleutian Islands in the summer and fall. Associated with ice in spring and winter and may be associated with ice in summer and fall. Occasional movement into the GOA (Boveng et al. 2008)
Northern sea otters – SW Alaska	Threatened*	Depleted & a strategic stock	The overall population trend for the southwest Alaska stock is believed to be declining, particularly in the Aleutian Islands.	Coastal waters from Central GOA to W Aleutians within the 40 m depth contour. Critical habitat designated in primarily nearshore waters with few locations into federal waters in the GOA.

Source: Allen and Angliss 2011; List of Fisheries for 2011 (75 FR 68468, November 8, 2010).

Northern fur seal pup data available from <http://www.alaskafisheries.noaa.gov/newsreleases/2007/fursealpups020207.htm>.

*NMFS determined that ribbon seals were not to be listed on September 23, 2008. The Center for Biological Diversity and Greenpeace filed suit against NMFS regarding this decision on September 3, 2009.

**Northern sea otter information from http://www.nmfs.noaa.gov/pr/pdfs/sars/seaotter2008_ak_sw.pdf and 74 FR 51988, October 8, 2009

A detailed discussion of Steller sea lion population trends in the GOA is included in the most recent Biological Opinion (NMFS 2010b) and is summarized here. Based on non-pup counts of Steller sea lions on trend sites throughout the range of the western DPS in the GOA and Aleutian Islands, the overall population trend for the western DPS of Steller sea lions is stable and may be increasing, but the trend is not statistically significant. The number of non-pups counted at trend sites increased by 12% between 2000 and 2008. However, counts increased by only 1% between 2004 and 2008 (DeMaster 2009). Population trends differ across the range of the western DPS. Non-pup counts have declined in the Aleutian Islands, with the decline being most severe in the west and becoming less of a decline towards the east (7% decline in Area 543, 1% to 4% decline in Areas 542 and 541; NMFS 2010b). Pup and nonpup counts in the remainder of the western DPS range are either stable or increasing, ranging from 0% to 5% increases in population growth from 2000 to 2008 (NMFS 2010b).

Table 1-33 Status of Cetacea stocks potentially affected by the action.

Cetacea species and stock	Status under the ESA	Status under the MMPA	Population trends	Distribution in action area
Killer whale – AT1 Transient, E N Pacific transient, W Coast transient, Alaska resident, Southern resident	Southern resident endangered; remaining stocks none	AT1 depleted and a strategic stock, Southern Resident depleted. The rest of the stocks: None	Southern residents have declined by more than half since 1960s and 1970s. Unknown abundance for the Alaska resident; and Eastern North Pacific GOA, Aleutian Islands, and Bering Sea transient stocks. The minimum abundance estimate for the Eastern North Pacific Alaska Resident stock is likely underestimated because researchers continue to encounter new whales in the Alaskan waters.	Southern resident do not occur in GOA. Transient-type killer whales from the GOA, Aleutian Islands, and Bering Sea are considered to be part of a single population.
Dall's porpoise Alaska	None	None	Reliable data on population trends are unavailable.	Found in the offshore waters from coastal Western Alaska throughout the GOA.
Pacific white-sided dolphin	None	None	Reliable data on population trends are unavailable.	Found throughout the GOA.
Harbor porpoise GOA	None	Strategic	Reliable data on population trends are unavailable.	Primarily in coastal waters in the GOA, usually less than 100 m.
Humpback whale – Western and Central North Pacific	Endangered and under status review	Depleted & a strategic stock	Increasing. The Structure of Populations, Levels of Abundance, and Status of Humpbacks (SPLASH) abundance estimate for the North Pacific represents an annual increase of 4.9% since 1991–1993. SPLASH abundance estimates for Hawaii show annual increases of 5.5% to 6.0% since 1991–1993 (Calambokidis et al. 2008).	W. Pacific and C. North Pacific stocks occur in GOA waters and may mingle in the North Pacific feeding area.
North Pacific right whale Eastern North Pacific	Endangered	Depleted & a strategic stock	This stock is considered to represent only a small fraction of its precommercial whaling abundance and is arguably the most endangered stock of large whales in the world. A reliable estimate of trend in abundance is currently not available.	Before commercial whaling on right whales, concentrations were found in the GOA, eastern Aleutian Islands, south-Central Bering Sea, Sea of Okhotsk, and Sea of Japan (Braham and Rice 1984). During 1965–1999, following large illegal catches by the U.S.S.R., there were only 82 sightings of right whales in the entire eastern North Pacific, with the majority of these occurring in the Bering Sea and adjacent areas of the Aleutian Islands (Brownell et al. 2001). Critical habitat near Kodiak Island in the GOA
Fin whale Northeast Pacific	Endangered	Depleted & a strategic stock	Abundance may be increasing but surveys only provide abundance information for portions of the stock in the Central-eastern and southeastern Bering and coastal waters of the Aleutian Islands and the Alaska Peninsula. Much of the North Pacific range has not been surveyed.	Found in the GOA, Bering Sea and coastal waters of the Aleutian Islands.

Cetacea species and stock	Status under the ESA	Status under the MMPA	Population trends	Distribution in action area
Beluga whale-Cook Inlet	Endangered	Depleted & a strategic stock	2008 abundance estimate of 375 whales is unchanged from 2007. Trend from 1999 to 2008 is not significantly different from zero.	Occurrence only in Cook Inlet.
Minke whale Alaska	None	None	There are no data on trends in Minke whale abundance in Alaska waters.	Common in the Bering and Chukchi Seas and in the inshore waters of the GOA. Not common in the Aleutian Islands.
Sperm whale North Pacific	Endangered	Depleted & a strategic stock	Abundance and population trends in Alaska waters are unknown.	Inhabit waters 600 m or more depth, south of 62°N lat. Widely distributed in North Pacific. Found year-round in GOA.
Baird's, Cuvier's, and Stejneger's beaked whale	None	None	Reliable data on population trends are unavailable.	Occur throughout the GOA.

Sources: Allen and Angliss 2011; List of Fisheries for 2011 (75 FR 68468, November 8, 2010); <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/spermwhale.htm>. North Pacific right whale included based on NMFS (2006a) and Salvesson (2008). AT1 Killer Whales information based on 69 FR 31321, June 3, 2004. North Pacific Right Whale critical habitat information: 73 FR 19000, April 8, 2008. For beluga whales: 73 FR 62919, October 27, 2008.

Northern Sea Otter

The southwest Alaska DPS of northern sea otter is listed as threatened under the ESA (70 FR 46366, August 9, 2005). This population segment ranges from the Western Aleutian Islands to the Central GOA. NMFS completed an 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). The USFWS has determined that, based on available data, northern sea otter abundance is not likely to be significantly affected by commercial fishery interaction at present (Allen and Angliss 2010), and commercial fishing is not likely a factor in the population decline (70 FR 46366, August 9, 2005). Otters feed primarily in the rocky near shore areas on invertebrates, while groundfish fisheries are conducted further offshore on groundfish species (Funk 2003). Trawl closures where sea otters feed reduce potential interaction between trawl vessels and sea otters and ensure the clam habitat used by sea otters is not disturbed. Critical habitat for sea otters has been designated and is located primarily in nearshore waters (74 FR 51988, October 8, 2009), reducing the potential for effects by Federal fisheries. The USFWS is developing a recovery plan for the southwest Alaska DPS of northern sea otters.

Cook Inlet Beluga Whale

In 2008, the Cook Inlet DPS of beluga whales was listed as an endangered species under the ESA following a significant population decline. NMFS has identified more than one third of Cook Inlet as critical habitat. In 2010, NMFS estimated the Cook Inlet beluga whale population to be 340 individuals, up from the 2009 estimate of 321 whales, although the 10-year annual trend is still declining 1.1% per year. Historical abundance is estimated at approximately 1,300 whales (NMFS 2008). Cook Inlet belugas primarily occur in the northern portion of Cook Inlet. Beluga whales do not normally transit outside of Cook Inlet, and thus are unlikely to encounter vessels fishing in the federal groundfish fisheries. NMFS has determined that the only potential impact of the groundfish fisheries on Cook Inlet belugas is through competition for prey species (Brix 2010).

Southern Resident Killer Whale

The DPS of Southern Resident Killer Whales (SRKW) was listed as endangered under the ESA on November 18, 2005 (70 FR 69903). SRKWs range from the Queen Charlotte Islands to Central California. The population declined from historical abundance estimates of 140-200 whales in the 1960s and 1970s to fewer than 90 whales in recent years, and was listed as endangered under the ESA in 2005.

The stock is currently under a 5-year status review (75 FR 17377, April 6, 2010). Numerous factors have likely caused the decline, including a reduction in availability of preferred prey. SRKWs forage selectively for Chinook salmon which are relatively large compared with other salmon species, have high lipid content, and are available year-round (Ford and Ellis 2006). In inland waters, the diet of SRKWs consists of 82% Chinook salmon during May through September (Hanson et al. 2010). Stock of origin investigations have found that SRKWs forage on Chinook salmon from the Fraser River, Puget Sound runs, and other Washington and Oregon runs. There have been recent observational reports of SRKWs in poor body condition (Durban et al. 2009). Ford et al. (2005) found a correlation between the reduction in Chinook salmon abundance off Alaska, British Columbia, and Washington and decreased survival of Northern and SRKWs. In 2009, NMFS released a Biological Opinion that evaluates the effects of the ocean salmon fisheries off Washington, Oregon, and California on SRKWs, and found that the proposed action is not causing jeopardy or adverse modification (NMFS 2009). NMFS is currently conducting a scientific review of new evidence that strongly suggests that Chinook salmon abundance is very important to the survival and recovery of SRKWs, which may have implications for salmon fisheries and other activities that affect Chinook salmon abundance.

1.8.3.2.2 Effects on Marine Mammals

1.8.3.2.2.1 Significance Criteria for Marine Mammals

Table 1-34 contains the significance criteria for analyzing the effects of the proposed action on marine mammals. These criteria are from the 2006–2007 groundfish harvest specifications environmental assessment/final regulatory flexibility analysis (EA/FRFA) (NMFS 2006b). These criteria are applicable to this action because the harvest specifications analysis analyzed the effects of groundfish fisheries on marine mammals. That EA/FRFA provided the latest ideas on determining the significance of effects on marine mammals based on similar information that is available for this EA/RIR. Significantly beneficial impacts are not possible with the management of groundfish fisheries as no beneficial impacts to marine mammals are likely with groundfish harvest. Generally, changes to the fisheries do not benefit marine mammals in relation to incidental take, prey availability, and disturbances; changes increase or decrease potential adverse impacts. The only exception to this may be in instances when marine mammals target prey from fishing gear, as seen with killer whales and sperm whales removing fish from HAL gear. In this example, the prey availability is enhanced for these animals because they need less energy for foraging.

Table 1-34 Criteria for determining significance of impacts to marine mammals

	Incidental take and entanglement in marine debris	Prey availability	Disturbance
Adverse impact	Mammals are taken incidentally to fishing operations or become entangled in marine debris.	Fisheries reduce the availability of marine mammal prey.	Fishing operations disturb marine mammals.
Beneficial impact	There is no beneficial impact.	Generally, there are no beneficial impacts.	There is no beneficial impact.
Significantly adverse impact	Incidental take is more than PBR or is considered major in relation to estimated population when PBR is undefined.	Competition for key prey species likely to constrain foraging success of marine mammal species causing population decline.	Disturbance of mammal is such that population is likely to decrease.
Significantly beneficial impact	Not applicable	Not applicable	Not applicable
Unknown impact	Insufficient information available on take rates.	Insufficient information as to what constitutes a key area or important time of year.	Insufficient information as to what constitutes disturbance.

Because halibut fisheries are federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings³⁴ that may occur are subject to ESA section 7 consultation. NOAA Fisheries Service initiates the consultation and the resulting biological opinions are issued to NOAA Fisheries Service. The Council may be invited to participate in the compilation, review, and analysis of data used in the consultations. The determination of whether the action “is likely to jeopardize the continued existence of” endangered or threatened species or to result in the destruction or modification of critical habitat is the responsibility of the appropriate agency (NMFS or USFWS). If the action is determined to result in jeopardy, the opinion includes reasonable and prudent measures that are necessary to alter the action so that jeopardy is avoided. If an incidental take of a listed species is expected to occur under normal promulgation of the action, an incidental take statement is appended to the biological opinion.

In addition to those species listed under the ESA, other seabirds occur in Alaskan waters that may interact with halibut fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murre, auklets, and puffins. These groups and others represent 38 species of seabirds that breed in Alaska. Eight species of Alaska seabirds breed only in Alaska and in Siberia. Populations of five other species are concentrated in Alaska but range throughout the North Pacific region. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not breed in Alaska but migrate to Alaska during summer, and for other species that breed in Canada or Eurasia and overwinter in Alaska. Additional discussion about seabird life history, predator-prey relationships, and interactions with commercial fisheries can be found in the 2004 FPSEIS. Since charter halibut gear are typically rod-and-reel with a maximum of two hooks, interactions with seabirds are unlikely. There are no known reported takes of seabirds in charter fisheries off Alaska, based on best available information.

1.8.3.2.2 Impacts of the Alternatives

None of the alternatives under consideration would affect the prosecution of the halibut fisheries in a way not previously considered in consultations. The Alternatives 2 – 5 would limit charter halibut removals and any associated bycatch, although seabirds are not a known incidental harvest in this fishery. A likely result of the proposed alternatives is that commercial halibut harvests may increase if charter halibut removals are reduced. The commercial halibut fishery is subject to strict seabird avoidance requirements.³⁵ None of the alternatives would affect takes of listed species and therefore, none of the alternatives is expected to have a significant impact on endangered or threatened species.

As reported for seabirds, the Harvest Specifications EIS contains a detailed description of the incidental take effects of the groundfish fisheries on marine mammals (NMFS 2007a) and is incorporated by reference. Marine mammals can be taken in groundfish fisheries by entanglement in gear (e.g., trawl, longline, and pot) and, rarely, by ship strikes for some cetaceans. No records exist of charter or commercial setline halibut fishery takes of marine mammals. Any redirection of sport effort on DSR as a result of reduced allocation of halibut to the charter sector would not have an effect on marine mammals, as sport fishing gear for DSR also has no reported takes of marine mammals.

1.8.4 Ecosystem

Hollowed et al. (2011) recognized that ecosystems are complex adaptive systems, in which feedback among components (species or functional groups within an ecosystem) creates patterns of interconnected change. Currently, an ecosystem assessment chapter for the NPFMC Stock Assessment and Fishery Evaluation (SAFE) report is prepared and presented each year to the Council’s PTs and SSC (e.g., Zador and Gaichas 2010). This ecosystem assessment synthesizes the status and trends of multiple ecosystem

³⁴ The term “take” under the ESA means “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct” (16 U.S.C. § 1538(a)(1)(B)).

³⁵ <http://www.alaskafisheries.noaa.gov/protectedresources/seabirds/guide.htm>

indicators and is evolving towards providing an ‘ecosystem report card’ and set of potential reference points for management purposes.

Hollowed et al. (2011) reports that one line of research in terms of ecosystem function in the Alaska region has revolved around trophic ecology: preserving the dynamics of predator/prey interactions and the ‘food webs’ of marine ecosystems as a whole. Fisheries can shape food webs in multiple ways. Fisheries can induce changes in food web structure through the release of predatory control on prey species because they often deplete high trophic level predators. For example, although such ‘top-down’ control was traditionally deemed insignificant, there is now ample evidence for predator control on marine species (Baum and Worm 2009).

Research and modeling is currently focusing on improving estimates of multispecies interactions for use in strategic management decisions. The tools used for incorporating trophic ecology into management generally consist of two types of analyses: (i) bulk biomass/flow (‘food web’) models that aim to quantify the productivity of major components of the food web (‘feeding guilds’) and (ii) the use of focused individual predator/prey interaction models to identify changes in the productivity of individual stocks, for example, for estimating changes in natural mortality or changes in food supply that are either fisheries-induced or the result of natural variability and/or climate change.

The method used most frequently at present to perform the first type of analysis for marine systems is Ecopath (Polovina 1984) in part because of the availability of a user-friendly software package for the model, Ecopath with Ecosim (Christensen et al.2004). The food web-oriented software has been developed for recent ecosystem assessments (e.g., Zador and Gaichas 2010) which provides a more flexible statistical framework for fitting bulk biomass/stock production models (including an independent implementation of core Ecosim algorithms) to a wide range of available data, providing uncertainty estimates for biomass, diets, age/size structure and functional responses (the Ecosense/ELSEAS routines; Aydin et al. 2005, 2007). This tool is being used annually in the Ecosystem Assessment of the SAFE Report on the status and trends of major trophic guilds (e.g., Zador and Gaichas 2010) (Figure 1-35).

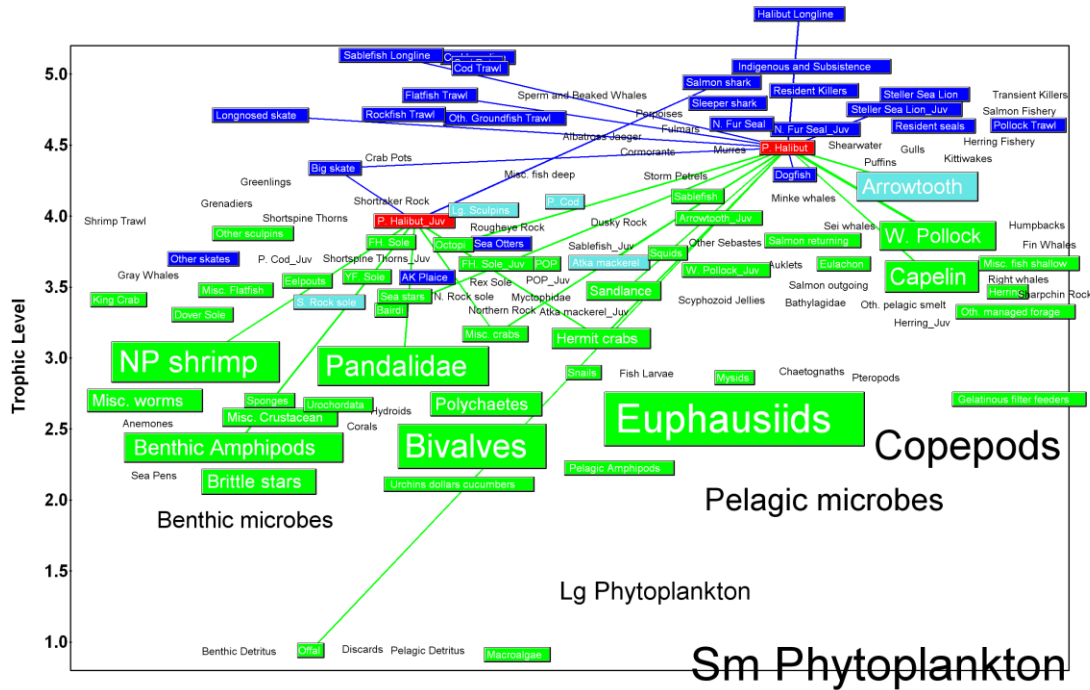


Figure 1-35 GOA food web (Source: Sarah Gaichas, NMFS AFSC)

As described in NMFS (2007) Dorn et al. (2005) noted the decline in assessed adult pollock biomass in the GOA since the 1990 may have resulted in the observed declines of biomass or body weight of groundfish predators specializing in feeding on large pollock; specifically Pacific halibut and Pacific cod. Food habits studies (e.g. Yang and Nelson 2000) indicate that consumption rates of large pollock by cod and halibut have dropped between 1990 and 2005. On the other hand, consumption of juvenile pollock by arrowtooth flounder has remained high, suggesting that top-down control of juvenile pollock by arrowtooth (e.g. as described in Bailey 2000) may be limiting the availability of pollock to halibut and cod. While multispecies analysis was not performed specific to listed EIS Alternatives, the sensitivity analysis described in Dorn et al. (2005) suggested that current fishing levels may be a secondary factor behind arrowtooth predation in limiting pollock availability to other predators.

An analysis of groundfish food habits data collected on the NMFS bottom-trawl survey from 1990-present (data available at <http://access.afsc.noaa.gov/REEM/WebDietData/DietTableIntro.php>) by Kerim Aydin (unpublished analysis) noted that between decades, the size preference of GOA Pacific halibut for pollock prey has remained similar, with smaller halibut consuming smaller pollock and larger halibut consuming larger pollock in both decades (Figure 1-36). However, the decreasing proportion of pollock in the diets of larger halibut (80+ cm fork length) between the 1990s and 2000s suggests that the larger halibut are encountering and consuming fewer pollock in the more recent time period (Figure 1-37). Research on the impacts and implications of this dietary shift on overall halibut growth rate, as well as on regional patterns (particularly east versus west across the GOA), is currently ongoing.

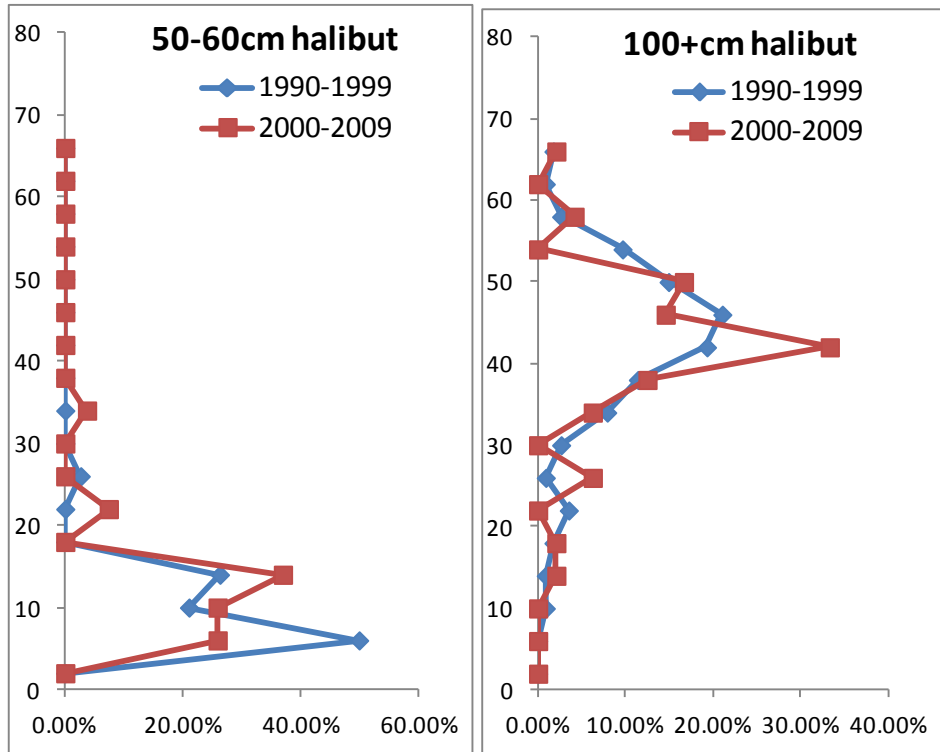


Figure 1-36 Length frequency of pollock (in cm, y-axis) in the diets of 50-60cm fork length (left) and 100+cm fork length (right) Gulf of Alaska Pacific halibut, shown by decade (Source: Kerim Aydin, AFSC).

As explained in Chapter 3, Section 3.3.1 of the Groundfish Harvest Specifications EA (NMFS 2007), NMFS and the Council continue to develop their ecosystem management measures for groundfish fisheries. The Council has created a committee to inform the Council of ecosystem developments and to assist in formulating positions with respect to ecosystem-based management. The Council took the lead in the establishing the interagency Alaska Marine Ecosystem Forum to improve inter-agency coordination and communication on marine ecosystem issues and continues to lead coordination of those meetings. The SSC holds regular ecosystem scientific meetings, often at the February Council meetings. In addition to these efforts to explore how to develop its ecosystem management efforts, the Council and NMFS continue to initiate efforts to take account of ecosystem impacts of fishing activity by designating EFH protection areas and habitat areas of particular concern. Ecosystem protection is supported by an extensive program of research into ecosystem components and the integrated functioning of ecosystems, carried out at the AFSC. Exempted fishing permits (EFPs) currently support investigation of new management approaches for the control of halibut removals through halibut excluder devices <http://alaskafisheries.noaa.gov/ram/efp.htm>.

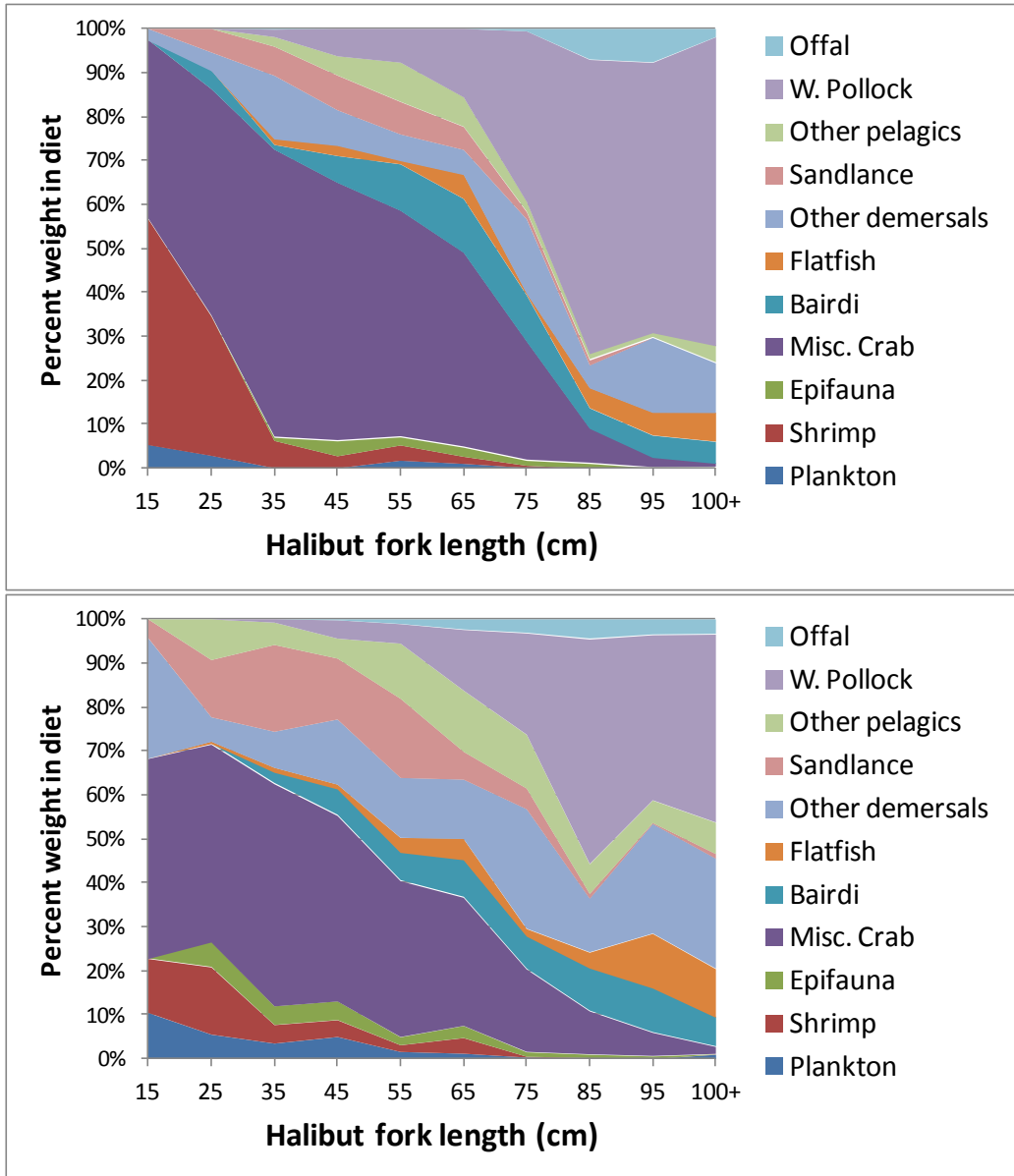


Figure 1-37 Percent weight in diet of major prey items of GOA Pacific halibut, by halibut fork length, for 1990-1999 (top figure) and 200-2009 (bottom figure) (Source: Kerim Aydin, AFSC).

1.8.4.1 Impacts of the Alternatives

The proposed alternatives for maintaining the GHM Program or replacing it with a CSP would not allow for removals of halibut biomass in an amount that would decrease food availability enough to impact the ecosystem. The proposed alternatives would shift the allocation between the charter sector and commercial sector, but not appreciably affect the amount of halibut removals.

Total halibut removals are considered by the IPHC when it sets conservative commercial catch limits for halibut. The IPHC has requested US and Canadian government staffs to develop discard mortality rates (DMRs) for their respective sport halibut fisheries to improve estimates of total removals. The Council has recommended improved observer coverage in commercial halibut fisheries and improved PSC estimates are expected as early as 2014. Alternatives 3-5 also include separate accountability of sport

halibut wastage, which could facilitate the development of sport halibut DMRs. There are no known effects on the ecosystem as a result of the proposed action.

1.8.5 Social and Economic Environment

A description of the charter halibut fishery and detailed discussions of the socioeconomic impacts of the alternatives may be found in the RIR in Section 3. Section 4 contains the IRFA, conducted to evaluate the impacts of the suite of potential alternatives being considered on small entities, in accordance with the provisions of the RFA.

1.8.5.1 Impacts of the Alternatives

Alternatives 2 through 5 would establish charter sector halibut allocations that vary with halibut stock abundance. These charter allocations could result in a reduction in the amount of halibut harvested in the charter fishery compared to Alternative 1 (status quo alternative), particularly at low to moderate levels of halibut abundance. Reduced charter harvests could result in revenue reductions for charter operators from reduced demand for charter vessel fishing trips. However, as discussed in RIR, the opportunity to take halibut is not the only factor affecting the demand for guided saltwater sport charters, and the demand for charter trips could decline even without additional charter harvest restrictions. Charter vessel anglers may be negatively impacted by charter harvest restrictions implemented under proposed alternatives because anglers may derive less satisfaction from charter vessel fishing trips on which they can retain a few number of halibut and/or halibut of a smaller size.

Charter harvest could increase relative to the status quo at higher levels of halibut abundance under proposed alternatives because the charter sector allocations vary with halibut abundance. An increased charter allocation is expected to economically benefit charter operators by increased revenue if angler demand for charter trips increases owing greater angling opportunities for retaining more and/or larger halibut on charter vessel fishing trips.

Under proposed alternatives the Council attempted to mitigate the impacts of the initial allocation on the charter sector at all levels of halibut abundance by allowing charter limited entry permit holders to acquire additional halibut for harvest by charter anglers from the commercial sector through financial compensation. Charter clients who fish with these permit holders would be allowed to fish under regulations for non-guided anglers.

1.9 Cumulative Effects

This section analyzes the cumulative effects of the actions considered in this EA. A cumulative effects analysis includes the effects of past, present, and reasonably foreseeable future action (RFFA). The past and present actions are described in several documents and are incorporated by reference. These include analyses for the original GHF action, several Area 2C and Area 3A GHF management measure analyses, the withdrawn charter IFQ Program, and Charter Limited Entry (Moratorium)³⁶. A charter halibut LEP was adopted by the Council in March 2007 and was implemented in 2010. Permits were issued in late 2010 and early 2011; charter halibut operators were required to have a permit on board the vessel for each charter vessel fishing trip on which anglers retain halibut beginning on February 1, 2011. A possible future action under consideration by the Council includes the development of a share-based allocation program to individual charter LEP holders and/or a common pool program to replace the proposed individual GAF Program. Stakeholders have not submitted a suite of alternatives for analysis yet.

Two actions currently in the NMFS rulemaking stage that indirectly affect halibut allocations include 1) restructuring of the Observer Program and 2) reduction of GOA halibut PSC limits in directed groundfish fisheries.

³⁶ <http://www.alaskafisheries.noaa.gov/npfmc/halibut/charter-management.html> and <http://www.alaskafisheries.noaa.gov/sustainablefisheries/halibut/sport.htm#g>

The proposed alternatives under consideration in this analysis are designed to limit halibut harvests in the charter fishery. Any direct effects or reasonably foreseeable indirect environmental effects from the action would be minor, as explained in the EA. The action under any of the alternatives would not significantly change the total amount of halibut harvested and would not entail changes in halibut stock levels. Any environmental effects caused by a change in halibut fishery management under the status quo alternative, Alternative 2, and Alternative 3 are so minor as to make it difficult to reasonably predict further indirect effects of those changes.

Cumulative effects are linked to incremental policy changes that individually may have small outcomes, but that in the aggregate and in combination with other factors can result in major resource trends. This action would not interact synergistically with other actions or with natural trends to significantly affect the halibut resource of the GOA. While future actions related to this action may result in impacts, these actions depend upon future decisions by the Council, which are also subject to NEPA, as appropriate. For all future actions pursuant to NEPA, the appropriate environmental analysis documents would be prepared to inform the decision makers of potential impacts to the human environment and to implement mitigation measures to avoid significant adverse impacts. Thus, no reasonably foreseeable future actions would have impacts that would cause significant cumulative effects when combined with the effects from this action.

This analysis provides a brief review of the RFFA that may affect environmental quality and result in cumulative effects. Future effects include future action the Council may consider that would affect sector allocations to the of the charter and commercial halibut fisheries. CEQ regulations require a consideration of actions, whether taken by a government or by private persons, which are reasonably foreseeable. This is interpreted as indicating actions that are more than merely possible or speculative. Actions have been considered reasonably foreseeable if some concrete step has been taken toward implementation, such as a Council recommendation or the publication of a proposed rule. Actions simply “under consideration” have not generally been included because they may change substantially or may not be adopted, and so cannot be reasonably described, predicted, or foreseen. Identification of actions likely to impact a resource component within this action’s area and time frame will allow the public and Council to make a reasoned choice among alternatives.

Table 1-35 is an inclusive list of potential actions that could indirectly affect halibut management. Ecosystem management, rationalization, and traditional management tools are likely to improve the protection and management of target and prohibited species, including halibut, and are not likely to result in significant effects when combined with the direct and indirect effects of the proposed action. Ongoing research efforts are likely to improve our understanding of the interactions between the harvest of groundfish and halibut. NMFS, NPRB, and the commercial fishing industry are conducting or participating in several research projects to improve understanding of the ecosystems, fisheries interactions, and gear modifications to reduce halibut PSC. Other government actions and private actions may increase pressure on the sustainability of target and prohibited fish stocks either through extraction or changes in the habitat or may decrease the market through aquaculture competition, but it is not clear that these would result in significant cumulative effects. Any increase in extraction of target species would likely be offset by federal management. These are further discussed in Sections 4.1.3 and 7.3 of the Harvest Specifications EIS (NMFS 2007).

Reasonably foreseeable future actions for marine mammals and seabirds include ecosystem-sensitive management; rationalization; traditional management tools; actions by other federal, state, and international agencies; and private actions, as described in Sections 8.4 and 9.3 of the Harvest Specifications EIS (NMFS 2007a). Ecosystem-sensitive management, rationalization, and traditional management tools are likely to increase protection to marine mammals and seabirds by considering these species more in management decisions, and by improving the management of the groundfish fisheries through the restructured observer program, catch accounting, seabird avoidance measures, and vessel monitoring systems (VMS). Research into marine mammal and seabird interactions with the groundfish

fisheries are likely to lead to an improved understanding leading to trawling methods that reduce adverse impacts of the fisheries. Changes in the status of species listed under the ESA, the addition of new listed species or critical habitat, and results of future Section 7 consultations may require modifications to groundfish fishing practices to reduce the impacts of these fisheries on listed species and critical habitat. Any change in protection measures for marine mammals likely would have insignificant effects because any changes would be unlikely to result in the PBR being exceeded and would not be likely to result in jeopardy of continued existence or adverse modification or destruction of designated critical habitat. Additionally, since future TACs will be set with existing or enhanced protection measures, it is reasonable to assume that the effects of the fishery on the harvest of prey species and disturbance will likely decrease in future years.

Table 1-35 Reasonable Foreseeable Future Actions.

Ecosystem-sensitive management	<ul style="list-style-type: none"> Increasing understanding of the interactions between ecosystem components, and ongoing efforts to bring these understandings to bear in stock assessments, Increasing protection of ESA-listed and other non-target species components of the ecosystem, Increasing integration of ecosystems considerations into fisheries decision-making
Fishery rationalization	<ul style="list-style-type: none"> Continuing rationalization of federal fisheries off Alaska, Fewer, more profitable, fishing operations, Better harvest and PSC control, Rationalization of groundfish in Alaskan waters, Expansion of community participation in rationalization programs
Traditional management tools	<ul style="list-style-type: none"> Authorization of groundfish fisheries in future years, Increasing enforcement responsibilities, Technical and program changes that will improve enforcement and management
Other federal, state, and international agencies	<ul style="list-style-type: none"> Future exploration and development of offshore mineral resources Reductions in United States Coast Guard fisheries enforcement activities Continuing oversight of seabirds and some marine mammal species by the USFWS Expansion and construction of boat harbors Expansion of state groundfish fisheries Other state actions Ongoing EPA monitoring of seafood processor effluent discharges
Private actions	<ul style="list-style-type: none"> Commercial fishing Increasing levels of economic activity in Alaska's waters and coastal zone Expansion of aquaculture

Any action by other entities that may impact marine mammals and seabirds will likely be offset by additional protective measures for the federal fisheries to ensure ESA-listed mammals and seabirds are not likely to experience jeopardy or adverse modification of critical habitat. Direct mortality by subsistence harvest is likely to continue, but these harvests are tracked and considered in the assessment of marine mammals and seabirds. The cumulative effect of these impacts in combination with measures proposed under proposed alternatives is not likely to be significant.

Reasonably foreseeable future actions for habitat and the ecosystem include ecosystem-sensitive management; rationalization; traditional management tools; actions by other federal, state, and international agencies; and private actions, as detailed in Sections 10.3 and 11.3 of the Harvest Specifications EIS (NMFS 2007). Ecosystem-sensitive management, rationalization, and traditional management tools are likely to increase protection to ecosystems and habitat by considering ecosystems and habitat more in management decisions and by improving the management of the fisheries through the observer program, catch accounting, seabird and marine mammal protection, gear restrictions, and VMS.

Continued fishing under the harvest specifications is likely the most important cumulative effect on EFH but the EFH EIS (NMFS 2005) has determined that this effect is minimal. Any shift of fishing activities from federal waters into state waters would likely result in a reduction in potential impacts to EFH because state regulations prohibit the use of trawl gear in much of state waters. Nearshore impacts of coastal development and the management of the Alaska Water Quality Standards may have an impact on EFH, depending on the nature of the action and the level of protection the standards may afford. Development in the coastal zone is likely to continue, but Alaska overall is lightly developed compared to coastal areas elsewhere and therefore overall impact to EFH are not likely to be great. The pollock, Pacific cod, sablefish, flatfish, and halibut fisheries in the GOA have been independently certified to the Marine Stewardship Council environmental standard for sustainable fishing. Overall, the cumulative effects on habitat and ecosystems under proposed alternatives are not likely to be significant.

Direct and indirect effects for Pacific halibut include mortality along with changes in reproductive success and prey availability. Halibut spawn in deep waters of the continental slope in midwinter where they are not significantly affected by any fishery. Halibut are opportunistic predators with a wide range of prey species and no significant change to prey structure is expected as a result of Alternative 1. No evidence of fishery impacts to habitat of halibut has been shown, so this effect will not be considered in the cumulative effects analysis that follows.

1.9.1 Reasonably Foreseeable Future Actions

1.9.1.1 Observer Program

The current federal groundfish observer program in Alaska is structured by vessel size. As such, groundfish vessels less than 60' are not presently required to carry observers; vessels 60' to 125' length overall (LOA) are required to carry and pay for their own observers 30 percent of their fishing days, regardless of gear type or target fishery; vessels greater than 125' LOA are required to carry observers 100 percent of the time. Vessels in the 30 percent coverage category may select when they wish to carry observers, but are marginally constrained in this self-selection by regulatory requirements for quarterly coverage levels. The two size categories with less than 100 percent observer coverage comprise the majority of vessels fishing in the GOA and out of ports other than Dutch Harbor and Akutan in the BSAI.

Observers estimate total catch for a portion of hauls or sets, and sample hauls or sets for species composition, including PSC. These data are extrapolated in the Alaska Region Catch Accounting System (CAS) to make estimates of (among other things) total PSC halibut catch on both observed and unobserved vessels. Observer data are assumed to be representative of the activity of all vessels and are used to estimate total halibut PSC. The ratio estimator is derived from a set of covariates that match both observer and groundfish landing/production information. A detailed description of this process is presented in Cahalan et al. (2010).

Regulations governing observer deployment (i.e., observer coverage requirements) introduces the potential of bias in observer data by using a non-random deployment model, which may facilitate non-representative fishing. Given the use of observer data in CAS, and the subsequent use of CAS estimation in stock assessments and quota management, this issue can undermine the data used to manage halibut PSC (among other species) in the North Pacific groundfish fisheries. In response to these issues, the Council took action at its October 2010 meeting to recommend that NMFS restructure the observer program to address multiple issues with the current program, including bias (NPFM 2010). The recommended restructuring preferred alternative provides NMFS with flexibility to place observers onboard a vessel, using accepted statistical practices, so that coverage gaps and vessel-trip selection bias is addressed (http://www.alaskafisheries.noaa.gov/npfmc/current_issues/observer/ObserverMotion1010.pdf).

The Council's preferred alternative to restructure the observer program is likely to influence estimation most in sectors currently with 30 percent or less coverage. Past analytical examinations of the North Pacific Groundfish Observer Program have dealt with such issues as sampling protocols, reducing bias, estimate expansion, and the statistical properties of estimates (e.g. Jensen et al. 2000, Volstad et al. 1997,

Pennington 1996, and Pennington and Volstad 1994). These and other studies suggest bias is likely reduced by changing from the current system, in which 30 percent coverage vessels can choose when and where to take observers, to a new system in which NMFS is responsible for distributing observers among vessels using statistically robust methods.

The extent to which random deployment influences PSC halibut estimates is related to current efforts by the fleet to manipulate PSC rates, as well as the magnitude of bias caused by quarterly deployment regulations and timing of observer coverage. Work presented in the restructuring analysis (NPFMC 2010) suggests evidence of a deployment effect, but the magnitude of this bias on PSC estimates is not known. Improvements in the statistical properties of observer samples and estimates will result in many data improvements, including improved spatial coverage, as smaller vessels that fish in inshore areas receive coverage; a reduction in the ability for vessels to “game” coverage by not taking an observer to certain areas of known high incidental removals or attempting to manipulate PSC rates; CAS estimates may better reflect sector-specific halibut PSC, due to a consistent amount of observer data available throughout the year; and finally a more representative sample of halibut viability may be obtained.

The potential changes in PSC halibut estimation described in the preceding paragraph will most influence groundfish fisheries that currently have a large amount of effort from 30 percent or unobserved vessels. Fisheries currently with a 100 percent or more of coverage will continue to receive vessel specific rates, which is the most accurate and precise estimate available. Fisheries currently with a mixture of 100 percent and 30 percent vessels receive PSC estimates that are vessel-specific for observed vessels and PSC halibut rates derived from observer information collected onboard a mixture of 100 percent and 30 percent vessels. PSC estimates in a fishery may change depending on the direction of deployment bias and the amount of 30 percent coverage relative to 100 percent coverage under the current observer deployment model. Fisheries with both levels of coverage, but historically operated under high levels of 30 percent coverage, may experience a larger reduction in bias (and subsequent change in PSC) than those with a large amount of 100 percent coverage. Further, the amount of variation associated with PSC rates and estimates may also change, due to a representative sample better reflecting true variation of halibut PSC in the fishery, as well as additional vessels (those 40’ to 60’ LOA) being sampled by observers.

The restructured observer program will also estimate halibut PSC for those fishing sectors that previously did not carry observers (groundfish vessels <60’ and the commercial IFQ sector). The potential changes in halibut PSC estimates will affect groundfish fisheries that currently have a large amount of effort from 30 percent and currently unobserved vessels. Estimates of halibut discards in the commercial halibut IFQ fishery will be based on actual fishery performance for the first time instead of proxy estimates from the IPHC halibut longline survey. More precise halibut PSC and wastage estimates will benefit management of the halibut stock; however impacts to groundfish catches and impacts to available halibut CEY for directed halibut users due to the newly derived halibut wastage estimates are unknown³⁷. The proposed rule for Amendment 86 was published on March 14, 2012 at 77 FR 15019 (<http://www.fakr.noaa.gov/prules/77fr15019.pdf>). The restructured program is expected to be implemented in 2013.

1.9.1.2 GOA Halibut PSC Limit Reductions

The overall trawl halibut prohibited species catch (PSC) or “bycatch” limits in the GOA have not been reviewed in a comprehensive fashion since a 2,000 mt (4.4 Mib) trawl cap was implemented in 1989 and hook-and-line PSC limits were reduced to 300 mt (661,000 lb) in 1995 when the halibut and sablefish IFQ program was implemented and the sablefish fishery was removed from under the cap. In 2012 reductions were made to the trawl limit resulting from a focused review of the halibut PSC allocation to the Central Gulf rockfish program. Recent declines in halibut biomass, particularly in the GOA, have

³⁷ Source: Public comment letter from Alaska Groundfish Data Bank, May 29, 2012 (<http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/halibut/HalibutComments512.pdf>)

exacerbated concerns about levels of halibut bycatch in groundfish fisheries because of the potential effect on halibut fishermen in the commercial IFQ, charter, unguided, and subsistence fisheries.

In June 2012 the Council adopted a preferred alternative to reduce halibut bycatch limits in the GOA trawl and hook-and-line groundfish fisheries. If approved by the Secretary of Commerce, the preferred alternative would reduce the GOA halibut PSC limit for the 1) groundfish trawl gear sector and 2) groundfish catcher vessel (CV) hook-and-line gear sector by 15%. The proposed reduction would be phased in over three years: 7% in year 1, 5% in year 2 (to 12%), and 3% in year 3 (to 15%). The proposed reduction for the 3) catcher processor (CP) hook and line gear would be 7% which would be implemented in one step in year 1. The Council intends that year 1 would occur in 2014 and that all reductions would occur by 2016.

This action would result in a new cap of 1,848 mt (in 2014), 1,759 mt (in 2015), and 1,705 mt (in 2016 and later years) for the trawl sector. The new hook-and-line halibut PSC limit may change annually, so the numbers reported are illustrative of what may occur in the future, based on the GOA Pacific cod split formula. Based on 2012 Pacific cod TACs in the Western and Central GOA the hook-and-line CP sector would fish under a 109 mt halibut PSC limit. The hook-and-line CV sector PSC limit would be 161 mt (in 2014), 152 mt (in 2015), and 147 mt (in 2016 and beyond). Note that the Council used 1,973 mt as the baseline for its proposed trawl PSC limit reduction, which results after deducting a 27.4 mt PSC limit reduction, which was implemented in 2012 under the Central Gulf Rockfish Program, from the 2,000 mt overall trawl cap.

The preferred alternative reduced the halibut PSC limit for the DSR fishery from 10 mt (22,000 lb) to 9 mt (19,840 lb). Given limited observer coverage in this fishery NMFS does not anticipate managing the fishery to that limit.

1.9.1.3 IPHC Halibut Bycatch Working Group

At its 2010 Annual Meeting the IPHC reconstituted the bilateral (US and Canada) Halibut Bycatch Work Group. Originally formed in 1991 to address several issues significant at that time, this Halibut Bycatch Working Group (hereafter HBWG II) was reformed for very different reasons.

In recent years, several issues have served to increase the need for greater understanding of the impacts of halibut incidental removals, including the decline in halibut exploitable biomass, and new information on migration by juvenile and adult halibut, coming from the 2003/2004 tagging study. In addition, concerns about the adequacy of monitoring and the accuracy of estimates of incidental halibut removals provided to IPHC by domestic agencies have been raised. Thus, the IPHC reconstituted the HBWG II, with the goal of reviewing progress on control of such removals since 1991, incidental harvest monitoring programs, and examining how such mortality is accounted for within the IPHC harvest policy.

The HBWG II met in Seattle, Washington on August 11 and held conference calls on September 27, December 1, and December 20, 2010, as it worked to meet its charge. Additionally, staffs of the U.S. National Marine Fisheries Service (NMFS), IPHC, and Fisheries and Oceans Canada (DFO) produced and reviewed numerous documents and analyses in support of the HBWG II deliberations. The final report is posted at <http://www.iphc.int/documents/2012bycatch/Reportof2010HBWG.pdf>.

At its 2011 Annual Meeting the IPHC discussed halibut bycatch management and received a report from its Working Group. The IPHC stated it remained concerned about the yield lost to the halibut fishery as a result of mortality in other fisheries. Accordingly, the Commission established a Halibut Bycatch Project Team, led by a Commissioner from each country, to gain better understanding of the amounts and potential impacts of halibut mortality in other fisheries. Further, this Team will explore whether options for reducing this mortality can be implemented and whether mitigating the impacts of mortality in one area on the available harvest in other areas is possible.

At its 2012 Annual Meeting the IPHC reviewed progress by the Project Team and Group and developed objectives and timelines for work in 2012 for a reconstituted Halibut Bycatch Working Group III.. In

particular, the Group will review a staff report on halibut migration, review actions taken by both countries to reduce bycatch mortality, identify further actions that will be effective in reducing bycatch mortality, and identify options to mitigate the effects of such mortality.

1.9.1.4 Halibut Bycatch Workshops³⁸

In 2009 the IPHC's scientific staff offered two workshops on topics of interest to the fishing industry and to observers of the Pacific halibut fishery. These workshops followed two previous workshops: a 2007 workshop on the IPHC stock assessment, including a formal external peer review; and, a 2008 workshop on biomass apportionment.

Workshop I On April 29 and 30, 2009, the biomass apportionment workshop took place in Seattle. The workshop dealt with a wide variety of subjects, including harvest policy and the use of simulation modeling to study the effects of alternative apportionment methods on the dynamics and status of halibut stocks.

Workshop II On September 29, 2009, the IPHC staff held a one-day workshop in Seattle on the topic of determining and incorporating the impacts of halibut mortality. During this second workshop the staff also covered topics such as the effects of mortality of sublegal fish in halibut fisheries and incorporating mortality into the assessment and management of halibut stocks. In addition, the workshops resulted in a number of comments and questions, for which the IPHC staff has compiled detailed responses, which are also available on the website.

April 2012 NPFMC/IPHC halibut bycatch workshop A workshop was organized by the IPHC and the Council to review the methodology and accuracy of the estimation of Pacific halibut bycatch in trawl and longline groundfish fisheries off Alaska, and the impacts of halibut bycatch on the halibut stock as a whole and by area, given the current understanding of halibut migration. The workshop also discussed general halibut ecology, including recent trends in exploitable biomass, spawning biomass, and size at age, and information concerning the causes and implications of declining size at age of halibut. More than 200 participants attended the two-day workshop in person or through a webcast of the meeting in late April 2012. The Council requested the workshop in order to better understand the science and management issues related to the Pacific halibut stock, particularly in the GOA. All workshop presentations and a summary of all workshops are available on the IPHC's website: <http://www.iphc.int>.

1.9.1.5 Catch Accountability Through Compensated Halibut Project

Established in 2011, the Catch Accountability Through Compensated Halibut (CATCH) Project is a 501(c)(6) nonprofit organization funded by a grant from the National Fish and Wildlife Foundation and industry in-kind contributions. CATCH is a collaboration of the Alaska Charter Association (ACA) and the Southeast Alaska Guides Organization (SEAGO). The project has researched the feasibility of a catch share program designed to increase recreational fishing opportunities for halibut in Area 2C and Area 3A. The concept is for a holding entity, such as a regional fishery association, to purchase commercial halibut QS from willing commercial QS holders. In concept, purchased QS would be added to the charter sector's annual allocations in each area in order to increase the overall allocation upon which annual harvest measures are based. This would also provide a means to maintain, or in the case of Area 2C, return to a traditional bag limit of two fish a day of any size. A completed design of the CATCH pooled CSP is planned to be presented to the Council by December 2012.

1.9.1.6 Permanent Solution

Various Council charter halibut stakeholder committees have advanced numerous proposals for a long term solution³⁹ to address the Council's problem statement related to management of the charter halibut

³⁸ <http://www.iphc.int/publications/annual/ar2009.pdf>

³⁹ <http://www.alaskafisheries.noaa.gov/npfmc/halibut/charter-management.html>

sector, which also would provide benefits to the charter sector. The Council may choose to adopt the CATCH Project for analysis or may task its committee to further develop it or other CSP models in the future.

1.9.2 Summary of Cumulative Effects

Mortality

Direct/Indirect Effects The potential effect of total fishing mortality on GOA Pacific halibut reduces halibut recruitment, spawning stock biomass, and available yield to directed fisheries.

Persistent Past Effects Persistent past effects of mortality on Pacific halibut have been identified as reduced recruitment, spawning stock biomass, and yield to directed fisheries.

Reasonably Foreseeable Future External Effects The directed commercial IFQ longline fishery is closely managed by IPHC, NMFS, and the Council. The charter fishery for Pacific halibut is closely managed by IPHC, NMFS, ADF&G, and the Council. Although state-managed fisheries may remove incidental amounts of halibut, IPHC accounts for all removals, including removals in other fisheries, when setting catch limits for the directed commercial IFQ longline fishery. Thus, changes in total halibut removals (increase or decrease) are reflected in changes to catch limits set for the directed fishery.

Cumulative Effects The combined effects of mortality on Pacific halibut resulting from direct catch, PSC removals, and reasonably foreseeable future external events (both human controlled and natural) under Alternative 1 are not significant under NEPA criteria. No significant change from the baseline condition is expected.

Change in Reproductive Success

Direct/Indirect Effects The potential effect of changes in reproductive success on Pacific halibut in the GOA is insignificant. Halibut spawn in deep waters of the continental slope in midwinter where they are not significantly affected by any fishery. No significant change from the baseline condition is expected.

Persistent Past Effects No persistent past effects has been identified on changes in reproductive success of Pacific halibut. The halibut stock is declining due to reduced catchable size of fish at age, lower growth rates, and higher than target harvest rates. The stock remains at risk of further declines. Conservation of the halibut resource is the primary concern and management objective of the proposed alternatives. Impacts of PSC removals on commercial catch limits has also been a concern.

Reasonably Foreseeable Future External Effects Halibut spawn in deep waters of the continental slope in midwinter where they are not significantly affected by any fishery. The directed longline fishery and other state-managed fisheries are not considered contributing factors to changes in reproductive success for halibut since there is no significant spatial/temporal overlap between these fisheries and halibut spawning areas. Long-term climate change and regime shifts could have impacts on the reproductive success of Pacific halibut depending on the direction of the shift. It has been shown that warm trends favor recruitment while cool trends weaken recruitment in most fish species including halibut.

Cumulative Effects The combined effects of changes in reproductive success on Pacific halibut resulting from direct catch, PSC, and reasonably foreseeable future external events (both human controlled and natural) are considered insignificant. No significant change from the baseline condition is expected.

Change in Prey Availability

Direct/Indirect Effects The potential effect of changes in prey availability on BSAI and GOA Pacific halibut is insignificant. Halibut are opportunistic predators with a wide range of prey species and no significant change to prey structure is expected.

Persistent Past Effects No persistent past effects impacting prey availability of halibut has been identified.

Reasonably Foreseeable Future External Effects Halibut are opportunistic predators with a wide range of prey species. Increase in prey competition between Pacific halibut and fisheries catch is not expected. Thus, the directed longline fishery and other state-managed fisheries are not considered contributing factors to changes in prey availability for halibut. Long-term climate change and regime shifts could have impacts on certain prey species of Pacific halibut depending on the direction of the shift. It has been shown that warm trends favor recruitment while cool trends weaken recruitment in most fish species; however, the effects of this type of large scale event on the prey structure of halibut cannot be determined at this time.

Cumulative Effects The combined effects of changes in prey availability on Pacific halibut resulting from direct catch, PSC, and reasonably foreseeable future external events (both human controlled and natural) are considered insignificant. No significant change from the baseline condition is expected.

1.9.3 Significance

Considering the direct and indirect impacts of the proposed action when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the reasonably foreseeable future actions listed above, the cumulative impacts of the proposed action are determined to be not significant. This finding is based on conclusions that none of the alternatives:

- can be reasonably expected to jeopardize the sustainability of GOA groundfish or Pacific halibut;
- exceed a threshold of more than minimal and not temporary disturbance to habitat;
- can be reasonably expected to alter the population trend outside the range of natural variation; or
- produce population-level impacts for marine species, or changes community- or ecosystem-level attributes beyond the range of natural variability for the ecosystem.

1.9.4 NEPA SUMMARY

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). The Finding of No Significant Impact (FONSI) is the decision maker's determination that the 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 "context" and "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 the 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 this EA/RIR/IRFA. The results of that analysis are summarized here for those criteria.

Context: For this action, the setting is the directed halibut fisheries in Area 2C and Area 3A. Any effects of this action are limited to those regulatory areas. The effects of this action on society are on individuals directly and indirectly participating in these fisheries 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: Considerations to determine intensity of the impacts are set forth in 40 CFR 1508.27(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. The sections of the EA that address the considerations are identified.

- 1) *Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

(Section 1.8.1) No. No significant adverse impacts on target species were identified for the proposed action. The implementation of sector allocations, separate accountability, and annual management measures to control charter halibut harvests will eliminate or reduce charter overages. The reduction of overages should enhance sustainability of the halibut stock.

2) *Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

(Section 1.8.2). No. To the extent that charter halibut harvests is controlled or reduced to its allocation as a result of this action, it will likely have beneficial impacts on halibut stocks and directed fisheries. The proposed action is not likely to jeopardize the sustainability of any non-target or prohibited species.

3) *Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in the fishery management plans (FMPs)?*

No. No significant adverse impacts were identified for the proposed action on ocean or coastal habitats or EFH. The charter and commercial halibut fisheries have minimal effect on benthic habitat, though localized areas are more heavily impacted. Substantial damage to ocean or coastal habitat or EFH is not expected.

4) *Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

(Section 2). No. Public health and safety will not be affected in any way not evaluated under previous actions or disproportionately as a result of the proposed action. The proposed action will not change fishing methods (including gear types), nor will they substantially change timing of fishing.

5) *Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

(Section 1.8.3) No. The proposed action is not likely to adversely affect ESA-listed species or their designated critical habitat.

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.)?*

(Section 1.8.4). No significant adverse impacts on biodiversity or ecosystem function were identified for the proposed action. No significant effects are expected on biodiversity, the ecosystem, marine mammals, or seabirds.

7) *Are significant social or economic impacts interrelated with natural or physical environmental effects?*

Sections 3 and 4 provides a more detailed discussion of the socioeconomic impacts and the physical environment respectively. Socioeconomic impacts of this proposed action result from the potential that the charter halibut annual management measures may be restricted to achieve the allocation without overage. The impacts increase as the allocation becomes more constraining. Beneficial social impacts may occur for those who depend on other directed fisheries for Pacific halibut, with most of the benefits accruing to halibut QS holders and subsistence halibut fishers in Areas 2C and 3A.

8) *Are the effects on the quality of the human environment likely to be highly controversial?*

(Section 4). This action directly affects the directed halibut fisheries in Area 2C and 3A. Development of the proposed action has involved participants from the scientific and fishing communities and the potential impacts on the human environment are understood.

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?*

(Section 2). No. This action would not affect any categories of areas on shore. This action takes place in the geographic area of the GOA. The land adjacent to this marine area may contain archeological sites of native villages. This action would occur in adjacent marine waters so no impacts on these cultural sites are expected. The marine waters where the fisheries occur contain ecologically critical areas. Effects on the unique characteristics of these areas are not anticipated to occur with this action because of the amount of fish removed by vessels will be constrained to stay within the allocations specified for these fisheries and the alternatives provide protection to EFH and ecologically critical nearshore areas.

10) *Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

(Section 1.8.3). No. The potential effects of the action are well understood because of the halibut and groundfish stocks, harvesting methods, and area of the activity. For marine mammals and seabirds, enough research has been conducted to know about the animals' abundance, distribution, and feeding behavior to determine that this action is not likely to result in population effects. The potential impacts of different gear types on habitat also are well understood, as described in the EFH EIS (NMFS 2005).

11) *Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

(Section 1.9). No. Beyond the cumulative impact analyses identified above, no other additional past or present cumulative impact issues were identified. The combination of effects from the cumulative effects and this proposed action are not likely to result in significant effects for any of the environmental component analyzed and are therefore not significant.

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?*

(Section 2). No. This action will have no effect 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. Because this action occurs in marine waters, this consideration is not applicable to this action.

13) *Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

(Section 2). No. This action poses no effect on the introduction or spread of nonindigenous species into the GOA beyond those previously identified because it does not change fishing, processing, or shipping practices that may lead to the introduction of nonindigenous species.

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?*

(Section 2). No. This does not establish a precedent for future action because harvest control measures have been frequently used as a management tool for the protection of marine resources in the Alaska groundfish fisheries. Pursuant to NEPA, for all future 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.

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?*

(Section 2). No. This action poses no known violation of federal, state, or local laws or requirements for the protection of the environment. The proposed action would be conducted in a manner consistent, to the maximum extent practicable, with the enforceable provisions of the Alaska Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972, and its implementing regulations.

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?

(Section 1.8.1.1.3.1, 1.8.2.1, 1.8.3.2.1). No. The effects on target and non-target species from the alternatives are not significantly adverse as the overall harvest of these species will not be affected. No cumulative effects were identified that added to the direct and indirect effects on target and nontarget species would result in significant effects.

1.10 SUMMARY

The proposed alternatives address allocation of the Pacific halibut resource between the commercial setline and charter sectors. While the proposed alternatives would affect harvest levels and fishing practices of individuals participating in both sectors, overall halibut removals would not be affected. The IPHC factors known resource removals into the halibut stock assessment when setting annual commercial longline catch limits. Therefore, none of the proposed alternatives is expected to significantly impact the halibut stock. The proposed alternatives potentially could have a beneficial effect on halibut stocks compared to the status quo by more closely aligning charter harvest to target levels, particularly at lower levels of halibut stock abundance.

None of the alternatives considered is expected to affect the physical environment, benthic community, marine mammals, seabirds, or non-specified groundfish species. There may be an effect on the human environment as there are winners and losers under any sector allocation. At moderate to low levels of halibut abundance, the proposed alternatives could provide the charter sector with a smaller poundage catch limit than it would have received under the status quo alternative. Conversely, at higher levels of abundance, the proposed alternatives could provide the charter sector with a larger poundage catch limit than it would have received under the status quo alternative. The Council also considered higher allocations to the charter sector at low abundance levels.

The Council attempted to mitigate the impacts of the initial allocation on the charter sector by recommending charter allocations that vary with the abundance of halibut stocks. While the Council considered establishing fixed poundage allocations to the charter sector under 2008 rejected alternatives, the Council determined that use of allocations that vary with halibut stock abundance balanced the needs of the guided sport and commercial sectors at all levels of halibut abundance. The calculation of sector catch limit based on the CEY would be a simple calculation and would be transparent and comprehensible to each user group. This approach is equitable for halibut fishery management because both the commercial and guided sport sector allocations adjust directly with changes in halibut exploitable biomass. Thus, both the charter and commercial sectors would share in the benefits and costs of managing the resource for long-term sustainability under a combined catch limit. The Council also attempted to mitigate the impacts of the initial allocation on the charter sector by allowing charter limited entry permit holders to acquire additional allocation from the commercial sector through financial compensation (GAF Program). Charter clients who fish with these permit holders would be allowed to fish under regulations for non-guided anglers.

2 REGULATORY IMPACT REVIEW

2.1 Introduction

Since the early 1990s, the Council has been developing proposals to limit harvests and establish a timely and accountable management regime for the charter halibut fisheries in Area 2C and Area 3A. Charter anglers in both areas are subject to a Guideline Harvest Level (GHL) that identifies a harvest limit for the sector based on the total constant exploitation yield (TCEY). Management measures in the fisheries are intended to maintain charter harvests at the GHL.

Charter anglers in Area 2C (Southeast Alaska) have only been allowed to harvest one halibut per person, per day as their bag limit, since June 5, 2009. A size limit of 37 inches was added to the one-fish bag limit in 2011. That was the first year the charter sector's harvest was within their (GHL) since 2004, but proved to be overly constraining. In 2012 the management measures apply a "reverse slot limit" rule that limits the size of the retained halibut to less than or equal to 45 inches, or greater than or equal to 68 inches in length. This new rule provides anglers with an opportunity to retain a "trophy" fish – a halibut larger than 68 inches – which is an important component of many charter business plans in Area 2C. The Charter Implementation Committee and charter fishery participants recommended the proposed slot limit to ensure that total harvests in Area 2C charter fisheries are kept within the IPHC's 2012 recommended GHL of 931,000 lbs, while providing a reasonable charter fishing opportunity.

For Area 3A (Central Alaska), charter anglers have operated under the same two-fish of any size bag limit as they have since 1995. The only limitations in Area 3A that have changed since 1995 are crew retention of halibut on a charter trip. A State Emergency Order was in effect for parts of the 2007, 2008, and 2009 that limited charter crew retention of halibut after the early part of the fishing year. No limits on crew retention have been imposed since 2009.

Unguided halibut fishers in Alaska harvest under a daily bag limit of two fish of any size per person per day. Amending unguided halibut bag limits is not part of this action. A complete history of management measures considered by the Council, and those that have been implemented by the Secretary of Commerce, are documented in the EA.

Regulations currently in place are imposed under the GHL. The GHL limits charter allocations in a stair-step fashion at Total CEY levels above a minimum amount. This analysis examines alternatives to determine the charter sector's future allocations and the management measures to achieve those allocations. The catch sharing plan ("CSP") proposed by this action defines a more linear division of a commercial and charter combined catch limit (CCL) that would be implemented by the IPHC, at all stock levels. It would also provide a mechanism for determining the charter sector management measures that would be imposed each year, based on the process followed in 2012 (the "2012 approach"), which relies on input from the Council, ADF&G, IPHC, and NMFS.

The Council has elected to consider this action to resolve conflicts and resulting instability between the sectors, as enumerated in the following problem statement.

The absence of a hard allocation between the longline and the charter halibut sectors has resulted in conflicts between sectors and tensions in coastal communities dependent on the halibut resource. Unless a mechanism for transfer between sectors is established, the existing environment of instability and conflict will continue. The Council seeks to address this instability while balancing the needs of all who depend on the halibut resource for the food, sport, or livelihood.

The Council also adopted a statement of management objectives (Section 1.3). In summary, the Council intends to establish a catch sharing plan to establish a fair and equitable division of the exploitable halibut resource between the commercial and charter sectors in Area 2C and 3A. This action should also define a process for determining charter sector management measures that recognize the charter sector's numerous

business models, and its need for a stable regulatory environment with no in-season regulatory changes. Those measures should ensure that charter sector harvests stay within the sector’s allocation, as the halibut commercial IFQ program constrains commercial harvests through monitoring and reporting requirements, and, if necessary, penalties. Advance notice and predictability, with respect to limits and season length, would be provided to the charter halibut sector. Management measures to achieve these goals would not be adjusted in-season, but would be defined prior to the start of the fishing season.

A limited entry program for Area 2C and Area 3A was implemented in January 2010; charter halibut permits (CHP) are required to be on board vessels in the charter halibut fishery beginning February 1, 2011. This program limits the number of vessels that may be used to by guided fishermen at any time and limits the number of clients that may fish on a permitted vessel during a trip. The limited entry program will influence the effects of the alternatives, but will remain in place, unchanged under all of the alternatives.

2.2 Alternatives Considered

2.2.1 Alternative 1. Status Quo (GHL)

The current management program comprises the status quo. The charter sector is currently operating under a GHL in Area 2C and Area 3A. The GHLs were established as the maximum poundage that the charter clients in Areas 2C and 3A may harvest. The GHL defines harvest levels based on the total constant exploitation yield (TCEY) using a stair-step approach (as shown in Table 2-1). The charter sector requested that a fixed poundage allocation be provided prior to the beginning of the fishing year, to enhance predictability for bookings for the next summer’s fishing season. The GHL is linked to the TCEY, making it responsive to annual fluctuations in abundance.

Table 2-1 GHLs Established in Regulation for Areas 2C and 3A

If the annual Total CEY for halibut is more than (lbs):	Then the GHL will be (lbs):	If the annual Total CEY for halibut is more than (lbs):	Then the GHL will be (lbs):
Area 2C		Area 3A	
9,027,000	1,432,000	21,581,000	3,650,000
7,965,000	1,217,000	19,042,000	3,103,000
6,903,000	1,074,000	16,504,000	2,734,000
5,841,000	931,000	13,964,000	2,373,000
4,779,000	788,000	11,425,000	2,008,000

Source: NOAA regulations at CFR 300.65(c)(1)

Once the annual GHL is set, management measures (in addition to the limited entry program) for the year are decided under the 2012 approach, which encompasses the following steps.

1. Scientific and Statistical Committee (SSC) reviews the analytical approach for selecting annual management measures; a baseline review would occur in 2012, and (potentially) only when future methodology changes;
2. Charter Halibut Management Committee recommends a range of potential management measures, using the current measure in each area as the baseline, in mid to late October each year;
3. ADF&G analyzes proposed management measures for public review at the December Council meeting;
4. Council selects its preferred measure and recommends it for consideration by the IPHC in December;

5. IPHC adopts the recommended measure as part of its annual management measures for the upcoming season in January; and
6. National Marine Fisheries Service implements the CSP management measure(s) as part of the IPHC annual management measures by March.

Currently, no use of commercial IFQ for charter fishing is permitted.

2.2.2 Alternatives 2 through 5 - Catch Sharing Plan

Each of the action alternatives would divide the CCL between the charter sector and the commercial IFQ fishery in Areas 2C and 3A. The resulting charter allocation would be an input in a methodology that would be used annually to determine the charter sector management measures. Those measures are decided under different methodologies under Alternative 2 and under Alternatives 3, 4, and 5. All of the action alternatives would also implement a ban on skipper and crew retention of halibut on charter trips in Area 3A, mirroring the ban already in place for Area 2C.

The Council is considering four alternatives to the Status Quo. **Alternative 2** is the 2008 Preferred Alternative, which would replace the GHM Program with a catch sharing plan (CSP) for the two areas.

In **Area 2C**,

- when the CCL is less than 5M lbs, the charter sector would be allocated 17.3% of the CCL, and
- when the CCL is 5Mlbs or greater, the charter sector would be allocated 15.1% of the CCL

In **Area 3A**,

- when the CCL is less than 10M lbs, the charter sector would be allocated 15.4% of the CCL, and
- when the CCL is 10Mlbs or greater, the charter sector would be allocated 14.0% of the CCL

This CSP would replace the current GHM program for setting annual allocations for each sector. These allocations are based on estimates generated by the Statewide Harvest Survey. Charter sector catch estimates under this alternative would also be based on the Statewide Harvest Survey.

Management measures would be identified using a matrix of management measures, with a management measure considered acceptable if it is projected to result in a harvest that is within 3.5% of the CSP charter allocation (i.e., a $\pm 3.5\%$ target range around an allocation would be established). The suite of allocations and management measures at designated triggers are listed below.

2008 Preferred Alternative: Area 2C				
Combined Fishery CEY (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
Tier 1 <5	Comm alloc = 82.7% Charter alloc = 17.3% Charter range = 13.8-20.8%	One fish	Maximum size limit imposed that brings harvest to <17.3%	One fish
Tier 2 ≥5 - <9	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	One fish	Maximum size limit imposed that brings harvest to <15.1%	Two fish, but one must be less than 32" in length
Tier 3 ≥9 - <14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish, one must be less than 32" in length	One fish	Two fish
Tier 4 ≥14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish	Two fish, but one must be less than 32" in length	Two fish

2008 Preferred Alternative: Area 3A				
Combined Fishery CEY (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
Tier 1 <10	Comm alloc = 84.6% Charter alloc = 15.4% Charter range = 11.9-18.9%	One fish	Maximum size limit imposed that brings harvest to <15.4%	One fish
Tier 2 ≥10 but <20	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	One fish	Maximum size limit imposed that brings harvest to <14.0%	Two fish, but one must be less than 32" in length
Tier 3 ≥20 but <27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish, one must be less than 32" in length	One fish	Two fish
Tier 4 ≥27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish	Two fish, but one must be less than 32" in length	Two fish

In addition, a charter halibut permit (CHP) holder would be permitted to lease halibut individual fishing quota from commercial quota share holders to increase their clients catch under a Guided Angler Fish (GAF) Program. GAF would be issued in pounds based on the poundage of IFQ acquired by the charter permit holder leasing the IFQ. A leasing limitation would apply to prevent any IFQ holder from leasing in excess of 10% of IFQ holdings or 1,500 lbs of IFQ, whichever is greater.

This alternative also imposes a prohibition on retention of charter halibut by skippers and crew onboard in both areas.

Due to deficiencies that the Council has identified with elements of its 2008 PPA, the allocation percentage associated with that alternative could be retained and the other management measure modified at final action. For example, the matrix of annual management measures could be replaced with the 2012 approach, the ± 3.5 percent range deleted, and the GAF modifications included at final action. The analysis retains the management measures of the 2008 PA under Alternative 2 to allow for a comparison of discrete alternatives. However, the RIR is structured such that the allocation alternatives are treated separately from the other management measures. This structure allows the Council to retain the ability to select any allocation percentage included in the analysis along with any of the management measures identified.

Alternative 3 is the **2012 Preliminary Preferred Alternative** for a modified CSP. This alternative is similar to Alternative 2, with a few specific differences. Alternative 3 would:

1) adjust allocations from those defined by Alternative 2 upwards by 5.6% of the base allocation in Area 2C and 11.6% of the base allocation in Area 3A. This adjustment is intended to accommodate a change from using the Statewide Harvest Survey to ADF&G logbooks for charter harvest estimates. The adjustments are based on the average difference in harvest estimates between the two sources from 2006 – 2010 with an added adjustment to remove skipper and crew harvests during that period.

In Area 2C,

when the CCL is less than 5M lbs, the charter sector would be allocated 18.3% of the CCL, and
when the CCL is 5Mlbs or greater, the charter sector would be allocated 15.9% of the CCL

In Area 3A,

when the CCL is less than 10M lbs, the charter sector would be allocated 17.2% of the CCL, and
when the CCL is 10Mlbs or greater, the charter sector would be allocated 15.6% of the CCL

2) Management measures are decided using the 2012 method (described under the status quo. In addition, the $\pm 3.5\%$ target range for determining whether a management measures is acceptable is

eliminated under this alternative. Instead a management measure would be selected to minimize the difference between the projected harvest and the harvest allocation, with a goal of staying within the allocation.

3) Revisions to the GAF:

GAF would be issued in numbers of fish, with conversion of IFQ pounds to numbers of fish based on the average weight of GAF from the previous year or most recent year GAF data are available, except in the first year of the GAF program, when the GAF weight to number of fish conversion factor would be based on the previous year's data or the most recent year of charter fishing without a maximum size limit in effect.

The leasing limitation under this alternative would limit the holder of IFQ from:

leasing in excess of 10% of the Area 2C IFQ held or 1500 lbs of Area 2C IFQ whichever is greater, and

leasing in excess of 15% of the Area 3A IFQ held or 1500 lbs of Area 3A IFQ, whichever is greater.

Include a requirement for captains to mark GAF by removing the tips of the upper and lower lobes of the tail and report the length of retained GAF halibut to NMFS through the NMFS approved electronic reporting system.

Within five years of the start of the GAF program, a complete review of that program will be completed, taking into account the economic effects on both sectors.

4) Other Issues:

The Council will also consider whether to recommend to the IPHC that the latter implement separate accountability for commercial wastage and charter wastage.

Finally, this action would modify current regulations by removing the one-fish bag limit for Area 2C. Future bag limits and size limits would be implemented using the 2012 approach.

Alternative 4 contains the same elements as Alternative 3, except it would increase the allocation to the charter sector from the level of the 2008 Preferred Alternative by 3.5% for CCLs below 9Mlbs in Area 2C and for CCLs below 20Mlbs in Area 3A. This effectively creates an additional tier in Area 2C from 5Mlbs to 9Mlbs and in Area 3A from 10Mlbs to 20 Mlbs. The result is that in **Area 2C**,

when the CCL is less than 5Mlbs, the charter sector would be allocated 20.8% of the CCL,

when the CCL is 5Mlbs or greater and less than 9Mlbs, the charter sector would be allocated 18.6% of the CCL, and

when the CCL is 9Mlbs or greater, the charter sector would be allocated 15.1% of the CCL.

In Area 3A,

when the CCL is less than 10M lbs, the charter sector would be allocated 18.9% of the CCL,

when the CCL is 10Mlbs or greater and less than 20Mlbs, the charter sector would be allocated 17.5% of the CCL, and

when the CCL is 20Mlbs or greater, the charter sector would be allocated 14.0% of the CCL.

Alternative 5 contains the same elements as Alternative 3, except it would increase the allocation to the charter sector of the 2012 Preliminary Preferred Alternative by 3.5% for CCLs below 9Mlbs in Area 2C and for CCLs below 20Mlbs in Area 3A. As with Alternative 4, this adjustment results in an additional

tier in Area 2C from 5Mlbs to 9Mlbs and in Area 3A from 10Mlbs to 20 Mlbs. The result is that in **Area 2C**,

when the CCL is less than 5Mlbs, the charter sector would be allocated 21.8% of the CCL,

when the CCL is 5Mlbs or greater and less than 9Mlbs, the charter sector would be allocated 19.4% of the CCL, and

when the CCL is 9Mlbs or greater, the charter sector would be allocated 15.9% of the CCL.

In Area 3A,

when the CCL is less than 10M lbs, the charter sector would be allocated 20.7% of the CCL,

when the CCL is 10Mlbs or greater and less than 20Mlbs, the charter sector would be allocated 19.1% of the CCL, and

when the CCL is 20Mlbs or greater, the charter sector would be allocated 15.6% of the CCL.

For comparison purposes, the allocations of halibut to the charter sector in IPHC Area 2C are shown in Table 2-2 and in IPHC Area 3A are shown in Table 2-3. The tables show both the status quo alternative and the alternatives defined in the Council motion. Note that the GHF allocation is based on the Total CEY and the CSP allocations are based on the CCL.

Table 2-2 Area 2C charter allocations defined by the Council motion

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHF in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 1 (2008 Pref Alt + 3.5% of CCL)	Option 1 adjusted (2012 PPA + 3.5% of CCL)*
4.779	0.788	< 5 Mlb	17.3%	18.3%	20.8%	21.8%
5.841	0.931	≥5 Mlb - 9 Mlb	15.1%	15.9%	18.6%	19.4%
6.903	1.074	≥ 9 Mlb	15.1%	15.9%	15.1%	15.9%
7.965	1.217					
9.027	1.432					

Table 2-3 Area 3A charter allocations defined by the Council motion

Alt 1		Alt 2	Alt 3	Alt 4	Alt 5	
If Total CEY is greater than (Mlb)	GHF in Mlb (Status Quo)	Combined Catch Limit (CCL)	2008 Preferred Alt.	2012 PPA (2008 PA adjusted for allocation and logbooks)	Option 2 (2008 Pref Alt + 3.5% of CCL)	Option 2 adjusted (2012 PPA + 3.5% of CCL)*
11.425	2.008	< 10 Mlb	15.4%	17.2%	18.9%	20.7%
13.964	2.373	≥ 10 Mlb - 20 Mlb	14.0%	15.6%	17.5%	19.1%
16.504	2.734	≥ 20 Mlb	14.0%	15.6%	14.0%	15.6%
19.042	3.103					
21.581	3.650					

2.3 Background

2.3.1 Previous Council Actions

The Council has considered different management tools to restrict charter sector harvests since the mid-1990s. The GHM Program was implemented to limit charter halibut harvests in 2004. It has been amended several times for Area 2C, because management measures did not constrain harvests to the GHM. Dividing the halibut resource that is available for harvest between the two sectors has been considered previously. Proposed actions attempted to address the lack of constraints on charter harvests, which have the effect of reducing commercial IFQ allocations. An allocation decision was included when the Council approved the halibut charter IFQ program in 2005. The Council rescinded its preferred alternative before the Secretary of Commerce took action. A limited entry program to restrict the number of permits in the halibut charter fishery was approved by the Secretary of Commerce in January 2010 and became effective on February 1, 2011.

In the development of the original 2008 CSP analysis, the Council considered and rejected an approach that would have allocated a fixed amount or percentage of the halibut resource to the charter sector. Once its allocation was harvested, the charter sector would have been closed to any further halibut retention. This type of allocation traditionally has been referred to as a “hard cap,” because the sector would have been prohibited from retaining halibut once the limit was reached, thereby preventing it from exceeding its allocation. The charter sector would not have been prohibited from providing charter trips for other species, halibut trips outside Areas 2C and 3A, or even halibut charter trips within Areas 2C or 3A, where no halibut is retained.

Charter industry representatives contended that because of the sector’s business structure, closing the fishery to retention, in-season, would dramatically disrupt their traditional method of booking clients and operating their businesses. For example, charter operators have indicated that many of their clients book trips a year in advance. If the charter season’s historical length was disrupted, it could force the business to refund deposits for trips scheduled after the closure and severely inconvenience the client, reducing their level of satisfaction with the business that was forced to cancel their trip. This dissatisfaction could logically extend to the visitor’s opinion of the Alaska vacation experience, with ramifications for the State’s entire tourism sector. Charter operators have stated on the record that client satisfaction, word of mouth referrals, and repeat customers are vital to their operations (especially lodge owners and Area 3A charter businesses). If a charter business must cancel a client’s trip, because the season is closed before the trip is taken, operators are rightly concerned that those clients may be unwilling to book future trips with their business, out of that port, or perhaps even in that management area.

Client dissatisfaction with the business operator could be magnified, if halibut fishing was the primary reason for the trip and the client is unable to easily obtain refunds for all of their other travel expenditures. Many clients book flights to Alaska and schedule other vacation activities along with the charter trips. Ensuring the client is able to take the reserved and paid for charter trip is important to trip providers. Altering the management structure in-season could impact the charter operator’s ability to provide the contracted for trips and, over time, diminish the firm’s economic viability.

In 2007, the Council adopted a Charter Halibut Limited Access Program (CHLAP) program that limited new entry into the charter halibut sector; an earlier analysis to implement a moratorium on entry was rejected in the late 1990s in favor of a more comprehensive rationalization program, which would have included the charter sector into the commercial halibut IFQ program (later rescinded). The Council and many long term members of the charter industry felt that limiting new entry was an important protection for the existing charter fleet if the sector’s harvest is to be capped. If the CHP was not implemented, the current charter operators would compete against each other and new entrants for common pool halibut and charter clients. The CHP limits the number of charter businesses and vessels that may participate in the fishery at any one time.

The CHP was established federal in regulation and the charter sector began fishing with CHPs on February 1, 2011. Under the CHP program all halibut charter vessel operators in Areas 2C and 3A must carry a CHP endorsed with the appropriate regulatory area and number of anglers. Charter halibut operators must have an original, valid CHP onboard during every charter vessel fishing trip when charter anglers onboard are catching and retaining Pacific halibut.

Management measures have been considered that could constrain the growth in charter halibut harvests. Some measures impose a restriction on when, where, or how fishing may occur; limit the number of halibut that a charter client may retain; or limit the size of halibut that may be retained. Examples are restricting charter boat crew harvests, reducing bag limits, and implementing restrictions on the sizes of halibut that may be retained. Limitations on crew harvests are likely to have little impact on a client's willingness to take a charter trip, but are not expected to constrain harvests to a level that is deemed appropriate by policy makers (NPFMC 2006b). An action such as reducing the bag limit to one fish is expected to impact some clients' willingness to take a trip (NPFMC 2006b). Harvest restrictions that limit the size of the second halibut that may be retained are thought to have less of an impact on a client's willingness to take a trip, than reducing the bag limit from two fish to one fish (NPFMC 2006b). These management measures are expected to slow the growth of charter harvests by varying amounts.

In 2008 the Council selected a preferred alternative to replace the GHM Program with a target charter initial allocation, based on halibut abundance and a market-based mechanism to increase the charter allocation. The program was withdrawn before it was implemented by the SOC. That action would have established the charter management actions at identified levels of halibut abundance. The 2008 preferred alternative would have allowed the selection of the appropriate management measures to move up or down to the next tier each year. The suite of allocations and bag limit and size limit restrictions at designated triggers are listed below.

Preferred Alternative: Area 2C				
Combined Fishery CEY (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
Tier 1 <5	Comm alloc = 82.7% Charter alloc = 17.3% Charter range = 13.8-20.8%	One fish	Maximum size limit imposed that brings harvest to <17.3%	One fish
Tier 2 ≥5 - <9	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	One fish	Maximum size limit imposed that brings harvest to <15.1%	Two fish, but one must be less than 32" in length
Tier 3 ≥9 - <14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish, one must be less than 32" in length	One fish	Two fish
Tier 4 ≥14	Comm alloc = 84.9% Charter alloc = 15.1% Charter range = 11.6-18.6%	Two fish	Two fish, but one must be less than 32" in length	Two fish
Preferred Alternative: Area 3A				
Combined Fishery CEY (million lb)	Allocation	Charter Fishery Bag & Size Limit Regulations		
		If charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
Tier 1 <10	Comm alloc = 84.6% Charter alloc = 15.4% Charter range = 11.9-18.9%	One fish	Maximum size limit imposed that brings harvest to <15.4%	One fish
Tier 2 ≥10 but <20	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	One fish	Maximum size limit imposed that brings harvest to <14.0%	Two fish, but one must be less than 32" in length
Tier 3 ≥20 but <27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish, one must be less than 32" in length	One fish	Two fish
Tier 4 ≥27	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	Two fish	Two fish, but one must be less than 32" in length	Two fish

Under the 2008 plan, and the current CSP options, the Council would annually request that the IPHC set a combined charter and commercial catch limit. The CCL, in the 2008 preferred alternative, along with projected charter harvests, would determine the daily bag limit and/or size-limit regulations governing charter anglers. The Council intended that the bag limit and/or size limits would have been implemented under annual IPHC regulations, and not be subject to separate Council action and NMFS rulemaking. However the inflexibility of the matrix approach was later determined to be too rigid to always result in acceptable charter management measures. The matrix approach, while part of the Council's 2008 Preferred Alternative, is only included in Alternative 2.

2.3.2 Historical Halibut Catches and Adjustment Factors

Total removals from the halibut population come from seven categories: commercial catch (IPHC survey catch is included in this category), sport catch, O32 (halibut over 32 inches in length) mortality (from a variety of fisheries targeting species other than halibut), personal use, O32 wastage from the commercial IFQ fishery, O26/U32 (halibut from 26 inches to 32 inches in length) mortality from non-target fisheries, and O26/U32 wastage from the commercial IFQ fishery. A more thorough summary of historic participation in each of these categories is provided in Section 1.1.1.1 of the EA. Historical catch data provided in the RIR will focus on the commercial and charter harvests from Areas 2C and 3A. A discussion of wastage and other removals is also included as they affect the allocations.

The IPHC process to determine the amount of halibut available for determining the CCL for the charter fishery and commercial IFQ fishery is discussed in the EA to show why increases in charter sector harvests reduce the percentage of the Total CEY available to the commercial IFQ fishery. In summary, the Total CEY is currently calculated by applying a harvest rate (21.5 percent) in Areas 2C and 3A to the exploitable biomass estimate. The fishery CEY is calculated by subtracting an estimate of all other non-commercial removals⁴⁰ from the Total CEY. The IPHC sets a harvest limit only for commercial fisheries using setline or other hook and line gear. All other halibut removals including sportfishing harvests are accounted for before the fishery CEY is set.

2.3.2.1 Sportfishing Harvests and Their Estimation

This section describes the two data collection tools for sportfish harvests as well as their strengths and weaknesses. Information in this section provides background detail to the decision of moving from the SWHS to logbooks as the source for estimating charter harvests. The use of ADF&G charter logbooks for harvest reporting is implicit with all of the proposed allocation options.

Description of Statewide Harvest Survey

Since the mid-1990s, ADF&G (department) has provided the IPHC and Council with estimates of charter yield (harvest in pounds) based in part on estimates from the department's Statewide Harvest Survey (SWHS). The department also provided reports to the IPHC summarizing creel survey harvest estimates from several ports in Southeast Alaska, but only the SWHS provided comprehensive, year-round estimates of harvest for the sport fishery.

The SWHS is a mail survey that employs stratified random sampling of households containing at least one licensed angler. Survey respondents are asked to report the numbers of fish caught and kept by all members of the entire household, and the data are expanded to cover all households. Up to three mailings may be used to increase the response rate and correct for nonresponse bias.

⁴⁰ Non-commercial removals include: projected legal-sized PSC, projected unguided sport catch, projected wastage in the commercial hook-and-line fishery, and projected personal use/subsistence removals. Mortality of sub-legal halibut from the commercial fisheries is accounted for in the stock assessment, but not for the sport fisheries.

The SWHS has used two types of survey questionnaires. Approximately equal numbers of each type were mailed. The standard questionnaire did not break out guided and unguided harvest except for Kenai Peninsula fisheries (Area P). An alternate questionnaire, used since 1992, requested anglers to report effort, catch, and harvest for guided and unguided trips. Starting in 1996, for all areas except Area P, charter harvest was estimated by applying the guided proportions from the alternate questionnaire to the total estimate from both survey types. A single questionnaire that separately estimates guided and unguided harvest statewide was used starting in 2011.

Description of Logbook Program

ADF&G initiated a mandatory charter boat logbook program in 1998. The logbook program was an outgrowth of several years of mandatory annual registration of sport fishing guides and businesses. The logbook program was intended to provide information on actual participation and harvest by individual charter vessels and businesses in various regions of the state. This information was needed by the Alaska Board of Fisheries for allocation and management of state managed species such as Chinook salmon, rockfish, lingcod, and by the North Pacific Fishery Management Council for the allocation of halibut.

During the early years of the program, the department was concerned about the quality of information collected in the logbook. During this time, the Council was considering incorporating the charter fishery into the existing individual fishery quota (IFQ) management system for the commercial fleet. The department conducted an initial evaluation of the 1998-2000 logbook data in September 2001 (Bingham 2001). This evaluation compared SWHS estimates of harvests of several species with reported harvests from the logbook, and compared logbook data to interview data from on-site sampling in Southeast and Southcentral Alaska. Halibut harvests reported in the logbook were close to the SWHS estimates in 1998 but were substantially higher in subsequent years. Results for other species were variable. Comparisons with onsite interviews indicated that halibut harvest reported in the logbook was close, on average, to numbers reported in interviews. For Southeast Alaska, the halibut harvests reported in logbooks and interviews were within one fish for 90 - 91 percent of the trips. For Southcentral Alaska, only 58 - 74 percent of the trips were within one halibut, but the percentage increased each year.

ADF&G dropped the halibut reporting requirement in the logbooks beginning in 2002, following passage of a motion by the Council to include charter harvest into the existing IFQ system. The reporting requirement was removed because there no longer appeared to be a reason for the State of Alaska to collect charter halibut data. The Council had decided that initial allocation of quota share would be based on 1998-1999 logbook data, and that the logbook would not be used to track IFQ harvest. Federal agencies indicated clearly that they would develop a separate, possibly electronic, reporting system for charter halibut IFQ harvest (Wostmann & Associates, Inc. 2003). ADF&G, however, continued to estimate charter and noncharter halibut harvest through the SWHS, and to use the logbook program to continue to monitor participation in State-managed fisheries. As a result, no halibut information was collected in the logbook from 2002 through 2005.

The NPFMC rescinded the IFQ motion in December 2005. At that time, ADF&G pledged to resume the halibut reporting requirement for the charter logbook, and do it in a manner that improved the quality of the data collected. A number of new measures were implemented in 2006 to monitor and improve the quality of logbook data (Meyer and Powers 2009). The most significant changes, in terms of improving data quality, included:

1. Charter operators were required to report the fishing license number and residency of each licensed angler, and the numbers of fish kept and released by each angler on the vessel (including crew).

2. The logbook data entry staff increased telephone contacts to charter operators to correct logbook data that was recorded improperly, to request missing data, and to answer questions about how to complete logbooks.
3. An additional technician was added in Southcentral Alaska to conduct interviews and count (verify) halibut harvest in the Homer, Anchor Point, Deep Creek, and Seward fisheries. Referred to as the “roving tech,” this position was added in 2006 to increase the percentage of charter trips with verified halibut harvest. This technician also conducted courtesy logbook inspections early in the season.

Logbook Evaluation for 2006-2008

Following improvements to the logbook program, ADF&G sought to determine whether the quality of logbook data had in fact improved and whether logbook data should be used to monitor and manage the charter halibut fishery. ADF&G presented two reports to the Council evaluating 2006 logbook data (Meyer et al. 2008) as well as 2006-2008 logbook data (Meyer and Powers, 2009). The reports included summaries of missing or invalid data, timeliness of logbook submissions, frequency of reported fishing trips by individual clients and crew (license numbers), comparisons of logbook data to a post-season survey of charter clients for a single day of fishing, comparison of annual logbook data with SWHS estimates of harvest at the Area and subarea levels, comparison of annual halibut harvest recorded for individual anglers in logbooks to those angler’s mail survey responses, comparisons of reported logbook effort and harvest per boat trip to dockside interview data, and comparisons of reported annual logbook harvest for selected ports to onsite creel survey estimates.

Results of the comparison of logbook and SWHS estimates were mixed. Annual effort indicated by logbook data and SWHS estimates were very similar most years. Logbook effort ranged from 2 percent lower to 5 percent higher than the SWHS effort in Area 2C, and from 10 percent lower to 0.4 percent higher in Area 3A. The logbook estimates were consistently within the confidence intervals of the SWHS estimates except in Area 3A in 2007. Halibut harvest reported in the logbook was consistently higher than the SWHS estimates, but more so in Area 3A than in Area 2C. Discrepancies in halibut harvest estimates and logbook data in Area 2C were due mostly to differences in the Prince of Wales area. For Area 3A, discrepancies were due mostly to differences in the Prince William Sound/North Gulf and Cook Inlet numbers.

In an attempt to understand the cause of harvest discrepancies, ADF&G compared 2008 logbook harvest data for individual licensed anglers to their responses to the SWHS questionnaire. Only SWHS responses from anglers from single-angler households could be compared, because anglers were asked to report household-wide harvests in the SWHS. Logbook and SWHS data were matched for 847 anglers in Area 2C and 1,132 anglers in Area 3A. There was no difference between annual harvest reported in logbooks and the SWHS in 53 percent of the Area 2C records and 66 percent of the Area 3A records. Differences ranged from -16 fish (logbook was lower) in Area 3A to +10 fish in Area 2C. However, 92% of the angler comparisons were within 3 fish in Area 2C and 95% were within 2 fish in Area 3A. The average difference was -0.14 halibut/angler in Area 2C and +0.07 fish/angler in Area 3A. The net result for the anglers in the comparison was that total harvest was 6 percent lower in the logbook than in the SWHS in Area 2C, and 3 percent higher in the logbook than in the SWHS in Area 3A. Given the favorable comparisons for single-angler households, it was postulated that the observed discrepancies in the area estimates, particularly in Area 3A, were due to incomplete SWHS reporting by anglers from multi-angler households (i.e., perhaps a substantial portion of these respondents were not reporting harvest for their entire household).

There was also concern that some SWHS data handling procedures may cause bias in harvest estimation. In particular, ADF&G routinely edits SWHS responses that include harvests in excess of daily bag limits,

as long as those differences are small. Large differences are investigated and edited only in consultation with area managers. The theory is that anglers may be reporting harvests in excess of the bag limit due to recall or prestige bias. Halibut harvest estimates for 2006 were re-computed using the raw responses without bag limit edits. The re-computed estimates were about 7 percent larger in Area 2C and Area 3A, indicating that bag limit edits potentially bias the harvest estimates low. However, a systematic difference is not observed in fishing effort reported in logbooks and the SWHS, suggesting that anglers are reporting effort correctly. If so, the bag limit edits might in some cases be correcting for erroneous data. On the other hand, they might be truncating illegal harvest that should still be estimated as part of the removals.

The results of other comparisons between the two data sources were also mixed. Some of the comparisons were difficult to make and results may have suffered due to surveys not being completely comparable. For example, the comparisons of logbook and post-season survey data indicated that about 4-7 percent of anglers whose license numbers were recorded in charter logbooks reported that they never made a charter trip. While it is possible that some license numbers were fabricated, there are other possible explanations. For example, it is likely that some of the 7-digit license numbers were transposed, or that some surveyed clients had a different understanding of the term “charter,” or that some surveyed anglers were actually “comps” (anglers that fished for free).

From 2006 to 2008, the number of halibut reported harvested for individual anglers in logbooks and in the post-season survey agreed 63-67 percent of the time in Area 2C. Agreement was higher in Area 3A (75-77%). The distribution of differences was skewed in both areas, with a substantial portion of anglers reporting harvests of more than two halibut per day (the bag limit) in the post season survey. This was assumed to be due to anglers reporting for their entire household, or for multiple days, rather than for themselves only and for a single day as explained in the directions.

Comparisons of logbook data and dockside interview data were favorable. The average difference in reported harvest and harvest observed and counted dockside by ADF&G technicians was -0.08 halibut per boat-trip for Area 2C and -0.21 halibut per boat-trip for Area 3A. Large differences were not expected because interviews were conducted within minutes of when logbooks were required to be completed. On the other hand, technicians didn’t always share their counts with the charter operators, and differences (logbook minus interview) ranged from -35 fish to +10 fish. Some of the large differences could have been caused by date errors on logbooks or miscoding of vessel numbers such that data from different trips were being compared.

Following presentation of the 2009 report, the SSC indicated in its minutes that it concurred that logbook data offers clear advantages relative to the SWHS, and encouraged additional research. The Council made no specific motion on the use of logbooks at the October 2009 meeting.

Updated Comparisons Through 2010

Since the 2006-2008 report, comparisons of logbook data and SWHS estimates of annual charter effort (for all species), numbers of halibut harvested, and yield (harvest in pounds net weight) have been updated through 2010 (Figure 2-1). In addition, comparisons of reported numbers of halibut released in logbooks and the SWHS were compiled for this report (Figure 2-1). These comparisons will be updated again when the 2011 SWHS estimates become available.

The comparisons for 2009 and 2010 are generally consistent with the earlier comparisons. Logbook effort and effort estimates from the SWHS generally are very similar, and are closer to each other than estimates of the numbers of fish harvested or yield. Having more years of data provides a more realistic view of the potential differences between these two data sources. For example, harvest and yield from logbook data were lower than corresponding estimates from the SWHS in Area 2C in 2009. Harvest and yield from the logbook in Area 3A consistently exceed the estimates based on the SWHS, but the differences were variable from year to year. Most of this variability is probably due to sampling variance in the SWHS.

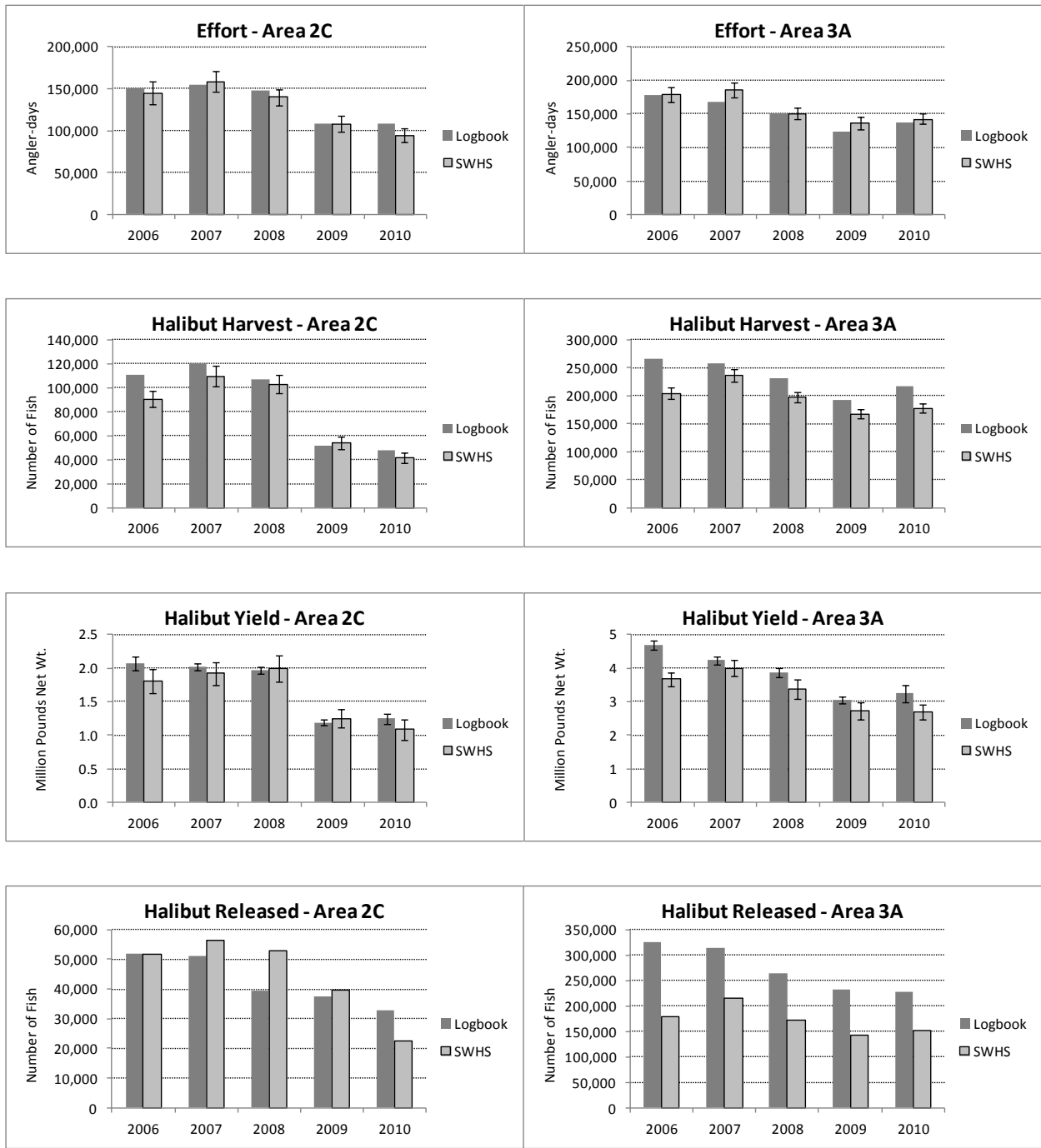


Figure 2-1 Comparison of angler-days of effort for all species, numbers of halibut harvested, estimated halibut yield (pounds net weight), and numbers of halibut released in Areas 2C and 3A, based on logbook data and the ADF&G Statewide Harvest Survey, 2006-2010.

There has been increasing interest in recent years in estimating release mortality in the recreational fishery. Therefore, numbers of halibut reported released in the logbook were also compared to SWHS annual estimates of halibut releases for 2006-2010 (Figure 2-1). In Area 2C, the number of released halibut reported in logbooks was less than the SWHS estimates three of five years. In Area 3A, however, the numbers of fish reported released in logbooks consistently exceeded the SWHS estimates. The reason

for these differences in patterns is unclear. Under current management, charter operators have no clear strategic incentive to under- or over-report numbers of released fish in logbooks. It is also possible that the differences are due to under- or over-reporting by charter clients in the SWHS, but again, there is no obvious strategic incentive. If the differences in Area 2C were caused by recall bias or prestige bias on the part of SWHS respondents, it is not clear why they would have opposite results in Area 3A.

The proportion of the total catch that was released was also compared between logbooks and SWHS estimates (Figure 2-2). The proportion of catch that was released was relatively stable in both areas from 2006 to 2010, except for an increase in Area 2C in 2009 and 2010, which is consistent with the imposition of a one-fish bag limit in those years. The differences in the proportion of halibut released between logbook data and SWHS estimates were also relatively consistent from year to year. There is no information yet to suggest that logbook data on released fish are unsuitable for estimating discard mortality.

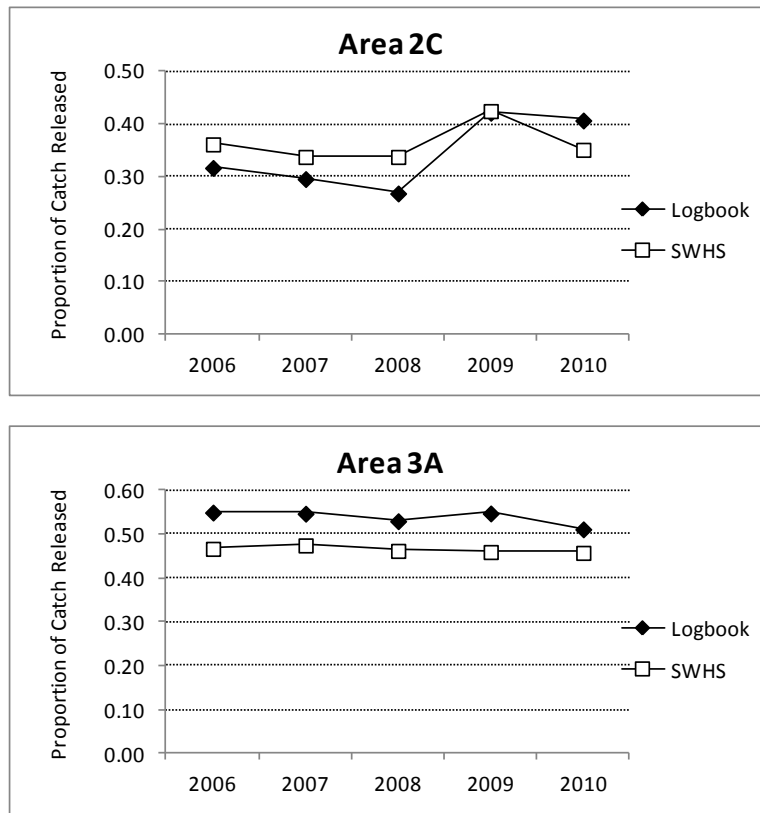


Figure 2-2 Comparisons of the proportions of charter halibut catch that were released in Areas 2C and 3A, as reported in charter logbooks and as estimated in the ADF&G Statewide Harvest Survey, 2006-2010.

Future Monitoring and Evaluation

ADF&G conducts ongoing monitoring and quality control of logbook data, including monitoring of incoming data for missing, illegible, or invalid information; incorrect dates; and late reporting. Telephone calls are made to charter operators to clear up data or reporting issues, and these follow-up calls have been effective in improving data quality. Logbook data for halibut and other species are summarized in an annual data report distributed via the ADF&G web site (Sigurdsson and Powers 2009-2012).

ADF&G intends to periodically conduct and report on evaluations of logbook data, including summaries of unresolved reporting errors, angler trip frequency, and late reporting, as well as comparisons of harvest and release numbers to other data sources. Regardless of whether logbooks are adopted as the preferred

estimate, ADF&G will continue to estimate the charter halibut catch (number of fish kept and released) and harvest (number kept) through the SWHS. When conducting dockside interviews, ADF&G port samplers will continue to record numbers of fish kept and released, and will count numbers of fish kept when possible to verify reported logbook harvest. Port samplers also record logbook numbers so logbook data can be matched to interview data. Evaluations will likely include comparisons of harvest and release data at the subarea and Area level, and reported harvest and release at the vessel or vessel-trip level. If necessary, it would also be possible to again conduct end-of-season surveys of licensed anglers to verify effort and harvest information, and compare SWHS responses and logbook data for individual licensed anglers from single-angler households.

Implementation:

There are differences in the reported halibut harvest in logbooks and the estimated harvest from the SWHS. ADF&G conducted multiple comparisons with other data sources to try to diagnose the quality of reported logbook harvest, and potentially find the source of the differences. The differences, however, did not follow a consistent pattern among different data sources (EOS, SWHS, single-angler households, and creel surveys). For example, the discrepancies in halibut harvest between logbook data and SWHS estimates were larger in Area 3A than in Area 2C. To date, the cause(s) of these discrepancies has not been identified. The discrepancies may be due to anglers from multi-angler households not reporting for the entire household in the mail survey, recall bias in the mail survey, bag limit edits in processing mail survey responses, incomplete reporting of crew harvest in the mail survey, inflation of harvest in logbooks, or a combination of factors, some of which are still unidentified.

Since the exact harvest is unknown, there is no way to know whether logbook data or SWHS estimates are more accurate. However, the advantages provided by the logbook data listed below suggest that the logbooks likely provide a better estimate of charter halibut harvest. For Area 2C, the 2006-2010 estimates of charter halibut yield based on logbook data averaged 5.6 percent higher than yield based on SWHS estimates (range -5% to +15%). For Area 3A, logbook-based estimates of yield averaged 15.9 percent higher than the SWHS-based estimates (range +5.7% to 28.0%). Although there are only five years of comparisons, it does not appear that the estimates are converging. Therefore, a similar range of differences might be expected in future years, unless there are significant changes in data collection methods that affect harvest reporting.

Some stakeholders are concerned that the differences in how the logbooks and SWHS measure harvest will cause more restrictive management of the charter fishery if logbooks are adopted for monitoring and management under the CSP. There is potential for a “disconnect” between the allocations and management because the CSP allocations were based on SWHS-based estimates of charter yield. For example, if logbooks are used to manage the Area 3A harvest, management measures could be triggered at levels of harvest that are 15 percent lower than if management were still based on the SWHS estimates. As a result, some stakeholders have expressed interest in adjusting the CSP allocations to account for the difference, and this option has been incorporated into the Council’s current PPA using the 2006 – 2010 differences provided above, with the removal of harvest attributed to skippers and crew. It would be difficult to calculate a precise analytical adjustment on available data. Some of the difference is likely caused by random sampling variation in the SWHS survey. That variation is confounded with differences attributed to variation in reporting of harvest by skippers and crew (“crew harvest”). It is assumed that not all, but some unknown proportion, of crew harvest is captured in the SWHS. Crew harvests reported in the logbook are smaller than the differences in harvest estimates, so crew harvest alone does not account for all of the differences between logbook data and SWHS estimates. In addition, most of the CSP allocations were based on SWHS estimates from years in which halibut were not required to be reported in the logbook.

Advantages

There are several clear advantages to using logbooks for monitoring and managing charter halibut harvest in Areas 2C and 3A:

1. Logbook data are required to be submitted by the guide at the end of each charter trip. Therefore, logbooks ideally represent a complete census of harvest without recall bias, avidity bias, or sampling error, factors that can affect the accuracy of SWHS estimates.
2. Catch and harvest information from logbooks is much more specific than SWHS estimates. Mail survey estimates are annual and can be summarized for the charter sector at the level of area, subarea, or site (a well-known location such as Sitka Sound or Kachemak Bay). On the other hand, logbook data can be summarized at the level of Area, subarea or SWHS reporting area, port of landing, ADF&G statistical area, charter business, charter vessel, individual angler, and any combination of the above. This allows fairly comprehensive analysis of the effects of potential regulatory measures, such as bag limits and annual limits, at various scales.
3. The location of charter harvest is believed to be more accurately reported in logbooks than in SWHS questionnaires. Charter captains are required to log the primary statistical areas fished, and follow-up calls are made to clarify nonsensical or unusual reports. Mail survey respondents are asked to report harvest locations or, in some cases, locations of landing the fish. It is suspected that many nonresident anglers, however, do not accurately recall names of specific locations or even ports of landing.
4. Charter anglers that harvest halibut in Area 2C are required to sign logbooks to verify that the halibut data reported for them was correct. NMFS has indicated that this signature requirement will be extended to Area 3A under the Council's proposed catch sharing plan. The signature requirement is generally believed to improve the accuracy of reported logbook data.
5. Although logbook data are potentially subject to strategic misreporting or nonreporting, ADF&G will continue onsite interviews and sampling for halibut size, as well as compilation of charter harvest estimates from the SWHS. Data from these programs will be used for ongoing monitoring of logbook accuracy. If it appears from onsite interviews that a significant portion of charter trips are not being logged, it may be possible to develop methods to statistically correct reported logbook harvest.
6. Logbook data are timelier than the SWHS. Logbooks are required to be submitted on a weekly basis beginning in April. Data for trips through July are generally entered and available for projections by late October. Final logbook data are usually available by February or March of the following year. In comparison, SWHS estimates are not available until September of the year following harvest.
7. Projections of logbook-reported harvest for the current year are more accurate than projections of SWHS estimates for the current year. The reason is that logbook data itself are used to make the projection, and the proportion of harvest that occurs through any particular date is relatively stable from year to year. The stability in the distribution of harvest over time could be affected, however, if the Council were to adopt seasonal closures or seasonal changes in bag limits.
8. The logbook is more flexible than the mail survey and can be modified annually to adapt to changing information needs. Since 1998, the logbook form has undergone numerous revisions. Additional fields and requirements were added or removed in recent years to help facilitate management and enforcement of the charter halibut fishery. Some of the most important changes to the logbook included reporting angler names and license numbers, adding signature lines for

anglers to certify that their reported catch data were correct, adding reporting of the primary limited entry permit number, and providing for reporting of GAF in anticipation of the catch sharing plan.

Non-Reporting

One weakness of the charter logbook is that it is not possible to accurately detect or monitor non-reporting of harvest, either through intentional or accidental failure to submit logbook pages. Charter businesses are not required to account for unused logbook pages or file reports for days on which they did not make a charter trip. An operator may accurately complete a logbook page by the end of a charter trip but then fail to submit it. If a charter operator discovers an unsubmitted page long after it was due, the operator may be reluctant to submit the page for fear of a citation, even though cases of occasional late pages are not generally referred to enforcement. In some cases, operators may believe there is a strategic advantage in not submitting a completed logbook page.

Apparent instances of non-reporting were discovered when making comparisons of 2006-2008 logbook and creel interview data. In Area 3A, about 8 percent of interviews could not be matched to logbook data in 2007, and about 6 percent could not be matched in 2008. In other words, creel survey data existed from apparent charter trips for which there was no corresponding logbook data. It was not possible to determine with certainty whether these were actual cases of nonreporting. Failure to find a matching logbook record for a creel survey interview could be caused by incorrect reporting of the date on logbook data, errors in reporting logbook numbers in the interview data, or incorrectly recording non-charter trips as charter trips in interview data. It may be possible to develop better ways of identifying and minimizing logbook non-reporting, or making appropriate adjustments to improve the accuracy of logbook harvest estimates.

Historic Sport Harvest (SWHS)

Table 2-4 and Table 2-5 report the estimated halibut sport harvest from 1995 through 2010 in Area 2C and Area 3A, respectively, using SWHS data. Because of the one year lag in estimating sport catch from the SWHS, data for 2011 were not available when the tables were generated. Later in this section the estimated charter harvests from SWHS are compared to Bottomfish Logbook estimates.

Charter halibut harvests, as estimated from SWHS, more than doubled from 1995 through 2008 (from 0.986 Milbs to 1.999 Milb). After 2008 charter harvests began to decline, as a result of stricter charter bag limits and worsening world-wide economic conditions. Based on logbook data, the implementation of a one-fish bag limit, of not more than 37 inches, in 2011, reduced charter harvests to 388,000 lbs that year.

Table 2-4 Area 2C harvest of sport caught halibut 1995-2010

Year	Charter				Non-Charter			Total Sport Harvest		
	No. Fish	Avg. Wt.	Yield (M lb)	GHL (M lb)	No. Fish	Avg. Wt.	Yield (M lb)	No. Fish	Avg. Wt.	Yield (M lb)
1995	49,615	19.9	0.986		39,707	19.3	0.765	89,322	19.6	1.751
1996	53,590	22.1	1.187		41,307	22.8	0.943	94,897	22.4	2.129
1997	51,181	20.2	1.034		53,205	21.4	1.139	104,386	20.8	2.172
1998	54,364	29.1	1.584	No GHL	42,580	21.5	0.917	96,944	25.8	2.501
1999	52,735	17.8	0.939		44,301	20.4	0.904	97,036	19.0	1.843
2000	57,208	19.7	1.130		54,432	20.6	1.121	111,640	20.2	2.251
2001	66,435	18.1	1.202		43,519	16.6	0.721	109,954	17.5	1.923
2002	64,614	19.7	1.275		40,199	20.3	0.814	104,813	19.9	2.090
2003	73,784	19.1	1.412	1.432	45,697	18.5	0.846	119,481	18.9	2.258
2004	84,327	20.7	1.750	1.432	62,989	18.8	1.187	147,316	19.9	2.937
2005	102,206	19.1	1.952	1.432	60,364	14.0	0.845	162,570	17.2	2.798
2006	90,471	19.9	1.804	1.432	50,520	14.3	0.723	140,991	17.9	2.526
2007	109,835	17.5	1.918	1.432	68,498	16.5	1.131	178,333	17.1	3.049
2008	102,965	19.4	1.999	0.931	66,296	19.1	1.265	169,261	19.3	3.264
2009	53,602	23.3	1.249	0.788	65,549	17.3	1.133	119,151	20.0	2.383
2010	41,202	26.4	1.086	0.788	52,896	16.7	0.885	94,098	20.9	1.971

Source: Statewide Harvest Survey

Area 3A charter harvests displayed a similar trend to the Area 2C harvests. In Area 3A, charter harvests have varied from a low of 2.533 Mlbs in 1999, to a high of 4.002 Mlbs in 2007; however, harvests in 1997 and 2008 are about equal. In 2010, charter harvests were 2.698 Mlb, or about 40,000 lb less than 2009.

A primary difference between the two areas was the bag limits in Area 3A did not change over the time period considered. Therefore, economic conditions may have played a larger role in the decline of charter harvests than changes in management measures.

Table 2-5 Area 3A harvest of sport caught halibut 1995-2010

Year	Charter				Non-Charter			Total Sport Harvest		
	No. Fish	Avg. Wt.	Yield (M lb)	GHL (M lb)	No. Fish	Avg. Wt.	Yield (M lb)	No. Fish	Avg. Wt.	Yield (M lb)
1995	137,843	20.6	2.845		95,206	17.5	1.666	233,049	19.4	4.511
1996	142,957	19.7	2.822		108,812	17.6	1.918	251,769	18.8	4.740
1997	152,856	22.3	3.413		119,510	17.6	2.100	272,366	20.2	5.514
1998	143,368	20.8	2.985	No GHL	105,876	16.2	1.717	249,244	18.9	4.702
1999	131,726	19.2	2.533		99,498	17.0	1.695	231,224	18.3	4.228
2000	159,609	19.7	3.140		128,427	16.9	2.165	288,036	18.4	5.305
2001	163,349	19.2	3.132		90,249	17.1	1.543	253,598	18.4	4.675
2002	149,608	18.2	2.724		93,240	15.9	1.478	242,848	17.3	4.202
2003	163,629	20.7	3.382	3.650	118,004	17.3	2.046	281,633	19.3	5.427
2004	197,208	18.6	3.668	3.650	134,960	14.4	1.937	332,168	16.9	5.606
2005	206,902	17.8	3.689	3.650	127,086	15.6	1.984	333,988	17.0	5.672
2006	204,115	17.9	3.664	3.650	114,887	14.6	1.674	319,002	16.7	5.337
2007	236,133	16.9	4.002	3.650	166,338	13.7	2.281	402,471	15.6	6.283
2008	198,108	17.0	3.378	3.650	145,286	13.4	1.942	343,394	15.5	5.320
2009	167,599	16.3	2.734	3.650	150,205	13.5	2.023	317,804	15.0	4.758
2010	177,460	15.2	2.698	3.650	124,088	12.8	1.587	301,548	14.2	4.285

Source: Statewide Harvest Survey

Charter catches are not uniform throughout the year. Catches tend to be greatest from early June through the later part of August (Figure 2-3). The percentage of total charter catch dropped dramatically during the weeks before June and after August. In Area 2C, the charter sector is dependent on cruise ship clients in ports like Ketchikan, Sitka, Juneau, and Haines; those clients are less likely to shift their trip dates, because their time in Alaska is linked to their cruise dates. Halibut catches from Area 3A tend to follow the same general trend as Area 2C. The primary difference in the two areas is that Area 3A catch tends to start sooner and taper off sooner than in Area 2C.

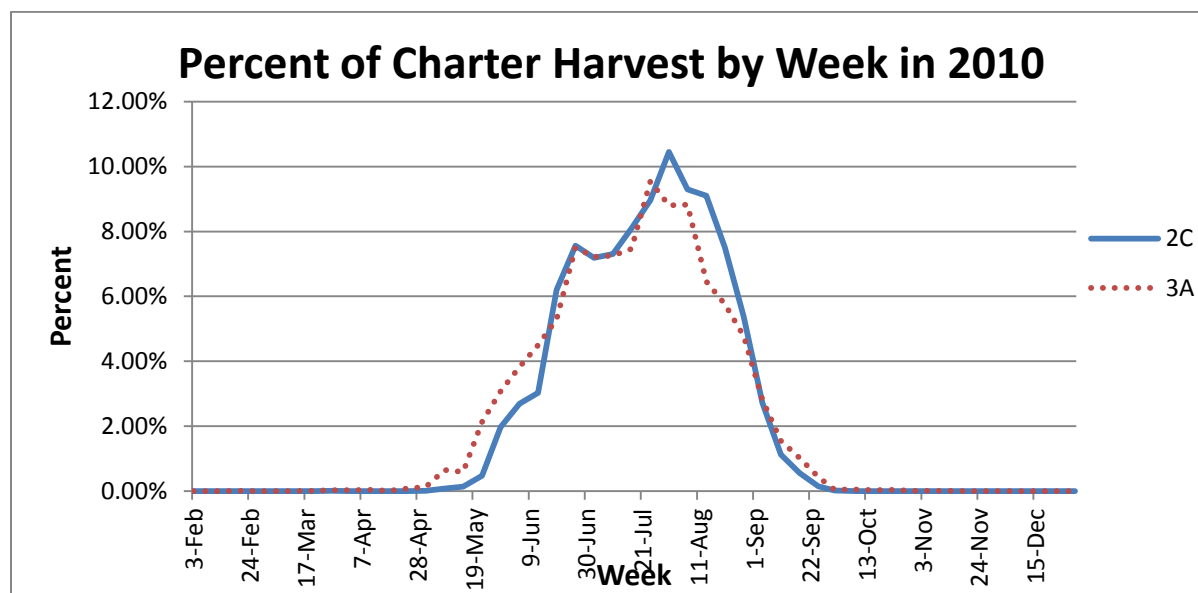


Figure 2-3 Weekly percentage of total charter harvest during 2010.

Comparison of 2006 through 2010 Harvest Estimates using Logbooks and SWHS

Table 2-6 shows the estimated charter harvests in areas 2C and 3A for the years 2006 through 2010, using both the bottomfish logbook data and statewide harvest survey (SWHS) data. Data are reported for both the estimated yield and the standard error associated with the yield estimate).

Table 2-6 Charter harvests in Areas 2C and 3A from bottom fish logbooks and statewide harvest survey (Mlbs)

Area	Year	Logbook		SWHS		%Diff	Avg%Diff
		Yield (Mlb)	SE(yield)	Yield (Mlb)	SE(yield)		
Area 2C	2006	2.063	0.052	1.804	0.089	14.4%	
	2007	2.015	0.028	1.918	0.085	5.1%	
	2008	1.974	0.025	1.999	0.099	-1.3%	
	2009	1.187	0.022	1.249	0.071	-5.0%	
	2010	1.249	0.040	1.086	0.077	15.0%	5.63%
Area 3A	2006	4.689	0.072	3.664	0.108	28.0%	
	2007	4.229	0.059	4.002	0.120	5.7%	
	2008	3.865	0.063	3.378	0.142	14.4%	
	2009	3.044	0.055	2.734	0.133	11.3%	
	2010	3.238	0.123	2.698	0.116	20.0%	15.88%

Source: ADF&G statewide harvest survey and bottomfish logbook data.

In Area 2C the logbook data indicates that the charter sector harvest declined each year from 2006 through 2010. Yield in 2006 was 2.063 Mlbs. SWHS estimates of yield were 1.804 Mlbs in 2006. Their harvest increased to an estimated 1.999 Mlbs in 2008, and then declined to 1.086 Mlbs in 2010. Over the five-years, the logbook yield was reported to be larger than the statewide harvest survey in three years, with the greatest difference being 15.0%. The average of the differences over the five year period was 5.63%. The adjustment factor that is used in this analysis to convert the Area 2C allocation from SWHS data to logbook data is 5.6%, or the 5.63%, rounded to the nearest one-tenth of a percent.

Comparing logbook and SWHS data for Area 3A indicates that the logbook estimate was larger every year from 2006 through 2010. The average of the annual percentage difference was 15.88%. The greatest difference was 28.0% in 2006 and the smallest difference was 5.7% in 2007.

Area 3A charter harvests, from 2007 through 2009, restricted skipper and crew harvests during part of the year (Table 2-7). Those years, skipper and crew were allowed to retain halibut early in the charter fishing season to meet their own consumption needs. During the peak of the season, they were not allowed to retain halibut. It is common for some charter operations to retain a bag limit for the skipper and crew and divide those fish among clients to increase the amount of meat they can take home.

Table 2-7 Charter regulations limiting skipper and crew harvests

Year	Charter Regulations
1995-2006	Two-fish bag limit (no size restrictions), no limit on crew retention
2007	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/1-12/31.
2008	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/24-9/1.
2009	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/23-9/1.
2010	Two-fish bag limit (no size restrictions), no limit on crew retention
2011	Two-fish bag limit (no size restrictions), no limit on crew retention
2012	Two-fish bag limit (no size restrictions), no limit on crew retention

Estimates of skipper and crew harvests in numbers of halibut are presented in Table 2-8. During 2007 through 2009, when skipper and crew harvest limitations were implemented, the number of halibut harvested by these individuals was 0.1%, 0.5%, and 0.7% of the total charter halibut taken in Area 3A, respectively. During 2006, 10.4% of the total was taken by skipper and crew. The other complete year over this time period when no limitations were in place (2010), 5.7% of the charter harvest was reported to have been taken by skippers and crew. The percentage in 2010 is substantially lower than 2006. The reason the percentage was substantially lower 2010 is unknown, but one factor maybe that some skippers did not realize the limitation was not implemented that year or they had become accustomed to not retaining halibut on charter trips.

Table 2-8 Area 3A client and crew harvest in numbers of fish

Area	Year	Logbook Data			% crew
		Client	Crew	Total	
Area 3A	2006	238,189	27,704	265,893	10.4%
	2007	258,196	228	258,424	0.1%
	2008	231,363	1,269	232,632	0.5%
	2009	190,750	1,260	192,010	0.7%
	2010	204,080	12,340	216,420	5.7%

Source: ADF&G bottomfish logbook data

Multiplying the annual crew percentages in Table 2-8 by the logbook harvest in Table 2-6 yields the logbook yield (Table 2-9). The average percentage difference between the SWHS and the adjusted

logbook data are reported in the percentage difference column. The average of the annual percentage differences (11.6%) is the adjustment factor used throughout this analysis to base future management of the charter fleet on logbook data and implement a prohibition on retention of halibut by skipper and crew.

Table 2-9 Estimated Area 3A logbook and SWHS yield and differences between the two data sources

Year	Yield (Mlb) without crew			
	Logbook	SWHS	Abs Diff	% Diff
2006	4.201	3.664	0.537	14.7%
2007	4.225	4.002	0.223	5.6%
2008	3.844	3.378	0.467	13.8%
2009	3.024	2.734	0.289	10.6%
2010	3.053	2.698	0.355	13.2%
Average % difference				11.6%

Source: ADF&G logbook and SWHS data

In summary, the adjustment factors for managing future charter harvests using logbook data are presented in Table 2-10. In Area 2C the adjustment was completely based on the difference between logbook and SWHS data, with no adjustment for skipper and crew harvest. No adjustment for skipper and crew fish was necessary, because the years when crew were allowed to retain halibut during part of the year, the amount retained was always less than 90 fish per year and less than 0.1% of the total number of fish. In Area 3A the adjustment factor includes both the estimated difference in logbook and SWHS data as well as the estimated skipper and crew removals reported in logbooks.

Table 2-10 Adjustment factors for logbooks and crew harvests

Area	Factor
Area 2C	5.6%
Area 3A	11.6%

Commercial IFQ Harvests

Area 2C commercial halibut removals are collected through the NMFS eLandings system and have fluctuated from a low of 2.29 Mlbs in 2011, to a high of 10.49 Mlbs in 2005 (Table 2-11). Removals were between 9.67 Mlbs and 9.90 Mlbs during 1997 through 1999. Removals were between 8.27 Mlbs and 8.45 Mlbs over the four year period from 2000 through 2003. From 2004 through 2006, removals increased to between 10.11 Mlbs and 10.50 Mlbs each year.

The number of halibut QS holders has declined since QS was issued initially (NMFS RAM, 2012). In Area 2C, 2,389 QS holders were initially issued halibut QS. By the end of the first year of fishing under the IFQ program (1995) the number of QS had declined to 2,125. As of the end of 2011, the number of halibut QS holders had declined to 1,130. That represents a decrease of 1,259 QS holders, more than half the number originally issued halibut QS.

Table 2-11 Area 2C commercial IFQ fishery catch data and value estimates

Year	Total CEY (Mlb)	Fishery CEY (Mlb)	Commercial Catch Limit (Mlb)	Commercial Catch (Mlb)	Ex Vessel \$/lb.	Estimated Ex Vessel Value (\$million)	QS Holders	Avg. Ex Vessel Value / QS holder
1995	13.94	8.54	9.00	7.761	\$2.04	\$15.80	2,125	\$7,436
1996	n/a	n/a	9.00	8.737	\$2.26	\$19.74	1,894	\$10,421
1997	13.92	11.41	10.00	9.753	\$2.24	\$21.86	1,740	\$12,561
1998	17.70	15.48	10.50	9.666	\$1.39	\$13.39	1,685	\$7,945
1999	12.80	10.49	10.49	9.902	\$1.99	\$19.71	1,623	\$12,147
2000	8.44	6.31	8.40	8.266	\$2.62	\$21.66	1,582	\$13,690
2001	11.20	8.78	8.78	8.273	\$2.11	\$17.47	1,536	\$11,375
2002	10.66	8.50	8.50	8.455	\$2.22	\$18.74	1,511	\$12,400
2003	12.00	9.11	8.50	8.286	\$2.95	\$24.48	1,466	\$16,696
2004	20.00	17.00	10.50	10.116	\$3.04	\$30.70	1,413	\$21,728
2005	14.90	11.80	10.93	10.489	\$3.08	\$32.29	1,384	\$23,327
2006	13.73	10.33	10.63	10.397	\$3.75	\$39.01	1,362	\$28,641
2007	10.80	7.61	8.51	8.346	\$4.41	\$36.77	1,302	\$28,243
2008	6.50	3.92	6.21	6.145	\$4.33	\$26.63	1,225	\$21,736
2009	5.57	2.86	5.20	4.866	\$3.08	\$15.01	1,205	\$12,454
2010	5.02	2.39	4.40	4.350	\$4.71	\$20.48	1,162	\$17,628
2011	5.39	2.33	2.33	2.293	\$5.52	\$12.66	1,130	\$11,201

Note: All values are reported in nominal dollars

Source: RAM data and IPHC Blue Books

The value of the fishery, in nominal dollars, exhibited a general increasing trend from 1995 through 2006. There were some years when the value of the fishery fell during that time period (1998 and 2001 being notable examples). Since 2007 the trend has been a decline in the value of the fishery, with 2011 being the lowest value year, even when the values are not adjusted for inflation. The average ex vessel value per QS holder is estimated in the rightmost column. That column shows the same general trend as total value, but the declines in recent years are, mitigated by the declining number of QS holders.

In Area 3A, commercial removals followed a similar trend to that in Area 2C. Removals ranged from 14.23 Mlbs in 2011, to 26.13 Mlbs in 2007 (Table 2-12). Commercial removals were greatest from 1997 through 1999, and 2004 through 2008. Removals were over 24.00 Mlbs each of those years.

A total of 3,073 QS holders were given an initial halibut allocation. By 2011, the number of QS holders was reported to be 1,431. Meaning, 1,642 QS holders left the Area 3A commercial halibut fishery between initial allocation and the end of 2011. This was neither an unexpected, nor undesirable outcome of the IFQ program. One of the driving forces in the development of the IFQ program was the overcapitalization of the fishery and the corresponding short fishing seasons.

Table 2-12 Area 3A commercial IFQ fishery catch data and value estimates

Year	Total CEY (Mlb)	Fishery CEY (Mlb)	Commercial Catch Limit (Mlb)	Commercial Catch (Mlb)	Ex Vessel \$/lb.	Estimated Ex Vessel Value (\$million)	QS Holders	Avg. Ex Vessel Value / QS holder
1995	31.16	16.87	20.00	18.142	\$1.99	\$36.10	2,752	\$13,119
1996	n/a	n/a	20.00	19.318	\$2.24	\$43.23	2,515	\$17,190
1997	40.66	33.55	25.00	24.235	\$2.16	\$52.40	2,338	\$22,411
1998	45.44	38.71	26.00	24.538	\$1.36	\$33.42	2,243	\$14,900
1999	31.80	24.67	24.67	24.310	\$2.09	\$50.69	2,156	\$23,509
2000	18.98	11.94	18.31	18.166	\$2.60	\$47.18	2,098	\$22,487
2001	27.80	21.89	21.89	21.100	\$2.03	\$42.77	2,049	\$20,873
2002	30.96	24.14	22.63	22.614	\$2.23	\$50.34	2,017	\$24,957
2003	40.00	34.22	22.63	22.324	\$2.89	\$64.61	1,964	\$32,895
2004	36.50	29.98	25.06	24.717	\$3.04	\$75.02	1,897	\$39,545
2005	32.90	26.30	25.47	25.228	\$3.07	\$77.50	1,842	\$42,074
2006	32.18	24.94	25.20	25.238	\$3.78	\$95.45	1,795	\$53,176
2007	35.78	27.63	26.20	26.133	\$4.40	\$115.06	1,667	\$69,024
2008	28.96	22.25	24.22	24.166	\$4.40	\$106.33	1,547	\$68,733
2009	28.01	20.84	21.70	21.399	\$3.12	\$66.68	1,501	\$44,423
2010	26.19	18.28	19.99	20.092	\$4.69	\$94.19	1,462	\$64,426
2011	23.52	14.36	14.36	14.268	\$5.43	\$77.48	1,431	\$54,141

Note: All values are reported in nominal dollars

Source: RAM data and IPHC Blue Books

The ex vessel value of the Area 3A fishery has exhibited trends similar to those reported for Area 2C. However, while the value of the fishery has declined in recent years, the declines, to date, have been less dramatic than experienced in Area 2C.

2.3.2.2 Percentage of Halibut Harvested by Charter Sector

Figure 2-4 shows the percentage of the combined charter and commercial catch limit⁴¹ taken in the charter sector during 1995 through 2011. The percentage of total halibut harvested by the charter sector in Area 2C shows no consistent increasing or decreasing trend from 1995 through 2000. From 2001 through 2006, the charter sector percentage of the combined harvest was fairly stable. The charter sector percentage increased in 2007, peaked at 24 percent in 2008, and dropped to less than 15 percent in 2011. The decline Area 2C is due to both overall economic conditions and more stringent management measures implemented on bag limits. In Area 3A, the charter sector percentage of the total decreased from 1995 through 2000. Its percentage of the total increased in 2000, and then decreased through 2002. The percentage was fairly stable during 2003 through 2010. In 2011 the percentage of the combined catch increased to just less than 17 percent (about a 5 percent change from 2010). This was the first year that the percentage of harvest by the charter sector was greater in Area 3A than Area 2C. The large increase in the percentage of the total harvest is driven by a relatively small increase in charter harvest and a substantial decline in the harvest by the commercial IFQ fishery.

⁴¹ Assumed to be the IFQ catch limit plus the GHL

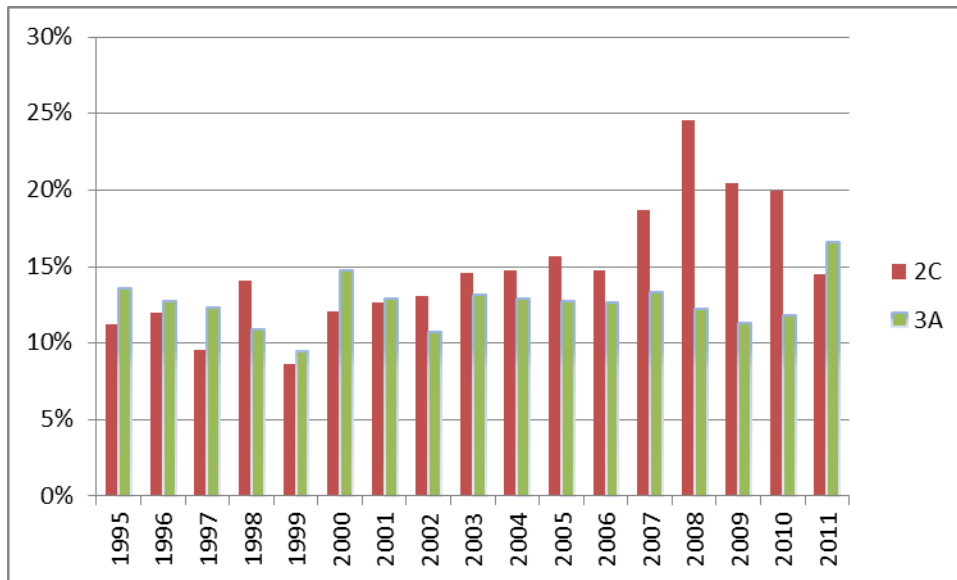


Figure 2-4 Charter halibut harvest as a percentage of combined commercial IFQ and charter harvest, 1995–2011.

2.4 Current Management of Charter Sector (status quo)

The IPHC has promulgated regulations governing the Pacific halibut fishery in 2012 under the Convention between Canada and the United States for the Preservation of the Halibut Fishery of the North Pacific Ocean and Bering Sea (Convention). As provided by the Northern Pacific Halibut Act of 1982 (Halibut Act) at 16 U.S.C. 773b, the Secretary of State, with the concurrence of the Secretary of Commerce (Secretary), may accept or reject, on behalf of the United States, recommendations made by the IPHC in accordance with the Convention (Halibut Act, Sections 773–773k.). On March 5, 2012, the Secretary of State of the United States, with the concurrence of the Secretary, accepted the 2012 IPHC regulations as provided by the Northern Pacific Halibut Act of 1982 (Halibut Act) at 16 U.S.C. 773–773k. The Halibut Act provides the Secretary with the authority and general responsibility to carry out the requirements of the Convention and the Halibut Act. The Regional Fishery Management Councils may develop and the Secretary may implement regulations governing harvesting privileges among U.S. fishermen in U.S. waters that are in addition to, and not in conflict with approved IPHC regulations.

The NPFMC has exercised this authority in developing a suite of halibut management programs that correspond to the three fisheries that harvest halibut in Alaska: the subsistence, sport, and commercial fisheries. Subsistence and sport halibut fishery regulations are codified at 50 CFR part 300.

After debate and refinement since 1993, the GHL was recommended by the NPFMC in February 2000. NMFS published a final rule on August 8, 2003 (68 FR 7256) that implemented the GHL for 2004. The GHL established a pre-season estimate of the acceptable annual harvests for the charter halibut fishery in Areas 2C and 3A. Initially, the GHL was set at 125 percent of the average historic charter sector harvest⁴² over the years 1995 through 1999. That average harvest equated to the charter sector being allocated, the equivalent at the time the preferred alternative was selected of 13.05 percent of the combined commercial setline fishery and charter sector allocation (combined CEY) in Area 2C and 14.11 percent of the combined CEY in Area 3A.

The GHLs were established as the maximum poundage that the charter clients in Areas 2C and 3A may harvest. The charter sector requested that a fixed poundage allocation be provided prior to the beginning of the fishing year, to enhance predictability for bookings for the next summer’s fishing season. The overall intent was to maintain a stable charter fishing season of historical length, using area-specific

⁴² Based on Statewide Harvest survey data

measures to control harvests to the GHL. Because the GHL is linked to the total constant exploitation yield (TCEY) it is responsive to annual fluctuations in abundance. For example, in the event of a sufficient reduction in halibut biomass and corresponding TCEY in either area, as determined by the IPHC, the area GHL is reduced incrementally in a stepwise fashion in proportion to the reduction. Regulations at § 300.65(c)(1) specify the GHLs based on the TCEY that is established annually by the IPHC.

The original GHLs were 1.432 Mlbs in Area 2C and 3.650 Mlbs in Area 3A. For 2012 they are both set lower: 931,000 lb in Area 2C (three tiers lower) and 3.102 Mlbs in Area 3A (one tier lower). The GHLs are reduced if the area-specific Total CEY declines by at least 15 percent below the average 1999-2000 Total CEY, as determined by the IPHC. For example, if the Total CEY in Area 2C was to fall by between 15 percent and 24 percent below its 1999–2000 average, then the GHL would be reduced from 1.432 Mlbs to 1.217 Mlbs. If the Total CEY declined by between 25 percent and 34 percent, then the GHL would be reduced from 1.432 Mlbs to 1.074 Mlbs. If the Total CEY continued to decline by at least 10 percent, the GHL would be reduced from 1.074 Mlbs by an additional 10 percent to 931,000 lb. If the Total CEY declined by an additional 10 percent or more, the GHL would be reduced by an additional 10 percent from 931,000 lb to the baseline level of 788,000 lb. The Area 2C GHL would not be reduced below 788,000 lb. If the area halibut biomass increased, the GHL could be increased only to its initial level of 1.432 Mlb, but no higher. A summary of the GHL tiers that are established in regulation is presented in Table 2-13.

Table 2-13 GHLs Established in Regulation for Areas 2C and 3A

If the annual Total CEY for halibut is more than (lbs):	Then the GHL will be (lbs):	If the annual Total CEY for halibut is more than (lbs):	Then the GHL will be (lbs):
Area 2C		Area 3A	
9,027,000	1,432,000	21,581,000	3,650,000
7,965,000	1,217,000	19,042,000	3,103,000
6,903,000	1,074,000	16,504,000	2,734,000
5,841,000	931,000	13,964,000	2,373,000
4,779,000	788,000	11,425,000	2,008,000

Source: NOAA regulations at CFR 300.65(c)(1)

The GHLs for each Total CEY level, not adjusted for switching to logbooks, are graphically portrayed in Figure 2-5. While the Area 2C and Area 3A graph axis represent different poundage levels, they both have similar shapes. GHLs are undefined below a given level of Total CEY and the lines are horizontal above a given level of Total CEY.

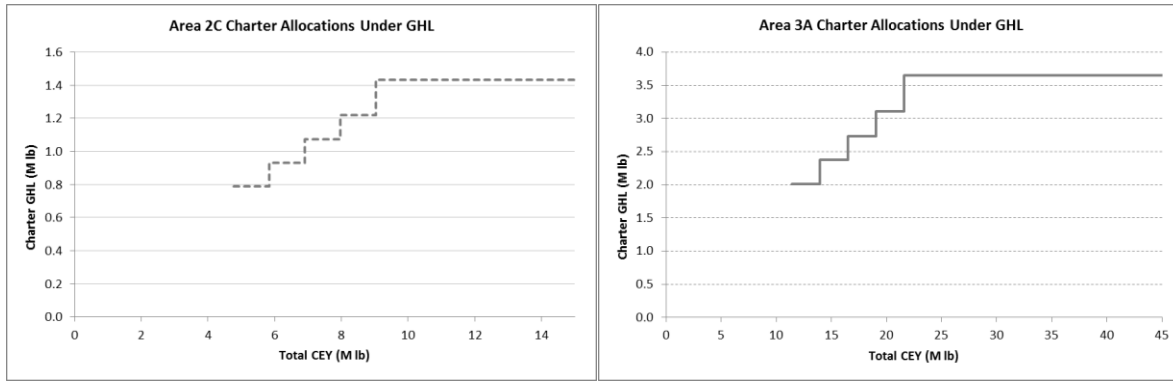


Figure 2-5 GHLs for the Area 2C and Area 3A charter fisheries

Each year from 2004 through 2010, the charter halibut fishery exceeded the GHL in Area 2C (Figure 2-6); however, due to implementation of more stringent management measures, the preliminary estimate of 2011 charter halibut harvest was well below the GHL (see Table 2-4 **Error! Reference source not found.**). During 2004 through 2007, the GHL was 1.432 Milbs. During that time period, charter halibut harvests were approximately 1.750 Milbs in 2004, 1.952 Milbs in 2005, 1.804 Milbs in 2006, and 1.918 Milbs in 2007. In 2008, the GHL was 931,000 lb and guided charter harvests were approximately 1.999 Milbs. In 2009 the GHL was 788,000 lbs and the guided charter harvest was approximately 1.249 Milbs. In 2010, the GHL was 788,000 lbs and guided charter harvest was approximately 1.279 Milbs. In 2011 the GHL was 788,000 lbs and the estimated guide charter harvest was about 386,000 lbs, or less than half of the limit. The decrease in the guided charter harvest was primarily due to the implementation of the 37” size limit in addition to the one-fish bag limit. Since the GHL was implemented (2006 through 2011), the guided charter sector in Area 2C has annually exceeded the GHL by over 400,000 lbs, on average.

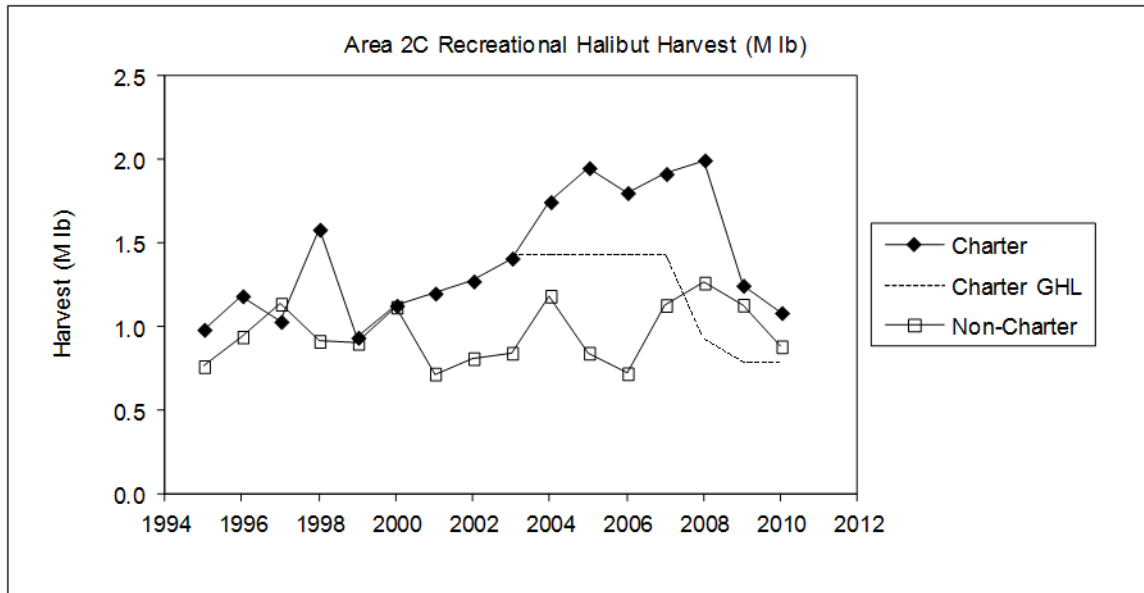


Figure 2-6 Area 2C sport halibut harvest, 1994 – 2010 (Source: ADF&G)

For 2012, the GHL is established at 931,000 lbs. A one-fish bag limit with a reverse slot limit allowing retention of fish less than or equal to 45 inches or greater than or equal to 68 inches (head-on) has been recommended by the Council and approved by the IPHC, to limit Area 2C charter harvest to the GHL.

Area 3A GHL’s were set at 3.650 Milbs from 2004 through 2011 (Figure 2-7). In 2012, the GHL was reduced one tier to 3.103 Milbs. From 2004 through 2006, the GHL was exceeded by relatively small

amounts (at most 39,000 lb). In 2007, the GHL was exceeded by a much greater amount (about 350,000 lb). From 2008 forward, the charter sector has not exceeded the Area 3A GHL, and since 2009 has harvested less than 3.000 Milbs. Low charter harvests in the most recent years have more than offset overages that occurred from 2004 through 2007.

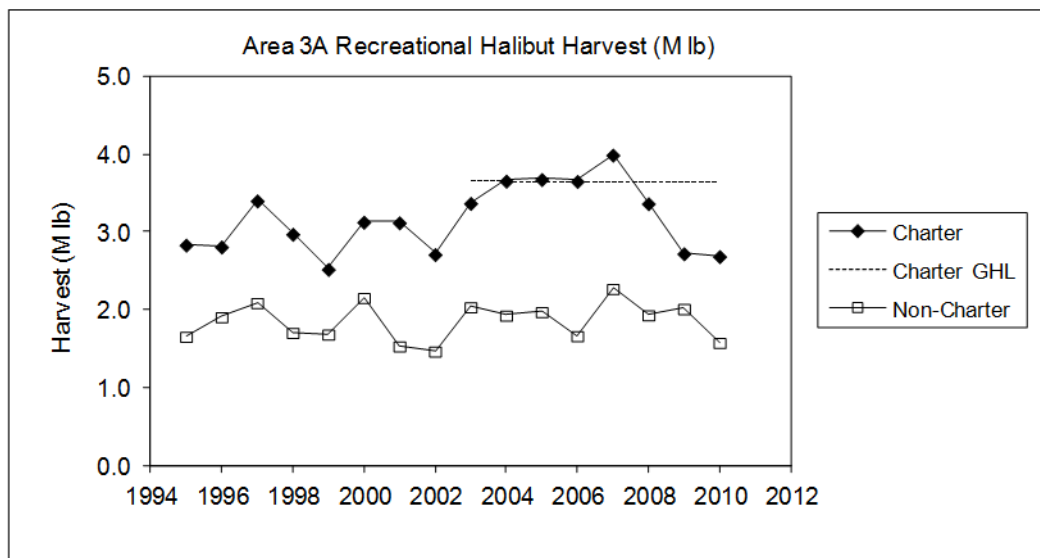


Figure 2-7 Area 3A recreational halibut harvest, 1994 – 2010 (Source ADF&G)

The GHL for Areas 2C and 3A is established for the sport fishing season that the IPHC has determined to be February 1 to December 31. A GHL will be established each fishing year, if the TCEY is above the lowest established GHL tier.

Based on the structure of the GHL, if the Total CEY is less than or equal to 4.779 Milbs in Area 2C or less than or equal to 11.425 Milbs in Area 3A, a GHL amount may not be defined for that area by the current regulations. It is assumed that the GHL amount would not be defined in regulation, and charter vessel anglers would be subject to regulations implemented by the IPHC and NMFS.

Current IPHC regulations for all sport (guided and unguided) anglers fishing waters in and off Alaska are: (a) the sport fishing season is from February 1 to December 31; (b) the daily bag limit is two halibut of any size per day per person unless a more restrictive bag limit applies in Federal regulations at 50 CFR 300.65; and(c) no person may possess more than two daily bag limits. Based on the 2012 Total CEY, the Federal regulations at 50 CFR 300.65(d)(2) limit charter vessel anglers in Area 2C to retaining one halibut per calendar day.

The IPHC establishes the Total CEY in late January each year and the sport fishing season begins February 1. If the current GHL and charter harvest regulations are not revised and the IPHC establishes a Total CEY for Area 2C less than or equal to 4.779 Milbs, charter vessel anglers would be subject to the IPHC regulations setting the fishing season (a) and the possession limit (c). Area 2C charter vessel anglers also would be limited to retaining one halibut of any size per day by the more restrictive bag limit currently in Federal regulation at 50 CFR 300.65(d)(2). The IPHC could potentially recommend implementation of a more restrictive management measure through its annual regulations. IPHC regulations are subject to acceptance by the Secretary of State, with the concurrence of the Secretary of Commerce.

If the current GHL and charter harvest regulations are not revised and the IPHC establishes a Total CEY less than 11.425 Milbs for Area 3A, charter vessel anglers would be subject to the IPHC regulations a, b, and c specified above. Area 3A charter vessel anglers would be restricted to retaining two halibut of any size per day because current regulations at 50 CFR 300.65 do not contain a more restrictive bag limit than

(b) for that area. As in Area 2C, the IPHC also could recommend implementation of more a restrictive management measure through its annual regulations, if necessary.

Captain and crew harvests in Area 2C would still be prohibited by federal regulations imposed at 50 CFR 300.65(d)(2)(ii)); the prohibition was implemented along with a one-fish bag limit and line limits in 2009. That section states that “a charter vessel guide, a charter vessel operator, and any crew member of a charter vessel must not catch and retain halibut during a charter fishing trip.” If skipper and crew harvest limitations are extended to Area 3A, they could be enforced, regardless of whether a GHL was set for a fishing year. Also, charter operators would still be required to abide by the requirements and limitations established under the Charter Halibut Permit (CHP) program for Areas 2C and 3A (see §300.67). CHPs limit a) the number of vessels that may operate in the halibut fishery at any given time by requiring a limited entry permit on any vessel operating as a halibut charter, b) the number of clients harvesting halibut that may be carried as a condition of each permit, and 3) the area that may be fished.

2.4.1 Coastwide Assessment

The historical (1995 through 2007) catch and CEY estimates used in this analysis are based on the area-wide assessment. Starting in 2008, to account for migration the coast-wide assessment was used to derive CEYs used in this analysis. This issue is described in more detail in Section 1.8.1.4 of the EA.

2.4.2 Changes in Management Measures Under the GHL

The management measures for the charter sector in Area 3A have remained at two fish of any size since the GHL was implemented. The primary reason is the Total CEY has not declined to a level that would trigger a reduction in the bag limit (see Figure 2-6). The Area 2C regulations have changed nearly annually since the GHL was implemented. This section provides a description of recent changes in the Area 2C charter fisheries. Much of the language in this section that describes the history of actions since 2007 is taken from the analysis prepared for the proposed rule implementing the CHP program (NMFS 2009).

Concerns that the Area 2C GHL was being exceeded initiated a management response by the IPHC, NMFS, ADF&G, and, subsequently, the Council, beginning in 2007. In January 2007, the IPHC recommended that NMFS reduce the daily bag limit for anglers on charter vessels in Areas 2C, from two halibut, to one halibut during certain time periods. Specifically, the IPHC recommended that a one-fish daily bag limit should apply to charter vessel anglers from June 15 through July 30 in Area 2C. The IPHC recommended this bag limit reduction, because it believed its management goals were at risk by the magnitude of the charter halibut harvest in excess of the GHL.

In a letter to the IPHC on March 1, 2007, the Secretary of State, with concurrence from the Secretary of Commerce, rejected the recommended one-fish daily bag limit in Area 2C, and indicated that appropriate reduction in the charter vessel harvest in these areas would be achieved by a combination of ADF&G and NMFS regulatory actions. For Area 2C, the State of Alaska Commissioner of Fish and Game issued an emergency order to prohibit retention of fish by charter vessel guides and crew members (No. 1-R-02-07). This order was similar to one issued for 2006. This action was intended, in conjunction with other measures, to reduce the 2007 charter vessel harvest of halibut to a level comparable to that which would be achieved by the IPHC-recommended bag limit reduction, which was estimated to range from 397,000 lb to 432,000 lb.

In June 2007, the need to remedy GHL overages by the start of the principal sport fishing season required the Secretary of Commerce, through NMFS, to develop regulations independent of the Council process. The preferred alternative selected by NMFS maintained the traditional two-fish daily bag limit, provided that at least one of the harvested halibut has a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retained only one halibut in a calendar day, that fish may be of any length. NMFS published regulations implementing this partial maximum size limit on June 4, 2007 (72 FR 30714).

During the first half of 2007 the Council considered management alternatives for the charter vessel halibut fishery in Area 2C that could be implemented starting in 2008. In June 2007, the Council adopted a preferred alternative that contained two courses of action. The Council recommended that the selection between the two actions depend on whether the halibut CEY decreased substantially for 2008. As explained above, the GHLS for Area 2C and 3A are linked to the respective CEYs, determined annually by the IPHC, as a basis for setting the commercial fishery catch limits in these areas. A substantial decrease in the CEY could cause the GHL for Area 2C to decrease from its previous 1.432 million lb (649.5 mt) level. Not knowing in June 2007 how the GHL may be affected by IPHC action in January 2008, the Council recommended a suite of charter vessel fishery restrictions if the GHL in Area 2C remained the same in 2008 (Option A) and another more restrictive suite to be applied, if the GHL decreased in 2008 (Option B). The Council recommended no change in management of the charter vessel fishery in Area 3A, because that fishery appeared stable at about its GHL. A proposed rule was published December 31, 2007 (at 72 FR 74257), soliciting comments on both options for Area 2C.

At its January 2008 annual meeting, the IPHC set the 2008 Total CEY for Area 2C at 6.5 Mlbs. This was a 4.3 Mlbs (1,950.4 mt) reduction from the 2007 Total CEY of 10.8 Mlb, which triggered a reduction in the Area 2C GHL to 931,000 lb. This reduced GHL compelled selection of the more restrictive Option B, for implementation in the final rule. Option B imposed a daily bag limit of one halibut for each charter vessel angler, prevented charter vessel guides, operators, and crew from harvesting halibut while clients were on board, restricted the number of lines used to fish for halibut on a charter vessel, and added certain recordkeeping and reporting requirements. These regulations were published on May 28, 2008 (73 FR 30504), and became effective on June 1, 2008.

On June 2, 2008, the Option B regulations were challenged in U.S. District Court for the District of Columbia by 11 plaintiffs requesting a temporary restraining order and preliminary injunction on implementing the regulations, particularly the one-halibut daily bag limit. On June 10, 2008, the court granted the plaintiff's request concluding that plaintiffs demonstrated a likelihood of success on the merits of their claims and enjoined NMFS from enforcing the one halibut daily bag limit. The court ordered that the previous (2007) rule become effective, which allowed a two-fish daily bag limit, provided that at least one of the harvested halibut has a head-on length of no more than 32 inches. On June 19, 2008, the court granted plaintiffs a preliminary injunction, which continued the effect of the temporary restraining order.

The court's decision was based largely on the argument that the one-fish bag limit was designed to achieve the reduced 2008 GHL in Area 2C, and NMFS could not know in June 2008 whether this GHL was exceeded. This would not be known until ADF&G produced its final estimate of the 2008 sport fishing harvest in October of 2009. Hence, the plaintiffs argued, and the court agreed, that NMFS had violated its 2003 GHL rule, by acting to impose restrictions before knowing that the new GHL was exceeded. In response to the Court's 2008 decision, NMFS withdrew the 2008 rule and prepared a revised analysis in support of new rulemaking in 2009 that implemented a one fish limit in Area 2C.

The 2009 IPHC stock assessment resulted in a further reduction of the Area 2C GHL to 788,000 lb. The 2009 analysis incorporated this new information and rulemaking corrected deficiencies that were identified by the Court in the previous analysis and rule. The 2009 rule was challenged, but the same Court denied a request for a preliminary injunction; and the one-fish bag limit became effective on June 5, 2009. The one halibut per day bag limit for charter vessel anglers remains in effect for Area 2C.

The Area 2C charter harvest has exceeded its GHL every year from 2004 through 2010. During 2004 through 2007, the GHL was 1,432,000 lb (649.5 mt). During that time period, charter harvests were approximately 1,750,000 lb (793.8 mt) in 2004, 1,952,000 lb (885.4 mt) in 2005, 1,804,000 lb (818.3 mt) in 2006, and 1,918,000 lb (869.9 mt) in 2007. In 2008, the GHL was 931,000 lb (422.3 mt) and charter harvest was approximately 1,999,000 lb (906.7 mt). In 2009 the GHL was 788,000 lb (357.4 mt) and the charter harvest was approximately 1,245,000 lb (564.7 mt). In 2010, the GHL was 788,000 lb (357.4 mt).

The Total CEY for 2011 was 5,390,000 lb (2,444.9 mt) in Area 2C. The corresponding GHL is 788,000 lb (357.4 mt) in Area 2C. Because NMFS imposed no additional charter restrictions in 2011, the IPHC believed that charter harvest was likely to exceed the GHL and result in total harvest exceeding the Total CEY. As such, the IPHC recommended and the Secretary adopted a daily bag limit for charter vessel anglers in Area 2C of one halibut with a maximum length of 37 inches per day (76 FR 14300, March 16, 2011). That management measure constrained the charter sector to 388,000 lbs (about 50 percent of their GHL), and proved to be too constraining on charter harvests.

The IPHC recommended to the governments of Canada and the United States catch limits for 2012 totaling 33,540,000 lbs (15,213 mt), an 18.3 percent reduction from the 2011 catch limits for all areas. The IPHC staff reported on the 2011 assessment of the Pacific halibut stock that estimated coastwide biomass, with apportionment among regulatory areas based on the data from the annual IPHC standardized stock assessment survey. The IPHC recommended a 21.5 percent harvest rate for Area 2C and Area 3A. Catch limits adopted for 2012 were lower in 3A, but not Area 2C. The IPHC also recommended using the harvest control rule it adopted in 2011 to implement the full reductions in catch limits identified by the stock assessment, rather than the partial (50 percent) reductions used in previous years (Full Down-Slow Up). Concern exists over continued declining halibut catch rates in most areas and IPHC staff recommended continued action to reduce harvests. The IPHC staff also noted as a continuing problem that updated information often indicates that previous estimates of biomass are incorrect, and that as a result actual historical harvest rates of the halibut stock are higher than the estimates IPHC used to inform its stock assessments.

The GHL defined a target harvest level for the charter sector of 0.931 Milbs in Area 2C, and 3.103 Milbs in Area 3A in 2012. In Area 2C the GHL from 2004 through 2007 was 1.432 Milbs (NPFMC 2007b and 2007c). In 2008, the Total CEY established by the IPHC was 6.500 Milbs in Area 2C. Because the Area 2C Total CEY was reduced, from 11.4 Milbs in 2007, the 2008 Total CEY resulted in a GHL of 931,000 lb. The CEY was reduced again in 2009, and the GHL was set at 788,000 lb through 2011. The Area 3A GHL had remained unchanged at 3.650 Milbs since 2004 (73 FR 6709, February 5, 2008), prior to 2012. The IPHC adopted the staff recommendations for catch limits in 2012 for all areas except 2B.

In an effort to constrain the Area 2C charter fleet to its GHL, a reverse size limit on the one-fish bag limit was implemented in 2012. That fish must be less than or equal to 45 inches and greater than or equal to 68 inches in length, as measured in a straight line, passing over the pectoral fin from the tip of the lower jaw with mouth closed, to the extreme end of the middle of the tail.

Charter Harvest Permits

In 2011, NMFS implemented the CHP program to address overcapacity in the charter fleet. The number of CHPs that were issued during 2011 (including interim permits) and the number of permits valid as of March 5, 2012 are presented in Table 2-14. Decreasing permit numbers result from the removal of interim permits as appeals are adjudicated or permits being revoked. Permits are issued to persons meeting the general landings requirements, community quota entities (CQE) that may hold charter permits, and military personnel that did not meet the general landings requirements but showed intent to enter the fishery during that time period.

In Area 2C a total of 570 permits were issued to individuals and 36 permits were issued to CQEs during 2011 (Table 2-14). The number of valid permits held by CQEs on August 23, 2012 increased to 44. One entity obtained an Area 2C MWR permit. The number of permits held by individuals decreased by 33, to 537 permits, because permits were revoked and/or interim permits had been removed through the appeals process. These permits are currently held by 262 “regular” permit holders, 11 CQEs, and one MWR that also holds permits in Area 3A.

In Area 3A a total of 490 permits were issued to individuals, 49 permits were issued to CQEs, and 5 permits were issued to government entities meeting the military exemption criteria during 2011. The

number of valid permits held on August 23, 2012 increased to 56 for the CQEs. U.S. Military Morale, Welfare, and Recreation Program (MWR) permits increased from five to six. The number of permits held by individuals decreased by 49, to 441 permits, because permits were revoked and/or interim permits had been removed through the appeals process. These permits are currently held by 317 “regular” permit holders, eight CQEs, and three MWR entities.

Table 2-14 Number of permits issued and number currently valid as of March 5, 2012.

Permit Type	Number of Permits that were valid at any time during 2011	Number of Permits valid as of August 23, 2012	# of permit holders as of Aug 23, 2012	Avg # Permits / holder
CHP	570	537	262	2.0
CQE	36	44	11	4.0
MWR	0	1	1	1.0
2C Total	606	582	274	2.1
CHP	490	441	317	1.4
CQE	49	56	8	7.0
MWR	5	6	3	2.0
3A Total	544	503	328	1.5

Key: CHP = “regular permits”; CQE = community quota entity permits; MWR = military permits

Source: RAM CHP data August 23, 2012

The entities that hold CQE or MWR permits in Area 2C and Area 3A are listed in Table 2-15. All CQE entities hold the maximum number of permits allowed in their area. Four permits are allowed in Area 2C and seven permits in Area 3A. There are an additional seven CQE entities that have been defined as being eligible to obtain CQE charter permits (<http://www.alaskafisheries.noaa.gov/rr/tables/tab121.pdf>). The seven MWR permits are linked to the base or the resort associated with a military base in Alaska.

Table 2-15 CQE and MWR charter permits by area and holder

2C CQE	
ADMIRALTY ISLAND COMMUNITY QUOTA ENTITY FOR ANGOON	4
COFFMAN COVE COMMUNITY QUOTA ENTITY - COFFMAN COVE	4
EDNA BAY COMMUNITY FISHERIES FOR EDNA BAY	4
HOONAH COMMUNITY FISHERIES, CORP FOR HOONAH	4
HYDABURG COMMUNITY HOLDING CORP	4
PELICAN FISHING CORPORATION - PELICAN	4
POINT BAKER COMMUNITY FISHERIES CORP - POINT BAKER	4
PORT ALEXANDER COMMUNITY HOLDING-PACHC	4
PORT PROTECTION PPCFC	4
THORNE BAY FISHERIES ASSOCIATION - THORNE BAY	4
WHALE PASS COMMUNITY ASSOCIATION FOR WHALE PASS	4
Area 2C CQE Total	44
3A CQE	
CAPE BARNABAS, INC. FOR OLD HARBOR	7
CHENEGA HERITAGE, INCORPORATED - CHENEGA BAY	7
CITY OF SELDOVIA COMMUNITY HOLDING CORP	7
LARSEN BAY DEVELOPMENT CO - LARSEN BAY	7
NANWALEK NR/FISHERIES BOARD, INC.-NANWALEK	7
OUZINKIE COMMUNITY HOLDING CORP FOR OUZINKIE	7
PORT GRAHAM CQE, INC - PORT GRAHAM	7
PORT LIONS FISHERIES, INC FOR PORT LIONS CQEA	7
Area 3A CQE Total	56
CQE Total	100
2C MWR	
EIELSON AIR FORCE BASE MWR	1
3A MWR	
EIELSON AIR FORCE BASE MWR	1
SEWARD ARMY RESORT	4
US ARMY MORALE WELFARE AND RECREATION FT GREELY	1
Area 3A MWR Total	6
MWR Total	7

Information in Table 2-16 provides a summary of the appeals that have been filed. As of March 2, 2012, a total of 199 of the 207 cases have been “completed”. Appeals and remands of some cases means the results could, potentially, change. The outcomes of the seven additional cases are still pending. Therefore, the appeals process is close to complete (96.1 percent of cases are completed) and the outcome of outstanding appeals will have a relatively minor impact on the overall charter capacity.

Table 2-16 Summary of charter permit appeals as of March 2, 2012

Status	Count	Pct of Total Appeals Filed	Pct of Total Appeals with NAO Decision
Completed Cases			
Denial Affirmed	124	59.9%	66.0%
Denial Vacated (overturned)	37	17.9%	19.7%
Denial both Affirmed and Vacated	1	0.5%	0.5%
Case Under Reconsideration by NAO	11	5.3%	5.9%
Case Remanded to NAO by RA	10		
Denial Affirmed but Effective Date Stayed Pending RA Review	5	2.4%	2.7%
Completed subtotal (cases with NAO Decisions):	188	90.8%	100.0%
Case Dismissed	11	5.3%	n/a
Dismissed subtotal (cases dismissed without NAO Decision):	11	5.3%	n/a
Pending Cases			
Pending	4	1.9%	n/a
Pending - drafted	1	0.5%	n/a
Pending - waiting for review	3	1.4%	n/a
Pending subtotal (cases without NAO Decisions):	8	3.9%	n/a
Total Appeals:	207	100.0%	n/a
n/a means "not applicable"			
NAO means National Appeals Office			

When permits are removed from the fishery, individuals had the choice of purchasing a new permit or exiting the fishery. In Area 2C, only one person purchased a permit to remain in the fishery (Table 2-17). The other 34 persons left the fishery (at least as of March 5, 2012) when their permit was revoked. In Area 3A, persons associated with 47 revoked permits left the fishery and seven persons purchased a permit to remain active in the halibut charter fishery.

Table 2-17 Number of persons leaving fishery or purchasing a new permit

Type	Area	CHP Revoked and Left Fishery	CHP Revoked and Then Bought a CHP
CHP	2C	34	1
CHP	3A	47	7

Source: RAM - March 5, 2012

The CHP analysis concluded that it is likely that the number of days fished per vessel could increase significantly under the CHP and the CHPs could be used to take more than one trip per day. The flexibility to increase the number of trips a permit generates is expected to allow charter CHP holders to carry enough clients to harvest historical levels of halibut. Over time, the 206 non-transferable Area 2C

permits and 162 non-transferable Area 3A permits will leave the fishery. As these non-transferable permits leave the fishery, the overall capacity of the fleet to carry clients will decline. Whether the fleet will have sufficient capacity to carry enough clients to harvest its allocation will depend on a number of factors including:

- the client demand for charter trips;
- the ability of the CHP holders to fully utilize the capacity of their permits; and
- the regulations in place to govern the harvest of charter clients.

The market value of CHPs was unknown when the original CSP was considered. Given that the CHP program has been in place since the beginning of 2011, some quantifiable data are now available for CHP transaction values. Table 2-18 reports the number of CHP transactions each month since January 2011 by area. Those data include a maximum, minimum, median, and average CHP price. These prices do not reflect the number of client endorsements that were attached to the CHP. Over the entire time period prices ranged from a low of \$9,000 for an Area 3A permit in May 2011, to a high of \$1.0 million for an Area 3A permit in May 2011. Most months the average price was between \$30,000 and \$60,000. CHP transaction prices were higher in Area 3A than in Area 2C. This may reflect the decline in demand and profitability in Area 2C, as tighter restrictions on the number and size of fish have been implemented.

Table 2-18 CHP transfers by area, month, and price

Year	Month	Area	Part of Business Sale	Min Price	Max Price	Med Price	Avg Price	Transactions	Total Permit Count	Sellers	Buyers
2011	JAN	2C	N	\$ 20,000	\$ 40,000	\$ 33,250	\$ 31,750	6	6	6	6
2011	JAN	3A	N	\$ 50,000	\$ 80,000	\$ 65,175	\$ 67,035	10	10	10	9
2011	FEB	2C	N	\$ 35,000	\$ 50,000	\$ 42,000	\$ 42,250	4	4	4	4
2011	FEB	3A	N	\$ 20,000	\$ 90,000	\$ 50,000	\$ 52,529	7	7	7	7
2011	MAR	2C	N	\$ 10,000	\$ 66,000	\$ 31,750	\$ 33,450	10	10	7	10
2011	MAR	3A	N	\$ 36,000	\$ 70,000	\$ 60,000	\$ 56,322	9	9	9	8
2011	APR	2C	N	\$ 30,000	\$ 35,000	\$ 31,000	\$ 32,000	3	3	3	3
2011	MAY	3A	N	\$ 9,000	\$ 78,000	\$ 69,000	\$ 58,833	9	9	9	9
2012	JAN	3A	N	\$ 40,000	\$ 58,500	\$ 45,000	\$ 47,833	3	3	3	3
2012	APR	3A	N	\$ 35,000	\$ 50,000	\$ 44,000	\$ 43,000	3	3	3	3
2012	MAY	3A	N	\$ 25,000	\$ 1,000,000	\$ 60,000	\$ 286,250	4	4	4	4

Note: Transactions with a transaction price of 0 are excluded from list.

Note: Each row with transferors or transferees less than 3 is confidential data and is excluded from the list.

Table 2-19 breaks out the CHP sales data by the number of angler endorsements on the permit. The lowest sales price for a permit was for a permit endorsed for four anglers. The highest price permit was endorsed for more than six anglers. In general, the trend seems to indicate that buyers are willing to pay more for permits with more angler endorsements. However, that is not always the true. In 2011, Area 2C permits with five angler endorsements sold for more than \$35,000, on average, while permits with endorsements for six anglers sold for less than \$32,000. In 2011, Area 3A endorsements for six anglers sold for slightly more, on average than CHP endorsed for more than six clients. Cases, where permits were sold for a higher price with fewer endorsements, may have been in part due to the supply of permits on the market when the transaction was made.

Table 2-19 CHP prices reported by year, area, number of anglers on permit

Year	Area	Entire Business Sold Flag	Classification	Minimum Transaction Price	Maximum Transaction Price	Median Transaction Price	Average Transaction Price	Transaction Count	Permit Count	Sellers Count	Buyers Count
2011	2C	N	4 Anglers	***	***	***	***	2	2	2	2
2011	2C	N	5 Anglers	\$ 25,000	\$ 60,000	\$ 33,500	\$ 35,214	7	7	4	7
2011	2C	N	6 Anglers	\$ 10,000	\$ 66,000	\$ 31,000	\$ 31,736	20	18	19	16
2011	2C	Y	4 Anglers	***	***	***	***	1	1	1	1
2011	3A	N	4 Anglers	\$ 9,000	\$ 50,000	\$ 43,000	\$ 37,476	7	7	7	7
2011	3A	N	5 Anglers	***	***	***	***	2	2	2	2
2011	3A	N	6 Anglers	\$ 36,000	\$ 80,000	\$ 61,000	\$ 61,594	29	29	29	25
2011	3A	N	> 6 Anglers	\$ 20,000	\$ 90,000	\$ 65,250	\$ 59,524	8	7	8	8
2011	3A	Y	5 Anglers	***	***	***	***	1	1	1	1
2012	2C	N	4 Anglers	***	***	***	***	2	2	2	2
2012	2C	N	5 Anglers	\$ 20,000	\$ 30,000	\$ 29,000	\$ 25,700	3	3	3	3
2012	2C	N	6 Anglers	\$ 28,000	\$ 36,000	\$ 30,000	\$ 31,632	5	5	5	5
2012	2C	Y	6 Anglers	***	***	***	***	2	2	2	2
2012	3A	N	4 Anglers	\$ 35,000	\$ 45,000	\$ 43,000	\$ 40,875	4	4	4	4
2012	3A	N	5 Anglers	***	***	***	***	2	2	2	2
2012	3A	N	6 Anglers	\$ 25,000	\$ 65,000	\$ 45,000	\$ 48,304	7	7	7	6
2012	3A	N	> 6 Anglers	\$ 44,000	\$ 1,000,000	\$ 75,000	\$ 313,182	3	3	3	3
2012	3A	Y	6 Anglers	***	***	***	***	1	1	1	1

Note: Transactions with a transaction price of 0 are excluded from list.

Note: Each row with transferors or transferees less than 3 is confidential data and is excluded from the list.

2.5 Analysis of alternatives – comparison of Status Quo (GHL) with Alternatives 2 through 5

Throughout this analysis the status quo is compared to the old and new (CSP) alternatives being considered. This approach is taken in all analyses. In this document the status quo is representative of the GHL. When considering changes to any fishery regulation the marginal changes from the status quo to the new alternatives are the appropriate comparisons. The reviewer should not infer that the goal of the Council is to construct a new alternative that results in the same charter allocation as the GHL in future years. Achieving such a goal is unlikely, even if it were the Council's objective. For example, the GHL and CSP allocations are based on different levels of the available halibut. The charter allocation under the GHL is based on the Total CEY, which is the exploitable biomass multiplied by IPHC's 21.5% exploitation rate (the percentage was adjusted upward in 2011 to account for 026/U32 bycatch and waste). The GHL stair-steps up at specified levels of the Total CEY, but does not adjust with each marginal change in the Total CEY. The charter allocation under the CSP is based on the CCL. The CCL is the Total CEY minus other removals and other adjustments made by the IPHC at their annual meeting. Because adjustments can be made to the CCL, by the IPHC, and the amount of halibut comprising other removals varies over time, matching the allocations under the GHL and CSP is improbable. So, if a CSP allocation were developed that closely matched the GHL in 2013, changes in other removals, IPHC management objectives, or exploitation rates over time would result in CSP allocations that no longer mirror the GHL allocation.

The Council has indicated that one objective of this amendment is to create a CSP that requires both the charter and commercial IFQ fisheries to share the burden of conservation at low levels of abundance. This objective conflicts with creating a CSP allocation that matches the GHL. As presented in all of the CSP options, the charter allocation is smaller than the GHL at low levels of abundance and is larger than the GHL at higher levels of abundance. This is essentially a function of the Council's objective to share the burden of conservation at low levels of halibut abundance. In addition to the change in the allocations, all of the CSP options would modify current regulations by removing the one-fish bag limit in Area 2C. Instead of fixing bag limits in regulation, the 2012 model for imposing charter harvest bag limits would be used to determine bag limits (and any other needed management measures) on an annual basis. The

2012 model is discussed in detail in Section 2.5.3.1. It is also compared to other models considered in the past in the April 2012 discussion paper⁴³.

2.5.1 CSP Allocations

This section presents information on the initial allocation options to determine the commercial setline fishery and charter sector catch limits under Alternative 2 through Alternative 5. The initial allocation to the charter sector determines the size of the common pool of halibut for use by CHP holders. After the size of the charter allocation is determined for a year, the 2012 Approach will be utilized to determine the management measures that will be implemented to constrain the charter sector to their allocation. All CHP holders may allow their clients to harvest from the common pool. The total number of halibut each business may harvest is limited only by the number of clients they can attract, the restrictions on their CHP - which determines the maximum number of clients that may be on the vessel for a trip, and the individual client harvest regulations, including the bag limit

The concept of GAF is discussed in detail in Section 0. In the context of this amendment, GAF could be leased by CHP holders from the persons issued commercial IFQ. The purpose of GAF is to increase charter angler's harvesting opportunities, when the unguided angler daily bag limits are less restrictive than those for the charter sector.

In April 2008, the Council discussed in which step of the IPHC catch limit determination the charter sector allocation would be deducted from the total available Total CEY. The next two paragraphs summarize the IPHC staff recommendation that the appropriate action would be for the Council to request that the IPHC set a combined catch limit for the charter sector and the commercial setline fishery in pounds. That combined catch limit would be the total amount of halibut available to the charter and commercial IFQ fisheries in a year. In conjunction with the combined catch limit discussion, the concept on individual sector accountability will also be discussed.

In any case, use of a combined catch limit would be simpler, more transparent, and more comprehensible to the user groups. The IPHC believes this approach also is more equitable because it places both sectors on an equal footing concerning the impacts and effects of PSC and other non-directed removals. Thus, both the charter and commercial sectors would share in the benefits and costs of managing the resource for long term sustainability under a combined catch limit, as halibut biomass fluctuates. In correspondence and testimony, the IPHC staff recommended that the IPHC could approve a combined charter and commercial catch limit for allocative use by the Council (i.e., the CCL). Placing recreational fisheries within a combined catch limit would also allow the IPHC's policy of phasing in changes in catch limits to be applied equitably to both user groups.

There is precedent for a CCL. Halibut catch, by all directed fishery users, is managed with one overall catch limit in Area 2A (WA/OR/CA). A catch sharing plan, developed in 1988 by the Pacific Fishery Management Council, provides for further allocation of the catch limit to the recreational, commercial, and tribal fisheries. In Area 2B (British Columbia), all sport and commercial catches have been managed within a single, combined catch limit since 2004. The IPHC also annually adopts the Council's Area 4C/D/E CSP. In all the CSPs, domestic federal and/or state/province agencies are involved with further management of sector fisheries to most effectively achieve the IPHC catch limit.

Currently, the IPHC:

1. Computes Total Constant Exploitation Yield, or Total CEY (Exploitable Biomass times Harvest Rate)
2. Subtracts from that Other Removals to determine Fishery CEY. Other Removals is comprised of guided and unguided sport harvest, subsistence, wastage, and bycatch mortality. The IPHC includes all mortality from guided and unguided sport and subsistence harvest in Other

⁴³ <http://www.fakr.noaa.gov/npfmc/PDFdocuments/halibut/CSPDiscussionPaper312.pdf>

Removals; however, for wastage and bycatch, the IPHC only includes the mortality of fish above a certain length. Prior to 2011, that length was 32 inches (O32). In 2011, the IPHC included mortality from fish larger than 26 inches (O26) in bycatch and wastage.

3. If the Fishery CEY is greater than the previous year's commercial catch limit, the staff Catch Limit Recommendation (CLR) is the previous year's commercial catch limit PLUS one third of the difference between the two. If the Fishery CEY is less than the previous year's commercial catch limit, then the CLR is the Fishery CEY.

Since 2004, the biomass of halibut available for harvest (exploitable biomass) has been in a downward trajectory due to decreasing recruitment and harvest rates above target. Because realized harvest rates have been in excess of the target harvest rate (20% through 2010 and increased to 21.5% in 2011), that was in place those years, and each subsequent annual exploitable biomass estimate has been lower than the previous year's estimate, the target harvest rate could never be met when only 50% of the intended reduction in removals is taken under SUFastD. Thus, beginning for the 2011 fishery, IPHC staff recommended a "Slow Up Full Down" (SUFULLD) adjustment. Under the SUFULLD adjustment, if the Fishery CEY was greater than the previous year's commercial catch limit, then the IPHC staff's CLR increased by only 33.3 percent of the difference between the previous year's commercial catch limit and the Fishery CEY. If the Fishery CEY was lower than the previous year's catch limit, the CLR equals the Fishery CEY. The Commission adopted the staff recommendation and shifted its harvest control rule to apply the SUFULLD policy to implement the full reductions in catch limits identified by the stock assessment in 2011.

As shown in Figure 2-8, under a combined charter/commercial catch limit system, the IPHC would:

1. Compute Total Constant Exploitation Yield, or Total CEY (Exploitable Biomass multiplied by Harvest Rate)
2. Subtract from Total CEY the Other Removals to determine Fishery CEY. Other Removals would include only unguided sport harvest, subsistence, O26 wastage, and O26 bycatch mortality.
3. The Fishery CEY is the basis of the combined commercial + charter fishery catch limit. The SUFULLD control rule is applied as before to determine the staff's CLR, i.e., if the Fishery CEY is greater than the previous year's Catch Limit, the staff's CLR for the subsequent year would be the previous year's Catch Limit PLUS one third of the difference between the two⁴⁴. If the Fishery CEY is less than the previous year's Catch Limit, then the CLR equal the Fishery CEY.

⁴⁴ There is an issue regarding how the first year of the program is handled in terms of SUFULLD. The comparison to the previous year is a part of the SUFULLD determination, and the previous year's catch limit would only be for the IFQ fishery, and not a combined catch limit. For the first year of the program the IPHC may need to modify the calculation to account for the change. Details of that modification are currently unavailable, but the impacts should be relatively modest.

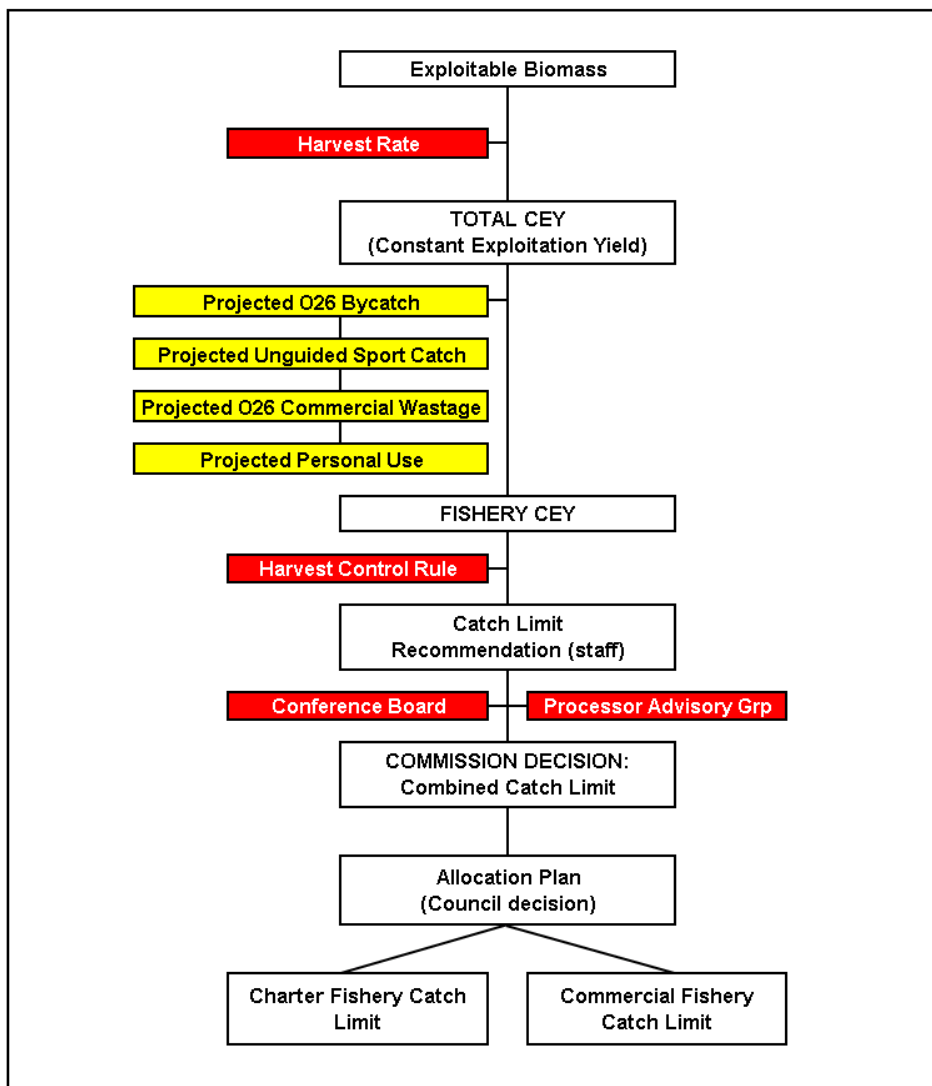


Figure 2-8 The IPHC stock assessment and charter and commercial catch limit setting process (Source: IPHC).

2.5.2 Implementing Annual Management Measures

At their April 2012 meeting the Council received a paper⁴⁵ discussing issues related to the matrix approach used to determine management measures under their 2008 Preferred Alternative. The discussion was precipitated by numerous comments received by NMFS during proposed rulemaking for the CSP (Alternative 2 in this analysis). After considering the concerns expressed, the Council determined that the 2012 Approach better met their objectives. The 2012 Approach is the methodology that is applied under Alternatives 3 through 5 in this analysis, but could also be applied to Alternative 2 at final action if the Council chooses Alternative 2 as its preferred alternative and wishes to include the 2012 Approach in that preferred alternative.

⁴⁵ <http://www.fakr.noaa.gov/npfmc/PDFdocuments/halibut/CSPDiscussionPaper312.pdf>

2.5.2.1 Management Matrix (Alternative 2)

This section discusses the current 2008 CSP management measures, concerns associated with those measures, and a retrospective view of how those measures might have performed in recent years. The proposed 2008 CSP includes a non-discretionary, pre-season specification of the harvest limit regulations and are intended to limit charter harvest to the target before an overage occurs, as opposed to the retroactive GHM approach that implements corrective action after the overages have occurred. The Council recommended that the annual CSP catch limits for the commercial and charter sectors and the CSP restrictions for charter anglers should be determined and implemented by a predictable and standardized methodology as part of the IPHC’s annual recommendations for halibut fishery conservation and management. The CSP would establish procedures for determining the sector catch limits and CSP restrictions for each area in order to provide a systematic method for limiting projected charter harvest to the target harvest range determined by the CSP. The annual CSP catch limits for the commercial and charter sectors and the CSP restrictions for charter anglers would be implemented as IPHC annual management measures. If the proposed CSP is approved by the IPHC each year, NMFS would include the CSP sector catch limits and CSP restrictions in the IPHC annual management measures published in the *Federal Register* each year, as specified by regulations at 50 CFR 300.62.

The 2008 CSP restrictions are daily bag limits of one or two halibut, which may be implemented with or without restrictions on the maximum size of halibut retained under the daily bag limit. The CSP would require default CSP restrictions when the charter sector is projected to harvest within its allocated range, more stringent restrictions when the charter sector is projected to exceed its target harvest range, and in some circumstances, less stringent restrictions when the charter sector is projected to be below its target harvest range.

Default CSP Restrictions

The Council recommended that CSP restrictions for each area be based on an area’s annual combined catch limit for that year. CSP restrictions contain four levels, or tiers, based on annual combined catch limits for each area. Each tier contains associated CSP restrictions. Table 2-20 presents the default CSP restrictions for Area 2C tiers and Table 2-21 presents the default CSP restrictions for Area 3A tiers. Following the IPHC’s specification of the annual combined catch limit for each area, NMFS would implement the default CSP restrictions for charter anglers in each area unless the projected charter harvest was estimated to be outside of the charter target harvest range.

Table 2-20 Default CSP restrictions for Area 2C

Tier	If the Area 2C annual combined catch limit for halibut in net pounds (lbs) is:	and...	then the default CSP restriction is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	4,999,999 lbs	one halibut of any size.
Tier 2	between 5,000,000 lbs	8,999,999 lbs	one halibut of any size.
Tier 3	between 9,000,000 lbs	13,999,999 lbs	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	14,000,000 lbs and greater		two halibut of any size.

Table 2-21 Default CSP restrictions for Area 3A

Tier	If the Area 3A annual combined catch limit for halibut in net pounds (lbs) is:	and...	then the default CSP restriction is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	9,999,999 lbs	one halibut of any size.
Tier 2	between 10,000,000 lbs	19,999,999 lbs	one halibut of any size.
Tier 3	between 20,000,000 lbs	26,999,999 lbs	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	27,000,000 lbs and greater		two halibut of any size.

The Council recommended that daily bag limits alone, or in combination with a maximum size limit, are appropriate CSP restrictions to limit charter harvest. The Council recommended a default CSP restriction limiting charter anglers to two fish of any size each day at relatively high levels of halibut abundance, which was specified as 14,000,000 lbs or greater in Area 2C, and 27,000,000 lbs or greater in Area 3A (tier 4). At these levels of abundance, annual combined catch limits would be relatively higher and charter anglers would not require more stringent CSP restrictions to maintain harvest within the charter target harvest range. As halibut abundance levels and annual combined catch limits decrease, CSP restrictions would be more stringent, further limiting charter harvest at those lower tiers. At the next lower tier, tier 3, the default CSP restriction would be a daily limit of two halibut, but at least one halibut must have a head-on length of no more than 32 inches. If, however, a charter vessel angler retains only one halibut in a calendar day, that halibut could be of any length. The Council recommended the most restrictive default CSP restriction, a daily limit of one halibut, apply to tiers 1 and 2 for each area. This conservative default CSP restriction would be in place at the relatively low levels of abundance reflected in tiers 1 and 2 to promote the development of halibut stocks levels supporting optimum yield.

2.5.2.1.1 Projections of Charter Harvest

Projections of charter harvest in each area are an integral component of the CSP. Each year, annual projections of total charter halibut harvest in net pounds for each area for the upcoming year would be used by a staff analyst to determine whether anglers in the charter fishery are likely to harvest an amount of halibut outside of the management tier default target harvest range.

A January 2009 ADF&G analysis⁴⁶ identified that at least one, and possibly two, projections of charter halibut harvest for the upcoming year would be required for the CSP for both areas. Each year, the IPHC would specify the annual combined catch limit. Based on ADF&G harvest estimates and IPHC staff recommendations for the combined catch limits released before the IPHC meeting, a staff analyst would project charter harvest in net pounds for the upcoming year. The harvest projection would assume that charter anglers would be subject to the default CSP restriction for the appropriate management tier. For example, to determine the total charter halibut harvest projection in net pounds under the management tier default CSP restriction, the analyst would review a forecast of the number of fish that would be harvested by charter anglers and an average net weight of halibut harvested by charter anglers. The product of the number of fish and the average net weight is the projection of charter halibut harvest in net pounds. If the projection under the default CSP restriction is below the charter target harvest range, the analyst would review a second projection assuming a less stringent CSP restriction. If the projection under the default CSP restriction is above the charter target harvest range, the analyst would identify a more stringent CSP restriction.

⁴⁶ http://www.alaskafisheries.noaa.gov/npfmc/current_issues/halibut_issues/HarvestProjectionsDisc709.pdf

The analyst would rely on projections based in large part on ADF&G analyses of charter harvest. ADF&G has used a variety of methods to project charter harvest in the past. Under the CSP the analyst's projections of charter halibut harvest would rely on ADF&G's previous experience estimating charter halibut harvest prior to and under the CSP. The analyst would use the best information available to develop harvest projections, including data from the ADF&G statewide harvest survey of sport anglers, ADF&G statewide saltwater charter logbooks, ADF&G dockside surveys, IPHC longline survey data, and any other information that improves the accuracy of the projections. The analyst would review the projections to account for year-to-year changes to the CSP restrictions in effect for charter anglers as well as normal year-to-year variability in harvest due to changes in fishing effort or catchability of halibut.

The analyst would conduct the above described steps prior to the IPHC annual meeting. Upon adoption of the Council's CSP for Area 2C and Area 3A, the IPHC would adopt a combined catch limit for Area 2C and a combined catch limit for Area 3A. With the announcement of the combined catch limits, the analyst can update his or her pre-meeting analysis and identify the appropriate management measure for each area for the upcoming season in accordance with the CSP. With its action to adopt the CSP, the IPHC would consider adoption of the management measure identified in the staff analysis in order to keep the charter sector to its domestic allocation in order to conserve the Pacific halibut resource. The measure(s) would be published in the Federal Register by NMFS as part of the IPHC annual management measures.

2.5.2.1.2 Determination of Annual CSP Restrictions

The annual CSP restrictions in effect in each area would be determined by using (1) the appropriate management tier associated with the IPHC's recommended annual combined catch limit, and (2) the projected charter harvest of halibut for each area under the default CSP restriction, expressed as a percentage of the annual combined catch limit for each area. The Council anticipated that the default CSP restrictions would limit projected charter harvest to within the charter target harvest range for each area. However, in the event that projected charter harvest is above the management tier target harvest range, the CSP triggers more stringent CSP restrictions. In the event that the projected charter harvest is below the management tier target harvest range, the CSP may trigger relaxed CSP restrictions. Thus, there are up to three possible CSP restrictions for each tier, depending on whether projected charter harvest under the default CSP restriction is less than, within, or above the charter target harvest range.

2.5.2.1.3 Determination of Annual CSP Restrictions if Projected Charter Harvest is Within the Target Harvest Range

If the projected charter fishery harvest under the default CSP restriction is within the charter target harvest range, charter anglers would be subject to the default CSP restriction for the year. For example, if the IPHC recommended an Area 2C annual combined catch limit of 9,500,000 lbs, the IPHC would implement the default CSP restriction, which limits charter anglers to retaining two halibut per day and one halibut must be less than 32 inches. The target range around the 15.1 percent charter allocation would have a low value of 11.6 percent and a high value of 18.6 percent (see Table 2-22). This allocation range would correspond to a target harvest range from 1,102,000 lbs to 1,767,000 lbs. If projected charter harvest under the default CSP restriction were greater than or equal to 1,102,000 lbs and less than or equal to 1,767,000 lbs, the CSP would limit charter anglers to the default CSP restriction, which is retaining no more than two halibut per day and one halibut must be less than 32 inches. Table 2-22 provides the proposed process for determining Area 2C annual CSP restrictions if projected charter harvest under the default CSP restriction is within the charter target harvest range.

Table 2-22 Determination of Area 2C Annual CSP Restrictions if Projected Guided Sport Harvest is Within the Target Harvest Range Under the Default CSP Restriction

Tier	If the Area 2C annual combined catch limit for halibut in net pounds (lbs) is:	and...	If the projected guided sport harvest using the default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	4,999,999 lbs	greater than or equal to 13.8% and less than or equal to 20.8% of the annual combined catch limit	one halibut of any size.
Tier 2	between 5,000,000 lbs	8,999,999 lbs	greater than or equal to 11.6% and less than or equal to 18.6% of the annual combined catch limit	one halibut of any size.
Tier 3	between 9,000,000 lbs	13,999,999 lbs	greater than or equal to 11.6% and less than or equal to 18.6% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	14,000,000 lbs and greater		greater than or equal to 11.6% and less than or equal to 18.6% of the annual combined catch limit	two halibut of any size.

If the IPHC recommended an Area 3A annual combined catch limit of 28,000,000 lbs (12,700.6 mt), the default CSP restriction would be a daily limit of two halibut of any size. The target range around the 14.0 percent charter allocation would have a low value of 10.5 percent and a high value of 17.5 percent (see Table 2-23). If projected charter harvest in Area 3A under the default CSP restriction represented an allocation greater than or equal to 10.5 percent and less than or equal to 17.5 percent, the CSP would limit charter anglers to the default CSP restriction, which is retaining two halibut of any size per day.

Table 2-23 provides NMFS' proposed process for determining Area 3A annual CSP restrictions if projected charter harvest under the default CSP restriction is within the charter target harvest range.

Table 2-23 Determination of Area 3A Annual CSP Restrictions if Projected Guided Sport Harvest is Within the Target Harvest Range Under the Default CSP Restriction

Tier	If the Area 3A annual combined catch limit for halibut in net pounds (lbs) is:	and...	If the projected guided sport harvest using the default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	9,999,999 lbs	greater than or equal to 11.9% and less than or equal to 18.9% of the annual combined catch limit	one halibut of any size.
Tier 2	between 10,000,000 lbs	19,999,999 lbs	greater than or equal to 10.5% and less than or equal to 17.5% of the annual combined catch limit	one halibut of any size.
Tier 3	between 20,000,000 lbs	26,999,999 lbs	greater than or equal to 10.5% and less than or equal to 17.5% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	27,000,000 lbs and greater		greater than or equal to 10.5% and less than or equal to 17.5% of the annual combined catch limit	two halibut of any size.

2.5.2.1.4 Determination of Annual CSP Restrictions if Projected Charter Harvest is Below the Target Harvest Range

If the projected charter harvest under the default CSP restriction is less than the lowest value of the target harvest range, the CSP specifies that charter anglers could be subject to the next less stringent CSP restriction, that is, the default CSP restriction under the next higher management tier. For example, if the annual combined catch limit is 26,000,000 lbs for Area 3A, tier 3 is the effective tier (see Table 2-24) and the default CSP restriction would limit charter anglers to retaining two halibut per day, and one halibut must be 32 inches (81.3 cm) or less. If projected charter harvest under this default CSP restriction as a percentage of the annual combined catch limit was less than 10.5 percent (see Table 2-24), then a second projection using the default CSP for tier 4 would limit charter anglers to retaining two halibut per day of any size.

If projected charter harvest under the tier 4 projection is less than 17.5 percent of the annual combined catch limit for Area 3A, which is the highest value of the charter target harvest range for annual combined catch limits of 10,000,000 lbs (4,535.9 mt) and greater (see Table 2-24), then the tier 4 default CSP restriction would apply, limiting charter anglers in Area 3A to retaining two halibut per day of any size. If, however, projected harvest under the tier 4 default CSP restriction was greater than 17.5 percent (see Table 2-24), the tier 3 default CSP restriction would apply, limiting charter anglers in Area 3A to retaining two halibut per day, one of which must be 32 inches (81.3 cm) or less.

Table 2-24 Determination of Area 3A Annual CSP Restrictions if Projected Charter Harvest under the Default CSP Restriction is Below the Target Harvest Range

Tier	If the Area 3A annual combined catch limit for halibut in net pounds (lbs) is:	and...	and the projected guided sport harvest using the default CSP restriction is:	then the next higher tier default CSP restriction is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:	If projected guided sport harvest using the next higher tier default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	9,999,999 lbs	less than 11.9% of the annual combined catch limit	one halibut of any size.	N/A	one halibut of any size.
Tier 2	between 10,000,000 lbs	19,999,999 lbs	less than 10.5% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.	less than or equal to 17.5% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
					greater than or equal to 17.5% of the annual combined catch limit	one halibut of any size.
Tier 3	between 20,000,000 lbs	26,999,999 lbs	less than 10.5% of the annual combined catch limit	two halibut of any size.	less than or equal to 17.5% of the annual combined catch limit	two halibut of any size.
					greater than or equal to 17.5% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	27,000,000 lbs and greater		less than 10.5% of the annual combined catch limit	N/A	N/A	two halibut of any size.

N/A = not applicable

Table 2-25 describes NMFS' proposed process for determining Area 2C annual CSP restrictions if projected charter harvest under the default CSP restriction is below the charter target harvest range under each tier.

Table 2-25 Determination of Area 2C Annual CSP Restrictions if Projected Charter Harvest Under the Default CSP Restriction is Below the Target Harvest Range

Tier	If the Area 2C annual combined catch limit for halibut in net pounds (lbs) is:	and...	and the projected guided sport harvest using the default CSP restriction is:	then the next higher tier default CSP restriction is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:	If projected guided sport harvest vessel using the next higher tier default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	4,999,999 lbs	less than 13.8% of the annual combined catch limit	one halibut of any size.	N/A	one halibut of any size.
Tier 2	between 5,000,000 lbs	8,999,999 lbs	less than 11.6% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.	less than or equal to 18.6% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
					greater than or equal to 18.6% of the annual combined catch limit	one halibut of any size.
Tier 3	between 9,000,000 lbs	13,999,999 lbs	less than 11.6% of the annual combined catch limit	two halibut of any size.	less than or equal to 18.6% of the annual combined catch limit	two halibut of any size.
					greater than or equal to 18.6% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.
Tier 4	14,000,000 lbs and greater		less than 11.6% of the annual combined catch limit	N/A	N/A	two halibut of any size.

N/A = not applicable

Exceptions to the method for determining the CSP restrictions exist for tiers 1 and 4. Where the projected charter harvest is less than the lowest value of the target harvest range in tier 1, a second projection would be unnecessary because the default CSP of the next higher tier, tier 2, is also one halibut of any size per day. Because the least restrictive CSP restriction under tier 1 is one halibut of any size per day, this CSP restriction would apply if projected charter harvest is less than or equal to the highest value of the target harvest range under the default CSP tier.

Where the projected charter harvest under tier 4 is less than the lowest value of the target harvest range, a second projection would be unnecessary because tier 4 is the highest tier and the default CSP restriction of two fish of any size per day is the least restrictive CSP restriction authorized under the CSP. Thus, the

tier 4 CSP restriction of two fish of any size per day would apply if projected charter harvest is less than the highest value of the target harvest range under the default CSP tier. If projected charter harvest is greater than the highest value of the target harvest range under the default CSP tier, the CSP restriction would be determined as discussed in the next section.

2.5.2.1.5 Determination of Annual CSP Restrictions if Projected Charter Harvest is Above the Target Harvest Range

If the projected charter harvest under the default CSP restriction is greater than the highest value of the target harvest range, the CSP specifies that charter anglers would be subject to the next more stringent CSP restriction (i.e., the default CSP restriction under the next lower management tier). For example, in tier 4, the default CSP restriction limits charter anglers to two fish of any size per day. If projected charter harvest under the tier 4 default CSP restriction is greater than the largest value of the target harvest range, then the tier 3 default CSP restriction would apply. In both areas, the tier 3 default CSP restriction limits charter anglers to retaining two halibut per day, one of which must be 32 inches (81.3 cm) or less. Similarly, in tier 3, if projected charter harvest under the tier 3 default CSP restriction is greater than the largest value of the target harvest range, then the tier 2 default CSP restriction would apply.

In both areas, the tier 2 default CSP restriction limits charter anglers to retaining one halibut of any size per day. However, the tier 1 and 2 default CSP restriction is the most restrictive charter harvest restriction under the CSP. If the projected charter harvest under the default CSP restriction is greater than the largest value of the target harvest range in tier 1 or tier 2, the Council specified that a maximum length limit would be placed on the one halibut that could be retained per day by charter anglers in that area. The addition of the length limit to the one halibut daily bag limit is intended to further restrict charter harvest to be equal to or below the annual charter catch limit for the appropriate management tier.

Table 2-26 and

Table 2-27 describe NMFS’ proposed process for determining annual CSP restrictions for each area if projected charter harvest under the default CSP restriction is above the target harvest range under each tier.

Table 2-26 Determination of Area 2C Annual CSP Restrictions if Projected Charter Harvest under the Default CSP Restriction is Above the Target Harvest Range

Tier	If the Area 2C annual combined catch limit for halibut in net pounds (lbs) is:	and...	If the projected guided sport harvest using the default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	4,999,999 lbs	greater than 20.8% of the annual combined catch limit	one halibut of a maximum length to restrict guided sport harvest to be equal to or below 17.3% of the annual combined catch limit.
Tier 2	between 5,000,000 lbs	8,999,999 lbs	greater than 18.6% of the annual combined catch limit	one halibut of a maximum length to restrict guided sport harvest to be equal to or below 15.1% of the annual combined catch limit.
Tier 3	between 9,000,000 lbs	13,999,999 lbs	greater than 18.6% of the annual combined catch limit	one halibut of any size.
Tier 4	14,000,000 lbs and greater		greater than 18.6% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.

Table 2-27 Determination of Area 3A Annual CSP Restrictions if Projected Charter Harvest under the Default CSP Restriction is Above the Target Harvest Range

Tier	If the Area 3A annual combined catch limit for halibut in net pounds (lbs) is:	and...	If the projected guided sport using the default CSP restriction is:	then the annual CSP restriction in effect is that the number of halibut caught and retained per calendar day by each charter vessel angler is limited to no more than:
Tier 1	between 0 lbs	10,999,999 lbs	greater than 18.9% of the annual combined catch limit	one halibut of a maximum length to restrict guided sport harvest to be equal to or below 15.4% of the annual combined catch limit.
Tier 2	between 10,000,000 lbs	19,999,999 lbs	greater than 17.5% of the annual combined catch limit	one halibut of a maximum length to restrict guided sport harvest to be equal to or below 14.0% of the annual combined catch limit.
Tier 3	between 20,000,000 lbs	26,999,999 lbs	greater than 17.5% of the annual combined catch limit	one halibut of any size.
Tier 4	27,000,000 lbs and greater		greater than 17.5% of the annual combined catch limit	two halibut, but at least one halibut must have a head-on length of no more than 32 inches (81.3 cm). If a charter vessel angler retains only one halibut in a calendar day, that halibut may be of any length.

For example, if the Area 2C annual combined catch limit is 4,500,000 lbs (2,041.2 mt) and projected charter harvest as a percentage of the annual combined catch limit exceeds 20.8 percent, which is the greatest value of the charter target harvest range (see Table 2-26), then charter anglers would be limited to retaining one halibut of a maximum length per day to limit charter harvest equal to or below 17.3 percent of the annual combined catch limit. This would keep the annual charter harvest within its allocation in Area 2C (see Table 2-26).

If the Area 3A annual combined catch limit is 14,000,000 lbs and projected charter harvest as a percentage of the annual combined catch limit exceeds 17.5 percent, which is the greatest value of the charter target harvest range (see

Table 2-27), the CSP would limit charter anglers to retaining one halibut of a maximum length per day to limit projected charter harvest equal to or below 14.0 percent of the annual combined catch limit. This would keep the annual charter harvest within its allocation in Area 3A (see

Table 2-27).

2.5.2.2 Summary of the Performance of the 2008 Preferred Alternative Relative to Recent Charter Regulations

Table 2-28 and Table 2-29 show historical projections of the CSP tiers and management measures that would have been in place in Areas 2C and 3A from 2006 through 2012 if the 2008 CSP PA had been implemented then. The difficulty in making these hindcasts lies in the fact that one must presume what decisions the IPHC would have made in its annual determination of the CCL under the CSP. As it is impossible to know what decision the IPHC would have made if the CSP had been in place, the analysis uses two different scenarios to provide reasonable estimates of likely default management measures⁴⁷:

Scenario 1 assumes that the CCL is the approved commercial catch limit plus GHL (see Table 2-28).

⁴⁷ The analysis projects “default” management measures. These are the measures which exist before the analyst compares projected harvest as a percentage of the allocation to ensure that the estimated harvest is within the Council’s specified range. The analysis does not estimate final management measures as it is impossible to difficult to predict how anglers would have reacted in the past to these measures.

Scenario 2 assumes that the CCL is the Combined Fishery CEY⁴⁸ (Table 2-29).

The two scenarios match in 11 out of the 12 years in the tables, but Scenario 2 results in a faster conversion to the 2 fish, 1 < 32" rule in Area 3A, despite it being an overestimate (see footnote 5).

The analysis estimates that under the 2008 Preferred Alternative that the Area 2C charter fishery would have incurred a default management measure of 2 fish, 1 < 32 inches in 2006. Under Scenario 1 the fishery would have defaulted to the more restrictive one fish of any size in 2008. According to Table 2-28, the hindcasted management measures would have aligned with the actual management measures in place in 2009 and 2010. Under Scenario 2, the management measure also would have switched to one fish of a maximum size in 2008 and would remain there to this day.

In Area 3A, the default regulation would have been a two fish daily bag limit with unrestricted sizes through 2008 under Scenario 1 and through 2007 under Scenario 2. Under Scenario 1 the default measure in 2009 and 2010 would have been 2 fish, 1 < 32 inches and then transitioned to one fish of any size in 2011. The Scenario 2 projections for this area are exactly the same, except for the one year earlier transition (2008) to a restriction on the size of the second fish. While the Area 3A GHl remained at 3.65 Mlb between 2006 and 2011 (see Table 2-28), harvest under the historic status quo management measures dropped below that level between 2008 and 2011. The CSP management measures would have been more restrictive than the GHl even during a time when charter harvests were falling and below the GHl in place at that time.

Table 2-28 Historical Projection of CSP Tiers and Management Measures: Combined Catch Limit is the Approved Commercial Catch Plus the GHl.

Year	Commercial Catch Limit	GHl	Est. Combined Catch Limit	CSP Matrix Tier	Default Management Measure Under the Proposed CSP	Management Measure Under the GHl*
Area 2C						
2006	10.630	1.432	12.062	3	Two fish (1 < 32")	Two fish any size
2007	8.510	1.432	9.942	3	Two fish (1 < 32")	Two fish (1 < 32")
2008	6.210	0.931	7.141	2	One fish any size	Two fish (1 < 32")
2009	5.020	0.788	5.808	2	One fish any size	One fish any size
2010	4.400	0.788	5.188	2	One fish any size	One fish any size
2011	2.330	0.788	3.118	1	One fish any size	One fish < 37"
2012	2.624	0.931	3.555	1	One fish any size	Reverse slot limit (U45O68)
Area 3A						
2006	25.200	3.650	28.850	4	Two fish any size	Two fish any size
2007	26.200	3.650	29.850	4	Two fish any size	Two fish any size
2008	24.220	3.650	27.870	4	Two fish any size	Two fish any size
2009	21.700	3.650	25.350	3	Two fish (1 < 32")	Two fish any size
2010	19.990	3.650	23.640	3	Two fish (1 < 32")	Two fish any size
2011	14.360	3.650	18.010	2	One fish any size	Two fish any size
2012	11.918	3.103	15.021	2	One fish any size	Two fish any size

Source: ADF&G 2012.

*2012 management measures were implemented through the IPHC annual management measures; 2011 measures were implemented through a Secretarial regulatory amendment; 2010 and prior measures were implemented through Council regulatory amendments.

⁴⁸ The IPHC applies two adjustments from the Fishery CEY before determining the commercial catch limit: 1) harvest rate policy and 2) slow up/full (now) and fast (earlier) down; therefore the estimates of CCLs in this paper are likely to be overestimates of what would have been determined by the IPHC in the past but staff was unable to hind cast these adjustments

Table 2-29 Historical Projection of CSP Tiers and Management Measures: Combined Catch Limit is the Combined Fishery CEY

Year	Total CEY	Other Removals	Combined Catch Limit	CSP Matrix Tier	Default Management Measure Under the CSP	Management Measure Under the GHL*
Area 2C						
2006	13.730	1.864	11.866	3	Two fish (1 < 32")	Two fish any size
2007	10.800	1.758	9.042	3	Two fish (1 < 32")	Two fish (1 < 32")
2008	6.500	1.659	4.841	1	One fish any size	Two fish (1 < 32")
2009	5.570	1.922	3.648	1	One fish any size	One fish any size
2010	5.020	1.842	3.178	1	One fish any size	One fish any size
2011	5.390	2.272	3.118	1	One fish any size	One fish < 37"
2012	5.860	1.719	4.141	1	One fish any size	Reverse slot limit (U45O68)
Area 3A						
2006	32.180	3.941	28.239	4	Two fish any size	Two fish any size
2007	35.780	3.920	31.860	4	Two fish any size	Two fish any size
2008	28.960	3.060	25.900	3	Two fish (1 < 32")	Two fish any size
2009	28.010	3.520	24.490	3	Two fish (1 < 32")	Two fish any size
2010	26.190	4.260	21.930	3	Two fish (1 < 32")	Two fish any size
2011	23.520	5.510	18.010	2	One fish any size	Two fish any size
2012	19.780	4.757	15.023	2	One fish any size	Two fish any size

Source: ADF&G, 2012.

*2012 management measures were implemented through the IPHC annual management measures; 2011 measures were implemented through a Secretarial regulatory amendment;

2.5.2.3 2010 and prior measures were implemented through Council regulatory amendments. Concerns Regarding the 2008 PA

During NMFS proposed rulemaking for the 2008 CSP, the agency received numerous comments raising concerns about the status quo. These concerns included the following.

- *The Management Matrix is Too Restrictive At Lower Tiers-*

Charter halibut operators have argued that the 2008 Preferred Alternative is too restrictive at the lower tier, particularly when the most restrictive measure is one fish of a maximum size. Operators have testified that their 2011 bookings were substantially lower than in years past in part because of the one fish restricted bag limit. ADF&G's November 4, 2011 letter to the IPHC indicates that the department's early estimates are that the Area 2C charter fishery harvested 0.388 Milb in 2011 compared to 1.086 Milb in 2010 when fishery operated under a one fish of any size management regime. However, ADF&G's estimates indicate that while total biomass harvested declined the early estimates of the number of fish harvested in 2011 (i.e., 41,209) is largely unchanged from their final estimate of the 2010 fishery (i.e., 41,202 fish).

- *The Selected Management Measures Deny the Charter Fishery its Allocation-*

Stakeholders commented that the inherent conservatism associated with estimating harvest under the 1 fish of a restricted size limit effectively denies the charter fishery access to its allocation. As noted above, in 2011 the IPHC recommended, and the Secretary implemented, a 1fish < 37 inches management rule for Area 2C. The IPHC used Method B, the assumption of maximum highgrading, to determine the length limit in the management measure. This length limit resulted in the sector harvesting an estimated 0.388 Milb compared to a GHL of 0.788 Milb even though total effort as measured by number of fish stayed

constant. The Council subsequently approved the use of Method C, the hybrid method, for future estimates; this method is less conservative than Method B. However, it still retains a highgrading component which could result in lower than projected actual harvests if anglers are unable to highgrade to the degree specified in the method.

- *The Selected Management Measures are Too Inflexible with Large Gaps Between Them*

Stakeholders commented that the selected management measures are too inflexible, with large gaps in their intended effect. For example, in both the Area 2C and Area 3A regulations the default Tier 3 management measure is 2 fish, 11 < 32 inches. However, if the analyst projects that the charter harvest will be above the allocation range the next management measure of a one fish daily bag limit with no size limit would be in effect. As can be calculated from Table 2-30 (below), a second fish in anglers' daily bag limits have historically accounted for 38.1 percent of the number of fish harvested in Area 2C and 47.5 percent of the number of fish harvested in Area 3A. The design of the 2008 Preferred Alternative means that even the slightest exceedance of the allocation range in Tier 3 means that anglers lose the opportunity to harvest between approximately 38 percent and 48 percent of their historical harvest opportunities.

- *The ±3.5 Percent Allocation Range is Too Small Given Inaccuracies in Estimated Harvest*

The Council recognized that managing charter halibut harvest is imprecise and, therefore, harvest in Area 2C and 3A under the CSP could be expected to vary above and below the charter catch limit. To account for this imprecision, the Council recommended that the CSP should restrict charter harvest to within a target harvest range corresponding with ± 3.5 percentage points of the charter allocation percentage; however the Council did not provide a rationale for why ± 3.5 percentage was appropriate or sufficient to meet its objectives. A projected harvest outside of this range under the default management measure for a given tier triggers movement to another non-default management measure. In February 2009, the SSC noted that (emphasis added):

*“Projecting charter halibut harvests is difficult, because it requires predictions or assumptions about how the consumer demand for charter trips will change through time, predictions or assumptions about how people will respond to regulatory change, as well as changes in the abundance, distribution, and size composition of halibut stocks. The limited time series data available for use in estimation severely constrains model complexity. The discussion paper effectively describes these limitations and how they affect forecast accuracy. It also describes asymmetries in risk and the distribution of risk that arises from under- and over-estimating catch. **The forecast methods used in the discussion paper are suitable given current data limitations.**”*

*While the resulting forecasts have had large errors, errors of this magnitude are not surprising given the uncertainties in the data, variability in the processes affecting the halibut stock and its fisheries, and the shortness of the time series. **Consequently, the SSC believes that the magnitude and range of uncertainties will prevent the forecast accuracy to be anywhere near the plus or minus 3.5% allowed in the charter range allocation of the preferred alternative.**”*

The SSC suggested that the ±3.5 percent range was insufficient given harvest estimation uncertainties. The IPHC's experience in 2011 is the most recent example of the difference between estimated harvest under a regulation and actual harvest. In this case, the IPHC was aiming for the 0.788 GHL and had a harvest of 0.388 Mlb even though the overall number of fish caught between 2010 and 2011 stayed unchanged (note the IPHC had not considered the hybrid approach when it adopted its 37 inch limit).

The analysis also identified issues with using the ±3.5 range. For example, there are challenges using the range both for determining which measure will be used and for a hard target for ensuring that charter harvests stay within that goal. For example, presume a selected management measure is 3.2 percent above the allocation target, but the best available measure within the range is highly prescriptive and inflexible

(i.e., 2 fish, 1 < 32"). However, harvest comes in at 0.7 percent of the allocation above the projected estimate. Overall harvest will be 3.9 percentage points above the target allocation and 0.4 percentage points outside of the projected range. Thus, the measure will have failed to meet the target allocation and be rejected. Also, while the matrix structure has the benefit of providing the public and the charter sector with a reasonable expectation of the potential management measures that will govern their fishing, it lacks flexibility to address changes in charter harvest should the alternative management measures be inadequate in bringing charter sector harvests in line with the sector's allocation. In other words, if the most restrictive of the three management measures within a tier does not limit charter effort to the extent necessary to contain charter harvests to the allocation, no alternative measure may be implemented and the charter allocation will be exceeded. This issue is most likely to occur with a sudden change in charter trips or a leap in estimated average size. Similarly, if the measure identified by the 2008 Preferred Alternative is overly constraining, charter harvests would fall below the allocation.

Table 2-30 CSP Management Measures in 2011

Category	Area 2C		Area 3A	
	Est.	Units/Notes	Est.	Unit/Notes
CEY	5.390	M lb	23.520	M lb
Other Removals	2.270	M lb	5.510	M lb
Combined Fishery CEY	3.120	M lb	18.010	M lb
Combined Catch Limit	3.120	Combined Fishery CEY	18.010	Combined Fishery CEY
CSP Tier		Tier 1		Tier 2
Target allocation	0.540		2.521	
Allocation Range Lower Limit	0.431	M lb	1.891	M lb
Allocation Range Upper Limit	0.649	M lb	3.152	M lb
Default Regulation	One fish any size		One fish any size	
Default Projected Charter Yield	1.291	>accept. Allocation range	1.028	<accept. Allocation range
Alternate Regulation	<i>One fish + max size</i>		<i>2 fish (1 < 32")</i>	
Alternate Projected Charter Yield	0.531	M lb	2.552	M lb
Final Regulation	1 fish under 33"		2 fish (1 < 32")	

2.5.2.4 The CSP in 2011

The tables above do not include subsequent adjustments from default management measures as it is difficult to retrospectively project, or hindcast, angler demand with any accuracy based on alternative management measures. However, based on ADF&G projections for 2011 (using data available in late 2010), the CSP's management measure matrix in 2011 would have resulted in a limit of 1 fish, 1 < 33 inches in Area 2C, while Area 3A would have been limited to 2 fish, 1 < 32 inches.⁴⁹ In Area 2C, the analyst calculating the CSP management measure for 2011 would have noted that the initial management measure selected under the management matrix (i.e., the one fish of any size) would have resulted in an allocation percentage above the CSP's specified range. The analyst would have then used the Council's preferred hybrid estimation technique to select a length restriction on the single fish in the daily bag limit (see Table 2-31). In Area 3A, the analyst would have noted that the default Tier 2 measure of one fish of any size would have resulted in a projection harvest below the target range and that the matrix's alternate measure specifies the 32-inch length limit on the second fish (see

⁴⁹ This estimate is more restrictive than the IPHC's 1 fish, 1<37 inch rule because the IPHC used the 0.788 Mlb GHL as the target not the combined CCL estimated for this section which is a much lower 0.540 Mlb. If the ADF&G estimate used a target of 0.788 Mlb then the alternate regulation would be 1 fish, 1<40 inches assuming a catch of 51,240 fish. A lower estimated demand (number of fish) would result in a higher length limit or the default regulation.

Table 2-32). In both cases the estimated harvest associated with both measures using the Council's preferred hybrid method is very close to the target allocation.

Table 2-31 Management Matrix for Area 2C in 2011

Tier	Combined Catch Limit (Mlb)	Allocation	Charter Fishery Bag & Length limit Regulations		
			If projected charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
1	<5	Comm alloc = 82.7% Charter alloc = 17.3% Charter range = 13.8-20.8%	INITIAL DEFAULT MEASURE One Fish	ALTERNATIVE MEASURE Maximum length limit imposed that brings harvest to 17.3%	One Fish

Table 2-32 Management Matrix for Area 3A in 2011

Tier	Combined Catch Limit (Mlb)	Allocation	Charter Fishery Bag & Length limit Regulations		
			If projected charter harvest within allocation range	If charter harvest projected to exceed allocation range	If charter harvest projected to be below allocation range
2	≥10 - <20	Comm alloc = 86.0% Charter alloc = 14.0% Charter range = 10.5-17.5%	INITIAL DEFAULT MEASURE One Fish	Maximum length limit imposed that brings harvest to 14.0%	ALTERNATIVE MEASURE Two fish, but one must be less than 32" in length

Table 2-33 Summary of Issues Associated with Various Management Measures

Potential Negative Issue with the Measure	Measures in the Current Preferred Alternative			Current 2C Reg
	One Fish Daily Bag <i>without</i> a Size Limit	One Fish Daily Bag <i>with</i> a Size Limit	Two Fish, One must be Less than <32"	One Fish Under U45 inches and O68 inches
General Relative Economic Effects on the Charter Industry	●	●		
Distributional Economic Effect Falls on a Small Number of Businesses				●
Limits Charter Industry's Ability to Market the Opportunity to Catch a Large Fish		●		
Council Must Select At Least One Analytical Parameter				●
Relative Effect on Angler Demand	●	●		
Has a substantial "corrupting" effect on the observed length frequency data from the harvest.		●	●	●
Annual harvest projections highly dependent on recent, representative size data	●	●	●	●
Higher Potential for Permit Holder Error				●
Considerable uncertainty in projections of harvest under this measure.		●		●

Auditing logbooks might help Enforcement staff to determine that an angler appears to have exceeded his or her annual limit if a guide, or several guides, collectively indicated in one or more logbooks that an angler exceeded his or her annual limit. But that could be the result of one or more logging errors. When anglers are interviewed after the fishing season, they rarely remember the number or length of fish that they caught (unless they only caught one or a really big one) and typically never remember the number or size of fish that other anglers on the boat caught. Any post-season checks or audits would require OLE to have access to ADF&G logbook data.

Enforcement staff would need to determine whether an angler harvested more than one fish of any size annually. Since the logbooks do not record length information, they could not be used to audit the length of fish retained by an individual angler and recorded on the back of the angler license.

Enforcement would require anglers to record on the license, at a minimum, the date the halibut was harvested and the length of the halibut. The angler tracking mechanism could be improved by requiring anglers to submit their angler licenses at the end of each fishing season. Enforcement would rely upon at-sea enforcement to ensure compliance and also would be affected by the possibility of replacement license purchases, as described above.

2.5.3 Individual Management Measures within the Current CSP Matrix

In general, the rigid structure of the matrix provides no discretion for managers to select an alternative management measure other than those dictated by the matrix regardless of whether harvests under that alternative measure better achieve the target allocation and have less of a negative effect on charter bookings. Managers and the charter industry have limited experience with the measures included in the matrix. As a result, it is possible that the expected effects of those measures (both in terms of harvests and the effects on the charter sector) may prove inaccurate. In addition, with changing halibut stocks, it is possible that the effects could vary over time. While the matrix is responsive to changes in projected harvests under the default measure, that response is limited to selecting a single back up management measure. By limiting the response to an inadequate default measures to the selection of a single back up measure, the matrix provides very little flexibility to respond to new information. The charter industry has recently suggested a number of unused measures intended to constrain their harvests while minimizing the negative effects on charter demand. The matrix provides no opportunity for consideration of these measures, which may prove far more effective in both addressing the need to constrain harvests of the charter sector and mitigate the negative effects of those constraining measures on the charter industry.

Table 2-34 Lower Tier Performance of the Two Fish Bag Limit with a Maximum Size on Both Fish- Area 2C Example

CCL (Mlb)	Tier	Target Allocations (%)			Target Allocations (Mlb)			1 fish no size limit (default)				1 fish max size limit			2 fish max size limit		
		Target	Lower Bound	Upper Bound	Target	Lower Bound	Upper Bound	Projected Harvest	Mean Weight	Projected Yield	In Range	Projected Harvest	Max size limit (in)	Projected Yield	Projected Harvest	Max size limit (in)	Projected Yield
1	1	0.173	0.138	0.208	0.173	0.138	0.208	45,338	26.36	1.195	Above	45,338	< 24	?	73,244	< 24	?
2	1	0.173	0.138	0.208	0.346	0.276	0.416	45,338	26.36	1.195	Above	45,338	29	0.336	73,244	24	0.305
3	1	0.173	0.138	0.208	0.519	0.414	0.624	45,338	26.36	1.195	Above	45,338	34	0.495	73,244	28	0.493
4	1	0.173	0.138	0.208	0.692	0.552	0.832	45,338	26.36	1.195	Above	45,338	40	0.675	73,244	31	0.646
5	2	0.151	0.116	0.186	0.755	0.58	0.93	45,338	26.36	1.195	Above	45,338	42	0.731	73,244	34	0.799
6	2	0.151	0.116	0.186	0.906	0.696	1.116	45,338	26.36	1.195	Above	45,338	48	0.887	73,244	36	0.899
7	2	0.151	0.116	0.186	1.057	0.812	1.302	45,338	26.36	1.195	Within	Calculation Not Needed			73,244	39	1.043
8	2	0.151	0.116	0.186	1.208	0.928	1.488	45,338	26.36	1.195	Within	Calculation Not Needed			73,244	42	1.181

Table 2-35 Lower Tier Performance of the Two Fish Bag Limit with a Maximum Size on Both Fish-- Area 3A Example

CCL (Mlb)	Tier	Target Allocations (%)			Target Allocations (Mlb)			1 fish no size limit				2 fish with 1 < 32max size limit			2 fish max size limit		
		Target	Lower Bound	Upper Bound	Target	Lower Bound	Upper Bound	Projected Harvest	Mean Weight	Projected Yield	In Range	Projected Harvest	Projected Yield	In Range	Projected Harvest	Max size limit (in)	Projected Yield
2	1	0.154	0.119	0.189	0.308	0.238	0.378	96,201	15.2	1.462	Above	183,240	2.284	Above	183,240	<26	?
4	1	0.154	0.119	0.189	0.616	0.476	0.756	96,201	15.2	1.462	Above	183,240	2.284	Above	183,240	<26	?
6	1	0.154	0.119	0.189	0.924	0.714	1.134	96,201	15.2	1.462	Above	183,240	2.284	Above	183,240	<26	?
8	1	0.154	0.119	0.189	1.232	0.952	1.512	96,201	15.2	1.462	Within	183,241	2.284	Above	183,240	27	1.113
10	2	0.14	0.105	0.175	1.400	1.050	1.750	96,201	15.2	1.462	Within	183,242	2.284	Above	183,240	29	1.368
12	2	0.14	0.105	0.175	1.680	1.260	2.100	96,201	15.2	1.462	Within	183,243	2.284	Above	183,240	31	1.616
14	2	0.14	0.105	0.175	1.960	1.470	2.450	96,201	15.2	1.462	Below	183,240	2.284	Within	183,240	34	1.922
16	2	0.14	0.105	0.175	2.240	1.680	2.800	96,201	15.2	1.462	Below	183,240	2.284	Within	183,240	39	2.227
18	2	0.14	0.105	0.175	2.520	1.890	3.150	96,201	15.2	1.462	Below	183,240	2.284	Within	183,240	48	2.515

In general, the rigid structure of the matrix provides no discretion for managers to select an alternative management measure other than those dictated by the matrix regardless of whether harvests under that alternative measure better achieve the target allocation and have less of a negative effect on charter bookings. Managers and the charter industry have limited experience with the measures included in the matrix. As a result, it is possible that the expected effects of those measures (both in terms of harvests and the effects on the charter sector) may prove inaccurate. In addition, with changing halibut stocks, it is possible that the effects could vary over time. While the matrix is responsive to changes in projected harvests under the default measure, that response is limited to selecting a single back up management measure. By limiting the response to an inadequate default measure to the selection of a single back up measure, the matrix provides very little flexibility to respond to new information. The charter industry has recently suggested a number of unused measures intended to constrain their harvests while minimizing the negative effects on charter demand. The matrix provides no opportunity for consideration of these measures, which may prove far more effective in both addressing the need to constrain harvests of the charter sector and mitigate the negative effects of those constraining measures on the charter industry.

2.5.3.1 2012 Approach (Alternatives 3 through 5)

A number of conditions have changed in the last several years that resulted in the adoption of the 2012 approach as the preferred system for selecting annual management measures to constrain charter halibut harvests to their respective targets (under the GHL Program) or allocations (under a CSP).

- NMFS implemented 2011 IPHC annual management measures, which included a 37-inch maximum size limit for all halibut retained by charter anglers in Area 2C. This size limit was implemented in conjunction with the one halibut per day bag limit that NMFS implemented in 2009 for Area 2C, so that charter anglers were limited to retaining one halibut no larger than 37 inches per day in 2011. The IPHC adopted the maximum size limit due to its conservation concerns over declining halibut stocks. The IPHC recommendation was based on the conservative assumption that all retained fish will be equal to the maximum size limit and was consistent with Council policy at the time the IPHC acted in January 2011 (the Council did not adopt the “hybrid” approach for calculating maximum length limits until June 2011). The effect of the 2011 management measure was overly constraining on harvests to the charter sector in Area 2C. The hybrid approach would likely have resulted in a maximum size limit between 40-45 inches. The IPHC took its action to ensure that the Area 2C charter sector adhered to its domestic allocation because the timeline for the Council process to select a new preferred alternative and for NMFS to complete the rulemaking process would not have guaranteed implementation of more restrictive management measures to limit charter harvest to the GHL for the 2011 charter season.
- The ADF&G charter logbook program has matured and logbook data have increasingly been used to project harvest and analyze management alternatives. Logbook estimates are preferable to the Statewide Harvest Survey as they are more timely, not subject to the same degree of recall bias, verified and signed by the client, and can be evaluated through periodic comparisons to other data. In its 2012 PPA, the Council identified the ADF&G charter logbook as its preferred data source for accounting of charter harvest against the allocations (whether the GHL or the CSP) in the future and modified its preliminary preferred allocations accordingly.
- As part of a new approach for the 2012 charter season (2012 Approach), the Council scheduled a review of three (i.e., maximum size limit, reverse slot, and closure of selected days of the week) potential management measures for its October 2011 and December 2011 meetings and its charter stakeholder committee recommended a number of measures for analysis for Area 2C, as it seemed likely measures would only be needed for that area. Harvest projections for 2010 associated with the three regulatory alternatives for the 2011 charter season were analyzed by ADF&G staff; that analysis was used by the Charter Halibut Management Implementation

Committee to recommend a preferred management measure for 2012 to the Council. The Council adopted the committee recommendations of a daily bag limit of one fish \leq 45 inches or \geq 68 inches (“U45/O68”) based on an increase in the GHL from 788,000 lb in 2011 to 931,000 lb in 2012. This “reverse slot limit” would allow the retention of halibut approximately \leq 32 lb and \geq 123 lb (dressed & head off weight). For Area 3A the committee and the Council recommended status quo (2 fish of any size) based on charter harvests in 2010 and 2011 (projected) that were significantly below the previous GHL of 3.65 Mlbs and the 2012 GHL of 3.103 Mlbs. The Council forwarded its recommendation to the IPHC after its December 2011 action. The IPHC adopted the Council recommendation at its January 2012 Annual Meeting. The Secretary of State and Secretary of Commerce approved the IPHC recommendation and NMFS implemented it as part of the IPHC annual management measures in March 2012. The success of the 2012 approach was 1) its development through the Council process and 2) its adherence to the IPHC’s commitment to conservation of the halibut resource under those domestic allocations(s). The Council has scheduled a review of the methodology for analyzing alternative management measures in October 2012, in order to add more scientific rigor to this approach for 2013.

The 2012 approach encompasses the following steps. The sequence of steps demonstrates a high degree of coordination and cooperation between the agencies responsible for managing Pacific halibut.

1. SSC reviews the analytical approach for selecting annual management measures (under either GHL Program or CSP); baseline review would occur in 2012, and (potentially) only when future methodology changes;
2. Charter Halibut Management Committee recommends a range of potential management measures, using the status quo measure in each area as the baseline, in mid to late October each year;
3. ADF&G analyzes proposed management measures for public review in November;
4. Council selects its preferred measure and recommends it for consideration by the IPHC in December;
5. IPHC adopts the recommended measure as part of its annual management measures for the upcoming season in January; and
6. National Marine Fisheries Service implements the CSP management measure(s) as part of the IPHC annual management measures by March.

The 2012 approach is the most flexible of all the management systems contemplated for implementing annual management measures, as it would incorporate all current information including:

- Final estimates of the preceding year’s harvest,
- Preliminary estimates of current year’s harvest,
- Evaluation of harvest estimates to target allocation,
- Projections of next year’s harvest,
- IPHC staff recommendations for catch limits (including combined catch limits if a CSP is approved by the Secretary of Commerce and implemented in federal regulations),
- SSC review of the analysis that incorporates the information,
- Stakeholder committee recommendations, and
- Public comment.

2.5.4 Removing the ± 3.5 Percent Allocation Range

The Council recognized that managing charter halibut harvest is imprecise and, therefore, harvest under the CSP could be expected to vary above and below the charter catch limit. To account for this imprecision, the Council recommended that the CSP approved in 2008 should restrict charter harvest to within a target harvest range corresponding with ± 3.5 percentage points of the charter allocation percentage (Alternative 2); however the Council did not provide a rationale for why ± 3.5 percentage was appropriate or sufficient to meet its objectives. **If the Council wishes to move forward with the ± 3.5 percentage point range of the CCL, justification of the range should be provided.** Under Alternative 2, projected harvest outside of this range, under the default management measure for a given tier, triggers movement to another management measure. In February 2009, the SSC noted that (emphasis added):

“Projecting charter halibut harvests is difficult, because it requires predictions or assumptions about how the consumer demand for charter trips will change through time, predictions or assumptions about how people will respond to regulatory change, as well as changes in the abundance, distribution, and size composition of halibut stocks. The limited time series data available for use in estimation severely constrains model complexity. The discussion paper effectively describes these limitations and how they affect forecast accuracy. It also describes asymmetries in risk and the distribution of risk that arises from under- and over-estimating catch. The forecast methods used in the discussion paper are suitable given current data limitations.

While the resulting forecasts have had large errors, errors of this magnitude are not surprising given the uncertainties in the data, variability in the processes affecting the halibut stock and its fisheries, and the shortness of the time series. Consequently, the SSC believes that the magnitude and range of uncertainties will prevent the forecast accuracy to be anywhere near the plus or minus 3.5% allowed in the charter range allocation of the preferred alternative.”

The SSC suggested that the ± 3.5 percent range was insufficient given harvest estimation uncertainties. The IPHC’s experience in 2011 is the most recent example of the difference between estimated harvest under a regulation and actual harvest. In this case, the IPHC was aiming for the 0.788 GH/L and had a harvest of 0.388 Mlbs even though the overall number of fish caught between 2010 and 2011 stayed unchanged (note the IPHC had not considered the hybrid approach when it adopted its 37 inch limit).

The ± 3.5 percent range is not part of Alternatives 3 through 5 in this analysis. It has been removed and the 2012 Approach for determining appropriate management measures to achieve the Council’s objectives has replaced both the ± 3.5 percent range and the matrix.

2.5.5 Separate Accountability

IPHC’s treatment of bycatch mortality in halibut resource management has changed over time from different forms of explicit area-specific catch limit deductions to the current approach, which has been in place since 1997 (Clark and Hare 2006). The approach treated the bycatch of adults and juveniles differently because juvenile fish are in a migration phase of life history, so the impact of that portion of the bycatch mortality is visited to “downstream” areas, whereas the adult mortality has more local impact. Thus, mortality of O32 fish was deducted from the TCEY in the area of capture and U32 mortality was accounted for in the harvest policy. Incorporating the effect of juvenile bycatch into the harvest policy, by harvest rate adjustment, provided a means of accounting for the effects in a simple and straightforward manner while still protecting the stock (Clark et al. 1997). The approach was modified in 2010 by changing the size break points from 32 inches to 26 inches to allow for a common treatment of all other removals, i.e., bycatch, sport, subsistence and wastage removals (Hare 2011). To summarize, the present method of bycatch accounting has the following features:

- Mortality of fish larger than 26 inches is subtracted from the Total CEY in the area where the mortality occurred because its effect is the same as a commercial removal.
- Mortality of fish smaller than 26 inches is accounted for in the harvest policy, i.e., harvest rate.

Based on the IPHC policy regarding other removals discussed above, the calculation of other removals changed over the time period from 2006 through 2011. Prior to 2010, O26/U32 bycatch and O26/U32 wastage was not included in the other removal categories (Table 2-36). When O26/U32 bycatch and O26/U32 wastage was added to the other removals, the IPHC increased the exploitation (harvest) rate applied to the exploitable biomass from 0.20 to 0.215 to estimate the Total CEY.

Table 2-36 Estimates of other removals 2006 through 2012

Area	Limit Year	Catch Data Year	Other removals from year prior to catch limit						Total
			O32 Bycatch	O26U32 Bycatch	O32 Wastage	O26U32 Wastage	Subsist	Unguided Sport	
Area 2C	2006	2005	0.140	--	0.040	--	0.680	0.905	1.765
	2007	2006	0.140	--	0.020	--	0.600	1.004	1.764
	2008	2007	0.210	--	0.020	--	0.580	0.844	1.654
	2009	2008	0.216	--	0.012	--	0.525	1.169	1.922
	2010	2009	0.128	--	0.012	--	0.458	1.244	1.842
	2011	2010	0.214	0.088	0.009	0.233	0.457	1.269	2.270
	2012	2011	0.214	0.088	0.005	0.061	0.425	0.925	1.718
Area 3A	2006	2005	1.320	--	0.080	--	0.400	2.023	3.823
	2007	2006	1.320	--	0.050	--	0.430	2.141	3.941
	2008	2007	0.990	--	0.050	--	0.380	1.641	3.061
	2009	2008	1.058	--	0.063	--	0.372	2.026	3.519
	2010	2009	1.918	--	0.042	--	0.337	1.966	4.263
	2011	2010	0.951	0.777	0.020	1.369	0.329	2.077	5.523
	2012	2011	1.035	0.846	0.029	0.840	0.313	1.704	4.767

Source: ADFG and IPHC estimates of other removals

Note: These estimates may differ slightly from the total removals used in the figures due to small differences in the assessment model and the numbers used by IPHC to set catch limits.

Implementing SA would alter the figure above by removing O26 inch commercial wastage from the boxes under the Total CEY and moving it between the allocation plan and the commercial fishery catch limit. Charter sector wastage would also be deducted after the allocation split and before the charter fishery catch limit is set. This process is depicted in Figure 2-9. Currently, only estimates of commercial fishery wastage are available. That would be deducted under this plan. Charter sector wastage would need to be estimated before it could be deducted when determining that sector's catch limit.

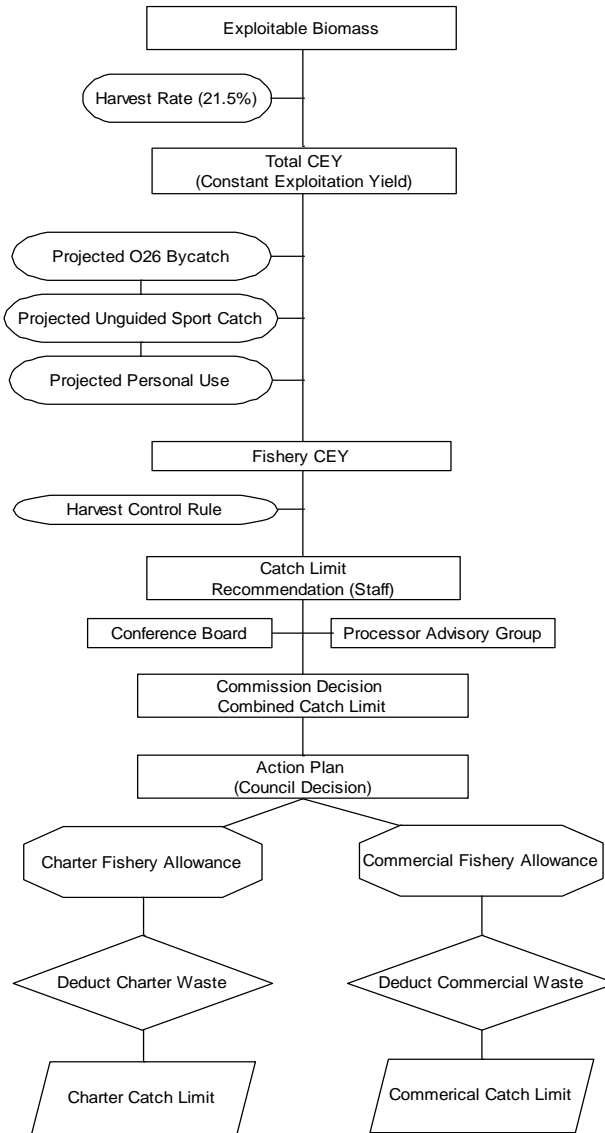


Figure 2-9 Separate accountability flowchart for Areas 2C and 3A.

Table 2-37 shows the estimated commercial wastage for 2011 and 2012. Commercial wastage in that table represents the mortality in the directed halibut fishery of sublegal halibut between 26 inches and 32 inches that are required to be released, plus mortality of halibut that are 32 inches or larger on lost or abandoned gear. Because charter estimates are currently unavailable, proxies were provided by ADF&G to serve as examples. Those estimates are also reported in Table 2-37.

Using the 2011 and 2012 O26 waste estimates, an example of the impact of using SA is provided for the charter and IFQ fisheries based on the Council’s PPA. These estimates are from the IPHC Blue Book except charter waste. The proxy for charter waste was provided by ADF&G staff.

Table 2-37 Charter waste proxy and commercial waste estimates (Mlb)

Area	Year	Charter*	% Charter	Commerical	% Comm	Total
2C	2011	0.122	33.5%	0.242	66.5%	0.364
	2012	0.048	42.1%	0.066	57.9%	0.114
3A	2011	0.074	5.1%	1.389	94.9%	1.463
	2012	0.071	7.6%	0.869	92.4%	0.940

* Proxies for charter waste are provided for demonstration purposes and are not working estimates.

Table 2-38 reports 2011 and 2012 data on Total CEY and other removals to calculate the charter and commercial catch limits. Catch limits are calculated in the top portion of the table without employing separate accountability. The combined catch limit is adjusted using the SUFullD calculation. Slow up only occurred in Area 2C and only during 2012. Calculations in the tables were as follows without SA:

- Data on the Total CEY, total removals⁵⁰, and GHF were taken from reported data by IPHC and ADF&G.
- CSP other removals were calculated by subtracting the GHF amount from total removals.
- CSP combined fishery CEY was calculated by subtracting CSP other removals from the Total CEY.
- SUFullD was applied to calculate the Combined Catch Limit.
- That Combined Catch Limit was used to determine the charter sector allocation percentage and the commercial IFQ allocation percentage under the 2012 PPA.
- The charter sector allocation percentage and the commercial IFQ allocation percentage from the PPA were multiplied by the CCL to determine the individual sector catch limits.

When the SA was employed the calculations were as follows:

- Data on the Total CEY, total removals⁵¹, and GHF were taken from reported data by IPHC and ADF&G.
- CSP other removals were calculated by subtracting the GHF **and commercial and charter waste** from the total removals (see Table 2-37).
- CSP combined fishery CEY was calculated by subtracting CSP other removals from the Total CEY.
- SUFullD was applied to calculate the Combined Catch Limit.
- That Combined Catch Limit was used to determine the charter sector allocation percentage and the commercial IFQ allocation percentage under the 2012 PPA.
- The charter sector allocation percentage and the commercial IFQ allocation percentage were multiplied by the CCL **and then their waste was deducted** to determine the individual sector catch limits.

⁵⁰ Total removals were increased from those reported in the IPHC Blue Books by the charter waste proxy.

⁵¹ Total removals were increased from those reported in the IPHC Blue Books by the charter waste proxy.

Table 2-38 Estimated charter and commercial catch limits (Mlb) under the 2012 PPA with and without SA

Year	Total CEY	Total Other Removals ^a	GHL	CSP Other Removals	CSP Combined Fishery CEY	Combined Catch Limit	CSP PPA Charter Allocation %	CSP PPA Charter Catch Limit	CSP PPA IFQ Allocation %	CSP PPA IFQ Catch Limit
Area 2C Without Separate Accountability										
2011	5.390	3.182	0.788	2.394	2.996	2.996	18.3%	0.548	81.7%	2.448
2012*	5.865	2.701	0.931	1.770	4.095	3.362	18.3%	0.615	81.7%	2.747
Area 2C With Separate Accountability										
2011	5.390	3.182	0.788	2.030	3.360	3.360	18.30%	0.493	81.7%	2.503
2012*	5.865	2.701	0.931	1.656	4.209	3.643	18.30%	0.619	81.7%	2.990
Area 3A Without Separate Accountability										
2011	23.520	9.234	3.650	5.584	17.936	17.936	15.6%	2.798	84.4%	15.138
2012	19.779	7.932	3.103	4.829	14.950	14.950	15.6%	2.332	84.4%	12.618
Area 3A With Separate Accountability										
2011	23.520	9.160	3.650	4.121	19.399	19.399	15.6%	2.952	84.4%	14.984
2012	19.779	7.861	3.103	3.889	15.890	15.890	15.6%	2.408	84.4%	12.542

Note: The * in 2C 2012 indicates it is a slow up year.

^a Other removals includes the proxy of charter waste from Table 2-37. Therefore, other removals will not match IPHC Blue Book estimates.

The change in charter and commercial IFQ catch limits when SA is applied are reported in Table 2-39. During full down years, implementing SA results in gains/losses of equal magnitude but opposite sign being realized by the charter and commercial fleet. The sector that increases their catch limit had a smaller ratio of waste to allocation percentage than the other sector. When a slow up year occurs, it is possible that the SUFD adjustment changes the combined limit sufficiently that both sector's allocation is increased, as shown in 2012 for Area 2C.

Table 2-39 Change in charter and commercial IFQ catch limit when SA is applied (Mlb)

	Charter Catch Limit Difference with SA	IFQ Catch Limit Difference with SA
Area 2C		
2011	-0.055	0.055
2012*	0.003	0.163
Area 3A		
2011	0.154	-0.154
2012	0.076	-0.076

The asterisk in Area 2C for 2012 indicates a slow up year.

2.5.6 Alternative 2: 2008 Preferred Alternative Catch Limits

The Council's 2008 preferred alternative would allocate 17.3% of the Area 2C CCL to the charter sector when the CCL is less than 5 Mlbs. Area 3A charter allocations would be 15.4% of the CCL when the CCL is less than 10 Mlbs. These percentages were originally derived as 125% of the 2001 through 2005 average charter harvest (GHL formula updated through 2005) using the SWHS. The Area 2C charter sector would be allocated 15.1% when the CCL is 5 Mlbs or greater; the Area 3A charter sector would be allocated 14.0% when the CCL is 10 Mlbs or greater.

Area 2C

Figure 2-10 shows the Council's 2008 Preferred Alternative charter catch limit, assuming the SWHS are used to estimate charter harvest. CSP allocations are compared to the status quo charter limit as defined under the GHL. The figure indicates that the GHL allocation would be larger than the CSP allocation until the CCL is 9.483 Mlbs. CCLs that are greater than 9.483 would result in a larger charter allocation under the 2008 Preferred Alternative CSP than the GHL. The percentage difference between the GHL and CSP allocation below 9.483 Mlbs will vary in a non-linear fashion, depending on the CCL and the other removals.

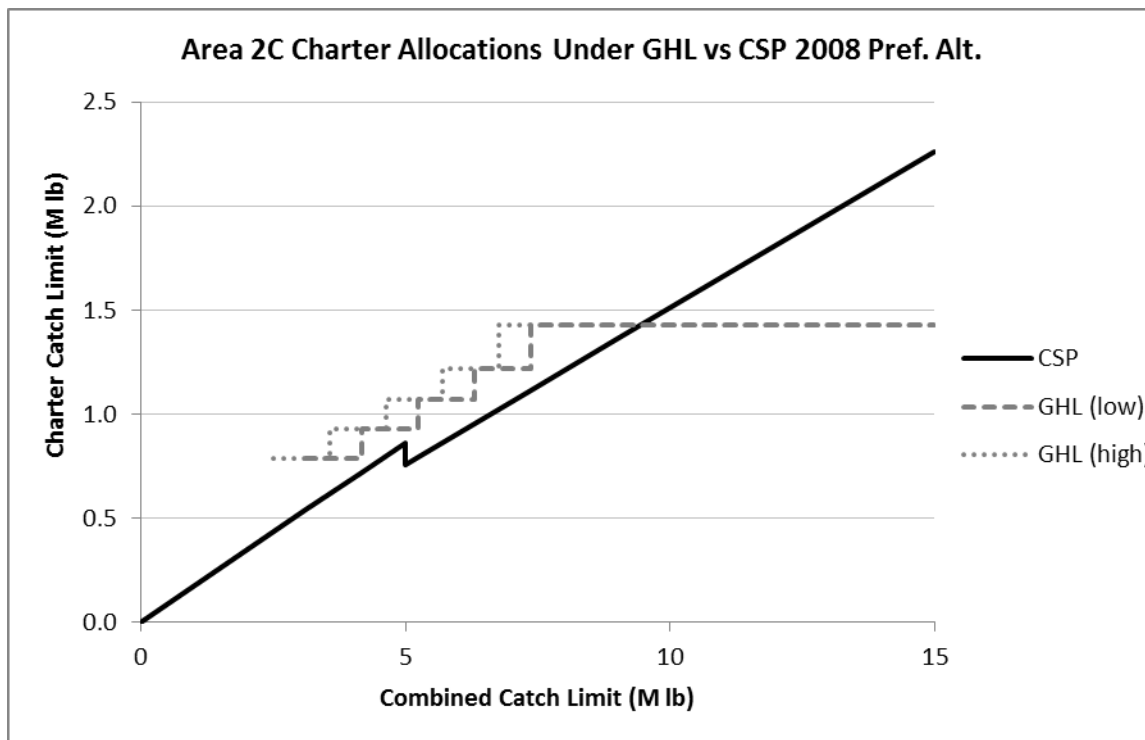


Figure 2-10 Area 2C charter allocation (2008 preferred alternative) based on SWHS

The two dashed GHL lines represent the GHL when “Other Removals”⁵² were at high and low levels. In Area 2C, low removals were set at 1.66 Milbs based on the other removals estimate for 2008. High levels of other removals were assumed to be 2.27 Milb, based on 2011 estimates. These estimates represent the largest and smallest other removals estimates from 2006 through 2012.

Figure 2-11 shows the discrepancy between allocations under the 2008 Preferred Alternative if charter harvest estimates are switched to using logbooks without adjusting the CSP allocation. (Here, the effect is shown by raising the GHL, which shows the difference in allocations implicit in using logbooks to estimate harvest under the CSP. The increase is estimated as the difference between the logbook and SWHS harvest estimates when the logbook estimate equals the GHL). This shows that harvest is estimated to be larger when logbooks are used, so the CSP allocation would be reached sooner. Therefore, more restrictive management measures would be required to limit the charter sector to their catch limit when logbooks are used, instead of the SWHS.

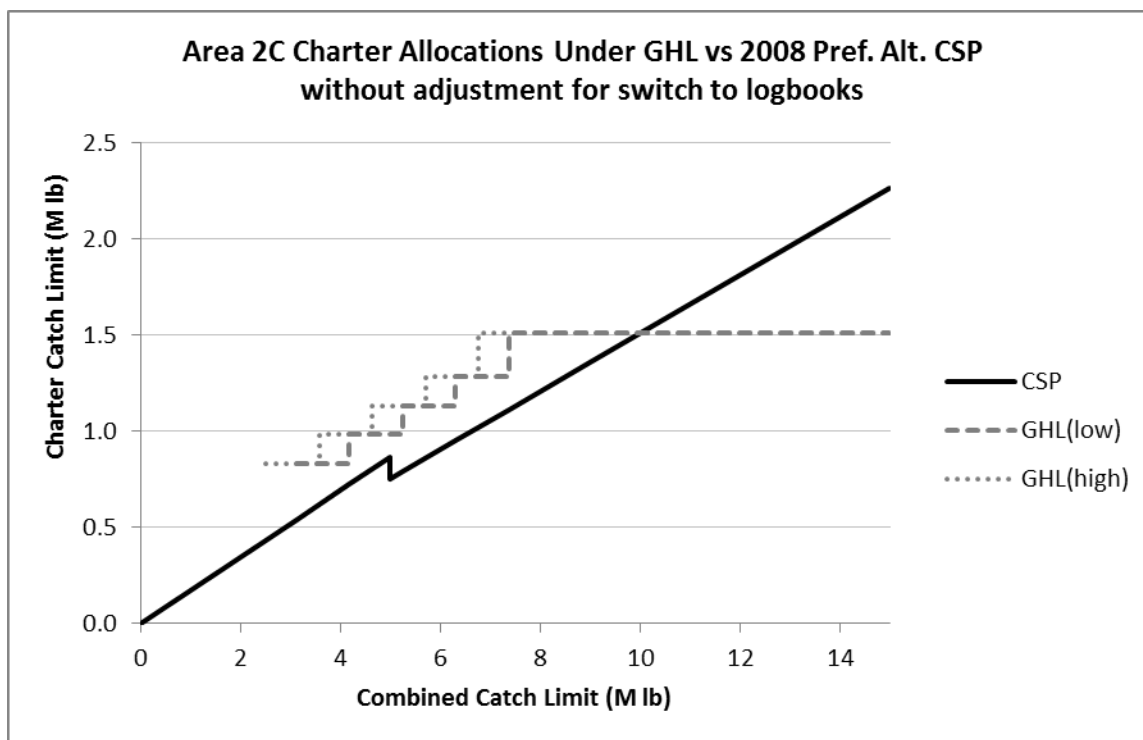


Figure 2-11 Area 2C 2008 preferred alternative (CSP not adjusted for switch to logbooks)

⁵² Other removals include: legal bycatch, O26U32 bycatch, legal waste, O26U32 waste, subsistence, and unguided sport harvests.

Area 3A

In Area 3A, low levels of other removals were 3.06 Mlbs based on the 2008 estimate. High levels of other removals were assumed to be 5.51 Mlb, based on 2011 estimates. These estimates represent the largest and smallest other removal estimates from 2006 through 2012. Like Area 2C, other removals increased starting in 2010 when the O26/U32 wastage and O26/U32 bycatch was included in the estimate.

Figure 2-12 shows the Council's 2008 preferred CSP alternative allocation assuming the SWHS are used to estimate charter harvest. CSP allocations are plotted along with the GHL estimates using the high and low estimate of other removals. The figure indicates that the GHL allocation would be larger than the CSP allocation until the CCL is 26.071 Mlbs. CCLs that are greater than 26.071 Mlbs would result in a larger charter allocation under the 2008 Preferred Alternative CSP than the GHL. The percentage difference between the GHL and CSP allocation below 26.071 Mlbs varies in a non-linear fashion depending on the CCL and other removals.

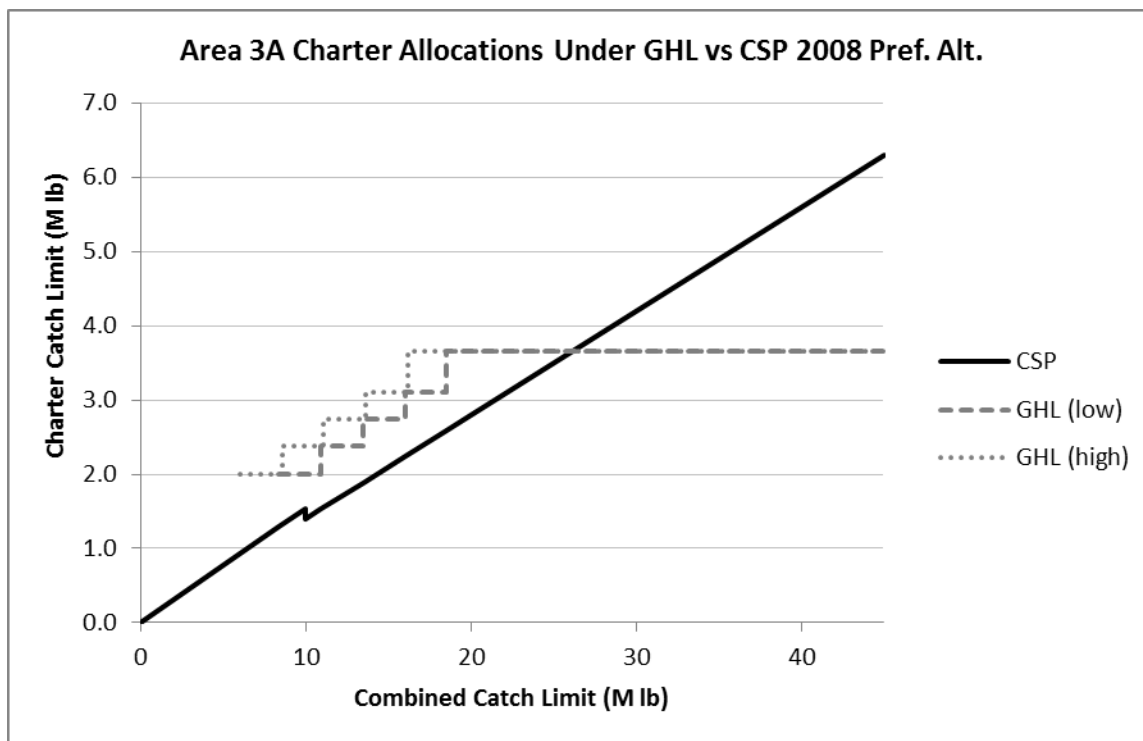


Figure 2-12 Area 3A charter allocation (2008 preferred alternative) based on SWHS

Figure 2-13 shows the discrepancy between the current GHL, which uses SWHS, and the CSP under the 2008 Preferred Alternative if charter harvest estimates are switched to using logbooks without adjusting the CSP allocation. (As in Area 2C, the effect is estimated by raising the GHL by the difference of the logbook harvest estimate and the SWHS estimate when the estimated catch using logbooks is equal to the GHL). Because the harvest estimate is larger, the CSP allocation would be reached sooner and more restrictive management measures would be required to limit the charter sector to their catch limit under logbook estimates in comparison to SWHS estimates.

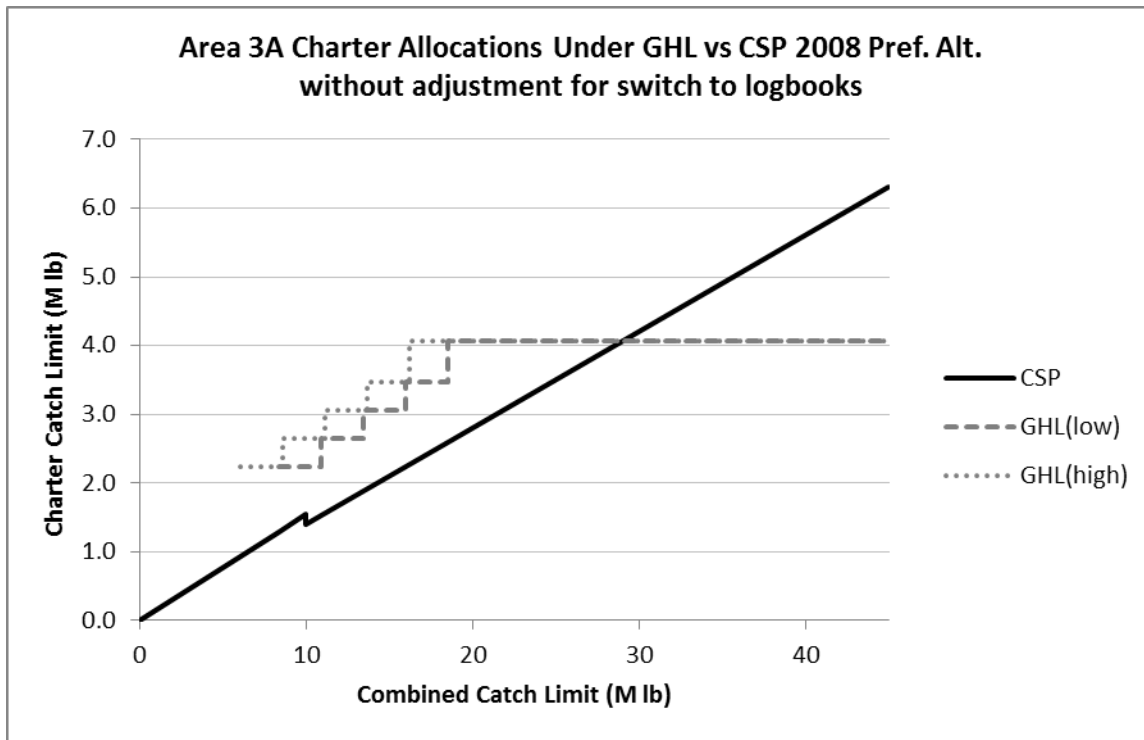


Figure 2-13 Area 3A 2008 preferred alternative (CSP not adjusted for switch to logbooks)

2.5.7 Alternative 3: 2012 Preliminary Preferred Alternative

The 2012 PPA is the 2008 preferred alternative increased by 5.6% in Area 2C and 11.6% in Area 3A to account for switching to logbooks as the primary data for determining charter harvest. In Area 3A the adjustment factor also accounts for crew harvests⁵³. Data and calculations showing how those adjustment percentages are derived and presented in Section 2.3.2.

Area 2C

Figure 2-14 provides estimates of the Area 2C PPA CSP allocation over the range of combined catch limits from 0 Milbs through 15 Milbs. CSP allocations increase linearly until the CCL reaches 5.0 Milbs. At that CCL level, the charter allocation is decreased from 18.3% to 15.9% of the CCL. Decreasing the charter's percentage of the CCL causes the charter allocation to drop from 915,000 lb (when CCL is less than 5.0 Milb) to 795,000 lb (when CCL is greater than or equal to 5.0 Milb). That equates to a 120,000 lb reduction in the charter allocation when the CCL increases by 1 lb. This drop in the charter allocation has been a source of controversy. The Council has recognized that this drop in charter allocation will occur. They also understand that it is a result of providing the charter sector a greater percentage of the CCL at low levels of halibut abundance. This issue (the drops in the charter allocation when the CCL increase causes a decrease in the charter sector percentage of the CCL) is discussed further in Section 2.5.11.

Charter allocations under the CSP and GHL are equal when the CCL is 9.511 Milbs. At CCLs less than 9.511 Milbs, the GHL generates a larger charter allocation; at CCLs greater than or equal to 9.511 Milbs, the CSP generates a larger charter allocation. Conversely, because of the charter sector and commercial IFQ sector share the CCL, the commercial IFQ fishery's allocation is larger under the GHL when the CCL is less than 9.511 Milbs and smaller when the CCL is greater than or equal to 9.511 Milbs.

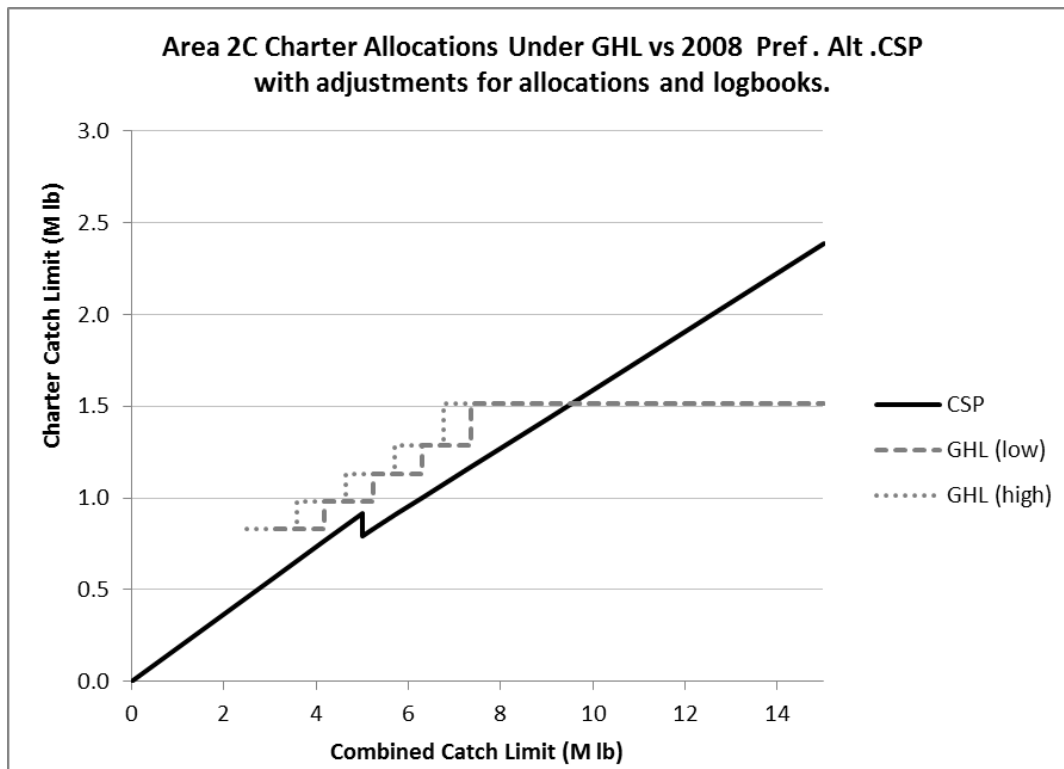


Figure 2-14 Area 2C charter allocation under the 2012 PPA

⁵³ Adjustments are only included for Area 3A, because the Area 2C crew harvests were always less than 90 fish per year over this time period.

Area 3A

Figure 2-15 provides estimates of the Area 3A PPA CSP allocation over the range of combined catch limits from 0 Mlbs through 45 Mlbs. CSP allocations increase linearly until the CCL reaches 10.0 Mlbs. At that CCL level, the charter allocation is decreased from 17.2% to 15.6% of the Area 3A CCL. Decreasing the charter's percentage of the CCL causes the charter allocation to drop from 1.720 Mlbs. (when CCL is 9.999 Mlb) to 1.560 Mlbs.lb (when CCL is 10.000 Mlb). That equates to a 160,000 lb reduction in the charter allocation when the CCL increases by 1 lb. This issue (the drops in the charter allocation when the CCL increase causes a decrease in the charter sector percentage of the CCL) is discussed further in Section 2.5.11.

Charter allocations under the CSP and GHL are equal when the CCL is 26.112 Mlbs. At CCLs less than 26.112 Mlbs the GHL generates a larger charter allocation; at CCLs greater than or equal to 26.112 Mlbs the CSP generates a larger charter allocation. Conversely, because of the charter sector and commercial IFQ sector share the CCL, the commercial IFQ fishery's allocation is larger under the GHL when the CCL is less than 26.112 Mlbs.lb and smaller when the CCL is greater than or equal to 26.112 Mlbs.

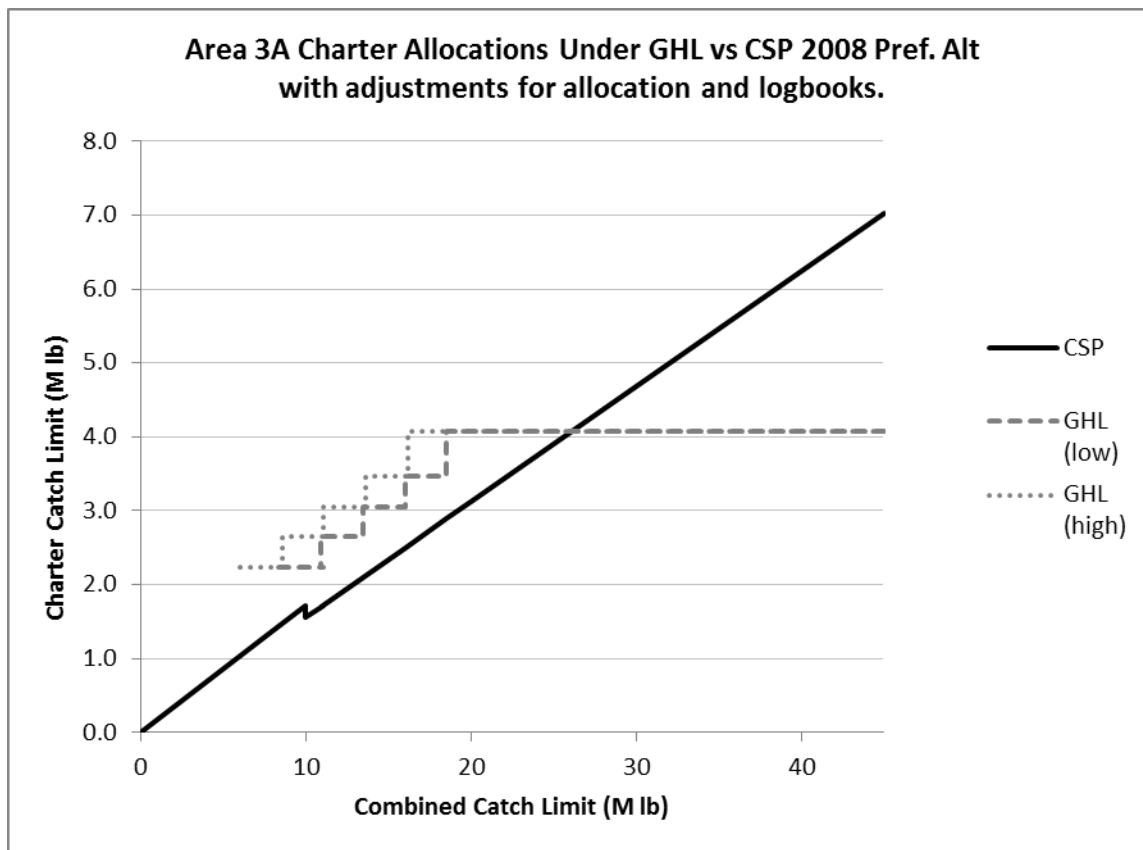


Figure 2-15 Area 3A charter allocation under the 2012 PPA

2.5.8 Alternative 4: Option 1 (Area 2C) and Option 2 (Area 3A)

The third option considered by the Council, “Option 1 (unadjusted)”, is the 2008 preferred alternative increased by 3.5% of the CCL, when the CCL is less than 9.0 Milb. The 3.5% was selected as an adjustment factor to increase the charter catch limit. Because the charter percentage is adjusted in Area 2C when the CCL is below 9.0 Milb and not adjusted at or above 9.0 Milb, the charter sector has three allocation percentages that can be realized over the CCL range. The same process is used in Area 3A except the 3.5% upward adjustments occur when the CCL is below 20.0 Milb, but do not occur when the CCL is 20.0 Milb or greater.

Option 1 (Area 2C)

In Area 2C, when the CCL is less than 5 Milb, the charter percentage of the CCL is 20.8%. When the CCL is 5.0 Milb or more and less than 9.0 Milb, the charter allocation is 18.6% of the CCL. Finally, when the CCL is 9.0 Milb or more the charter percentage is the 15.1% of the CCL (as under the 2008 preferred alternative). The charter allocations under the CSP and the GHL using the SWHS to estimate sport catch are presented in Figure 2-16. That figure has two drops where the charter allocation percentage of the CCL decreases. The first drop occurs when the CCL reaches 5.000 Milb. At that point, the charter allocation decreases from 1.040 Milb to 930,000 lb. Their allocation then increases at a rate of 186 lb for each 1,000 lb increase in the CCL. When the CCL reaches 9.000 Milb the charter allocation decreases from 1.674 Milb to 1.359 Milb (215,000 lb). From that point, the charter allocation will increase 151 lb for each 1,000 lb.⁵⁴ increase in the CCL. The new drop added by this option is greater than the original decline because both the percentage difference between the two charter allocations levels and the amount of the CCL is greater at the second drop.

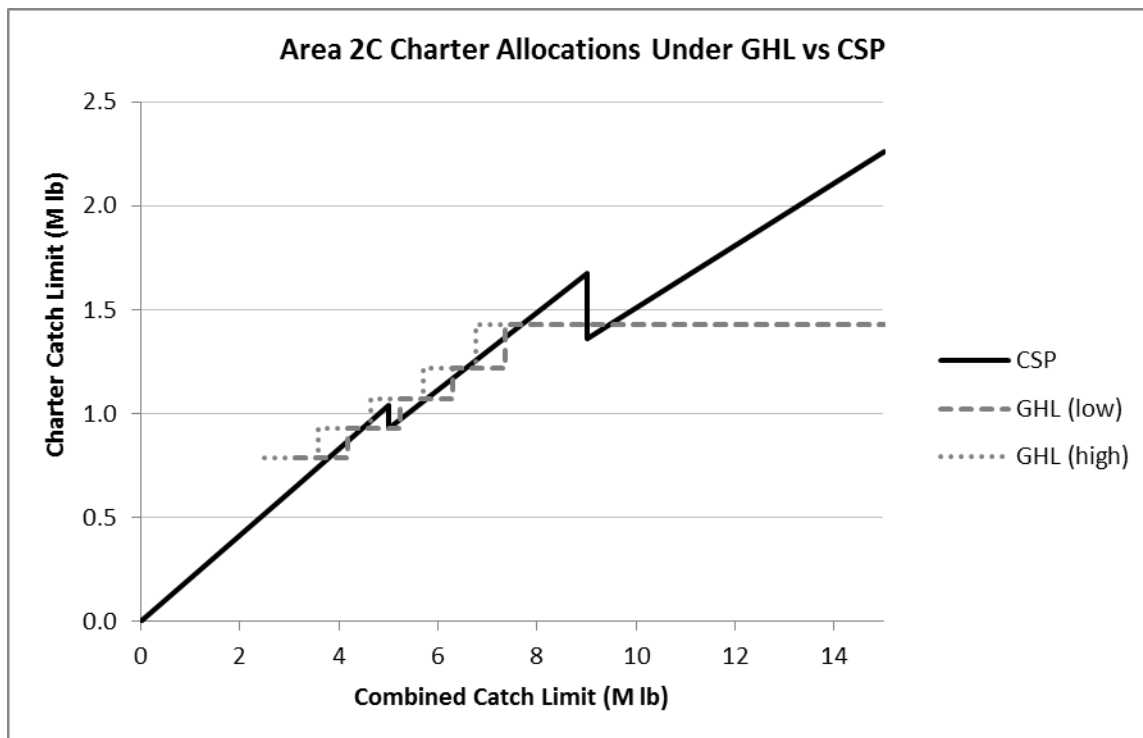


Figure 2-16 Area 2C charter allocations under Option 1 using SWHS

⁵⁴ The commercial IFQ fisheries allocation will increase 849 lb. for each 1,000 lb. increase in the CCL after the CCL reaches 9.000 Milb.

Figure 2-17 compares the charter allocations under the GHL and the CSP when the CSP is not adjusted for the switch to logbooks. The comparison is estimated by increasing the GHL to account for the switch to logbook accounting. Therefore the shift in the GHL represents an estimate of the difference in charter harvests estimated by logbooks and the SWHS, at the level where the logbook harvest is equal to the GHL. The higher level of harvest under the GHL indicates the charter sector would reach their allocation sooner under logbook management of the CSP and would therefore require more restrictive management measures to constrain their harvest to the CSP.

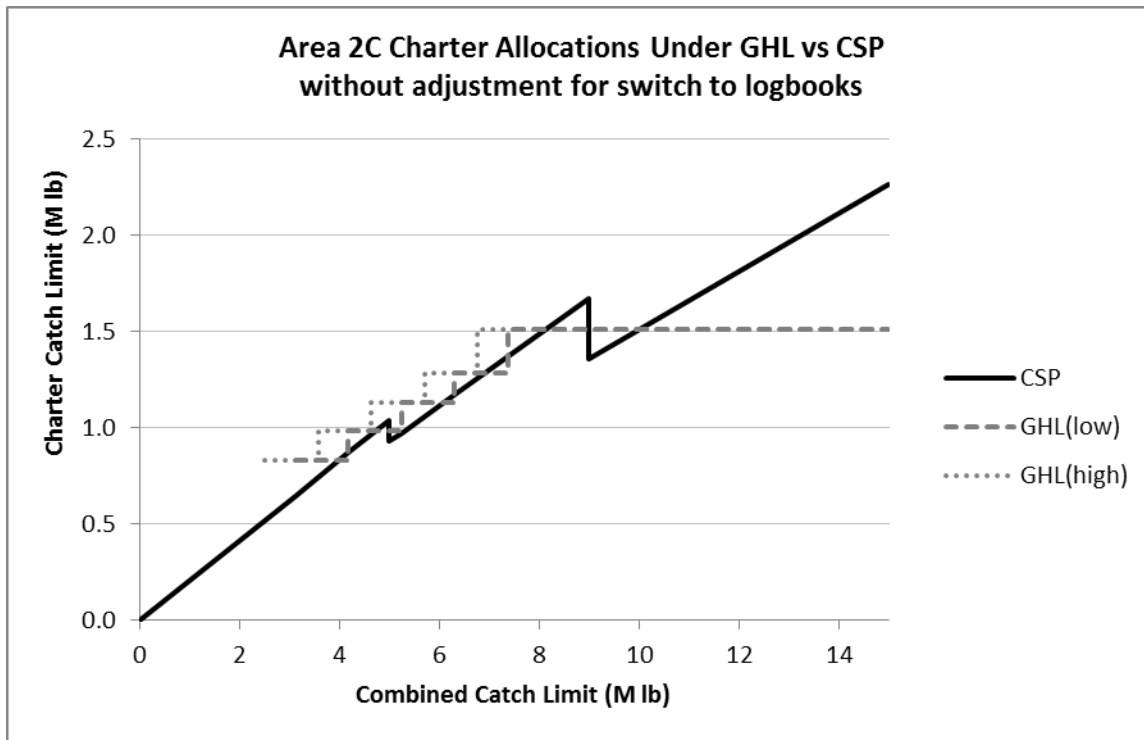


Figure 2-17 Area 2C charter allocations under Option 1 (only GHL adjusted for logbooks)

Area 3A

When the CCL is less than 10 Mlbs in Area 3A the charter percentage of the CCL is 18.9%. When the CCL is 10.0 Mlbs or more, and less than 20.0 Mlb the charter allocation is 17.5%. Finally, when the CCL is 20.0 Mlbs or more the charter percentage is set at the 2008 preferred alternative of 14.0%. The charter allocations under the CSP and the GHL using the SWHS to estimate sport catch are presented in Figure 2-18. That figure has two drops that occur where the charter allocation percentage of the CCL decreases. The first drop occurs when the CCL reaches 10.000 Mlbs. At that point, the charter allocation decreases from 1.890 Mlbs to 1.750 Mlbs (140,000 lb decrease). When the CCL reaches 20.000 Mlbs the charter allocation decreases from 3.500 Mlbs to 2.800 Mlbs (700,000 lb decrease). From that point, the charter allocation will increase 140 lb for each 1,000 lb increase in the CCL. Like in Area 2C, the second drop added by this option is greater than the original decline because both the percentage difference between the two charter allocations levels and the CCL are greater at the second drop.

The charter allocation, at high levels of other removal, would be greater based on the GHL until the CCL reaches 26.071 Mlbs. All larger CCLs would result in a larger charter allocation using the CSP formula, given these assumptions.

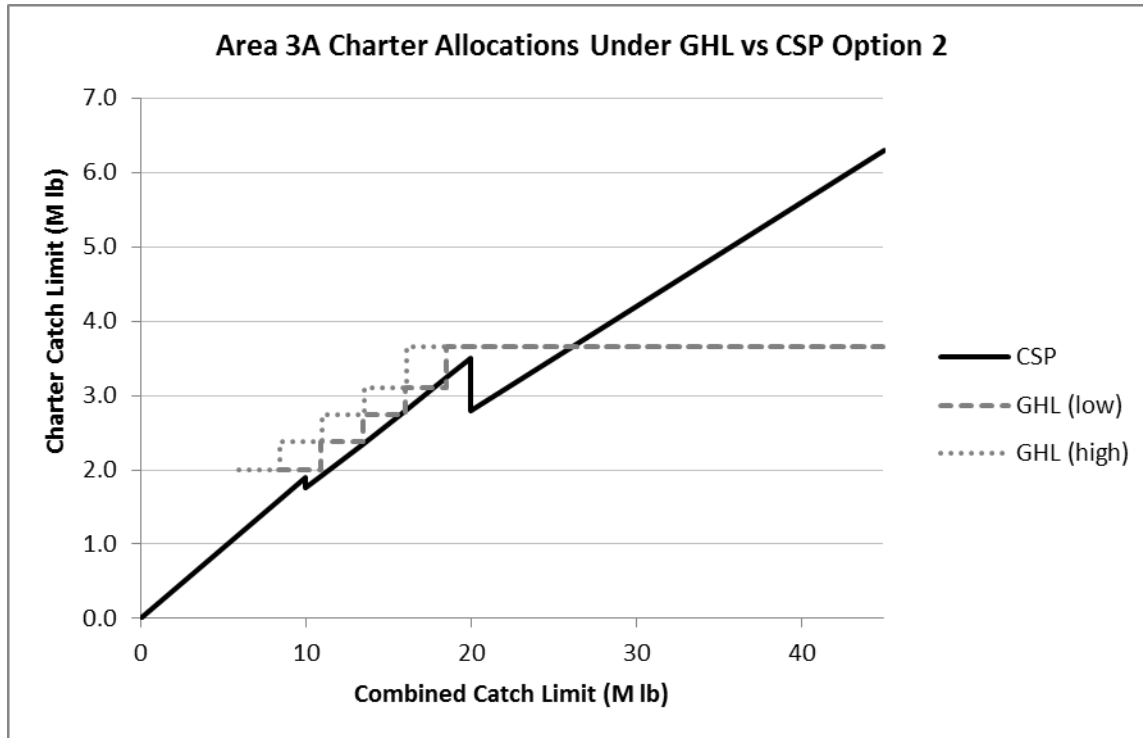


Figure 2-18 Area 3A charter allocations under Option 2 using SWHS

Figure 2-19 compares the charter allocations under the GHL and the CSP, when the CSP is not adjusted for the switch to logbooks. The GHL is increased to account for a switch to logbook data. Therefore the GHL represents an estimate of charter harvest under the SWHS when the estimated charter harvest using logbooks was equal to the GHL. A higher level of harvest under the GHL estimated with SWHS is used to illustrate that the charter sector would reach their allocation sooner under logbook management of the CSP and would require more restrictive management measures to constrain their harvest to the CSP. This is not an option that is currently under Council consideration, but is provided to show the impact of using logbooks to determine charter harvests in the future (under the 2012 Approach) without adjusting the charter allocation.

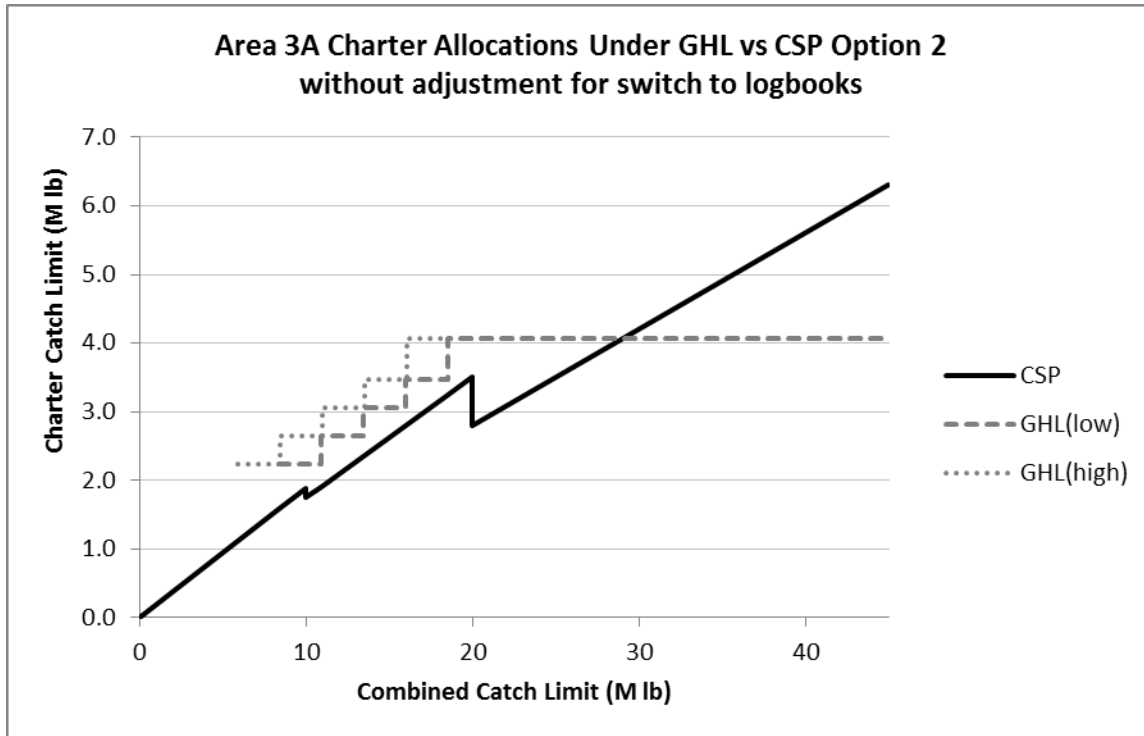


Figure 2-19 Option 2 without adjustment for switch to logbooks

2.5.9 Alternative 5: Option 1 (Area 2C) and Option 2 (Area 3A) with Logbook Adjustment

The fourth CSP charter allocation considered (Alternative 5) is the 2012 Preliminary Preferred Alternative increased by 3.5 percent of the CCL when the CCL is less than 9 Mlbs in Area 2C and less than 20 Mlbs in Area 3A.

Area 2C

In Area 2C, when the CCL is less than 5 Mlb the charter percentage of the CCL is 21.8%. When the CCL is 5.0 Mlb or more and less than 9.0 Mlb, the charter allocation is 19.4%. Finally, when the CCL is 9.0 Mlb or more the charter percentage is 15.9%. The charter allocations under the CSP and the GHL using the logbooks to estimate charter harvests are presented in Figure 2-20. That figure has two drops where the charter allocation percentage of the CCL decreases. The first drop occurs when the CCL reaches 5.000 Mlbs. At that point, the charter allocation decreases from 1.090 Mlbs to 970,000 lb (a 120,000 lb reduction). Their allocation then increases at a rate of 194 lb for each 1,000 lb increase in the CCL. When the CCL reaches 9.000 Mlbs the charter allocation decreases from 1.746 Mlbs to 1.431 Mlbs (a 315,000 lb reduction). From that point, the charter allocation will increase 159 lb for each 1,000 lb⁵⁵ increase in the CCL.

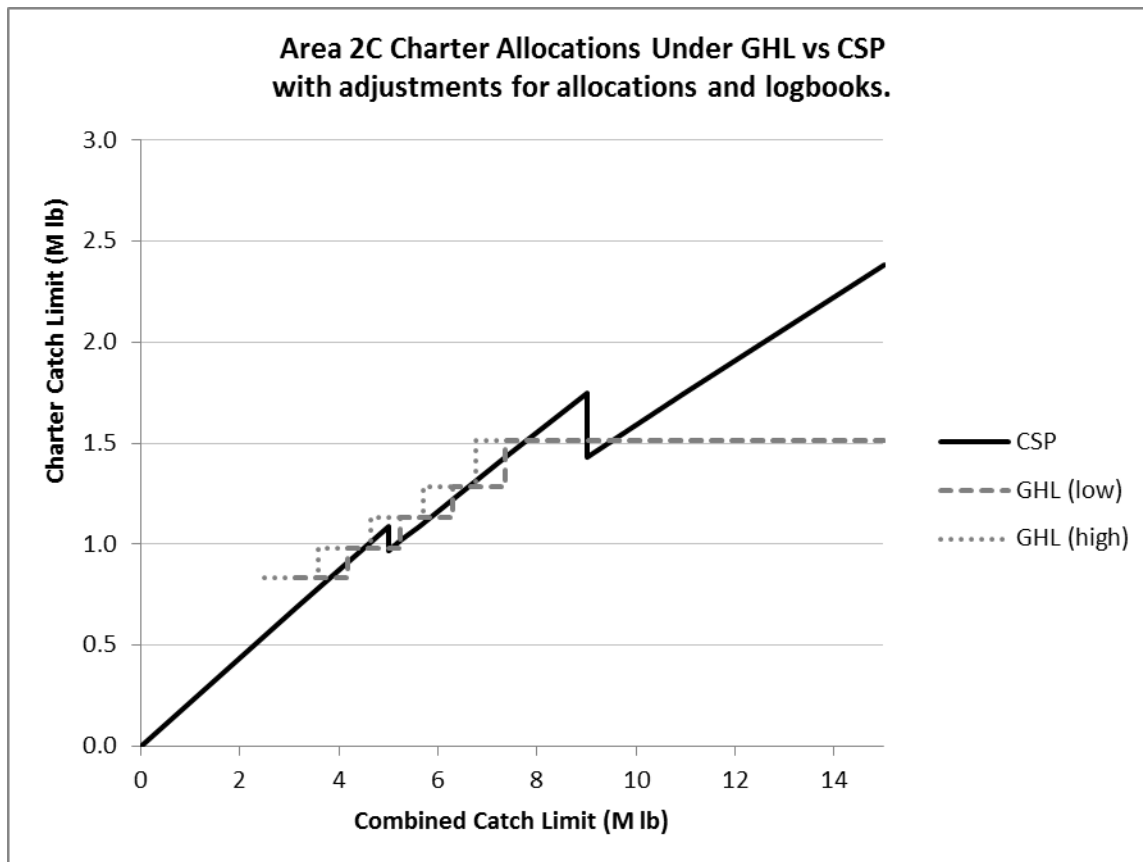


Figure 2-20 Option 1 adjusted for switch to logbooks

⁵⁵ The commercial IFQ fisheries allocation will increase 849 lb. for each 1,000 lb increase in the CCL after the CCL reaches 9.000 Mlb.

Figure 2-21 shows the percentage difference between the charter allocation under the GHL and CSP based on allocations using the 2012 PPA and Option 1 with logbook adjustments. At the lowest levels of the GHL, the percentage difference between the GHL and CSP is greatest (about 45 percent under the 2012 PPA). The difference between the GHL and Option 1 adjusted for switching to logbooks is smaller than under the 2012 PPA, until the CCL reaches 9.000 MIbs. At that point the charter percentage is equal under both options. From the lower CCL levels up to just more than 9.5 MIbs the percentage difference between the GHL and CSP allocations declines until the GHL and CSP charter allocations are the same.

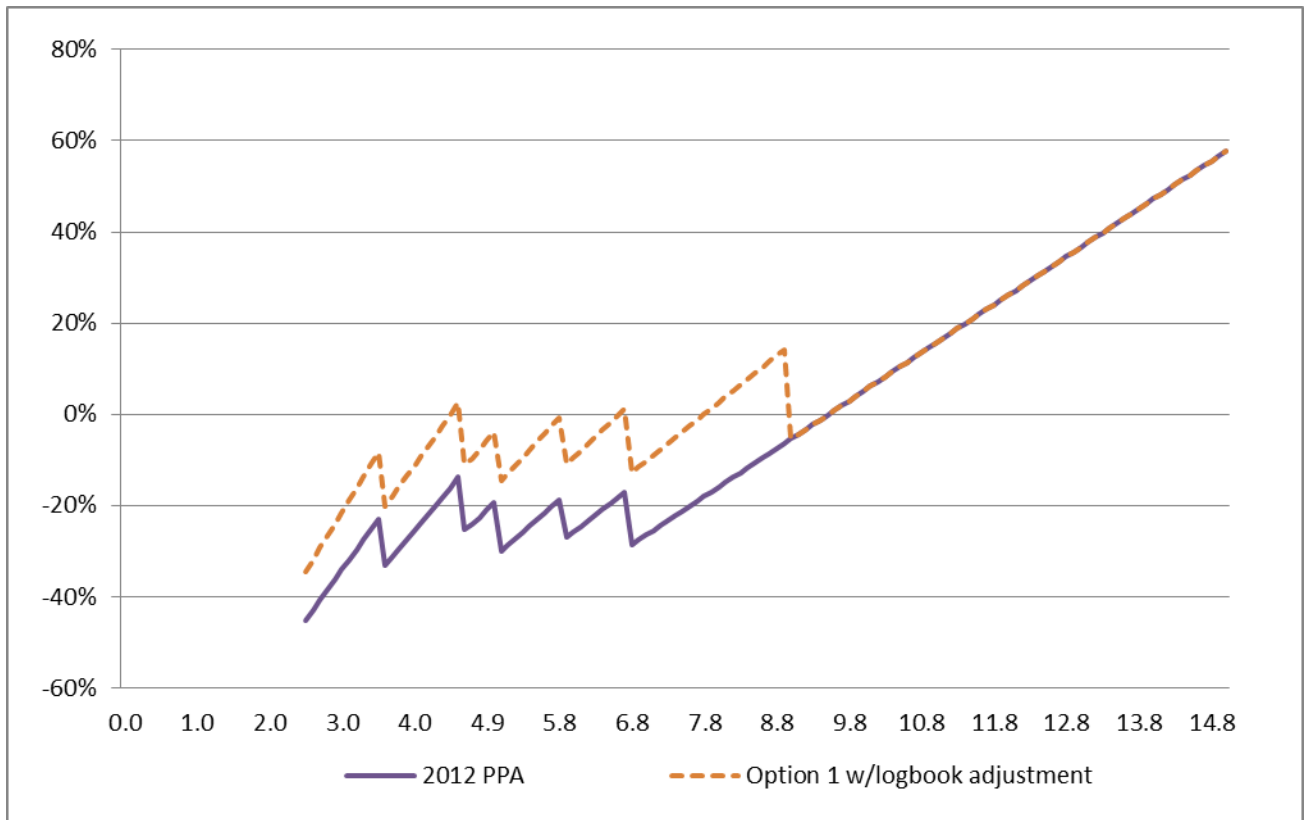


Figure 2-21 Area 2C percentage difference between Charter GHL and CSP allocations

Area 3A

At a CCL of less than 10 Milb, in Area 3A, the charter percentage of the CCL is 20.7%. When the CCL is 10.0 Milbs or more, but less than 20.0 Milb, the charter allocation is 19.1%. Finally, when the CCL is 20.0 Milbs or more the charter percentage is set at the 2008 preferred alternative of 15.6%. The charter allocations under the CSP and the GHL using the logbooks to estimate charter harvest are presented in Figure 2-22. That figure has two drops that occur where the charter allocation percentage of the CCL decreases. The first drop occurs when the CCL reaches 10.000 Milbs. At that point, the charter allocation decreases from 2.070 Milbs to 1.910 Milbs. When the CCL reaches 20.000 Milbs the charter allocation decreases from 3.820 Milbs to 3.120 Milbs (700,000 lb). From that point, the charter allocation will increase 156 lb for each 1,000 lb increase in the CCL.

The charter allocation, at high levels of other removals, would be greater based on the GHL until the CCL reaches 24.486 Milbs. All CCLs larger than 24.486 Milbs result in the charter sector's allocation being greater, using the CSP formula.

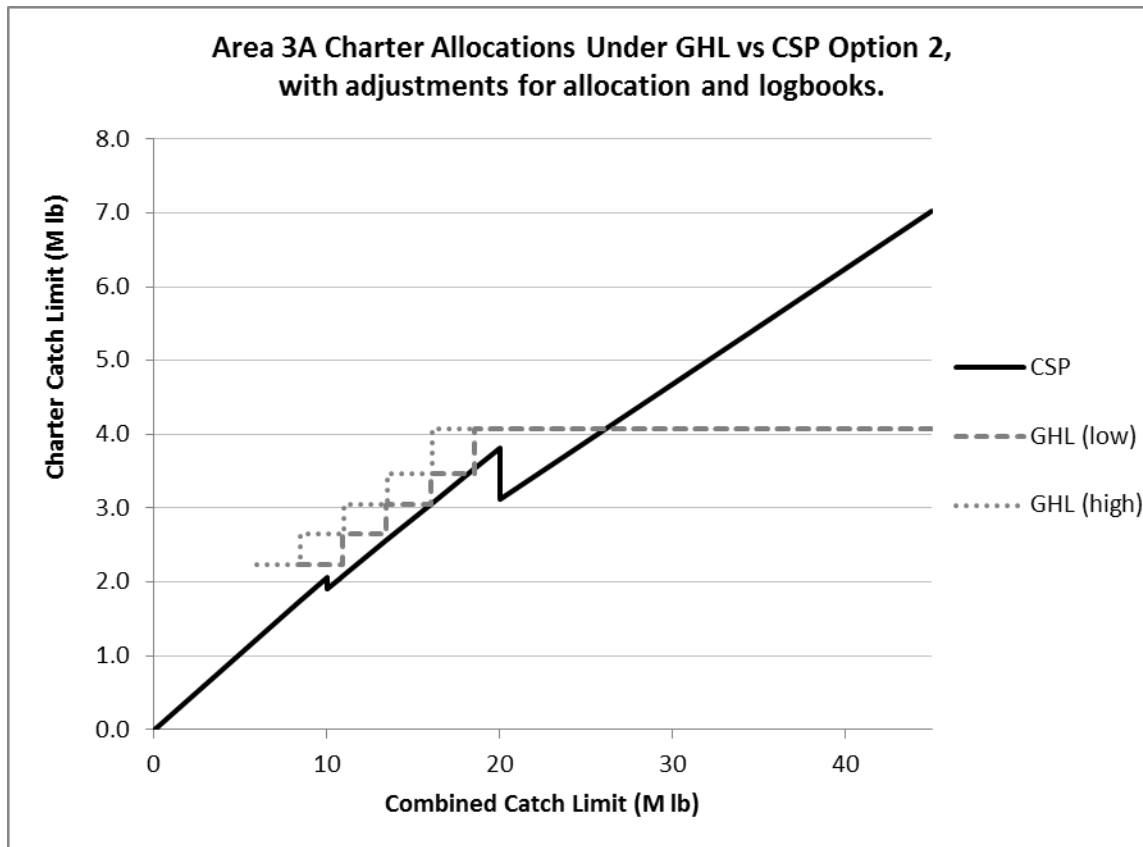


Figure 2-22 Option 2 adjusted for switch to logbooks

Figure 2-23 shows the percentage difference between the Area 3A charter allocation under the GHL and CSP based on allocations using the 2012 PPA and Option 2 with logbook adjustments. At the lowest levels of the GHL, the percentage difference between the GHL and CSP is greatest (the 2012 preferred alternative is about 50 percent of the GHL). The 2012 PPA with Option 2 adjusted for switching to logbooks is smaller than the 2012 PPA, until the CCL reaches 20,000 Mlb. At that point the charter percentage is equal under both options. From the lower CCL levels up to just less than 23.4 Mlb the percentage difference between the GHL and CSP allocations decreases and at that point they are equal. At CCLs greater than or equal to 23.4 Mlb, the charter allocation is greater under the CSP than the GHL.

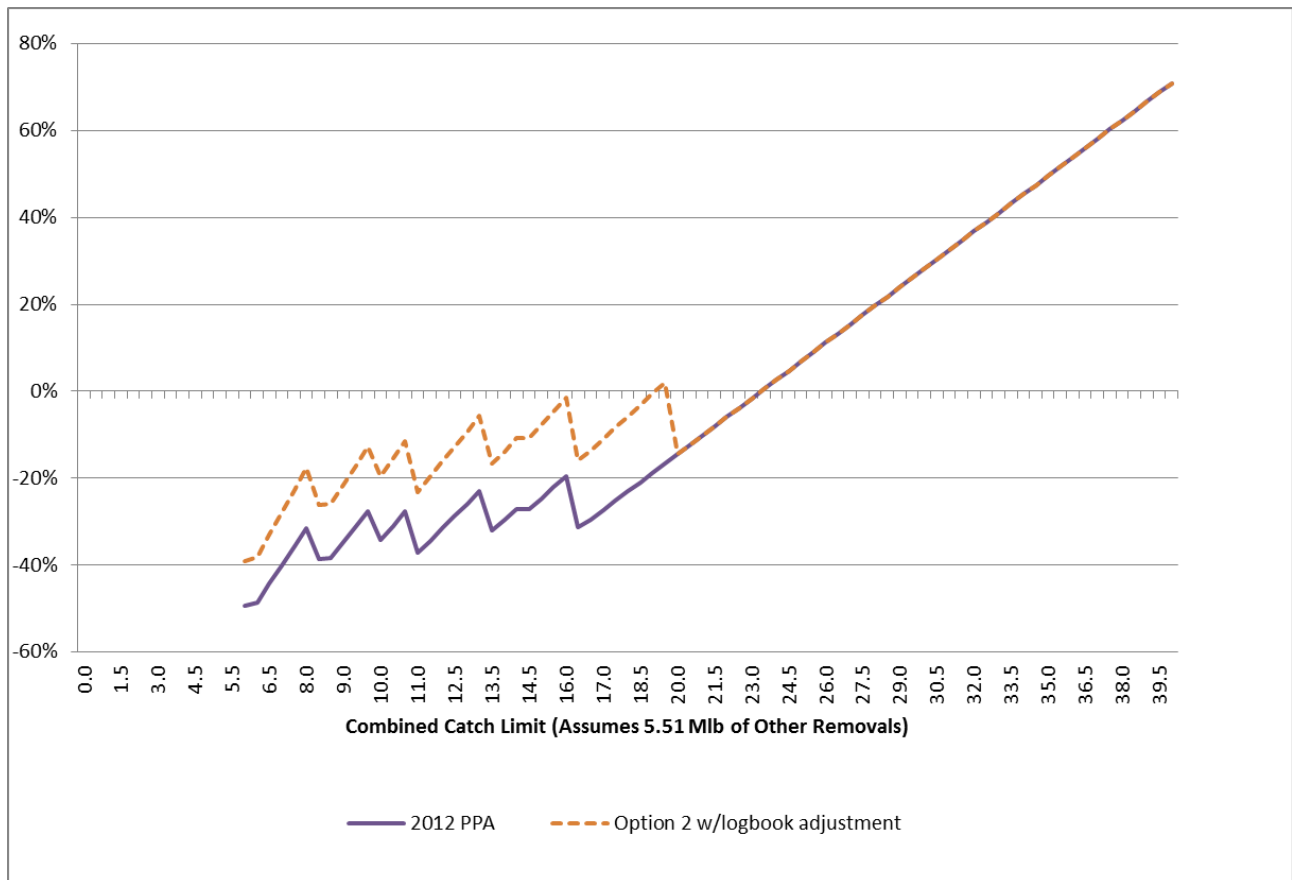


Figure 2-23 Percentage difference between Area 3A GHL and CSP Options

2.5.10 Comparison of CSP Allocations to GHL using recent years

The previous sections describe the charter allocations (and commercial allocations by inference) over the broad range of combined catch limits that may be realized in the future. This section uses recent historical data from 2008 through 2012 to compare the CSP allocations under the Council’s 2012 PPA (Alternative 3), Options 1 and 2 (Alternative 4), and Options 1 and 2 adjusted (Alternative 5) to the GHL. This section is intended to provide a better understanding of the impacts of proposed allocations under recent conditions in the fishery. Information presented in this section applies IPHC Slow Up Full Down policy, with no corrections for other IPHC policies. Comparisons to the GHL are based on the GHL set at the beginning of the year and not the actual GHL harvests between 2008 and 2012. These estimates do not apply SA of wastage.

Area 2C

Table 2-40 compares the Area 2C Council’s PPA to the GHL based on actual 2008 through 2012 Total CEY and other removals. Because the CCL was estimated to be less than 5 Milbs each of these years, the charter allocation is set at 18.3 percent of the CCL. From the figures presented earlier in this analysis it was noted that the CSP results in a smaller allocation to the charter sector than the GHL at lower CCLs. The CSP PPA versus the GHL column reflects that effect, showing the CSP PPA as a percentage of the GHL of less than 100% each year. In 2008, the 2012 CSP PPA about allocate the charter sector 95.2 percent of the GHL allocation. As the CCL declines the 2012 CSP PPA continues to decline relative to the GHL. The 2012 data results in a CSP allocation that is 68.0 percent of the GHL. The right most column in the table shows that 2012 CSP PPA as the change relative to the GHL. Those percentages are the decline in the charter allocation as a percentage of the GHL resulting from the 2012 PPA CSP allocation instead of the GHL allocation.

Table 2-40 Area 2C CSP PPA compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP PPA Guided Allocation	CSP PPA vs GHL	CSP PPA Allocation Change Relative to GHL
2008	6.500	2.590	0.931	1.659	4.841	4.841	18.30%	0.886	95.2%	-4.8%
2009	5.570	2.710	0.788	1.922	3.648	3.648	18.30%	0.668	84.7%	-15.3%
2010	5.020	2.630	0.788	1.842	3.178	3.178	18.30%	0.582	73.8%	-26.2%
2011	5.390	3.060	0.788	2.272	3.118	3.118	18.30%	0.571	72.4%	-27.6%
2012*	5.865	2.653	0.931	1.722	4.143	3.460	18.30%	0.633	68.0%	-32.0%

*2012 is a “slow up” year, meaning combined harvest is managed to last year’s combined catch limits plus 1/3 the difference between last year’s combined catch limits and this year’s combined fishery CEY.

It is also appropriate to understand how other sectors fare under these same conditions. Assuming that all other sectors fare better under higher total CEYs would misinterpret the information presented above. Table 2-41 indicates the percentage of the Total CEY that is allocated to the commercial IFQ fishery, the charter sector, and the other removals category under the GHL. Considering the other removals category is important, as fluctuations in that category can often overshadow effects of the differences in the GHL allocations. During 2008 the commercial IFQ fishery was allocated 60.2 percent of the Total CEY. The charter sector was allocated 14.3 percent and 25.5 percent was deducted for other removals. The commercial IFQ sector experienced greater declines, relative to the Total CEY than the charter sector from 2009 through 2011 because all other removals came “off the top” before the Fishery CEY was determined by the IPHC. In 2012, both the charter sector’s and the commercial IFQ sector’s percentage of the Total CEY increased. This increase was due to a 30.3% reduction in other removals, relative to 2011. The increase realized by the charter sector was less than the increase to the commercial IFQ fishery. From 2008 through 2012, the commercial IFQ sector’s percentage of the Total CEY decreased from 60.2

percent to 54.8 percent. The charter sector's percentage of the Total CEY increased from 14.3 percent to 15.9 percent. Finally, the largest increase accrued to the other removals category. Other removals accounted for 25.5 percent of the Total CEY in 2008 and 29.4 percent in 2012. Other removals accounted for as much as 42.2 percent (2011) during this time period. The increase in other removals as a percentage of Total CEY was primarily due to the reduction in the Total CEY over the time period considered.

Table 2-41 Area 2C percentage of Total CEY allocated to the sectors under the GHL

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	60.2%	n/a	14.3%	n/a	25.5%	n/a	100.0%
2009	51.3%	-14.6%	14.1%	-1.2%	34.5%	35.2%	100.0%
2010	47.6%	-7.3%	15.7%	11.0%	36.7%	6.3%	100.0%
2011	43.2%	-9.2%	14.6%	-6.9%	42.2%	14.9%	100.0%
2012*	54.8%	26.7%	15.9%	8.6%	29.4%	-30.3%	100.0%

Table 2-42 provides a comparison of the 2012 PPA CSP allocations to the Total CEY in Area 2C. Other removals are the same as the GHL comparison table, because both the Total CEY and the amount deducted for other removals are unchanged. Percentage changes in the commercial IFQ and charter fisheries follow the same pattern. Under the 2012 CSP, the percentage of the CCL allocated to the commercial IFQ and charter sectors does not change (the CCL is less than 5 Mlbs each of the years considered). Therefore, the percentage change from the previous year is the same for both sectors. The actual percentage allocated to the charter sector changes less than the commercial sector, because they are allocated a smaller percentage of the Total CEY. It is noteworthy that even when the percentage of other removals declined in 2012, that reduction was reallocated to the biomass through the "slow up" mechanism.

Table 2-42 Area 2C percentage of Total CEY allocated to sectors under the 2012 CSP PPA

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	60.8%	n/a	13.6%	n/a	25.5%	n/a	100.0%
2009	53.5%	-12.1%	12.0%	-12.1%	34.5%	35.2%	100.0%
2010	51.7%	-3.3%	11.6%	-3.3%	36.7%	6.3%	100.0%
2011	47.3%	-8.6%	10.6%	-8.6%	42.2%	14.9%	100.0%
2012*	48.2%	2.0%	10.8%	2.0%	29.4%	-30.3%	88.3%

Note: Because 2012 was a "slow up" year only 88.3 percent of the Total CEY is allocated to the fisheries listed in the table. The remainder of the Total CEY remains in the water and goes to the biomass.

Comparing Option 1 to the GHL, based on 2008 through 2012 data, indicates that the charter sector's allocation declines relative to the GHL each year. In 2008 the charter allocation was estimated to be 108.2 percent of the GHL. By 2012 the charter allocation under Option 1 was 77.3 percent of the GHL. The comparison of Option 1 to the GHL for each year is presented in Table 2-43.

Table 2-43 Area 2C Option 1 compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP Option 1 Guided Allocation	CSP Option 1 vs GHL	CSP Option 1 Allocation Change Relative to GHL
2008	6.500	2.590	0.931	1.659	4.841	4.841	20.80%	1.007	108.2%	8.2%
2009	5.570	2.710	0.788	1.922	3.648	3.648	20.80%	0.759	96.3%	-3.7%
2010	5.020	2.630	0.788	1.842	3.178	3.178	20.80%	0.661	83.9%	-16.1%
2011	5.390	3.060	0.788	2.272	3.118	3.118	20.80%	0.649	82.3%	-17.7%
2012*	5.865	2.653	0.931	1.722	4.143	3.460	20.80%	0.720	77.3%	-22.7%

The only differences between Table 2-44 and Table 2-42 are the commercial IFQ and charter percentages. Because Option 1 allocates a larger percentage of the CCL to the charter sector than the 2012 CSP PPA, the commercial IFQ allocation decreases and the charter allocation increases for every year considered.

Table 2-44 Area 2C percentage of the Total CEY allocated to sectors under Option 1

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	59.0%	n/a	15.5%	n/a	25.5%	n/a	100.0%
2009	51.9%	-12.1%	13.6%	-12.1%	34.5%	35.2%	100.0%
2010	50.1%	-3.3%	13.2%	-3.3%	36.7%	6.3%	100.0%
2011	45.8%	-8.6%	12.0%	-8.6%	42.2%	14.9%	100.0%
2012*	46.7%	2.0%	12.3%	2.0%	29.4%	-30.3%	88.3%

Table 2-45 compares the catch limits under Option 1 adjusted (Alternative 5) to the GHL. The same methodology was employed to generate this table as was used for the PPA and Option 1 tables. Because the charter sector allocation is a larger percentage of the CCL (21.8 percent at the CCL levels for 2008 through 2012), the charter sector fares better relative to the GHL. Charter sector allocations are 13.4 percent greater than the GHL in 2008. By 2010 the charter sector allocation would have been less than the GHL (all else being equal), and by 2012 the charter allocation would have been 19.0 percent less than the GHL.

Table 2-45 Area 2C Option 1 adjusted compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP Option 1 Adj. Guided Allocation	CSP Option 1 Adj. vs GHL	CSP Option 1 Adj. Allocation Change Relative to GHL
2008	6.500	2.590	0.931	1.659	4.841	4.841	21.80%	1.055	113.4%	13.4%
2009	5.570	2.710	0.788	1.922	3.648	3.648	21.80%	0.795	100.9%	0.9%
2010	5.020	2.630	0.788	1.842	3.178	3.178	21.80%	0.693	87.9%	-12.1%
2011	5.390	3.060	0.788	2.272	3.118	3.118	21.80%	0.680	86.3%	-13.7%
2012*	5.865	2.653	0.931	1.722	4.143	3.460	21.80%	0.754	81.0%	-19.0%

Table 2-46 compares the percentage of the commercial IFQ, charter, and other removals to the Total CEY over the 2008 through 2012 period. The commercial IFQ percentage of the Total CEY decreased from 58.2 percent in 2008 to 46.1 percent in 2012. The charter percentage of the Total CEY decreased from 16.2 percent to 12.9 percent. Finally, as expected, the other removals stayed the same as under the options, it increased from 25.5 percent in 2008 to 29.4 percent in 2012. However, the increase was substantially larger in 2011 (42.2 percent).

Table 2-46 Area 2C percentage of the Total CEY allocated to sectors under Option 1 adjusted

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	58.2%	n/a	16.2%	n/a	25.5%	n/a	100.0%
2009	51.2%	-12.1%	14.3%	-12.1%	34.5%	35.2%	100.0%
2010	49.5%	-3.3%	13.8%	-3.3%	36.7%	6.3%	100.0%
2011	45.2%	-8.6%	12.6%	-8.6%	42.2%	14.9%	100.0%
2012*	46.1%	2.0%	12.9%	2.0%	29.4%	-30.3%	88.3%

Note: * for 2012 indicates it was a “slow up” year so 11.7% of the Total CEY was left for the biomass

Based on the information presented in this section the charter catch limit would have been reduced from 931,000 lb under the GHL in 2012 to 633,000 lb under the 2012 PPA, 720,000 lb under Option 1, and 754,000 lb under Option 1 adjusted. Relative to the GHL the charter catch limit would have been decreased by 298,000 lb under the 2012 PPA, 211,000 lb under Option 1, and 177,000 lb under Option 1 adjusted. That fish would have been directly reallocated to the commercial sector. Based on the average Area 2C exvessel price, from 2011, of \$5.52/lb, those gains equate to an increase in IFQ holder exvessel revenue of about \$977,000 to \$1.16 million – depending on the option selected. These estimates represent only gross ex vessel revenues, a portions of which would be distributed to vessel owners, crews, and support industries. In addition, processors of those fish, processor support industries, consumers of commercially harvested halibut, and communities that receive fish tax revenue from the landings would also benefit from this redistribution of allocations. Losses to the charter sector would also arise, but those losses may not be as proportionately related to the pounds of halibut lost in 2012. Charter revenue is determined by client demand for halibut charter trips. Client demand is related to their expectations of the trip attributes and general economic conditions. As charter catch limits affects the management measures (by altering the bag limits and size limits), it changes the client’s expectations of the trip. When expectations are decreased to a point the client is no longer willing to take the trip, or will only take the trip at a reduced price, demand is decreased. That decrease in demand reduces the charter operator’s gross revenue and likely net revenue. Revenue decrease affects their charter industry suppliers, processors of charter caught halibut, charter crewmembers, other businesses in the community that provide goods and services to clients, and consumer’s surplus (the benefit charter clients obtain from the trip). Estimating the loss to the charter operator, let alone all the other sectors, is complex. Those losses may more than offset the gains to the commercial sector, but because of the limited information available and the assumptions that would be required, those estimates are not generated. Appendix B provides more detail on the various sectors and possible effects of changes in allocations. Some information in that appendix is based on 2008 estimates, but the same general principles remain relevant.

Area 3A

2012 CSP PPA relative to the GHL. Those percentages are the change in the charter allocation resulting from using the 2012 CSP as a percentage of the GHL. That column indicates the CSP would have generated a larger charter allocation in 2008 and 2009. The allocation in 2010 through 2012 is less than the GHL, as is represented by the negative percentages.

Table 2-47 compares the Area 3A Council's 2012 PPA to the GHL based on actual 2008 through 2012 Total CEY and other removals. Because the CCL was estimated to be more than 10 Mlbs each of these years, the charter allocation is set at 15.6 percent of the CCL. In 2008, the 2012 CSP PPA would have allocated the charter sector 110.7 percent of the GHL allocation. Declining CCLs cause the 2012 CSP PPA to decline relative to the GHL. The 2012 data results in a CSP allocation that is 75.5 percent of the GHL. The right most column in the table shows that 2012 CSP PPA relative to the GHL. Those percentages are the change in the charter allocation resulting from using the 2012 CSP as a percentage of the GHL. That column indicates the CSP would have generated a larger charter allocation in 2008 and 2009. The allocation in 2010 through 2012 is less than the GHL, as is represented by the negative percentages.

Table 2-47 Area 3A CSP PPA compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP PPA Guided Allocation	CSP PPA vs GHL	CSP PPA Allocation Change Relative to GHL
2008	28.960	6.710	3.650	3.060	25.900	25.900	15.6%	4.040	110.7%	10.7%
2009	28.010	7.170	3.650	3.520	24.490	24.490	15.6%	3.820	104.7%	4.7%
2010	26.190	7.910	3.650	4.260	21.930	21.930	15.6%	3.421	93.7%	-6.3%
2011	23.520	9.160	3.650	5.510	18.010	18.010	15.6%	2.810	77.0%	-23.0%
2012	19.779	7.861	3.103	4.758	15.021	15.021	15.6%	2.343	75.5%	-24.5%

Table 2-48 compares the commercial IFQ, charter, other removals distribution of the Area 3A Total CEY based on the GHL distribution of available halibut. Information in that table indicates that the commercial IFQ allocation would have declined under the GHL, and the charter and other removals percentage of the Total CEY would have increased, every year considered. The commercial IFQ percentage of the Total CEY would have declined from 76.8 percent of the Total CEY in 2008 to 60.3 percent of the Total CEY in 2012. The charter sector percentage of the Total CEY would have increased from 12.6 percent in 2008 to 15.7 percent in 2012. Other removals deducted from the Total CEY would have increased from 12.6 percent in 2008 to 24.1 percent in 2012. Part of that increase is due to including O26/U26 wastage and bycatch in the other removals starting in 2011.

Table 2-48 Area 3A percentage of Total CEY allocated to the sectors under the GHL

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	76.8%	n/a	12.6%	n/a	10.6%	n/a	100.0%
2009	74.4%	-3.2%	13.0%	3.4%	12.6%	18.9%	100.0%
2010	69.8%	-6.2%	13.9%	6.9%	16.3%	29.4%	100.0%
2011	61.1%	-12.5%	15.5%	11.4%	23.4%	44.0%	100.0%
2012	60.3%	-1.3%	15.7%	1.1%	24.1%	2.7%	100.0%

Table 2-49 compares the Area 3A allocation under the 2012 CSP PPA to the Total CEY. Information in the table shows a general downward trend in the percentage of the Total CEY to both the charter and commercial IFQ fisheries. Because the CSP allocation is based on a percentage of the CCL, the allocation change from the previous year is the same for both the charter and commercial IFQ fisheries.

Table 2-49 Area 3A percentage of Total CEY allocated to the sectors under the 2012 CSP PPA

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	75.5%	n/a	14.0%	n/a	10.6%	n/a	100.0%
2009	73.8%	-2.2%	13.6%	-2.2%	12.6%	18.9%	100.0%
2010	70.7%	-4.2%	13.1%	-4.2%	16.3%	29.4%	100.0%
2011	64.6%	-8.6%	11.9%	-8.6%	23.4%	44.0%	100.0%
2012	64.1%	-0.8%	11.8%	-0.8%	24.1%	2.7%	100.0%

Table 2-50 compares the CSP allocation under Option 2 to the GHL allocation from 2008 through 2012. Every year during this time period the CSP allocation is smaller than the GHL. The largest differences between the GHL and CSP allocation occur during 2010 and 2012. The difference was reduced in 2011 because the charter allocation was increased from 14.0 percent to 17.5 percent, as a result of the CCL dropping below 20 Milbs. The GHL allocation was reduced from 3.65 Milbs in 2011 to 3.103 Milbs in 2012. Reducing the GHL also reduced the difference between the CSP allocation and the GHL.

Table 2-50 Area 3A CSP Option 2 compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP Option 2 Guided Allocation	CSP Option 2 vs GHL	CSP Option 2 Allocation Change Relative to GHL
2008	28.960	6.710	3.650	3.060	25.900	25.900	14.0%	3.626	99.3%	-0.7%
2009	28.010	7.170	3.650	3.520	24.490	24.490	14.0%	3.429	93.9%	-6.1%
2010	26.190	7.910	3.650	4.260	21.930	21.930	14.0%	3.070	84.1%	-15.9%
2011	23.520	9.160	3.650	5.510	18.010	18.010	17.5%	3.152	86.3%	-13.7%
2012	19.779	7.861	3.103	4.758	15.021	15.021	17.5%	2.629	84.7%	-15.3%

Table 2-51 reports the commercial IFQ allocation, charter allocation, and other removals as a percentage of the Total CEY. Commercial IFQ allocations declined as a percentage of the Total CEY every year. From 2008 through 2012 the decline was 14.2 percent. Charter allocations as a percentage of the Total CEY declined from 2008 through 2010. When the charter sector's percentage of the CCL was increased in 2011, the charter sector's percentage of the Total CEY increased from 11.7 percent in 2010 to 13.4 percent in 2011.

Changes from the previous differ for the commercial IFQ and charter fisheries in 2011, because that is the year in which the charter sector's percentage of the CCL increased. Because the same percentage of the CCL was allocated to the charter sector in 2011 and 2012, the percentage change from the previous year was again the same for both the commercial and charter sectors in 2012.

Table 2-51 Area 3A percentage of Total CEY allocated to the sectors under Option 2

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	76.9%	n/a	12.5%	n/a	10.6%	n/a	100.0%
2009	75.2%	-2.2%	12.2%	-2.2%	12.6%	18.9%	100.0%
2010	72.0%	-4.2%	11.7%	-4.2%	16.3%	29.4%	100.0%
2011	63.2%	-12.3%	13.4%	14.3%	23.4%	44.0%	100.0%
2012	62.7%	-0.8%	13.3%	-0.8%	24.1%	2.7%	100.0%

better under this option in comparison to the GHL. Charter sector allocations are 10.7 percent greater than the GHL in 2008. By 2012 the charter allocation would have been 7.5 percent less than the GHL.

Table 2-52 compares the catch limits under Option 2 adjusted (Alternative 5) to the GHL. The same methodology was employed to generate this table as was used for the PPA and Option 1 tables. Because the charter sector allocation is a larger percentage of the CCL (19.1 percent of CCL during 2011 and 2012 and 15.6 percent for 2008 through 2010), the charter sector fares better under this option in comparison to the GHL. Charter sector allocations are 10.7 percent greater than the GHL in 2008. By 2012 the charter allocation would have been 7.5 percent less than the GHL.

Table 2-52 Area 3A CSP Option 2 adjusted compared to GHL 2008 through 2012

Year	Total CEY	Other Removals	GHL	CSP Other Removals	CSP Combined Fishery CEY	Slow Up Full Down Combined Catch Limits	CSP Allocation %	CSP Option 2 Adj. Guided Allocation	CSP Option 2 Adj. vs GHL	CSP Option 2 Adj. Allocation Change Relative to GHL
2008	28.960	6.710	3.650	3.060	25.900	25.900	15.6%	4.040	110.7%	10.7%
2009	28.010	7.170	3.650	3.520	24.490	24.490	15.6%	3.820	104.7%	4.7%
2010	26.190	7.910	3.650	4.260	21.930	21.930	15.6%	3.421	93.7%	-6.3%
2011	23.520	9.160	3.650	5.510	18.010	18.010	19.1%	3.440	94.2%	-5.8%
2012	19.779	7.861	3.103	4.758	15.021	15.021	19.1%	2.869	92.5%	-7.5%

Commercial IFQ allocations declined as a percentage of the Total CEY every year. From 2008 through 2012 the decline went from 75.5 percent of the Total CEY to 61.4 percent in 2012. Charter allocations as a percentage of the Total CEY declined from 2008 through 2010. When the charter sector's percentage of the CCL was increased in 2011, the charter sector's percentage of the Total CEY increased from 13.1 percent in 2010 to 14.6 percent in 2011.

Table 2-53 Area 3A percentage of Total CEY allocated to the sectors under Option 2 adjusted

Year	commercial IFQ	commercial IFQ (% change from previous year)	charter	charter (% change from previous year)	other removals	other removals (% change from previous year)	Total
2008	75.5%	n/a	14.0%	n/a	10.6%	n/a	100.0%
2009	73.8%	-2.2%	13.6%	-2.2%	12.6%	18.9%	100.0%
2010	70.7%	-4.2%	13.1%	-4.2%	16.3%	29.4%	100.0%
2011	61.9%	-12.3%	14.6%	12.0%	23.4%	44.0%	100.0%
2012	61.4%	-0.8%	14.5%	-0.8%	24.1%	2.7%	100.0%

Information presented in this section indicates the charter catch limit would have been reduced from 3.103 Mlbs under the GHF in 2012 to 2.343 Mlbs under the 2012 PPA, 2.629 Mlbs under Option 2, and 2.869 Mlbs under Option 2 adjusted. Relative to the GHF the charter catch limit would have been decreased by 758,000 lb under the 2012 PPA, 474,000 lb under Option 2, and 234,000 lb under Option 2 adjusted. That fish would have been directly reallocated to the commercial sector. Using the average Area 3A exvessel price of \$5.43/lb from 2011, those gross exvessel revenue equate to an increase in IFQ holder exvessel revenue of about \$1.3 million to \$4.1 million, depending on the option. The same caveats apply that were discussed under the Area 2C section regarding the comparison of gains to the commercial sector versus losses to the charter sector. As in Area 2C, the charter losses may more than offset the gains to the commercial sector, but because of the limited information available and the assumptions that would be required, those estimates are not generated. Further discussion of these types of effects is contained in Appendix B.

2.5.11 Removing Drops from Charter Allocation

This section discusses methods to remove the vertical drop in charter allocations for Areas 2C and 3A at CCL points where the charter allocation percentages are decreased. While alternatives removing the drops were not specifically included in the Council’s June motion, the issue has been raised as a concern many times in public testimony and Council deliberations. Therefore, the information in this section is provided to inform the Council. It is an extension of the Council motion to address public comments. At final action the Council retains the authority to select an option to remove the vertical drops provided that decision is adequately informed by the analysis, but may also select from the original options that retain the drops. Material in this section may be used by the Council to inform a decision to remove the drops.

Eliminating the vertical drops in charter allocations may be accomplished in a variety of ways. This analysis briefly talks about four methods and then provides a more detailed discussion of the option that provides the outcome that is assumed to most closely meet the Council’s objectives.

The vertical drops in the charter allocation could be removed by:

1. Calculating the slope of the line between the midpoints of the vertical drops and applying the Council’s charter percentage for the other tiers (Figure 2-24). An example of this method is provided for Option 2 (which adjusted the Council’s PPA for switching to management using logbooks). This example was used instead of the PPA, because it illustrates the effects when there are two vertical drops. The Council’s PPA would only have the first vertical drop. At the point where the drop would occur the adjusted line would be parallel to, but slightly above, the PPA allocation line. Forcing the lines through the mid-point of the declines would result in a reduced charter catch allocation at lower levels of CCL and increase the charter catch limit at

higher levels. The dashed CSP line represents the result of removing the vertical drop in the charter allocation in this example.

2. Using the same procedure described in #1 but forcing the lines through the top points of the vertical drops. This option maintains the charter allocation in the first tier. It then increases the charter allocation in the second through fourth tiers to amounts higher than the preliminary preferred alternative. At higher levels of the CCL, the charter sector may not have sufficient demand for trips to utilize its entire allocation.
3. Defining a nonlinear function for the allocation. This approach may be crafted to fit a line that meets the Council’s objectives. This option would require further direction and development before it could be selected as the preferred alternative.
4. Continue to use the Council’s preliminary preferred alternative percentages to define the allocations, but keep the charter catch limits constant for CLLs where their allocation would be less than the allocation would have been at lower CCLs. The effect of this option is that the charter catch limit stays constant, rather than dropping, in the transition between tiers (Figure 2-25, CSP dashed line). The impacts of this option on the charter allocation are presented in the figure below for Area 2C under the Option 2 adjusted for switching to logbooks. This option was presented as an example because it shows two vertical drops.

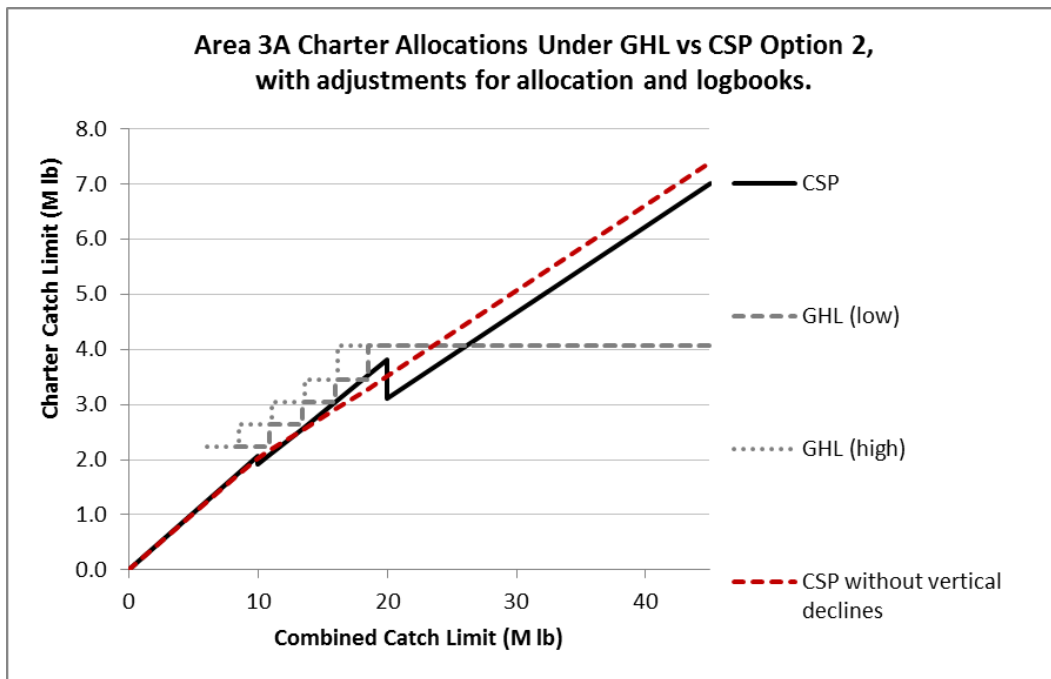


Figure 2-24 Area 3A example of charter catch limits forced through mid-points of vertical drops between tiers 1 and 2.

Note the “other removals” which affect the GHL estimates have been updated from previous analyses. The lower level is 3.06 Mlbs and higher level is 5.51 Mlbs in this analysis. As the value for “other removals” increases, the CCL will decrease for any given total CEY. That slightly increases the gap between the existing GHL and charter allocation under the CSP.

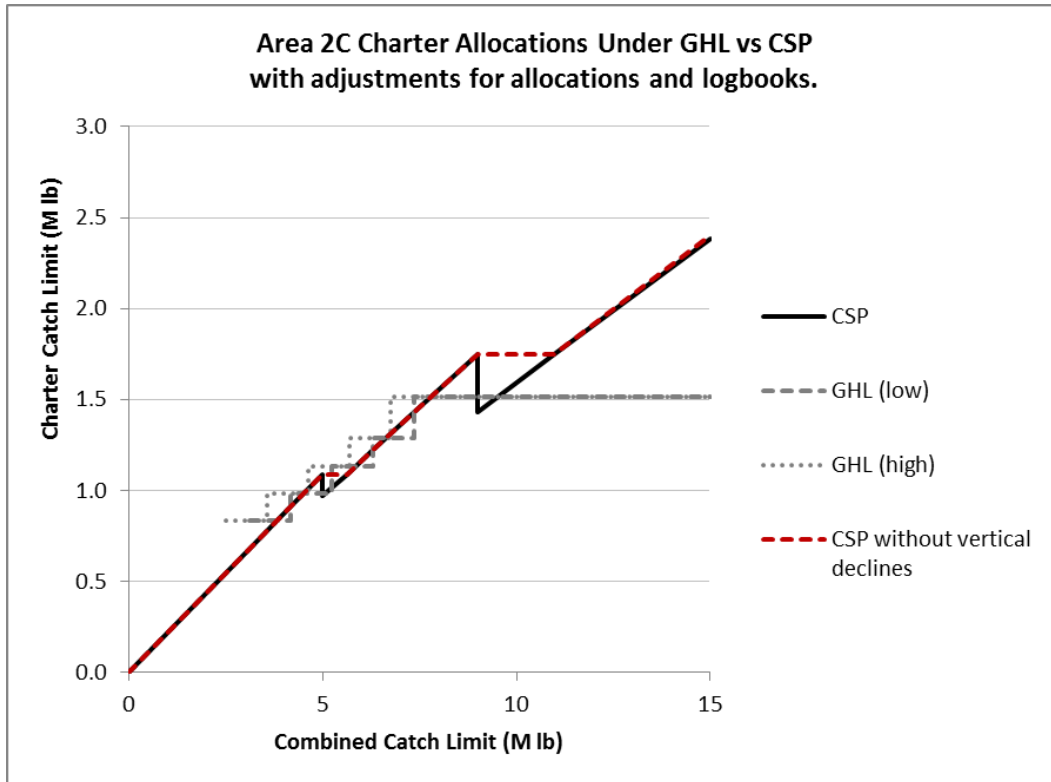


Figure 2-25 Area charter catch limits with constant levels at the transitions between tiers.

The fourth approach discussed above would retain the Council’s allocation percentages with modifications within specified CCL ranges. Table 2-54 shows the charter allocations for each of the Council’s CSP options. Charter allocations would be determined as a percentage of the CCL or as a fixed number of pounds, depending on the CCL. The CCL ranges where the Council percentage would apply and the CCL ranges the fixed poundage would apply for each CSP alternative under consideration is presented.

Table 2-54 Charter allocations to remove drops at various combined catch limit levels

Area 2C				Area 3A			
2008 PA				2008 PA			
CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %	CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %
0- <5.000	17.30%		82.70%	0- <10.000	15.40%		84.60%
5.000 – ≤5.728		0.865		10.000 – ≤10.999		1.54	
> 5.728	15.10%		84.90%	> 10.999	14.00%		86.00%
2012 PPA				2012 PPA			
CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %	CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %
0- <5.000	18.30%		81.70%	0- <10.000	17.20%		82.80%
5.000 – ≤5.755		0.915		10.000 – ≤11.026		1.720	
>5.755	15.90%		84.10%	>11.026	15.60%		84.40%
Option 1				Option 2			
CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %	CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %
0-<5.000	20.80%		79.20%	0- <10.000	18.90%		81.10%
5.000 – ≤5.590		1.040		10.000 – ≤10.800		1.890	
>5.590 – ≤9.000	18.60%		81.40%	>10.800 – ≤20.000	17.50%		82.50%
>9.000 – ≤11.085		1.674		>20.000 – ≤25.000		3.500	
>11.085	15.10%		84.90%	>25.000	14.00%		86.00%
Option 1 Adjusted				Option 2 Adjusted			
CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %	CCL (Mlbs)	Charter %	Charter Mlbs	IFQ %
0 - <5	21.80%		78.20%	0 - <10	20.70%		79.30%
5 – ≤5.618		1.090		10 – ≤10.838		2.070	
>5.618 – ≤9	19.40%		80.60%	>10.838 – ≤20	19.10%		80.90%
>9 – ≤10.981		1.746		>20 – ≤24.486		3.820	
>10.981	15.90%		84.10%	>24.487	15.60%		84.40%

Assuming the Council selected the fourth approach discussed above, changes in the Council’s 2012 PPA would be necessary. When the CCL is less than 5.000 Mlbs the charter sector would be allocated 18.3 percent of the CCL and the commercial IFQ fishery would be allocated 81.7 percent. When the CCL is between 5.000 Mlbs and 5.755 Mlbs the charter sector would be allocated 915,000 lbs and the commercial IFQ sector would be allocated the CCL minus 915,000 lbs. When the CCL is 5.755 Mlbs and greater, the charter sector would be allocated 15.9 percent of the CCL and the commercial IFQ fishery would be allocated 84.1 percent of the CCL.

In Area 3A the charter sector would be allocated 17.2 percent of the CCL under the 2012 PPA when the CCL is less than 10.000 Mlbs. When the CCL is greater than or equal to 10.000 Mlbs and less than 11.026 Mlb, the charter sector allocation is 1.720 Mlbs. At 11.026 Mlbs and greater the charter sector is allocated 15.6 percent of the CCL.

The charter allocation for all the CSP allocation approaches considered by the Council are defined using the CCL ranges presented in Table 2-54. Under each option the vertical drop is removed by setting the charter allocation at a fixed poundage level, until the percentage allocation at the next tier results in an allocation that is equal to that amount. In Area 2C, under the 2012 PPA, the graphical representation of

the allocation is presented in Figure 2-26. The graphical representation of the Area 3A 2012 PPA would have a similar shape, but the x and y axis would be set at greater values when the drop occurs.

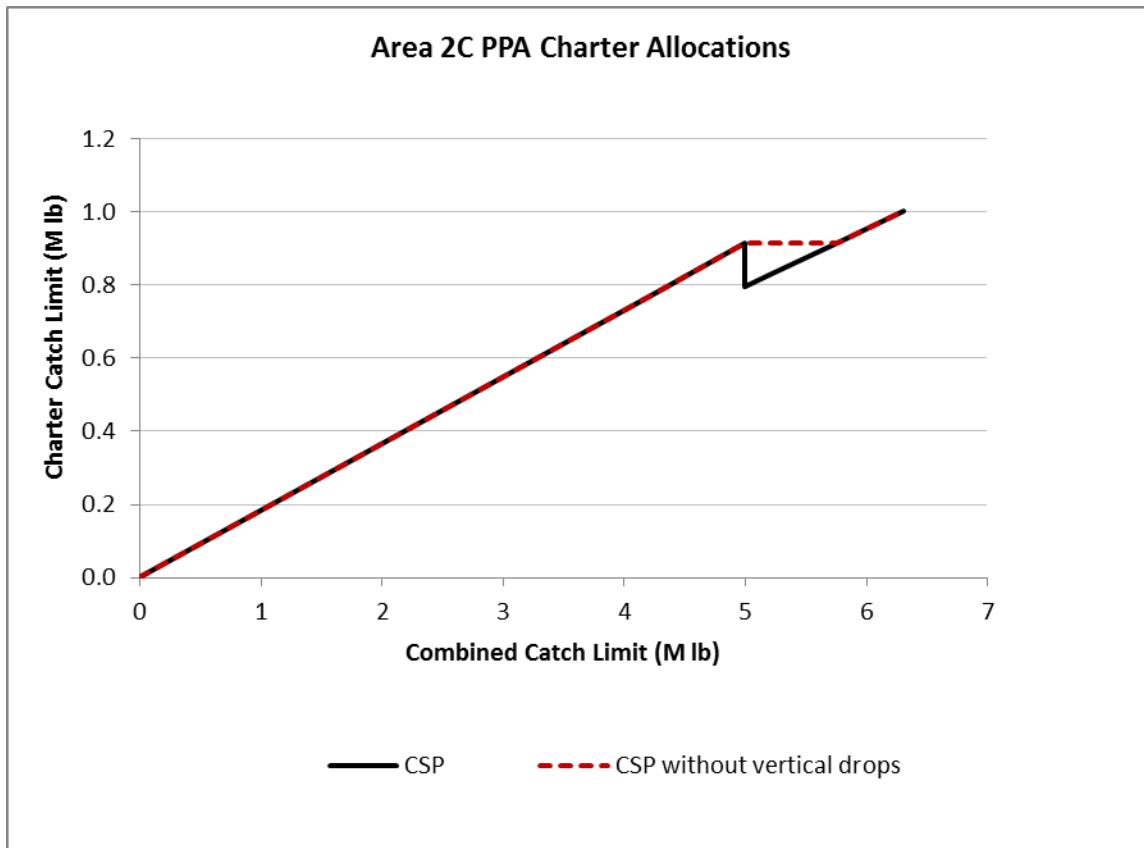


Figure 2-26 Area 2C graphical representation of the 2012 PPA when vertical drop is removed.

Understand the effects of these different ways of removing the drops differs with the choice of methods. Options that result in different slopes to the allocation line (by connecting midpoints or high points) will affect allocations (and resulting management measures) at all levels of the CCL. The effect of any nonlinear function cannot be predicted without further development of that function. The effect of the constant allocations, however, are relatively easy to predict (in comparison to the other methods) as the management measures to achieve those allocations would be the same as the measure needed to achieve the allocation at the peak before the drop. While the charter sector would receive no benefit from the increase in the CCL until the lower percentage allocation matched the high percentage allocation, the sector would also suffer no loss in that range, as its allocation would remain constant.

2.5.12 Guided Angler Fish

The GAF program would allow CHP holders to lease commercial IFQ to provide charter anglers with additional harvesting opportunities in excess of the annual charter allocation to the common pool. Through the RAM Division the CHP holder would request that NMFS convert the leased IFQ into Guided Angler Fish (GAF). The CHP holder could then use the GAF to provide anglers with additional harvesting opportunities, providing that the angler never exceeds the daily bag and size limits in place for unguided anglers. In a simple example, a CHP holder could lease 100 lb of commercial IFQ. NMFS would then convert the IFQ into GAF using the average weight of GAF fish the previous year, after the first year of the program, provided by ADF&G. For example, if the average size fish is 20 lb, then the 100 lb of IFQ could be transferred to the CHP holder as five GAF (i.e., five halibut). If charter halibut regulations specify that each angler’s daily bag limit is one fish of any size, while an unguided angler may

harvest two fish of any size, then the CHP holder can use one GAF to allow one charter angler to harvest two fish of any size. That is, the GAF would be used to allow a charter angler to harvest halibut under the same regulations in place for unguided anglers, regardless of the management measure in place for charter anglers fishing in the common pool (e.g., one fish, one fish with a slot limit, or 2 fish with one of any size and the other with a size restriction).

If the unguided bag limit is one fish of any size and the charter angler bag limit is one fish of any size, there is no reason to use GAF. When the charter angler is limited to one fish and the unguided angler may harvest two fish, the charter operator and client may use a GAF to harvest one additional halibut. Also, if there is a size limit imposed on a charter angler fish and those regulations do not exist for the unguided angler, the charter operator/charter angler could use a GAF to harvest a halibut that falls outside the size limit. Therefore, anytime a charter angler harvests a halibut that would be legal for an unguided angler to harvest, but not a charter angler, they would need to use a GAF to legally retain that halibut. The charter operator and charter angler would need to agree on any fees charged for harvesting the GAF. Depending on the structure of the payment, it could increase the total cost(s) to the charter operator, the charter angler, or both. The total increase in cost to the charter operator will, over the long run, equal the cost of leasing a pound of IFQ, multiplied by the standard conversion rate of IFQ to GAF for that area.⁵⁶

CHP holders must hold a sufficient number of GAF to cover any halibut harvested in excess of the charter angler bag limit, *prior to taking a trip*. They must also be able to show proof of holding the GAF if they are requested to by an authorized enforcement agent. CHP holders that do not hold sufficient GAF to cover halibut caught in excess of the charter bag limit may not allow clients to retain those fish. The GAF used by the charter angler is deducted from the CHP holder's account of unused GAF.

When the Council selected the components of the GAF program in 2008, it adopted eight specific provisions (lettered A through H) that define its Preferred Alternative for a GAF program. Only two of the provisions had options from which the Council selected its preferred option. Six provisions are simply statements of Council intent. The Council's April 2012 motion, recommended specific revisions to the GAF program (included under Alternatives 3 through 5). Those provisions are addressed in this section as well as the original components of the program (Alternative 2).

This section addresses the unique features of the two GAF components that were selected by the Council that distinguish its 2012 PPA (Alternatives 3-5) from its 2008 PA (Alternative 2). Under Provision A, the Council identified a limit on the number of halibut that a charter operator may assign to a CHP. Charter operators would be limited to assigning 400 or fewer GAF to each CHP that is endorsed for 6 or fewer clients. If a CHP is endorsed for more than 6 clients, a maximum of 600 GAF may be assigned for use with that permit. Linking the limits to a total number of GAF, instead of a number of IFQ pounds, eliminates fluctuations in the limit when the average halibut weight changes. It also provides stability, because the charter CHP holders would know in advance the maximum number of GAF that may be assigned to a CHP.

Recall that CHPs are allowed to be stacked on a vessel to maximize efficiency by allowing an increase in the number of anglers a vessel may carry. Therefore, more than one CHP could be onboard a vessel at any one time. If a CHP is on a vessel that has room under the GAF cap, and the harvest is assigned to that CHP in the logbook, the charter operator could allow clients to retain GAF, even if another CHP on the vessel has reached its cap. It is important to differentiate between caps on CHPs and vessels. When two CHPs are on a vessel for the purpose of carrying more than 6 clients, the cap is not set at 600 GAF for the vessel. The cap is 400 GAF for each of the CHPs on the vessel, with no more than 400 GAF assigned to an individual CHP.

⁵⁶ For example, if the cost to lease one pound of IFQ in an area is \$4.00 and the standard conversion rate of IFQ to GAF is 20 lb of IFQ to one GAF, then the cost to lease the GAF would be \$80.00. That cost could, depending on a number of exogenous factors (e.g., level of local charter competition), be divided between the charter operator and the client.

If the charter catch limit is large enough to allow clients to operate under the same bag limits as unguided anglers, there would be no incentive for charter CHP holders to lease quota from commercial IFQ holders. In this scenario, leasing GAF would not provide any benefits to their charter clients and would increase the cost of operation. Because bag limits are set at the beginning of the year and are not changed in-season, charter CHP holders would know before the start of the season if there is any need to lease GAF.

From a purely economic perspective, the commercial sector's willingness to lease to the charter sector depends on the lease price, relative to the net price the commercial sector receives at the dock. Assuming profit maximizing behavior, when the lease price is greater than or equal to the net profit they generate from harvesting the halibut, they would be willing to lease IFQ. Other factors outside of the company's bottom line in a year may impact an IFQ holder's decision to lease IFQ. Factors such as crew employment, relationships with the charter sector, agreements with processors, or enjoyment derived from fishing are a few of many possible reasons that may affect decisions on whether to lease IFQ to CHP holders. Each IFQ holder would employ his/her own criteria when determining whether to lease some or all of available IFQ to the charter sector.

During public comment on this issue, several charter sector representatives were asked if they thought leasing would occur, if permitted. Some charter operators expressed concern regarding the commercial sector's willingness to lease halibut IFQ to them. They stated a variety of reasons that included tensions that exist between the sectors, insufficient QS on the market, insufficient capital to lease the IFQs (especially smaller charter operations that are not associated with lodges), and uncertainty regarding the willingness of clients to pay extra to use GAF. Several commercial QS holders also were asked if they would be willing to lease halibut to the charter sector. Many indicated they would be willing to lease IFQ to the charter sector if it would help resolve the ongoing conflict between the sectors. Based on public testimony, it seems as if some IFQ would be made available to lease. Projections of the number of GAF that may be needed have been provided in Section 2.5.12. Based on public testimony, it is not possible to estimate the total amount, or market price, of GAF that would be made available in each area.

The following sections discuss each GAF provision considered by the Council. Provisions A through H apply to Alternative 2. The commercial lease limits under Alternative 2 are 10% of IFQ issued or 1,500 lbs (whichever is greater) in both Area 2C and Area 3A. Provisions A through J apply to Alternatives 3 through 5. The commercial lease limit is the same in Area 2C as Alternative 2, but the Area 3A lease limit is increased to 15% of IFQ issued to a person or 1,500 lbs (whichever is greater).

2.5.12.1 Provision A – Leasing Commercial IFQ to Guided Anger Fish

Leasing commercial IFQ for conversion to Guided Angler Fish (GAF).

1. A CHP holder may lease IFQ for conversion to GAF for use on the CHP.
2. (Alternative 2) Commercial halibut QS holders may lease up to 1,500 lbs or 10% (whichever is greater) of their annual IFQ to LEP holders (including themselves) for use as GAF on LEPs. If an IFQ holder chooses to lease to a CQE, then the same limitations apply as if they were leasing to an individual charter operator—1,500 lb or 10% whichever is greater—the 100% has no application here. *With regard to CQE leasing: any quota which a CQE holds, regardless of its origin, could be leased up to 100% to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, a lease from another qualified CQE, or a lease from an individual, and then lease out up to 100% of the quota it holds.*⁵⁷

(Alternatives 3 – 5) Commercial halibut QS holders in Area 2C may lease up to 1,500 lbs or 10% (whichever is greater) of their annual IFQ to CHP holders (including themselves) for use as GAF on CHPs. Area 3A IFQ holders may lease up to 1,500 lbs or 15% (whichever is greater). If an IFQ

⁵⁷ Italicized text explains current regulations; no regulatory change is needed.

holder chooses to lease to a CQE, then the same limitations apply as if they were leasing to an individual charter operator—1,500 lb or 10% in Area 2C and 1,500 lb or 15% in Area 3A whichever is greater—the 100% has no application here. *With regard to CQE leasing: any quota which a CQE holds, regardless of its origin, could be leased up to 100% to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, a lease from another qualified CQE, or a lease from an individual, and then lease out up to 100% of the quota it holds.*⁵⁸

3. No more than 400 GAF may be assigned to a CHP endorsed for 6 or fewer clients. No more than 600 GAF may be assigned to a CHP endorsed for more than 6 clients. Information in Table 2-14 indicates that an average CHP holder held 2.0 permits in Area 2C. This means the average permit holder could utilize about twice the GAF limit. In Area 3A, the average is about 1.4 permits per permit holder, so they could, on average, hold 1.4 times the CHP GAF limit. These estimates are averages, so some CHP holders will have the opportunity to purchase more GAF. Others that hold only one charter permit are limited to the stated limits.

Provision A creates an inter-sector trading program that would allow the charter sector to increase its sector allocation by a market-based, willing seller/willing buyer program, through civil contracts or informal agreements between individual commercial IFQ holders (both persons and CQEs) and individual CHP holders. It also would set limits on the amount of commercial halibut IFQ that IFQ holders may lease to individual charter CHP holders. All persons and CQEs holding commercial QS may not lease more than 10% of the Area 2C IFQ they were initially issued or 1,500 lb, whichever is greater, to any CHP holder. That includes any transfers they made to themselves, if they hold both commercial IFQs and CHP. The same restrictions apply to Area 3A except the persons and CQEs holders are limited to 15% or 1,500 lb, whichever is greater.

Provision A-1 would establish the ability for CHP holders to lease IFQ for conversion to GAF.

Provision A-2 would set a cap on the amount of commercial halibut IFQ that may be leased as GAF from each IFQ holder. The proposed levels selected for analysis allow IFQ holders to lease 1,500 lb or 10 percent of holdings, whichever is greater. In Area 2C, the provision allows IFQ holders with less than 15,000 lb of IFQ to lease as much as they own, up to a maximum of 1,500 lb, while those with more than 15,000 lb IFQ could lease 10% of their holdings. In Area 3A, the provision allows IFQ holders with less than 15,000 lb of IFQ to lease as much as they own, up to a maximum of 1,500 lb, while those with more than 15,000 lb IFQ could lease 10% of their holdings (Alternative 2). Under Alternatives 3 through 5, the provision allows IFQ holders with less than 10,000 lb of IFQ to lease as much as they own, up to a maximum of 1,500 lb, while those with more than 10,000 lb IFQ could lease 15% of their holdings. The provision does not specify restrictions based on vessel class or block shares, so all QS are included in this analysis.

Community Quota Entities The Council intends the following application of limits for transfers of IFQs held by CQEs:

1. If the CQE is leasing IFQ from an IFQ holder, the CQE is limited to leasing 10% or 1,500 lb of those Area 2C IFQs to use as GAF by a CQE CHP. The Area 3A limit is 15% or 1,500 lb (Alternatives 3 through 5).
2. If the CQE is leasing its IFQ to an individual that is NOT an eligible CQE community member, the CQE is limited to leasing 10% or 1,500lb of Area 2C IFQ to use as GAF by the (non-community) CHP holder. The limit in Area 3A, under Alternatives 3 through 5 is 15% or 1,500 lb (whichever is greater).
3. If the CQE is leasing its IFQ to an eligible CQE community member, the CQE can lease 100% of the IFQs that it holds or leases to use as GAF by CQE community members that have or use CHPs (i.e., the proposed cap on GAF transfers would *not* apply to CQEs that transfer held or leased IFQ to CQE

⁵⁸ Italicized text explains current regulations; no regulatory change is needed.

community members with CHPs). The Council intends that eligible CQE community members that have or use the CQE CHPs also have maximum flexibility on the use of those IFQs and GAFs within the community. The CQE could use its IFQ (held or leased) as it needed in a given year, either as GAF (up to 100%) or as commercial IFQ (up to 100%) or any combination of the two. The key distinction here is that the same leasing caps are *not* intended to apply to CQEs operating within the community.

4. Finally, the CQE would be allowed to *both* lease up to 10% or 1,500lb of Area 2C IFQ to an individual with a CHP (non-CQE participant) to use as GAF *and* lease the remainder of the IFQ held or leased, up to 100%, to eligible CQE community members with LEPs to use as GAF. In Area 3A the limits are 15% or 1,500 lb of IFQ under Alternatives 3 through 5. This feature allows CQEs to assist a non-eligible community member (e.g., a local lodge) to obtain GAF (as described under #2 above).

There are currently 45 eligible communities in the Gulf CQE Program, the same number since its inception: 23 are located in Southeast Alaska (Area 2C) and 22 are located in Southcentral Alaska (15 in Area 3A and 7 in Area 3B). To be determined eligible, each community must have met the following criteria: fewer than 1,500 people;[1] documented historical participation (at least one commercial landing) of halibut or sablefish;[2] direct access to saltwater on the GOA coast; no road access to a larger community; and listed in Federal regulation. Communities that were not identified at final action as meeting these criteria must apply to the Council to be approved for participation in the program. In order to add a community to the list in Federal regulations, a regulatory amendment must be developed and approved, and communities applying for eligibility would be evaluated using the original criteria above.

Thus far, 29 CQEs have been formed. Each of these CQEs completed the process of forming a non-profit corporation under laws of the State of Alaska, which requires time and resources of the community. In addition to the incorporation process, in order to be approved by NMFS as a CQE representing an eligible community, the CQE must also submit an application to NMFS.[4] A complete application to become a CQE consists of: (i) the articles of incorporation; (ii) a statement indicating the eligible community, or communities, represented by the CQE for purposes of holding QS; (iii) management organization information, including: (A) the bylaws; (B) a list of key personnel of the managing organization including, but not limited to, the board of directors, officers, representatives, and any managers; (C) a description of how the CQE is qualified to manage QS on behalf of the eligible community or communities it is designated to represent, and a demonstration that the CQE has the management, technical expertise, and ability to manage QS and IFQ; and (D) the name of the non-profit organization, taxpayer ID number, permanent business mailing addresses, name of contact persons and contact information of the managing personnel, resumes of management personnel, name of community represented by the CQE, and the point of contact for the governing body of each community represented.

As of 2011, only two CQEs, representing Old Harbor and Ouzinkie, have purchased halibut quota share, and no CQEs have purchased sablefish quota share. Old Harbor has been participating in the program using halibut quota share since 2006, with quota share originally obtained through a private financing arrangement. As of 2011, the CQE representing Old Harbor held 151,234 halibut QS units in Area 3B, which equates to 20,954 lbs in 2011. The QS is in 4 blocks: 3 blocks of C category QS and 1 block of B category; the majority of the QS is C category. The CQE representing Ouzinkie purchased 106,488 QS units of Area 3A QS in 2011, which equates to 8,270 lbs in 2011. The QS is C category and blocked.

In total, CQE holdings represent about 0.06% of the total Area 3A QS pool. Recall that the program allowed all CQEs combined to purchase up to 3% of the QS in each area in each of the first seven years of the program, culminating in a limit of 21% in each area starting in 2010. Thus, the program has not come close to reaching its regulatory limits.

While only two CQEs hold halibut QS (and one CQE holds Area 3B QS and is, therefore, not part of this action), this CQE and others may purchase Area 2C and 3A halibut QS; they would be subject to the same commercial use caps as any other QS holder. Associated IFQs would be leased to eligible residents of the community represented by the CQE. Under the CHP program, eligible CQEs also may be issued

permits for use in the community represented by the CQE (i.e., the charter trip must originate or terminate in the CQE community). In April 2008, the Council clarified that it intends to provide maximum flexibility to CQEs to support either commercial or charter business development, depending on that community's needs.

Under Provision A-2, a CQE would be allowed to convert 100 percent of its annual halibut IFQ to GAF for use on its own Community Charter Halibut Permits (CCHP), may lease 100 percent of its IFQ out as GAF to another CQE, may lease 100 percent of its IFQ to community residents (subject to limitations at 679.42(f)(6)),⁵⁹ or may lease GAF to its own community residents that hold CHPs. Therefore, the only limitation under existing regulations on CQE leases is that no individual that receives IFQ may hold, individually or collectively, more than 50,000 lb of halibut IFQ; this provision would extend that limitation to the GAF program, separately or in combination with IFQs. There is no limitation on how much of a CQE's IFQ or GAF could be leased for use on any one CCHP held by the CQE. The distribution of a CQE's halibut IFQ to CCHPs is left to the discretion of the CQE directors. GAFs transferred from CQE holdings must be used in the community represented by the CQE (the trip must originate or terminate in the CQE community).

Regulations at 50 CFR 679.42(l) state "A CQE receiving category B or C halibut QS through transfer may lease the IFQ resulting from that QS only to an eligible community resident of the eligible community represented by the CQE." Most CCHP holders are expected to be businesses. Therefore, residents in this context will include both real people and businesses, which also would be treated as individuals. This provision also implies that a CQE may not lease IFQ it holds to another CQE for use as commercial IFQ. It may lease IFQ it holds for use in the commercial sector only to residents of its community. The term "resident" needs to be clarified in this context, because businesses are expected to hold CCHPs. For a business to be considered a resident of a community, it could either be required to be headquartered in the community or operate in that community. This provision is intended to increase economic activity in these remote communities that do not have a "fully" developed halibut charter industry. Requiring that the charter activity take place in the community will help insure the community derives economic benefit from those operations. Therefore, it is assumed that "resident" means that the CCHP holder must operate its business out of the community.

All other leasing of halibut IFQ under this provision is limited to the charter sector for use as GAF. Allowing broader leasing for commercial IFQ harvest could circumvent leasing prohibitions that are currently in place for class B and C IFQ. CQEs that hold CHPs may lease GAF from QS holders under the same rules and caps as apply to any other CCHP holder. They may also lease GAF from other CQEs, as discussed earlier.

As of August 23, 2012 there were 100 CCHP permits held by 19 CQEs (Table 2-14). Forty-four permits were held by 11 Area 2C CQEs. In Area 3A, 56 permits were held by eight CQEs.

The proposed GAF limits in numbers of fish would allow all charter operations to use either 400 or 600 GAF per CHP, depending on the number of client endorsements. If IFQ pounds are used to establish the limit, the amount of fish that could be harvested using a CHP would vary, because average halibut weights vary by port and business. For example, in Area 2C, during the 2010 fishing year ADF&G estimated that the average weight of a charter harvested halibut was 26.4 lbs. However, the average weight from the Prince of Wales Island port was only 14.8 lbs and the average weight from the Glacier Bay port was 47.4 lbs (Table 2-55). Based on those average weights, a person holding a CHP endorsed for six or fewer clients leasing 400 GAF would have needed to lease approximately 5,920 lbs of IFQ in Prince of Wales Island and 18,960 lbs of IFQ in Glacier Bay. Each operator would provide the same

⁵⁹ 50 CFR 679.42(f)(6) states that "No individual that receives IFQ derived from halibut QS held by a CQE may hold, individually or collectively, more than 50,000 lb (22.7 mt) of IFQ halibut derived from any halibut QS source."

number of clients the opportunity to harvest a GAF, but the amount of IFQ needed for each fish (and therefore the cost of IFQ for each fish) could differ greatly (by 320 percent in IFQ pounds).

If the GAF limits were converted to pounds, CHP holders would be limited to different numbers of GAF based on their fishing practices and results. Using the example above, the CHP holder operating out of the Prince of Wales Island would be allowed to use 3.2 times as many GAF as the person operating out of Glacier Bay. The method by which NMFS would administer a cap based on numbers of GAF, given that leases and catch accounting are based on pounds, are defined in the Council’s preferred alternative. GAF would be issued in numbers of fish. In the first year of the program the conversion factor would be based on the most recent year’s data without a size limit in effect. After GAF harvests occur, the conversion would be based on area-wide (Area 2C or Area 3A) average weight of GAF. When IFQ pounds are converted to fish, persons that harvest bigger fish than the average may benefit relative to the persons that harvest smaller fish than the average.

Table 2-55 Average charter caught halibut weight from 2010 by port

Port	Avg Wt (lb.)	400 GAF (lb.)	600 GAF (lb.)
Ketchikan	22.1	8,840	13,260
Prince of Wales Island	14.8	5,920	8,880
Petersburg/Wrangell	34.6	13,840	20,760
Sitka	25.3	10,120	15,180
Juneau	16.2	6,480	9,720
Haines/Skagway	16.2	6,480	9,720
Glacier Bay	47.4	18,960	28,440
Area 2C Avg.	26.4	10,560	15,840
Central Cook Inlet	15.5	6,200	9,300
Lower Cook Inlet	15.0	6,000	9,000
Kodiak	14.9	5,960	8,940
North Gulf Coast	12.0	4,800	7,200
Eastern PWS	24.4	9,760	14,640
Western PWS	12.0	4,800	7,200
Yakutat	29.7	11,880	17,820
Area 3A Avg.	15.2	6,080	9,120
Source: ADF&G sportfish survey			

Based on the average weight of charter caught halibut and the number of CHPs that are currently valid⁶⁰, it is possible to estimate what the GAF limits in pounds would have been and the maximum amount of GAF that could be leased if every CHP holder leased up to the limit. Applying the average charter halibut weights to the limits on the number of fish (400 or 600) converts the number of fish to pounds.

Table 2-56 shows the Area 2C GAF IFQ limit (based on 400 GAF and 600 GAF) when converted from numbers of fish to pounds using the average net weight of charter halibut. For CHPs endorsed with 6 or fewer clients, the IFQ poundage limit ranged from 7,000 lbs to 11,640 lbs using the average annual weights from 1995 through 2010. Over that time period the average of all years was 8,300 lbs. When 600 GAF (for CHPs with more than six clients is used) were the benchmark for the GAF limit, the conversion to IFQ pounds 10,500 lbs to 17,460 lbs with an average of 12,450 lbs. If all CHP holders leased up to the limit (this outcome is not anticipated), they would be allowed to lease about 4.8 Mlbs of IFQ. This estimate is based on the average charter caught halibut weight over the time period and the number of CHPs currently valid. That amount is currently exceeds the maximum of 1.6 Mlbs of GAF that could be

⁶⁰ This includes the CHPs (both permanent and interim) that were valid as of March 5, 2012.

leased under the Council’s recommended restriction for QS holders leasing IFQ as GAF (Table 2-60), but it is unlikely that CHP holders would have demand for that amount of GAF.

Table 2-56 Area 2C average net weight of charter caught halibut, GAF IFQ pound limits, and the maximum amount of IFQ that could be leased.

Year	Avg net weight of charter halibut (lb)	IFQ (based on 400 GAF)	IFQ (based on 600 GAF)	Max. GAF Lease in IFQ lbs (563** CHPs w/6 or fewer clients)	Max. GAF Lease in IFQ lbs (12*** CHPs w/ more than 6 clients)	Total IFQ lbs that could be leased
1995	19.9	7,960	11,940	4,481,480	143,280	4,624,760
1996	22.1	8,840	13,260	4,976,920	159,120	5,136,040
1997	20.2	8,080	12,120	4,549,040	145,440	4,694,480
1998	29.1	11,640	17,460	6,553,320	209,520	6,762,840
1999	17.8	7,120	10,680	4,008,560	128,160	4,136,720
2000	19.7	7,880	11,820	4,436,440	141,840	4,578,280
2001	18.1	7,240	10,860	4,076,120	130,320	4,206,440
2002	19.7	7,880	11,820	4,436,440	141,840	4,578,280
2003	19.1	7,640	11,460	4,301,320	137,520	4,438,840
2004	20.7	8,280	12,420	4,661,640	149,040	4,810,680
2005	19.1	7,640	11,460	4,301,320	137,520	4,438,840
2006	19.9	7,960	11,940	4,481,480	143,280	4,624,760
2007	17.5	7,000	10,500	3,941,000	126,000	4,067,000
2008	19.4	7,760	11,640	4,368,880	139,680	4,508,560
2009	23.3	9,320	13,980	5,247,160	167,760	5,414,920
2010	26.4	10,560	15,840	5,945,280	190,080	6,135,360
2011	9.4*	3,760	5,640	2,116,880	67,680	2,184,560
Avg. (excludes 2011)	20.8	8,300	12,450	4,672,900	149,400	4,822,300
Max. (excludes 2011)	29.1	11,640	17,460	6,553,320	209,520	6,762,840
Min. (excludes 2011)	17.5	7,000	10,500	3,941,000	126,000	4,067,000
* Preliminary estimate						
** Includes 39 interim permits						
*** includes 1 interim permit						

Source: ADF&G charter halibut weight estimates and RAM CHP estimates.

Table 2-57 estimates the Area 3A IFQ limit (based on 400 GAF and 600 GAF) when converted from numbers of fish to pounds using the average net weight of charter halibut. For CHPs endorsed with 6 or fewer clients, the IFQ poundage limit ranged from 6,080 lbs to 8,920 lbs using the average annual weights from 1995 through 2010. Over that time period the average of all years was 7,503 lbs. When 600 GAF (for CHPs with more than six clients is used) were the benchmark for the GAF limit, the conversion to IFQ pounds 9,120 lbs to 13,380 lbs with an average of 11,254 lbs. If all CHP holders leased up to the limit (this outcome is not anticipated), they would want to lease about 4.1 Mlbs of IFQ. This estimate is based on the average charter caught halibut weight over the time period and the number of CHPs currently valid. That amount currently exceeds the maximum of 2.9 Mlbs of GAF that could be leased in 2012 under the Council’s recommended restriction for QS holders leasing IFQ as GAF (Table 2-60).

Table 2-57 Area 3A average net weight of charter caught halibut, GAF IFQ pound limits, and the maximum amount of IFQ that could be leased

Year	Avg net weight of charter halibut (lb)	IFQ (based on 400 GAF)	IFQ (based on 600 GAF)	Max. GAF Lease in IFQ lbs (403** CHPs w/6 or fewer clients)	Max. GAF Lease in IFQ lbs (95*** CHPs w/ more than 6 clients)	Total IFQ lbs that could be leased
1995	20.6	8,240	12,360	3,320,720	1,174,200	4,494,920
1996	19.7	7,880	11,820	3,175,640	1,122,900	4,298,540
1997	22.3	8,920	13,380	3,594,760	1,271,100	4,865,860
1998	20.8	8,320	12,480	3,352,960	1,185,600	4,538,560
1999	19.2	7,680	11,520	3,095,040	1,094,400	4,189,440
2000	19.7	7,880	11,820	3,175,640	1,122,900	4,298,540
2001	19.2	7,680	11,520	3,095,040	1,094,400	4,189,440
2002	18.2	7,280	10,920	2,933,840	1,037,400	3,971,240
2003	20.7	8,280	12,420	3,336,840	1,179,900	4,516,740
2004	18.6	7,440	11,160	2,998,320	1,060,200	4,058,520
2005	17.8	7,120	10,680	2,869,360	1,014,600	3,883,960
2006	17.9	7,160	10,740	2,885,480	1,020,300	3,905,780
2007	16.9	6,760	10,140	2,724,280	963,300	3,687,580
2008	17.0	6,800	10,200	2,740,400	969,000	3,709,400
2009	16.3	6,520	9,780	2,627,560	929,100	3,556,660
2010	15.2	6,080	9,120	2,450,240	866,400	3,316,640
2011	15.1*	6,040	9,060	2,434,120	860,700	3,294,820
Avg. (excludes 2011)	18.8	7,503	11,254	3,023,508	1,069,106	4,092,614
Max. (excludes 2011)	22.3	8,920	13,380	3,594,760	1,271,100	4,865,860
Min. (excludes 2011)	15.2	6,080	9,120	2,450,240	866,400	3,316,640
* Preliminary estimate						
** Includes 21 interim permits						
*** includes 2 interim permit						

Restrictions are also placed on the amount of IFQ an individual QS holder may lease to the charter sector. Commercial halibut QS holders may lease up to 1,500 lbs or 10 percent (whichever is greater) of their annual IFQ in Area 2C to CHP holders (including themselves) for use as GAF. In Area 3A they may lease 1,500 lb or 15 percent, whichever is greater.

CHP holders that also hold halibut QS would be allowed to lease some of that QS to themselves. Between 22 and 24 charter permit holders also hold QS in that area (Table 2-58). One person with a CHP in Area 2C only holds QS in Area 3A. These individuals will have the opportunity to lease IFQ to their halibut charter business, if the net returns on the halibut IFQ are greater in the charter fishery than the commercial halibut fishery. The remaining 240 CHP holders in Area 2C and 294 CHP holders in 3A must lease IFQ from someone else to utilize GAF.

Table 2-58 CHP holders that also hold halibut QS in Areas 2C or 3A

Area	CHP Holders	CHP Holders w/QS in Same Area	CHP Holders w/QS in either 2C or 3A		
CHP Only					
2C	262	22	8.4%	23	8.8%
3A	317	23	7.3%	23	7.3%
CHPs, CQEs, and MWRs					
2C	274	22	8.0%	23	8.4%
3A	328	24	7.3%	24	7.3%

Source: RAM – August 23, 2012

If an IFQ holder chooses to lease to a Community Quota Entity (CQE), then the same limitations apply as if they were leasing to an individual charter operator.

- (Alternative 2) 1,500 lb or 10 percent whichever is greater in Area 2C and 1,500 lb or 10 percent whichever is greater in Area 3A. Any quota which a CQE holds, regardless of its origin, could be leased up to 100 percent to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, lease from another qualified CQE, or lease from an individual, and then lease out up to 100 percent of the quota it holds. Because CQEs may hold QS⁶¹ and lease their entire IFQ holding to local charter operators, they operate under different rules and are excluded from this discussion.
- (Alternatives 3 through 5) 1,500 lb or 10 percent whichever is greater in Area 2C and 1,500 lb or 15 percent whichever is greater in Area 3A. Any quota which a CQE holds, regardless of its origin, could be leased up to 100 percent to eligible residents of the CQE community. For example, a CQE may hold quota share derived from purchase, lease from another qualified CQE, or lease from an individual, and then lease out up to 100 percent of the quota it holds. Because CQEs may hold QS and lease their entire IFQ holding to local charter operators, they operate under different rules and are excluded from this discussion.

Based on the lease limit rules above, the maximum amount of IFQ that could be available for lease by QS holders can be calculated. To simplify the calculation it was assumed that none of the 2012 QS units were held by a CQE. RAM data⁶² defines the total QS units held. Those QS units were converted to pounds of IFQ based on the 2012 conversion rate of 22.7 QS per IFQ pound in Area 2C and 15.5 in Area 3A. The lease rate rule was applied to each QS holder's IFQ pounds in an area to determine the total amount of IFQ that could be leased and the rule applied to each QS holder. The summary of those calculations are provided in Table 2-60. The information indicates that in Area 2C no class A, B, or D QS holders would be limited by the 10 percent restriction in 2012. This means every QS holder in these QS classes would be issued less than 15,000 lbs of IFQ in 2012.

Table 2-59 Alternative 2: Estimated maximum amounts of halibut IFQ that could be leased in areas 2C and 3A by share class, based on 2012 data.

	Leasable Pounds by IFQ Category					QS Holders by IFQ Category				
	A	B	C	D	All	A	B	C	D	All
1,500 rule (2C)	29,765	72,019	1,130,934	351,872	1,584,590	32	86	1,002	572	1,692
10% rule (2C)			8,880		8,880			5		5
2C Total	29,765	72,019	1,139,814	351,872	1,593,470	32	86	1,007	572	1,697
1,500 rule (3A)	35,572	323,933	1,519,056	483,989	2,362,550	32	230	1,126	595	1,983
10% rule (3A)	19,770	318,386	212,872	1,744	552,772	8	113	83	1	205
3A Total	55,342	642,319	1,731,928	485,732	2,915,322	40	343	1,209	596	2,188

Source: RAM QS holder data

⁶¹As of year-end 2011, no CQEs in Area 2C had purchased commercial halibut QS, and 2 CQEs in Area 3A had purchased a combined total of about 29,000 lbs (2011 IFQ lbs).

⁶²<http://www.fakr.noaa.gov/ram/daily/ifqunitf.csv> (February 28, 2012)

Table 2-60 Alternatives 3 through 5: Estimated maximum amounts of halibut IFQ that could be leased in areas 2C and 3A by share class, based on 2012 data.

	Leasable Pounds by IFQ Category					QS Holders by IFQ Category				
	A	B	C	D	All	A	B	C	D	All
1,500 rule (2C)	29,765	72,019	1,130,934	351,872	1,584,590	32	86	1,002	572	1,692
10% rule (2C)			8,880		8,880			5		5
2C Total	29,765	72,019	1,139,814	351,872	1,593,470	32	86	1,007	572	1,697
1,500 rule (3A)	36,823	334,624	1,534,209	482,299	2,387,955	33	239	1,128	595	1,995
15% rule (3A)	29,655	477,579	320,380	2,616	830,229	7	104	81	1	193
3A Total	66,478	812,203	1,854,588	484,915	3,218,185	40	343	1,209	596	2,188

Source: RAM QS holder data

Based on the amount available for lease, it appears that sufficient halibut could be made available for lease to meet client demand in 2012. However, that information alone does not provide the information necessary to determine the extent GAF leasing will occur. Whether IFQ is leased to members of the charter sector is dependent on several factors. These factors occur on both the demand side (CHP holder's ability to determine/forecast client demand and willingness to purchase halibut) and on the supply side (QS holder's willingness to lease their IFQ holdings). Both the supply and demand sides are equally important, because a mutually beneficial agreement must be reached before a lease will occur. Neither the buyer nor the seller possesses sufficient market power to force the other into a lease agreement.

2.5.12.2 Supply of GAF

It is not possible to predict the number of GAF that IFQ holders will make available for leasing each year. The quantity available is dependent on the market clearing price. That price must be sufficient to compensate the commercial IFQ holder for net revenues forgone from other uses of the IFQ⁶³. Because individual commercial harvesters generate different amounts of net revenue from their allocation, the commercial operations that generate the lowest marginal net revenue would be most likely to lease halibut, all else equal. The lack of cost data associated with the commercial and charter operations and the difficulty of projecting future supplies and demand given the variability of halibut stocks and complexity of the various markets at issue limits our ability to provide detailed estimates of which QS holders would be most likely to lease IFQ. However, it is possible to discuss some sectors that may or may not be willing to lease IFQ qualitatively.

The net revenue derived from halibut is dependent on the business plan of the QS holder and the prevailing or expected market conditions. QS holders may utilize their IFQ when harvesting halibut in the directed fishery or as a means to retain halibut harvested incidentally to other target fisheries. Net revenue derived from IFQ used in the directed halibut fishery (by catcher vessels) is based on the ex-vessel price received for the halibut sold minus the costs associated with harvesting those halibut. If costs are constant and the ex-vessel price increases, assuming constant fishery CEY, net revenue increases. Therefore, the market clearing price of a lease also increases. In general, leases may occur if the lease price per pound of IFQ is greater than the net return from a pound of halibut delivered.

In recent years, the ex vessel price of halibut has increased in both Areas 2C and 3A (Table 2-61), but costs have also increased. Fuel costs, for example, have increased substantially since 1998. However, the ex vessel prices in 2011 seem to have increased at a greater rate, which may indicate the reduced supply of commercially harvested halibut (or increased demand) may have resulted in larger net returns. This cannot be confirmed without cost of production data.

⁶³ These uses may include harvesting the halibut on their vessel or another vessel, selling the QS, or leasing the IFQ to another commercial fishermen. Leasing IFQ is very limited under the current IFQ program for class B, C, and D shares (except under survivorship transfer privileges § 679.41(k)), so for most QS holders leasing is not an option.

Table 2-61 Ex vessel prices in Areas 2C and 3A, 2003 through 2010

Year	2C	3A
2003	2.95	2.89
2004	3.04	3.04
2005	3.08	3.07
2006	3.75	3.78
2007	4.41	4.40
2008	4.33	4.40
2009	3.08	3.12
2010	4.62*	4.62*
2011	6.77**	6.61**

* Statewide price

** Average of monthly Southeast prices from notification of standard prices and fee percentages (76 FR 238 pp. 77209-14)

Since the commercial IFQ leasing provision expired in the late 1990s, information on class “B”, “C”, and “D” lease prices are unavailable. Lease prices should reflect the expected net return⁶⁴ associated with the annual harvest of those IFQ. A minimum lease price should approximate the ex vessel price minus the variable costs associated with their harvest. Increased demand for GAF could lead to a price increase above commercial net return.

If class “A” shares were harvested and processed on vessel, the net revenue derived from both harvesting and processing would need to be covered by the lease price. Because both the ex-vessel and first wholesale net revenue must be recouped, it is less likely that class “A” shares would be leased.

When halibut are utilized as incidental catch in the harvest of other groundfish (primarily Pacific cod), the net revenue associated with the halibut and any increased revenue associated with more fully harvesting the Pacific cod TAC is expected to be covered by the lease price. This calculation is dependent on several factors, some of which are currently unavailable⁶⁵. However, if the halibut PSC limits in the Pacific cod fishery are a constraint, these IFQ may be more highly valued for that use by the holder than halibut harvested in the directed halibut fishery, which would also increase the GAF lease price for these IFQ. The QS holders that are most likely to utilize their IFQ in the cod fishery are the freezer longliners. These vessels are operating under a cooperative system that provides incentives for individuals to minimize their halibut PSC usage when it is a constraint. When this potential use of IFQ is combined with the increased value of “A” shares discussed earlier, it may be concluded that “A” shares are unlikely to be leased. Information from Table 2-60 indicates that these shares comprise a relatively small amount of the total. Catcher vessels currently have fewer incentives to utilize IFQ in this manner⁶⁶. However, if rationalization of GOA groundfish fisheries is developed, this sector may also have increased incentives to utilize more IFQ to cover incidental halibut catch in the groundfish fisheries. These incentives will intensify as PSC limits are reduced.

The portfolio of an individual’s IFQ holdings may also affect their willingness to lease IFQ. For example, if a person has a relatively small amount of IFQ in Areas 2C and /or 3A and a larger holding further west, they may be willing the lease the Area 2C and Area 3A shares to maximize their profitability. Profitability

⁶⁴ The short-run difference between ex vessel revenue and total variable cost to harvest leasable halibut. This is sometimes referred to as Quasi-Rents in economics literature.

⁶⁵ For example, cost of production in the harvesting and processing sector and the amount of additional groundfish revenue that could be generated.

⁶⁶ These IFQ holders may utilize their halibut IFQ in the cod fishery if it allows them to reduce costs associated with additional halibut trips.

may be increased by leasing IFQ because of reduced costs associated with their harvest or increased revenue, if the IFQ was not harvested previously because of cost.

To determine approximately how many pounds of Area 2C and Area 3A IFQ met this criterion, the 2012 RAM list of QS holdings was examined. The 2012 QS units were converted to 2012 IFQ lb using the same rules listed for Table 2-60. Using those IFQ holdings the Area 2C and Area 3A IFQ (by area) were selected that comprised less than 10 percent of their total halibut holdings across all areas. The number of QS holders and their IFQ in Areas 2C and 3A are reported in Table 2-62. A total of 61 QS holder had less than 10 percent of their IFQ holdings in Area 2C. Those individuals were estimated to have been issued 44,956 lb of halibut IFQ in 2012. Of that total 11,477 lb was held by nine individuals who would not be allowed to lease all of their Area 2C IFQ because of the 1,500 lb/10 percent lease rule. Subtracting that amount from the total yields 33,479 lbs of IFQ that could be leased. However, if a person determined that since they could not lease their entire holding they would not lease any of their IFQ, a total of 19,979 lbs would be available. That would yield approximately 1,000 GAF, depending on the average weight of a GAF that would be applied to those IFQ. If all IFQ available, under this scenario, were leased, that number would increase by about 70 percent.

Table 2-62 IFQ holdings by area that comprise less than 10 percent of the QS holders total IFQ

	2C	3A
Total IFQ		
Pounds	44,956	27,878
QS Holders	61	35
Not leaseable (IFQ in excess of 1,500 lbs/10% Rule)		
Pounds	11,477	12,040
QS Holders	9	5
IFQ pounds that are leaseable		
Pounds	33,479	15,839
QS Holders	61	35
IFQ pounds are leaseable and all IFQ holding in the area may be leased		
Pounds	19,979	8,339
QS Holders	61	35

Source: RAM QS holder data

A total of 35 QS holders had less than 10 percent of their IFQ holdings in Area 3A. Those individuals were estimated to have been issued 27,878 lb of halibut IFQ in 2012. Of that total 12,040 lb was held by five individuals who would not be allowed to lease all of their Area 3A IFQ because of the 1,500 lb/15 percent lease rule. Subtracting that amount from the total yields 15,839 lbs of IFQ that could be leased. However, if a person determined that since they could not lease their entire holding they would not lease any of their IFQ, a total of 8,339 lbs would be available. That would likely yield fewer than 500 GAF, depending on the average weight of a GAF that would be applied to those IFQ. If all IFQ available, under this scenario, were leased, that number would less than double.

Factors beyond net revenues generated by the IFQ holder may also play a role in determining if shares would be leased. For example, some IFQ holders may not lease their IFQ because it would negatively affect their crew's compensation. Any leases that occur will reduce the overall harvesting income from the boat (assuming leases have little effect on commercial ex vessel prices). While the IFQ holder would be compensated by the lease, crew members that are paid on a share basis would not receive compensation. Given the heightened attention given to crew compensation and QS holders desire to

attract the best crew members, further reducing crew benefits may affect GAF leasing. Animosity that has developed between sectors over the years, in some communities, may affect some IFQ holder's willingness to lease to the charter sector. Certainly not all IFQ holders share that philosophy, but any that do may reduce the total GAF that could be made available.

Medical lease transfers of IFQs are an authorized leasing arrangement that has been used more frequently as the initial QS holders age. Medical leases are available only to those who cannot hire a master. NMFS has interpreted that provision to apply to initial recipients who do not own a vessel, as well as those who hold catcher vessel QS only in Area 2C or Southeast Alaska. Therefore any initial recipient who does not own a boat can use the medical lease to keep QS holdings; and that provision may be used twice for each condition. The ability to lease IFQ as GAF may lessen the use of the medical provision in the future.

Each individual IFQ holder must weigh all these considerations, and perhaps other factors such as the duration of the lease, when determining whether to enter into an agreement. If an IFQ holder would consider leasing some or all of their IFQ in an area, taking the circumstances in the commercial halibut fishery as given, the ultimate factor in determining whether the lease occurs is the demand for GAF.

2.5.12.3 Demand for GAF

The proposed structure of the GAF program allows only CHP holders to lease GAF and they are prohibited from sub-leasing those fish to other CHP holders. Limiting eligible participants in the GAF market may reduce speculation and perhaps, through reduced demand, reduce the GAF price. However, the market price for GAF will be determined by the value of those fish in the directed commercial fishery, and guided anglers' willingness to pay higher prices for trips that allow greater harvest flexibility or charter operators being willing to accept lower net revenue.

Guided anglers would only have incentives to use GAF when the harvest limits placed on guided anglers are more restrictive than those placed on unguided anglers. For example, if the guided angler in Area 3A was operating under a 2-fish of any size bag limit, they would have no incentive to pay additional costs to use GAF. GAF would not change the quantity or attributes of the halibut the client could harvest. If guided anglers were operating under a 1-fish of less than 37" bag limit, imposed in Area 2C during 2011, their incentive to utilize GAF increases. That does not mean that all guided angler's willingness to pay for GAF is equal to the cost associated with accessing those halibut. The actual number of transactions and transaction prices will be determined by the supply and demand associated with those fish.

Charter operations that have the highest net revenue per client and larger client bases are expected to be the most willing lessees of GAF. These business, which may have expansive ancillary operations (such as lodges), will use their larger client bases to use GAF or may be more able to support the costs associated with the risk of potentially unused GAF through their larger operations. These operators would be willing to enter leases only if net revenues are expected to increase after the lease. GAF would be purchased to attract clients willing to pay for an opportunity to harvest additional fish. Given that GAF can be used to create the opportunity, a variety of different uses could be made of GAF, which might differ depending on circumstances. For example, if a one fish bag limit with a maximum size is in place, an operator could use GAF strictly for providing clients with an opportunity to retain a trophy fish. This use of GAF could allow an operator to earn additional revenues from multiple clients based on a single GAF.⁶⁷ These operators might be able to attract certain clients willing to pay extra for that opportunity. During other times, GAF may be used strictly to allow clients to retain additional fish. Some risk is associated with any purchase of GAF, as it is possible that an operator may be unable to attract clients willing to pay for the added opportunity provided by GAF. These operators may be less willing to acquire GAF in the future.

Factors that influence demand and, as a result, whether a lease occurs include the management measures in place to limit charter harvest, duration of the lease, the business model of the charter service, and the

⁶⁷ This use of GAF can be made fairly without misleading clients, provided clients are informed of their chances of catching a trophy fish.

net returns of halibut in the commercial IFQ fishery. Each of these factors is described below, but other factors will also influence demand for leases.

Comparing the Area 2C management measures for 2011 and 2012 provides an example of how these measures could affect client demand for GAF. In 2011, management measures were imposed that limited charter clients to a daily bag limit of 1-fish, less than 37 inches. This strict management measure did not allow clients to retain a trophy sized halibut. Some clients may sufficiently value the ability to retain such a fish, to be willing to pay an additional GAF fee. Charter operators have often referred to their ability to market trips for halibut of trophy size as important to their business. This indicates that charter clients place a relatively high value on larger fish. The 37" limit also resulted in a client being able to take home a maximum of approximately 12 lbs of halibut fillets⁶⁸. Increasing the amount of halibut fillets that may be taken home, at less than retail cost, may entice clients to pay the additional fee. In 2012, the management measures changed. While there is still a 1-fish limit in Area 2C, the client may retain a fish that is less than or equal to 45 inches, or greater than or equal to 68 inches. The ability to retain a trophy fish and the increased smaller size limit reduces the incentive for a client to pay an additional fee for GAF. A client may still want to utilize GAF to retain two fish or fish between 45 inches and 68 inches, and it will depend on the preference of the individual angler and the ability of the operator to attract clients based on these added opportunities.

The duration of the lease agreements may also play an important role in determining if GAF are leased. Long term (multiyear) lease agreements may be developed for extended use of the GAF by a charter operator. Long term lease arrangements would be based on charter operators assuming that the combined catch limit will be small enough to trigger management measures at a tier limiting the number or size of the halibut their clients may harvest. The goal of the leasing entity is to amortize its investment over the lease period and provide a consistent market of halibut charter services to prospective clients. Long term leases could reduce uncertainty regarding access to fish and lease prices. Fluctuations in the commercial CEY will still cause the number of GAF a QS holder can lease to increase or decrease. Long term leases will be most effective for amounts that the lessee is certain to use and if the provisions to return unused GAF to the commercial sector provide adequate time for unused shares to be harvested.⁶⁹ Under a short term lease (annual), the lease price will be strongly influenced by current charter and commercial market conditions pertaining to the volatility of supply and demand. The annual lease arrangements may be more likely to occur when there is a temporary unforeseen surge in the demand for GAF, resulting from relatively restrictive harvest measures.

There are several types of charter businesses that operate in Areas 2C and 3A. They are described in Section 2.5.13.1. Businesses can be as basic as supplying only the items needed for a fishing trip, to all inclusive lodges that cater to all the client's needs from the time they arrive at the base community until they leave. Basic charter operations would need to pass the GAF costs on to the client as an increased cost of the trip or as a surcharge, if GAF are utilized by a client. Lodges could pass the cost of the GAF on as part of their overall package. The fee in that case may be less obvious to the client and the lodge could market their trips as allowing their clients to harvest 2-fish of any size. This type of operation, with a stable client base seeking specific attributes from their trip, may also be most likely to enter into long-term leases. They are also most likely to utilize GAF regardless of the lease structure.

Ultimately, each individual charter operation will need to determine if clients are willing to pay increased prices for using GAF. Charter operations attracting clients willing to pay extra for the experience of harvesting more or bigger fish will utilize GAF. Those that do not attract that type of client, will not

⁶⁸ Additional fillets could be retained if the vessel fished areas where rockfish, lingcod, or other desirable species could be harvested.

⁶⁹ Long term arrangements may also reduce uncertainties by ensuring GAF are available for lease at certain times in the season. These arrangements would reduce the need to transfer GAF back to the commercial sector late in the season by limiting the leases to the amount of GAF needed.

participate in the GAF program. In the same way, clients will need to determine if the increased cost of harvesting more or larger halibut is worth the increased cost. That decision is driven by the individual's demand to harvest additional fish.

2.5.12.4 Conclusions

It is not possible to determine the amount of GAF that will be leased in a year, subject to the regulatory limits, but the amount will vary based several factors including the commercial market for halibut and costs of commercial operations and demand for charter trips and the management measures that are in place to control charter harvests. Overall economic conditions will affect demand for charter trips and likely demand for GAF. The rules proposed on the limits for GAF transfer seem to allow for sufficient GAF to be leased (under current conditions). However, just because rules allow it to be leased does not mean that GAF will always be available at the price charter operators are willing to pay. To reduce the uncertainty of when GAF are available, charter operators may attempt to procure long term leases. These leases would help ensure GAF are available when needed and would reduce the annual fluctuation in GAF prices. Business that can amortize the cost of the GAF over a larger business may be more likely to lease GAF than charter operators who have smaller operations.

2.5.12.5 Provision B – Landing and Use Restrictions

CHP holders harvesting GAF while participating in the charter halibut fishery are exempt from landing and use restrictions associated with commercial IFQ fishery, but subject to the landing and use provisions detailed under the provisions listed below.

The following lists some of the landing and use provisions from which CHP holders would be exempted under Provision B. These provisions are generally described in <http://www.alaskafisheries.noaa.gov/ram/rtf95.pdf> and are more specifically detailed in 50 CFR 300.60 through 300.65:

- Block restrictions;
- Use and vessel harvest caps;
- Vessel length categories;
- Owner-on-board restrictions;
- Landing and reporting requirements;
- Prior notice of landings, and
- Vessel clearance requirements.

The provisions discussed below examine landing and use restrictions that would apply to CHP holders in place of the commercial landing and use provisions listed above.

Provision C – Issuance of Guided Angler Fish

GAF would be issued in numbers of fish. The conversion between annual IFQ and GAF would be based on average weight of GAF landed in each region's charter halibut fishery (2C or 3A) during the previous year, as determined by ADF&G⁷⁰. During the first year of the GAF program, the GAF weight to numbers of fish conversion factor is based on the previous year's data or the most recent year without ~~maximum~~ a⁷¹ size limit in effect.

Provision C addresses how NMFS RAM Program would convert IFQ to GAF. For example, if the average weight of a GAF in Area 3A in 2014 was 20.0 lb, then a CHP holder would have to lease 20.0 lb of IFQ for each GAF they want the opportunity to harvest in the 2015 season. The same average weight

⁷⁰ If no GAF was landed the previous year, the most recent year GAF data is available would be used.

⁷¹ The Council's motion stated that it would be the most recent year without a maximum size limit in effect. However, ADF&G staff indicated that any size limit would skew the average size and requested that the word maximum be replaced with a.

would be used to convert unused GAF back to IFQ at the end of the season. See Section 3.3 for a full description of this conversion.

Average weights for each regulatory area are weighted means, obtained by sampling the sport harvest at ports throughout Alaska and weighting the sample averages by the harvest corresponding with each port. Currently, ADF&G does not obtain a final estimate of the harvest corresponding with each port until September of the year following harvest, near the end of the fishing season. For example, the final estimate of average weight for 2012 would not be available until September 2013, after most of the charter fishing season. Alternately, NMFS could make the conversion using the preliminary estimates of average weights for the previous year, which are weighted by harvest projections rather than final harvest estimates. Occasionally, other errors in the weight data are corrected between the preliminary and final stage, but these changes are minor. Preliminary and final estimates of average weight have varied by less than 1 lb since 2001, with an average difference in 0.5 lb in Area 2C and 0.2 lb in Area 3A. If this program is implemented, ADF&G plans to continue to estimate average weight from length data collected from the charter harvest.

If there is a change in the average weight from year to year, it would become apparent during the following year, that the charter operator paid either too much or too little for GAF. Since the conversion is a linear function of the average weight, the percentage error in the amount of IFQ converted would equal the percentage difference in the average weights from year to year. These differences in weight converted (but, not necessarily price paid) likely would cancel out only for charter CHP holders and IFQ holders who convert relatively consistent quantities on a regular basis, over an extended number of years.

The delay in estimation of average weight may also affect catch accounting. It is assumed that GAF harvest would be tallied as commercial catch, since it is converted from IFQs. Because the conversion of IFQ to GAF would likely be based on preliminary estimates of average weight from the previous year, the accurate accounting of GAF removals could not be obtained until the final estimates of harvest are available the following year. The degree to which this accounting error becomes an issue depends on the magnitude of GAF conversion. If the amount of IFQ converted to GAF is a small proportion of the commercial catch limit, the error may not be worth addressing.

An important consideration was whether the average weight of the common pool charter harvest should be used to convert IFQ to GAF, or whether the average weight of GAF should be used. The average weight of GAF may be higher than the average weight of all charter caught halibut under certain conditions. For example, if the GAF program had been in place under the 2011 regulations for Area 2C, the GAF could have been used to exempt harvests from the 32 inch maximum size limit on the first fish and harvest a second fish as part of an angler's daily bag limit. In cases where the angler and the CHP holder decided to use a GAF, many of the fish could have been larger than 32 inches. If the average GAF is the same size as the average first fish, then the average GAF would be larger than the average fish for the entire fishery, because calculations for the latter would include fish that are constrained by the maximum size limit. Even in the absence of a size limit, GAF could be larger than common pool fish, if charter operations that use GAF tend to harvest larger fish than charters relying on common pool fish, as a result of how or where they fish. In addition, the average weight of GAF would be dependent on the distribution of harvest among subareas of Area 2C or Area 3A. Average weight currently varies quite a bit from port to port. If a high proportion of GAF are harvested from areas with larger fish, the end result would be that the average weight for GAF would be greater than the average weight for non-GAF.

It is also possible, under certain conditions, that average weight of GAF would not exceed that of the common pool. For example, if the charter fishery is restricted to a one-fish bag limit with no size limit, then common pool fish may have a higher average weight than GAF, due to high-grading. Under a one-fish limit, some anglers would try to harvest the largest fish possible.

2.5.12.6 Provision D – Subleasing of Guided Anger Fish (Preferred Alternative)

Subleasing of GAF would be prohibited.

Provision D is designed to limit the incentives for CHP holders to lease more IFQ for use as GAF than necessary. However, the leasing cost itself is likely to provide an incentive not to lease more IFQ than reasonably can be expected to be used. This provision would prevent a CHP holder from leasing to another CHP holder, if the first lease holder was unable to fish the GAF (e.g., unavoidable circumstances, including long term illness, injury, boat loss). However, CHP holders may be quick to recognize this limitation and adapt their lease agreements to include a reversion clause, in the event that the CHP holder is unable to fish the GAF. Such reversion clauses would be a private contractual decision between the parties. The automatic transfer of GAF to IFQ on November 1 could make negotiating a price for returned halibut more difficult for charter CHP holders. Commercial IFQ holders will know that any unused GAF would automatically revert to IFQ on November 1 with or without compensation to the charter operator. If charter CHP holders are not certain they will use all their GAF and they are unable to negotiate a “fair” return price in the lease agreement, it may limit angler’s access to GAF.

2.5.12.7 Provision E – Conversion of GAF back to IFQ

Conversion of GAF back to commercial sector

- 1. GAF holders may request NMFS convert unused GAF into IFQ pounds for harvest by the owner of the Quota Share in compliance with commercial fishing regulations.*
- 2. Unused GAF may revert back to pounds of IFQ and be subject to the underage provisions applicable to their underlying commercial QS*

Option a: automatically on October 1 of each year; or

Option b: upon the request of the GAF holder, if such request is made to NMFS in writing prior to October 1 of each year.

- 3. (Preferred Alternative) Unused GAF may revert back to pounds of IFQ and be subject to the underage provisions applicable to their underlying commercial QS either automatically on November 1 of each year or upon the request of the GAF holder, if such request is made to NMFS in writing prior to November 1 of each year.*

Component 1 would allow dual-holders of both IFQs and LEPs to convert GAF back into IFQ at any time during the commercial IFQ season. For example, at the beginning of the charter fishing season, a dual holder of commercial QS and charter LEP may request that NMFS convert IFQ equivalent to 200 GAF. In September, the dual holder realizes that he or she is only going to use 150 of the 200 GAF and asks NMFS to convert the remaining 50 GAF back into IFQ, using the same conversion ratios used during the original conversion. The holder is now free to commercially fish that IFQ. The intent of this component is to allow the dual holder to convert his or her own IFQ into GAF and retain the flexibility to convert those GAF back into IFQ.

Component 2 allows unused GAF to revert back to IFQ at the end of the commercial season, and to be subject to the underage provisions applicable to their underlying commercial QS. For example, a CHP holder not qualified to hold QS, leases IFQ and requests that NFMS convert it into GAF, which results in 200 GAF. By the end of the season, the CHP holder has used only 150 GAF. The unused 50 GAF *automatically* reverts to IFQ in the account from which it was leased.

Under Component 2, the Council’s motion establishes two non-mutually exclusive options for converting GAF back to IFQ. Option A establishes an automatic reversion date for unused GAF, of October 1, while Option B allows for reversion prior to October 1, if the GAF holder makes the request to RAM. These options address RAM suggestions received for the April 2008 draft of this document. The staff suggested

that reversion transfers could be conducted automatically, or only upon request. A full description of the re-conversion mechanism is contained in Section 3.3. The primary reason for establishing an automatic reversion date was to avoid a conflict between GAF to IFQ reversions and the end-of-season balancing the accounts for commercial halibut, sablefish, and crab IFQ and preparation of IFQ permits for the following seasons which is conducted by the RAM Program at the end of each year. The October 1 date is the earliest date that avoids the conflicts RAM staff is concerned about AND minimizes effects on the charter fleet as a whole. ADF&G data for 2006 indicate that less than 1 percent of charter halibut harvest occurred after September 30, in either Area 2C or Area 3A. Hence, an automatic reconversion date for unused GAF of October 1 would not significantly affect charter business operations in aggregate. However, individual businesses may be affected by any automatic reconversion date. At the same time, the automatic date makes the program easier for RAM staff to manage. It would also provide six weeks for those (reverted) commercial IFQs to be used in the commercial sector.

Under Component 3 (preferred alternative), the Council selected its preference for converting GAF back to the commercial sector as IFQ. That alternative states that all unused GAF will revert to the QS holder that leased the GAF to the charter operator on November 1. GAF may be transferred back to the person they leased the IFQ from, prior to November 1 if the GAF holders make the transfer request in writing to RAM.

Provision E would allow GAFs to revert back to the commercial sector at the written request of the GAF holder. The Council did not stipulate that commercial QS holders that leased IFQ to the charter sector could refuse to take the IFQ back. Because the GAF is returned at the request of the charter operator, if the IFQ holder is concerned about getting the IFQ returned during the season, they would need to structure terms of the reversion in the private lease contract. In that contract, they could specify the terms and conditions of reimbursement that the CHP holder would receive for returning GAF. Each contract could be structured to ensure that the buyer and seller agree to terms of the reversion. The proposed rule would address this issue in more detail, but such agreements would not be regulated or adjudicated by NMFS. Had the Council not selected Provision E, then there would be no reversion provision and the lease agreements would become a temporary, one-way transfer that would expire at the end of the calendar year. The Council's 2008 Preferred Alternative identified November 1 as the date by which all unused GAF automatically would revert to the commercial IFQ holder. Without specific language regarding compensation in the contracts, charter operators could lose the value of the GAF that is returned. Because the return of the IFQ is automatic and required in regulation, the charter operators may not have sufficient bargaining power to leverage a "fair" price for returned GAF, but since the reversion is after the typical charter season, it is likely that the automatic reversion will have little effect on the price. Unused GAF also may be returned to the IFQ holder prior to November 1, if the GAF holder submits a written request. Earlier reversions are likely to be negotiated and will depend on the added convenience of the early reversion to the commercial fisherman that may harvest the reverted IFQ. The Council did not stipulate any circumstance wherein the IFQ holder can request the GAF revert to IFQ.

The Area 2C charter anglers are assumed to be limited to a one-fish bag limit in the near term. This limitation would allow clients of charter CHP holders who use GAFs to return to historical daily bag limits, (presumably) for a fee, in Area 2C. GAF would not be expected to be used in Area 3A, until regulations are more restrictive on charter anglers than on non-guided anglers.⁷²

Because clients must book a trip with an CHP holder that holds GAF if they wish to fish under restrictions in place for unguided anglers, and they must be willing to incur any additional expense of using GAF that the CHP is able to pass along, only a subset of the client population would benefit from the program. Charter anglers who are unable to book a trip with a CHP holder that has GAF available, or

⁷² The area allocations determine the management measures in place for the year. When management measures are set, based on the 2012 model, CHP holders will know if GAF could be used that year to increase clients harvest opportunities.

are unwilling to incur additional fishing costs, would continue to be bound by the lower bag limit. Those anglers would not derive any benefit from the GAF program.

If a CHP holder has GAF they do not need, they may return the IFQ to the commercial IFQ holder from whom it was leased based on the above provisions. The pounds of IFQ returned would be calculated by multiplying the number of GAF by the average halibut weight used when the GAF were created. The commercial IFQ holder would then have the option of leasing the IFQ to another CHP holder or harvesting the IFQ himself or herself.

2.5.12.8 Provision F – Limitations on Using Guided Angler Fish to Expand the Daily Bag Limit

Guided angler fish derived from commercial QS may not be used to harvest fish in excess of the non-guided sport bag limit on any given day.

Provision F is intended to allow charter CHP holders to use GAF to provide charter anglers with opportunities that are equivalent to (but not more than) those provided to non-guided recreational anglers. Until implementation of a maximum size limit of 32 inches on the second fish in the charter angler's daily bag by NMFS in June 2007, charter and unguided anglers were subject to the same set of harvest regulations in both areas. Subsequently, a one-halibut of maximum size daily limit was imposed on charter anglers in Area 2C, while unguided users are permitted two halibut per day. Recall that the one fish bag limit in Area 2C would be removed from federal regulations under any of the proposed alternatives to the status quo.

2.5.12.9 Provision G – Enforcement and Sampling Access

Charter operators landing GAF on private property (e.g., lodges) and motherships would be required to allow agency samplers and enforcement personnel access to the point of landing.

Provision G requires that charter CHP holders landing GAF on private property (e.g., lodges) and charter trip support vessels (e.g., floating lodge facilities) allow ADF&G samplers and enforcement personnel access to the point of landing. The provision is included in this program because the conversion of IFQ to GAF would be based on average weight of halibut landed in each region's charter halibut fishery according to ADF&G's dockside sampling program. Current sampling programs collect size data from the recreational fishery, mainly at public access sites, with some exceptions in Area 2C. It is unknown whether the current access sites would provide adequate or representative samples of GAF. If remote lodges tend to use the GAF provisions more than other charter operations, estimates of average weight of GAF may be biased. Management agencies should have the ability to access private sites of halibut landings for purposes of data collection, if it is determined that this sampling is feasible and cost-effective.

Both NMFS staff and ADF&G staff have indicated that tracking the use of GAF is very important for the leasing program to function properly. Lodges have been discussed as potential significant users of GAF. During Council discussions, several people indicated they felt lodge owners were financially better situated to lease GAF. They have the opportunity to spread the cost of the GAF over the total amount of fees charged for the lodge stay. Also, persons staying at these lodges often are buying a "high-end" fishing experience and may be more willing to pay for a GAF, than persons that book only a charter or are taking a lower cost vacation.

Access to private property by specific enforcement personnel, to enforce the halibut regulations, is granted under the Halibut Act. Relevant language from the Act is provided below:

16 USC § 773i - Administration and enforcement

(b) Arrest, search and inspection, seizure; execution of warrants or other process

Any officer who is authorized by the Secretary, the Secretary of the department in which the Coast Guard is operating, or the head of any Federal or State agency which has entered into an agreement with such Secretaries under subsection (a) of this section to enforce the Convention, this subchapter or any regulation adopted under this subchapter may—

(1)with or without a warrant or other process—

(A) arrest any person, if he has reasonable cause to believe that such person has committed an act prohibited by section 773e of this title;

(B) board, and search or inspect, any fishing vessel which is subject to this subchapter;

(C) at reasonable times enter, and search or inspect, shoreside facilities in which fish taken subject to this subchapter are processed, packed or held;

(D) seize any fishing vessel (together with its fishing gear, furniture, appurtenances, stores, and cargo) used or employed in, or with respect to which it reasonably appears that such vessel was used or employed in, an act prohibited by section 773e of this title;

(E) seize any fish (wherever found) taken or retained in the course of an act prohibited by section 773e of this title, or the proceeds of the sale of such fish; and

(F) seize any other evidence related to an act prohibited by section 773e of this title;

(2) execute any warrant or other process issued by any court of competent jurisdiction; and

(3) exercise any other lawful authority.

While the language above grants some agency personnel access to private property, not all relevant agency personnel are included. For example, ADF&G port samplers are not covered under the Halibut Act. Port samplers will play an important role in determining the attributes of fish harvested under the GAF program. Without access to private property, they may be prohibited from collecting information that will allow unbiased estimates of GAF size as well as other information important management and enforcement of the program.

2.5.12.10 Provision H – Ban on Same Day Commercial and Charter Operations

Commercial and charter fishing may not be conducted from the same vessel, on the same day.

Provision H would prevent individuals who hold both a CHP and commercial IFQ from fishing for commercial and charter halibut on a vessel during the same day. The provision exists to facilitate enforcement, as different regulations would apply to charter-caught and commercially-caught halibut and preceding provisions exempt GAF from the landing and use provisions associated with commercial IFQ. This provision would not prevent dual-owners from conducting charter operations and commercial operations on separate boats on the same day. Table 2-58 provides information on the number of persons that hold CHPs and QS in Areas 2C or 3A.

To enforce this provision, logbooks indicate the date of a charter trip and the logbook must be completed before the halibut are offloaded. Referring to the logbook indicates whether that vessel was used on a charter trip that day. If the logbook is properly and accurately completed and indicates that no charter activity occurred on the vessel, enforcement staff would treat the harvest as commercial or unguided sport. The Council felt it was important to help the ability of enforcement officers and samplers to determine how to classify harvest and allowing both types of trips on a vessel in the same day could create too much uncertainty.

2.5.12.11 Provision I – Include a requirement for skippers to mark GAF by removing the tips of the upper and lower lobes of the tail and report the length of the retained GAF halibut to NMFS through the NMFS approved electronic reporting system.

It is critical that enforcement officers can easily distinguish GAF from fish harvested under the charter bag limit. Marking each GAF by removing the upper and lower lobes of the tail allow anyone on the vessel to distinguish GAF fish from other halibut that were caught. Any fish with the upper and lower lobes of the tail removed are assumed to be GAF. All halibut not marked must meet the charter harvest limitations in place for that area. The combination of GAF and regular charter halibut must not exceed the bag limit for client(s).

It is the responsibility of the skipper to ensure that the GAF fish are properly marked. Failure to properly mark GAF will result in the skipper being subject to appropriate enforcement action, as determined by the actual circumstances of the violation.

Charter anglers are currently required to retain the halibut carcass until landing, when halibut are filleted at sea, so enforcement officers can verify compliance with the reverse slot limit. Each halibut filleted at sea may be cut into no more than 2 ventral pieces, 2 dorsal pieces, and 2 cheek pieces, with skin on all pieces. If GAF are allowed in Area 3A those carcasses must also be retained so enforcement can verify compliance with the GAF requirements.

2.5.12.12 Provision J – A complete review within five years of the start of the GAF program, taking into account the economic effects of both sectors

This provision implements a timeline for the Council to conduct a review of the GAF program. The review must be completed within five years of the start of the program so four or fewer years of data will be available for the study. NMFS will collect data from GAF transfers to the charter sector and any GAF that is returned to the commercial IFQ fishery on November 1. NMFS will also collect data on GAF transfer prices. That information will be the primary source of quantitative economic data available for the review. Data on the overall harvest and bag limits in place during the first years of the program will also be available. These data, along with qualitative information collected from participants in the fishery will likely form the bulk of this analysis. At this time the charter industry has not been requested to report trip revenues or how clients will compensate charter operators for the use of GAF. Unless that information is collected, the analysis will provide only a qualitative discussion.

2.5.12.13 No Retention by Skipper and Crew

The retention of halibut by skipper and crew, while fishing on paid halibut charters, has been banned by ADF&G emergency order or NMFS regulation since 2006 in Area 2C. In Area 3A skipper and crew harvests were banned for the peak fishing portion of the year in 2007, 2008, and 2009. Skipper and crew harvests were allowed beginning in 2010 (Table 2-7). Table 2-63 shows the logbook estimate of skipper and crew harvest since 2006. The years that crew harvest was allowed for the entire year were 2006 and 2010. During the most recent year crew harvest was allowed, they harvested 12,340 halibut (5.7 percent of the total).

Table 2-63 Retention by skipper and crew in Area 3A (2006 through 2010).

Area	Year	Logbook Data			% crew
		Client	Crew	Total	
Area 3A	2006	238,189	27,704	265,893	10.4%
	2007	258,196	228	258,424	0.1%
	2008	231,363	1,269	232,632	0.5%
	2009	190,750	1,260	192,010	0.7%
	2010	204,080	12,340	216,420	5.7%

Since the Area 2C ban on skipper and crew harvest is currently in place, the only option for that area is the status quo; this prohibition would become part of the CSP upon implementation. Therefore, implementing a ban on crew retention of halibut will have no impact on crew or clients in that area. In Area 3A the ban on halibut retention was lifted in 2010, so crew and potentially some clients will be impacted in that area.

As discussed throughout this analysis, the current set of CSP allocations account for historic harvests for skipper and crew by explicitly including or excluding those removals. The allocation percentages are reduced such that the charter sector would not be credited with harvests made by skipper and crew. In the future, skipper and crew harvested halibut will be accounted for as unguided sport catch and will be deducted from that category of removals.

Both 2007 GHM analyses noted that a federal ban on retention of halibut would allow skipper and crew to harvest other species, while the ADF&G emergency order is a blanket ban on the harvest of any species caught while on a halibut charter. Thus, the federal ban would result in a lowering of economic burdens that the ban places on skipper and crew, by allowing them to access other species. To the degree that skipper and crew can replace halibut with other species, the federal ban would allow them to mitigate the burdens associated with a ban on halibut harvest. As noted in NPFMC (2006c), a ban on harvest can represent a significant economic burden to crew members, if they must replace protein caught during charter fishing trips with protein purchased from retail outlets. Clients could also be negatively impacted if skipper and crew harvests were shared with clients to increase the amount of halibut they take home.

2.5.13 Economic Effects

As noted in the October 2007 SSC report, this analysis does not provide quantitative estimates or confidence intervals for the magnitude of net national benefits. Nor are quantitative estimates provided for regional economic impacts of the alternatives considered in this amendment. Because those estimates cannot be provided, given the information available, the analysis does not identify an optimal allocation. To provide these data, analysts would need information on the contribution to national welfare associated with all sources of commercial removals (e.g., long-line retained catch and wastage, charter catches and release mortality, halibut PSC limit losses in other fisheries, etc.), as well as the effects these may have on users and uses of the resource not associated with commercial fishing activity, both market and non-market. That information is currently unavailable and an analysis to estimate those impacts is outside the scope of this document.

Determining which allocation would maximize net national benefits, narrowly focused on the two primary sectors of concern here would, by definition, require detailed information on costs and expenditures in both the commercial and charter sectors. In addition to cost information, demand for charter trips and angler willingness-to-pay for trips would also be required. Collecting that information could be expensive and time consuming. Even if these data were available, changes in the halibut biomass would impact the optimal sustainable yield and the optimal allocation of halibut. Because of these ongoing changes to the resource, any allocation that is optimal when it is constructed may be less than optimal in the future. To maintain an optimal allocation, managers would need to adjust that allocation whenever economic or biological conditions change (Criddle 2006a). The GAF program may aid in allowing the market to reallocate halibut between sectors. However, constraints imposed upon the program, to the extent they are binding, will continue to limit free movement of halibut between sectors. It is unreasonable to assume that optimal net economic benefits could be sustained over time by a management agency altering the allocation.

2.5.13.1 Charter Sector Revenue

A variety of models of charter operations exist in Southeast and Southcentral Alaska. This section provides a brief description of those businesses, including revenue sources, costs, and supporting businesses. To the extent that businesses and opportunities differ across regions, those differences are described. In addition, for businesses that operate ancillary (or related) businesses, charter operations

(including costs and revenues) are distinguished to the extent feasible. Since substantial variation exists across businesses, the descriptions in this section should be viewed as examples from which most operations will deviate (in some cases substantially).

For most charter operators, halibut are a primary target; however, most charters will run trips to target other species (including salmon, rockfish, and lingcod) or combination trips targeting halibut and other species. Halibut charters typically operate from late spring (May) until early fall (September). Winter trips may target halibut or catch halibut incidentally when targeting other species (most commonly king salmon), but the markets for these trips vary with location.

A variety of persons and businesses maintain charter operations in Southeast and Southcentral Alaska. Many small charter operations are run by sole proprietors, who operate a single vessel that carry six or fewer clients. In Southeast, all charters are limited to six clients. In some cases, these vessels operate without deckhands; however, many vessels capable of carrying six clients or more will also carry a deckhand for each 6 to 8 clients to assist with operations, including vessel operations, gear, baiting, gaffing, and cleaning, filleting, and processing fish. Deckhands are typically compensated at a daily rate plus a share of any tips. Small charter businesses typically only serve clients with charter fishing trips and sight-seeing trips. In Southeast, in particular, whale watching tours are popular. While most of these sole proprietors strive to make a living off charter (and sight-seeing) operations alone, many have other sources of income, including state or federal retirement income and seasonal employment that does not conflict with the summer charter season. Operators provide all fishing gear and bait, but many require clients to bring lunches. Larger charter operations typically serve more clients with larger or more vessels or provide ancillary services such as fishing processing (vacuum packing and freezing) and lodging, which may range from primitive overnight cabins to full service lodges that provide transportation to remote island luxury lodges and gourmet meals. Some charter companies (particularly in Southeast) operate “mothership” excursions, which are multiday trips on which clients stay aboard a large vessel, making daily charter trips on smaller vessels. These larger operations that also provide lodging vary greatly. In some cases, particularly in Southeast, operators will coordinate packages that include stays at local hotels and meals at local restaurants and charter fishing as part of a package; some operators maintain local lodging in a coastal community with air service; others provide remote lodging that is accessible only by boat or fly-in service. Package prices (and investment and operating costs) will vary with the type of experience. Some of these operators, particularly those providing accommodations in coastal communities, will contract charters with other local operators to expand their sales.

The primary expenses associated with charter operations are the vessel and the charter halibut limited entry permits. Permit prices, to date, have shown wide variation from approximately \$10,000 to approximately \$90,000, while averaging approximately \$50,000. Southeast (Area 2C) permits have traded at lower prices (approximately \$35,000 on average), in comparison to Southcentral (Area 3A) permits (which have averaged almost \$60,000). Prices also generally appear to increase with the number of angler’s endorsed on the permit. Vessel costs vary greatly across operations, as vessels range from relatively small vessels that carry four or fewer clients up to large party boats capable of carrying 35 clients. In addition, some operations maintain fleets of several vessels. Operations that hire captains also incur substantial payroll costs for their services. Costs vary with both safety requirements and operator safety choices. Vessels that carry six or fewer clients are not subject to the safety inspections, but may choose to enter the Coast Guard’s Alaska Voluntary 5 Star Safety Program.⁷³ Vessels carrying more than six persons must meet more stringent safety requirements (maintaining additional safety equipment including life rafts, double bilge pumps, and fire suppression systems) and are inspected annually. Insurance premiums (which include liability and workmen’s compensation insurance) along with

⁷³ To receive a five star rating, participants must comply with existing regulations governing uninspected vessels, and have a safety-training program (including drills), a properly installed bilge pump and audible bilge alarm, a handheld VHF FM radio, an Emergency Position Indicating Radio Beacon (EPIRB), and an inflatable life raft. Participants in the program are listed at the program website (<http://alaska5star.us/home>).

payments toward deductibles in the event of a claim, are also an expense for operators. A variety of other vessel related additional expenses, many of which vary by location, must be borne by charter operators (including harbor fees, launch fees, wide-load permit fees, and park permits). In some areas, daily launches are common (effectively leading to a daily charge) while in other areas vessels are kept in harbors (which typically charge monthly or seasonal fees).

Charter operators also bear advertising, promotional, and support costs, which also vary based on the choices of the operator. Operators typically maintain a website and toll free phone line for soliciting clients. Some advertise in sports magazines or internet pages. In addition, several maintain offices, some of which also include small retail sales operations for fishing accessories and gifts. Many operators also advertise by attending outdoor trade shows throughout the lower 48 to increase their client base. At the extreme, some of the larger operations will attend as many as 20 shows a year. In Southeast, some operations rely heavily on wholesalers and cruise lines. These arranged trips come at a cost, as wholesalers may charge up to 50 percent of the total trip price for arranging the clients.

Rates for charters vary across operations and trips. The typical full day (approximately 8 hour) six person (six-pack) trip rate is currently between approximately \$250 and \$325 per person. Operations that run greater distances may charge more, but may also extend trip times. The half day (approximately 4 to 5 hours) rate on these vessels is between approximately \$150 and \$200 per person. In Southeast, operators that support cruise line passengers typically operate these shorter trips. Larger vessels operating in Southcentral (which carry between 12 and 18 persons) typically charge a similar rate for a similar experience. Party boats, which carry between 18 and 35 persons, may charge substantially less – as low as \$100 per person for a 4 to 5 hour trip – and offer a different experience, such as shared rods. Discounted pricing may be available to seniors or military or if an operator needs an additional client to fill the vessel for a trip. Some operators also may apply a fuel surcharge, depending on fuel prices and the length of runs. Longer runs tend to be needed later in the summer season (i.e., July and August). Large operations that provide a variety of services (such as lodging and food) operate on an entirely different fee structure, typically using all inclusive pricing that covers food, lodging, local transportation, rain gear, and fish processing. Prices for these trips vary substantially depending on the operation and experience.

Many operators of single day trip operations have a goal of making approximately 100 trips per vessel per year, but between 50 and 75 trips is more typical and would be considered a successful season by many operators. Weather, vessel breakdown, or damage cancellations can lead to a loss of substantial revenues for an operation. These losses will vary year to year depending on conditions and also vary with location. Operations in locations with greater exposure to open water (such as Seward) are likely to have more weather cancellations than operations and fishing opportunities in more protected waters (such as most Southeast locations).

Development of scenarios for the charter sector is less straightforward than the development of scenarios for the commercial sector for a few reasons. The connection between halibut available to the sector (through the GHM Program or the CSP) and vessel revenues is less direct in the charter sector than in the commercial sector. Management measures governing the sector do not directly constrain catches from (and thereby revenues in) the sector, but instead limit inputs (such as the number of clients per trip) or outputs on a more limited basis (such as fish per client per day or fish size). The limits are intended to constrain total catch by the sector through their effects on individual harvests, as well as through their effects on both the supply of and demand for charter fishing trips. These supply and demand effects drive prices and the number of trips at both the individual and sector level. Additional uncertainty arises from both the relative inexperience with these management measures and the potential for factors other than the management measures (such as overall economic conditions or fuel prices) to affect supply and demand of charter trips. Development of charter sector scenarios is also complicated as fewer data sources are available for the charter sector relative to the commercial sector. Some data exists for examining charter sector activities (in numbers of trips and clients); however, vessel identification is not consistent over time for all vessels. These data do not directly define halibut fishing trips (instead

identifying trips as bottom fishing trips, salmon fishing trips, or both). In addition, these data do not include revenue or price information. Although limited entry permit price data are available, those data are only from a limited number of transactions over two years. These data show some inconsistencies, such as prices that do not always increase with the number of clients permitted, limiting their utility for development of scenarios. As a result of these factors, estimates of revenues and permit costs for scenarios must be based on anecdotal reports of sector participants and conjectures based on available data.

The variation in charter operations suggests that a variety of examples may best illustrate the circumstances of a charter operation. To simplify the scenarios, no examples include ancillary services (such as lodging and processing) that charter operators may also sell their charter clients. The scenarios only include cost information arising from limited entry permit purchases. In addition, since the limited entry program was implemented in 2010 for the 2011 season, no examples of revenue streams after purchase of a permit could be provided. As such, it should be understood that many operations will have revenues beyond those reflected in the example and all operations will have costs that are not reflected in the tables. In addition, the limited time series data and limited experience with management measures intended to constrain catches from the fleet creates some challenges to interpretation. Operations may be successful with relatively high numbers of clients and revenues under one set of management measures during periods when the economy is strong, but have limited success in years when different management measures apply or the economy is weak. These limitations should be considered when interpreting the tables.

Each scenario shows a permit price that is close to the average price of a six-client limited entry permit for the applicable management area (2C or 3A). The scenarios also show estimated annual revenues based on average and high assumed client trips and average and high charter prices. Client and trip numbers are based on log book data estimates, while prices are based on anecdotal information from fishery participants. Price estimates could be adjusted based on additional input from participants.

In assessing the scenarios, it should be considered whether an operation would be capable of covering its operating costs and have revenues remaining to commit to the price of a permit. While data are not available to establish whether revenues could be adequate to fund an operation and a permit, operational expenses are an important consideration. A variety of costs must be incurred by an operation, including fixed, long term costs (such as vessel costs) and variable, short term costs (such as fuel). These cost factors also pose challenges in interpreting the scenarios. For example, changes in these fuel costs can affect charter pricing. A change of an operation from a low priced scenario to a higher priced scenario may suggest additional returns to the operation, when in fact they are simply a reflection of the need to pass on fuel cost increases to clients.

In considering the scenarios in the broader context, it is important to keep in mind differences in the charter and commercial operations. Unlike in the commercial sector where two IFQ holders can join together to harvest their IFQ from a single vessel to achieve efficiencies, to receive any return from a charter permit requires that the holder operate a vessel. In essence, the permit holder must operate on an all-in basis – investing in all charter operation aspects of the business to receive a return from the permit. Commercial participants can avoid or save on some variable costs (such as fuel and to some extent bait and gear) on a short term basis, although fixed costs such as primary vessel costs are unavoidable. While charter participants may take steps to mitigate costs (such as fishing closer to port to save on fuel), realizing any return from the fishery in a year requires full participation by entering a vessel in the fishery.

The first scenario applies to a six person charter operating in Area 2C from 2005 through 2010, the years for which relatively consistent data time series data are available for the charter fleet (

Table 2-64). The scenario assumes that the vessel operates at a booking rate that is between \$200 and \$250 per client trip, which increased over time. Annual trips fluctuated at around 50 trips per year, except

in 2009 when bookings dropped below 45 trips. Revenues rose from slightly more than \$35,000 in 2005 to almost \$50,000 in 2008. Peak revenues were received in that year as a result of a price increase, despite a slight drop in bookings from the preceding year. Revenues declined in 2009, then recovered slightly in 2010, as a result of a fluctuation in bookings. Notably, the decline in revenues in this scenario coincided with the one fish bag limit that was instituted in 2009; however, the role of that bag limit in the decline in comparison to other factors (such as the economic downturn) is not known. In all years, gross revenues exceeded the average permit price of approximately \$35,000; however, whether revenues would be adequate to fund the purchase of a license is not known.

Table 2-64 Area 2C charter sector permit price and average 6-pack revenue scenario.

2C - Average 6 person permit price - approximately \$35,000						
Year		Clients per trip	Total trips	Total clients	Average price per client (\$)	Annual halibut charter revenue (\$)
2005	Two-fish bag limit (no size restrictions), no limit on crew retention.	3.7	49.3	184	200	36,879
2006	Two-fish bag limit (no size limit), state EO prohibiting crew harvest 5/26-12/31.	3.9	52.0	202	225	45,493
2007	Two-fish bag limit (1 under 32" eff. 6/1), no crew retention 5/1-12/31 (State EO and Federal Rule).	3.9	52.5	205	225	46,116
2008	Two-fish bag limit (1 under 32"), except one-fish bag limit Jun 1-10 (halted by injunction).	3.9	50.8	197	250	49,306
2009	One fish (no size limit), no harvest by skipper & crew, line limit (effective June 5).	3.8	44.6	170	250	42,426
2010	One fish (no size limit), no harvest by skipper & crew, line limit.	3.8	48.2	185	250	46,324
Clients and trips are based on the average charter boat that made over 20 trips in a year and carried 6 or fewer persons on all trips.						
Prices are based on anecdotal average price.						

The second scenario in Area 2C assumes that the vessel operated in the top quartile of trips and clients. Under this scenario, the vessel is assumed to charge a relatively high rate for bookings, increasing from \$225 per trip in the first year then jumping to \$300 through the remainder of the period (Table 2-65). Annual trips follow a similar pattern to the previous scenario, increasing from approximately 60 trips per year to 70 trips per year from 2005 through 2007, then declining in 2008 and 2009 (to below 60 trips in 2009), prior to recovering to above 60 trips per year in 2010. Total revenues started the period at slightly more than \$50,000 in 2005, increased to peak at above \$80,000 in 2007, declined to approximately \$65,000 in 2009, then recovered to over \$70,000 in 2010. As in the preceding scenario, a decline in revenues coincided with implementation of the one fish bag limit in 2009; however the effect of that measure in comparison to other factors is not known. Gross revenues from the vessel greatly exceeded the average permit price in all years, but whether the revenues would be adequate to support the operation and the purchase of a permit is not known.

Table 2-65 Area 2C charter sector permit price and upper quartile 6-pack revenue scenario.

2C - Average 6 person permit price - approximately \$35,000						
Year		Clients per trip	Total trips	Total clients	Average price per client (\$)	Annual halibut charter revenue (\$)
2005	Two-fish bag limit (no size restrictions), no limit on crew retention.	3.9	61	235	225	52,875
2006	Two-fish bag limit (no size limit), state EO prohibiting crew harvest 5/26-12/31.	4.0	66	265	300	79,500
2007	Two-fish bag limit (1 under 32" eff. 6/1), no crew retention 5/1-12/31 (State EO and Federal Rule).	4.0	70	279	300	83,700
2008	Two-fish bag limit (1 under 32"), except one-fish bag limit Jun 1-10 (halted by injunction).	3.9	66	259	300	77,700
2009	One fish (no size limit), no harvest by skipper & crew, line limit (effective June 5).	3.8	57	219	300	65,700
2010	One fish (no size limit), no harvest by skipper & crew, line limit.	4.0	61	242	300	72,600
Clients and trips are based on the top quartile of charter boats that made over 20 trips in a year and carried 6 or fewer persons on all trips.						
Prices are based on anecdotal high price.						

In Area 3A, the first scenario considers a vessel that operates at the average number of trips with the average total clients. The operation made slightly more than 50 trips in 2005 through 2008, before decreasing to slightly more than 45 trips in 2009 and 2010 (Table 2-66). Prices increased through the period from \$200 in 2005 to \$250 in 2008-2010. Gross revenues rose from slightly under \$50,000 in 2005 to over 60,000 (primarily from a price increase) in 2008 prior to decreasing to below \$55,000 in 2009 and 2010. The decrease in client trips in Area 3A in 2009 and 2010 is similar to the decrease in Area 2C, despite the constant management measures in the area. In Area 3A, permit prices appear to be higher (although a limited number of transactions have occurred, so that conclusion is weak). Whether this suggested higher permit price would affect the ability of an entering participant, operating at the average client and trip level, to fund the acquisition of a permit through their operation's revenues is not known. Comparing this scenario to the comparable Area 2C scenario, the annual average clients per trip and total clients are slightly higher in Area 3A, while the number of trips is comparable across the two area's scenarios. This Area 3A scenario shows higher revenues, as a result of the higher number of clients per trip.

Table 2-66 Area 3A Charter sector permit price and average revenue scenario.

3A - Average 6 person permit price - approximately \$60,000						
Year		Clients per trip	Total trips	Total clients	Average price per client (\$)	Annual halibut charter revenue (\$)
2005	Two-fish bag limit (no size restrictions), no limit on crew retention	4.7	52.8	247	200	49,335
2006	Two-fish bag limit (no size restrictions), no limit on crew retention	4.8	51.8	249	225	55,952
2007	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/1-12/31.	4.8	52.2	253	225	56,986
2008	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/24-9/1.	4.8	51.4	248	250	62,051
2009	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/23-9/1.	4.7	46.5	221	250	55,125
2010	Two-fish bag limit (no size restrictions), no limit on crew retention	4.6	46.3	215	250	53,772
Clients and trips are based on the average charter boat that made over 20 trips in a year and carried 6 or fewer persons on all trips.						
Prices are based on anecdotal average price.						

The second Area 3A scenario considers a vessel that operates at the upper quartile of trips and clients and charges a relatively high rate for bookings. This vessel scenario maintains 60 or more trips in all years, except 2009, when the scenario shows 56 trips (Table 2-67). Although the number of trips rises to 60 in 2010, these trips include fewer clients, leading to a drop in the average number of clients per trip to approximately 4.5. Gross revenues rise from almost \$75,000 in the first year to almost \$100,000 in the second and third years from a substantial price increase with a steady number of clients. Revenues decline

thereafter to approximately \$80,000 in 2010 as a result of a decrease in the total number of clients. The decrease in average clients per trip is unique to this scenario and may result in some increase in costs per client relatively to the preceding years.

Table 2-67 Area 3A charter sector permit price and upper quartile 6-pack revenue scenario.

3A - Average 6 person permit price - approximately \$60,000						
Year		Clients per trip	Total trips	Total clients	Average price per client (\$)	Annual halibut charter revenue (\$)
2005	Two-fish bag limit (no size restrictions), no limit on crew retention	4.8	68	329	225	74,025
2006	Two-fish bag limit (no size restrictions), no limit on crew retention	5.2	63	330	300	99,000
2007	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/1-12/31.	5.0	66	330	300	99,000
2008	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/24-9/1.	4.9	65	321	300	96,300
2009	Two-fish bag limit (no size restrictions), state EO prohibiting crew harvest 5/23-9/1.	4.9	56	275	300	82,350
2010	Two-fish bag limit (no size restrictions), no limit on crew retention	4.4	60	266	300	79,800
Clients and trips are based on the top quartile of charter boats that made over 20 trips in a year and carried 6 or fewer persons on all trips.						
Prices are based on anecdotal high price.						

In considering the scenarios, it is important to note that each scenario assumes relatively constant performance from year to year. An operation may improve or suffer some decline from year to year, effectively moving among the different performance scenarios (or even dropping below any of the scenarios presented here). While a well-run operation may be expected to consistently perform well, unanticipated events (such as accidents or vessel problems) and uncertainties in charter supply and demand could lead to these changes in success. Not only charter management measures (i.e., bag and size limits and limits on entry), but a variety of other factors, will affect success of an operation. General conditions in the economy can have a noticeable effect on the numbers of potential clients, as many clients (particularly those from outside of Alaska) must incur substantial travel costs to even access the Alaska halibut charter fishery. The intervention of these various factors should be considered when reviewing these scenarios.

2.5.13.2 Commercial Harvesters

Under the status quo, the Area 2C commercial and charter sectors are being impacted more severely in the near-term, than the Area 3A fleets, primarily as a result of lower halibut CEY. Changes in stock abundance and the implementation of the coast-wide assessment model are the primary reasons for the substantial allocation decrease in Area 2C. Commercial halibut harvesting operations take a variety of forms. A commercial operator may hold quota shares and a vessel, fishing the yielded IFQ on the vessel. Depending on whether the quota share holder is an initial recipient, it is possible that a hired skipper may be used to harvest IFQ. The primary long term costs of these operations are quota costs and vessel costs, although a variety of other long term and short term costs are incurred.

While some participants in the commercial fishery hold quota shares and own vessels (akin to the charter permits held and vessels owned by charter fishery participants), the halibut IFQ program has allowed for flexibility in structuring commercial halibut fishery operations. Specifically, new halibut fishery entrants may not own a vessel, but may fish their quota share holdings on the vessel of another participant (by riding along or crewing on the vessel). While this structure might appear to remove a substantial cost (i.e., vessel ownership) for participants who do not own a vessel, additional costs are incurred, as the vessel owner will retain a portion of the revenue generated by landings of those shares to cover operational costs and compensate for vessel use and crews. Payment arrangements for the harvest of IFQs vary across vessels depending on the circumstances. Generally, charges decrease with the amount of IFQ brought to the vessel for harvest. Also, a vessel that will be used for making a large harvest of its holder's quota may

charge less to bring small amounts of quota on board to supplement its fishing. In addition, arrangements may also differ if the quota holder also is an active crewmember on the vessel.

Vessels also incur costs for fuel, insurance, gear, moorage, gear storage, food, and provisions. Other charges made on harvests including state and local taxes and cost recovery fees. Vessels also require periodic repair and maintenance, which can be greatly increased by accidents or failures of engines, hydraulics, refrigeration, or propulsion systems.

Crew costs are also a substantial operating cost. Crew sizes differ slightly with the size of a vessel and its operation. Most of the smaller vessels (less than 55 feet) operate with crews of one or two in addition to the captain. Larger vessels will typically operate with a crew of 3 in addition to the captain. Crew are typically compensated on a share based system under which they receive a share of vessel revenues (or gross stock) after the payment of specified operating costs (which may include the costs of quota, food, bait, lost gear, fuel and provisions).

In addition to halibut harvests, many vessels also participate in groundfish fisheries. Most of these vessels use longline gear in the groundfish fisheries, but some use pot and a very few use trawl gear. In addition, some vessels that are equipped for pot gear may also fish in crab fisheries, most often the *C. bairdi* fisheries managed by the State of Alaska. Prosecution of these other fisheries may offset some of the lost revenues in the halibut fishery at times of low halibut abundance for vessels holding the requisite permits to enter those fisheries.

The six tables below show six gross revenue and quota cost scenarios (three for Area 2C and three for Area 3A), each from 2003 to 2011. The scenarios are intended only to provide information concerning the changes in revenue streams that arise from recent changes in halibut prices and the Fishery CEY. It is assumed that IFQ are fully harvested; estimates of revenue and quota share value are based on the average ex vessel price and share price in the area, except as noted. Each of the three quota share acquisitions would yield 5,000 pounds of IFQ in the year of purchase. Importantly, none of the tables consider operating costs other than quota share costs. In assessing the information in the tables consideration should be given to those costs, particular costs that are likely to have changed during the period (such as fuel costs, which are substantially higher now than in 2003) (see Alaska Fuel Price Survey, Pacific States Marine Fisheries Commission, Portland Oregon). Changes in other costs are likely to either compensate for, or intensify, the effects arising from revenue changes.

Scenario 1: The quota share holder received an initial allocation of quota shares equal to the average area initial allocation.

Scenario 2: The quota share holder received an initial allocation in an amount equal to the average harvest of a vessel 60 feet or less in length.

Scenario 3: The quota share holder made three share purchases over a five year period.

Under the first scenario in Area 2C, the quota holder is assumed to hold 25,000 quota shares (approximately the average initial allocation) throughout the period (see Table 2-68). Annual ex vessel gross revenue increases from 2003 to 2007, as a result of increases in both ex vessel price and the annual IFQ allocation (arising from a rising commercial CEY). Beginning in 2007, CEY and price decreases led to a drop in estimated quota value and gross revenue. Although the exvessel price recovered (reaching the highest value for the period by 2011), quota values declined, most likely in response to the drop in the commercial CEY throughout the remainder of the period. As a consequence, the quota is of slightly lower value in 2011 than in 2003, despite a doubling of exvessel price, while revenues from IFQ landings were less than two-thirds of the 2003 level in 2011. Nominal dollar values are reported in all tables.

Table 2-68 Scenario 1 for Area 2C – gross revenue and quota value for a quota holder who received an allocation of 25,000 quota shares.

2C - 1							
Year	Quota shares held*	Quota Share price (\$/share)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)
2003	25,000	1.39	34,750	7.02	3,563	2.95	10,526
2004	25,000	2.41	60,250	5.67	4,408	3.04	13,377
2005	25,000	3.31	82,750	5.45	4,588	3.08	14,122
2006	25,000	3.29	82,250	5.60	4,462	3.75	16,743
2007	25,000	2.80	70,000	7.00	3,573	4.41	15,740
2008	25,000	2.70	67,500	9.59	2,607	4.33	11,296
2009	25,000	1.70	42,500	11.86	2,107	3.08	6,499
2010	25,000	1.68	42,000	13.53	1,847	4.62**	8,534
2011	25,000	1.27	31,750	25.56	978	6.77***	6,622

* Shares assumed received under initial allocation under this scenario. Amount is slightly less than average initial allocation in Area 2C.

** Statewide price

*** Average of monthly Southeast prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).

Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

The second scenario in Area 2C assumes that a person holds quota shares in an amount that yields the average IFQ harvest by a vessel that is 60 feet or less in length (see

Table 2-69). The table also shows the average vessel harvest from 2003 to 2011, along with the gross revenues received for those harvests. These numbers can be contrasted with the harvest arising from the constant quota share holding to show fleet responses to changes in the fishery (such as changes in IFQ allocations arising from changes in the Fishery CEY and changes in ex vessel prices). Specifically, the harvest from constant quota share holdings exceeds the average vessel harvest (in pounds) from 2003 through 2006. This suggests that the harvest of halibut as a percentage of the quota share pool dispersed among vessels during that period. In other words, the average vessel harvests (increased in pounds but) decreased as a share of the total IFQ pool during that period, since the average vessel harvested less IFQ than was yielded by the constant QS holdings (which are equivalent to the average vessel's harvests in 2003). With more IFQ pounds to harvest and an increasing price, on average, QS holders elected to harvest more pounds from a vessel, but less of the total pool, achieving higher revenues from those harvests. In the period from 2007 through 2011, the opposite phenomenon occurred. The average vessel harvested fewer pounds, but an increasing share of the total IFQ pool. In other words, the average vessel harvested IFQ from a larger share of the QS pool, but fewer pounds. Revenues fluctuated during the period as a result of ex vessel prices for both a vessel harvesting a constant share of the QS pool and a vessel harvesting at the fleet average (for vessels of a length of 60 feet or less); however, gross revenues of the average vessel exceeded gross revenues of the vessel harvesting a constant percentage of the quota share pool, because of the concentration of additional harvests on the average vessel. Quota share value also fluctuated following a pattern similar to IFQ revenues, ending the period with a value less than in the beginning. This drop in value of constant QS holdings (which fell more than 10 percent from the 2003 value in 2011), however, is less proportionally than the drop in ex vessel gross revenues from annual IFQ

harvests (which fell by more than 30 percent from the 2003 in 2011)⁷⁴. The added concentration of harvests on the average vessel likely mitigated these effects for some quota holders. That concentration can occur by the quota share transfers that concentrate quota share holdings and by multiple quota share holders joining together to harvest their IFQ on a single vessel. This additional concentration can be used to reduce harvest costs, but may not avoid some costs, such as vessel costs that cannot be avoided through short run decisions.

Table 2-69 Scenario 2 for Area 2C - revenue and quota value for a quota holder who holds quota shares that yield IFQ harvested by the average vessel less than or equal to 60 feet in length in 2003 (15,000 pounds of IFQ yielded by 105,239 quota share units in 2003).

2C - 2									
Year	Quota shares held*	Quota Share price (\$/share)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)	Approximate average vessel harvest* (pounds)	Annual ex vessel revenue (of ~ average vessel harvest) (\$)
2003	105,239	1.39	146,282	7.02	15,000	2.95	44,310	15,000	44,310
2004	105,239	2.41	253,625	5.67	18,554	3.04	56,311	17,000	51,595
2005	105,239	3.31	348,339	5.45	19,314	3.08	59,448	18,000	55,404
2006	105,239	3.29	346,235	5.60	18,785	3.75	70,481	16,000	60,032
2007	105,239	2.80	294,668	7.00	15,039	4.41	66,260	15,000	66,090
2008	105,239	2.70	284,144	9.59	10,974	4.33	47,551	13,000	56,329
2009	105,239	1.70	178,905	11.86	8,871	3.08	27,359	12,000	37,008
2010	105,239	1.68	176,801	13.53	7,776	4.62**	35,923	12,000	55,440
2011	105,239	1.27	133,653	25.56	4,118	6.77***	27,876	12,000	81,240

* Shares assumed received under initial allocation under this scenario. Amount is based on the median vessel harvest by C category vessels (60 feet and under LOA) in 2003 all areas.

** Statewide price from CFEC

*** Average of monthly Southeast prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).

Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

The third scenario in Area 2C assumes that the quota share holder made three purchases of quota shares over a five year period (Table 2-70). Each purchase yields 5,000 lbs of IFQ in the year of purchase. The first purchase (in 2003) would have cost almost \$50,000. The second purchase, two years later, would have cost approximately 90,000. By that time, the original purchase would yield approximately 6,500 lbs of IFQ, as a result of the increase in the commercial CEY. The value of the first purchase, however, would have increased more than two-fold to over \$115,000, although halibut prices increased only slightly during the period. The third purchase would have been for an amount of quota share similar to the first purchase five years earlier (as the commercial CEY dropped back to a level similar to the 2003 level). Halibut prices by this time had increase by approximately 50 percent (almost \$1.50 higher than the 2003 price of \$2.95) and quota shares were approximately double the 2003 price. Consequently, in 2007, at the end of the purchase period, the quota share holder would have spent almost \$250,000 on quota share, which would yield approximately 13,000 lbs of IFQ and approximately \$61,000 in ex vessel revenues (at the 2007 commercial CEY and average ex vessel price). From 2007 on, the commercial CEY declined, so the amount of IFQ yielded by the quota share purchased declined to below 4,000 lbs in 2011 (less than one-third of the amount that might have been intended by the three-5,000 lbs purchases). As expected, the price of quota share declined by more than 50 percent from the 2007 level to approximately

⁷⁴ The decrease in ex vessel revenue from QS held was greater when 2007 is compared to 2011. During this period the gross ex vessel revenue derived from QS decreased to about 42 percent of the 2007 level. Had QS been purchased in 2007, with the assumption that the future stream of earnings would approximate 2007 levels, the revenues generated in 2011 may be less than the amount necessary to cover the annual repayment schedule.

\$1.25 per share leaving the total holding value at approximately \$125,000 (or slightly more than half of the almost \$240,000 outlay for purchases).

Table 2-70 Scenario 3 for Area 2C - revenue and quota value for a quota holder who made 3 purchases of quota shares (in 2003, 2005, and 2007), each of which yielded 5,000 pounds of IFQ harvested in the year of purchase.

2C - 3									
Year	Quota Shares acquired	Quota shares held	Quota Share price (\$/share)	Quota Share cost incurred (\$)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)
2003	35,080	35,080	1.39	48,761	48,761	7.02	5,000	2.95	14,770
2004	0	35,080	2.41	0	84,542	5.67	6,185	3.04	18,770
2005	27,245	62,324	3.31	90,179	206,292	5.45	11,438	3.08	35,206
2006	0	62,324	3.29	0	205,046	5.60	11,125	3.75	41,740
2007	34,990	97,314	2.80	97,971	272,478	7.00	13,906	4.41	61,270
2008	0	97,314	2.70	0	262,746	9.59	10,148	4.33	43,970
2009	0	97,314	1.70	0	165,433	11.86	8,203	3.08	25,298
2010	0	97,314	1.68	0	163,487	13.53	7,190	4.62**	33,218
2011	0	97,314	1.27	0	123,588	25.56	3,807	6.77***	25,776

Scenario assumes 3 purchases of QS, each purchase would yield 5,000 pounds of IFQ in the year of purchase.

** Statewide price

*** Average of monthly Southeast prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).

Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

The commercial fishery scenarios for Area 2C suggest that in recent years quota share holders have experienced losses in gross revenues from their holdings. A portion of this decline has been offset by increased halibut prices. Despite these price increases, revenues from constant quota share holdings declined in 2011 to substantially less than the 2003 level. To counter this effect, quota share holders have consolidated their IFQ holding to reduce harvest costs. The decline in value of quota share holdings suggests that this consolidation has achieved limited success in maintaining quota share value. Persons who purchased quota shares, particularly at peak quota share values in the mid-2000s have seen the value of their holdings decline substantially. These changes reflect short term changes that are dependent on the period selected for analysis. Over time, conditions could change, reversing the downward trends in revenues and quota share values reflected in data from recent years.

The Area 3A scenarios follow a slightly different pattern than the Area 2C scenarios. Changes in the Fishery CEY (and IFQ yielded by each quota share) are less substantial in Area 3A. In the first few years (2003 through 2006) the increase in IFQ yielded per quota share unit is less in Area 3A. As a consequence, the rise in quota share prices during that period was dampened in Area 3A. The drop in IFQ yielded by each quota share (or the drop in the Fishery CEY) is less substantial in Area 3A. This together with the increase in halibut prices result in a smaller drop in annual ex vessel revenues and quota share values in Area 3A. The result is that the value of constant quota share holdings (at the average initial allocation) doubled from the beginning of the period to the end of the period, while annual ex vessel revenues from constant quota share holdings ended the period at a level similar to or slightly higher than at the start (as shown in Table 2-71).

Table 2-71 Scenario 1 for Area 3A – gross revenue and quota value for a quota holder who received an allocation of 60,000 quota shares.

3A - 1							
Year	Quota shares held*	Quota Share price (\$/share)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)
2003	60,000	1.20	72,000	8.17	7,342	2.89	21,248
2004	60,000	1.88	112,800	7.38	8,131	3.04	24,676
2005	60,000	2.49	149,400	7.26	8,265	3.07	25,389
2006	60,000	2.46	147,600	7.34	8,177	3.78	30,925
2007	60,000	2.91	174,600	7.06	8,501	4.40	37,431
2008	60,000	3.51	210,600	7.63	7,859	4.40	34,579
2009	60,000	2.87	172,200	8.52	7,041	3.12	21,940
2010	60,000	2.28	136,800	9.25	6,486	4.62**	29,967
2011	60,000	2.52	151,200	12.88	4,660	6.61***	30,800

* Shares assumed received under initial allocation under this scenario. Amount is slightly less than average initial allocation.

** Statewide price

*** Average of monthly Central Gulf prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).

Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

A vessel that harvested IFQ yielded by quota shares in an amount equal to the average harvest of a vessel 60 feet or less in Area 3A in 2003 would have its harvests fluctuate above the 2003 level until 2008 (Table 2-72). The vessel would have harvested 15,000 lbs in 2003 and between 16,000 lbs and almost 17,500 lbs from 2004 through 2008. The vessels harvest would have then declined, dropping below 10,000 lbs in 2011. In contrast, the average vessel harvest increase to over 18,000 lbs in 2005, then declined progressively thereafter to approximately 12,000 lbs in both 2010 and 2011. Comparing the average vessel harvest to the a vessel harvesting a constant amount of quota shares suggests that harvest of quota consolidated in the fleet from 2003 through 2005, but then dispersed thereafter, until 2011. In that year, a relatively large decline in the Fishery CEY likely stimulated consolidation of the harvest of IFQ in the fleet.

Table 2-72 Scenario 2 for Area 3A - revenue and quota value for a quota holder who holds quota shares that yield IFQ harvested by the average vessel less than or equal to 60 feet in length in 2003 (15,000 pounds of IFQ yielded by 105,239 quota share units in 2003)

3A - 2									
Year	Quota shares held*	Quota Share price (\$/share)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)	Approximate average vessel harvest* (pounds)	Annual ex vessel revenue (of ~ average vessel harvest) (\$)
2003	122,579	1.20	147,094	8.17	15,000	2.89	43,410	15,000	43,410
2004	122,579	1.88	230,448	7.38	16,611	3.04	50,413	17,000	51,595
2005	122,579	2.49	305,220	7.26	16,884	3.07	51,869	18,000	55,296
2006	122,579	2.46	301,543	7.34	16,705	3.78	63,179	16,000	60,512
2007	122,579	2.91	356,703	7.06	17,368	4.40	76,472	15,000	66,045
2008	122,579	3.51	430,251	7.63	16,055	4.40	70,644	13,000	57,200
2009	122,579	2.87	351,800	8.52	14,385	3.12	44,824	12,000	37,392
2010	122,579	2.28	279,479	9.25	13,251	4.62**	61,222	12,000	55,440
2011	122,579	2.52	308,898	12.88	9,519	6.61***	62,923	12,000	79,320

* Shares assumed received under initial allocation under this scenario. Amount is based on the median vessel harvest by C category vessels (60 feet and under LOA) in 2003 (all areas).

** Statewide price

*** Average of monthly Central Gulf prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).

Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

The third scenario in Area 3A assumes that a person made three purchases of quota shares over a five year period from 2003 through 2007, with each purchase of an amount of quota share that would yield 5,000 lbs of IFQ in the year of purchase (Table 2-73). The number of shares purchased declined with each purchase, since the Fishery CEY rose during the purchasing period; however, the purchase price increased from less than \$50,000 for the first purchase to over \$100,000 for the third purchase. This price increase likely resulted from the increasing CEY and halibut exvessel price during the period of the purchases. Subsequently, the Fishery CEY declined leading to a decrease in pounds of IFQ harvested annually. Revenues from harvests decline, particularly in 2009 when the exvessel price declined in the area, but recovered in 2010, as a result of a price increase. Notwithstanding the decline in the Fishery CEY, the value of the quota shares remained above the sum paid for the three purchases, despite a decline in price from the last purchase. This arose because the quota share price in 2011 remained substantially higher than the price at the time of the 2003 purchase. This scenario suggests that despite a similar pattern in the Fishery CEY and quota share prices in Area 3A and Area 2C, Area 3A quota share holders appear to be better off than quota share holders in Area 2C. This arises primarily because the magnitude of the decline in the Area 3A Fishery CEY is substantially less than the changes in Area 2C. This conclusion is case dependent and could change, if the Fishery CEY declines in future years. For example, a person who made a substantial purchase of quota shares in Area 3A in 2008 would have suffered a considerable loss in quota share value by 2011.

Table 2-73 Scenario 3 for Area 3A - revenue and quota value for a quota holder who made 3 purchases of quota shares (in 2003, 2005, and 2007), each of which yielded 5,000 pounds of IFQ harvested in the year of purchase.

3A - 3									
Year	Quota Shares acquired	Quota shares held	Quota Share price (\$/share)	Quota Share cost incurred (\$)	Value of Quota Share held (\$)	Annual ratio of Quota Shares to IFQ	Annual IFQ pounds	Average ex vessel price (\$/pound)	Annual ex vessel revenue (\$)
2003	40,860	40,860	1.20	49,031	49,031	8.17	5,000	2.89	14,470
2004	0	40,860	1.88	0	76,816	7.38	5,537	3.04	16,804
2005	36,300	77,159	2.49	90,386	192,126	7.26	10,628	3.07	32,650
2006	0	77,159	2.46	0	189,811	7.34	10,515	3.78	39,769
2007	35,289	112,448	2.91	102,690	327,222	7.06	15,933	4.40	70,151
2008	0	112,448	3.51	0	394,691	7.63	14,728	4.40	64,805
2009	0	112,448	2.87	0	322,724	8.52	13,196	3.12	41,119
2010	0	112,448	2.28	0	256,380	9.25	12,156	4.62**	56,162
2011	0	112,448	2.52	0	283,368	12.88	8,733	6.61***	57,722

Scenario assumes 3 purchases of QS, each purchase would yield 5,000 pounds of IFQ in the year of purchase.

** Statewide price

*** Average of monthly Central Gulf prices from notification of standard prices and fee percentage (76 FR 238 pp. 77209-14).
 Except as noted prices are from RAM annual report to the fleet and annual transfer reports.

Finally, it is inappropriate to compare projected charter gross revenues with projected commercial ex-vessel revenue to determine which allocation is superior. Some of the reasons the comparison is not appropriate are:

- Both estimates only consider the gross revenue (or, in some cases, a portion thereof) generated by the sectors. Net revenues would be a more appropriate comparison for the two sectors, but cost data are not available to generate those estimates.
- Gross revenue estimates for the charter and commercial sectors do not consider the well-being of charter clients or halibut consumers. Criddle et al. (2003) found that charter clients and halibut consumers generated a larger consumer surplus than the producer surplus generated by the charter operators and commercial harvesters.
- Policy makers may have social or policy reasons to implement an option that does not generate the greatest economic benefits.

Cost Recovery. NMFS published regulations in the *Federal Register* (65 FR 14919, March 20, 2000) implementing the IFQ Cost Recovery Program for IFQ landings of halibut and sablefish. The regulations implemented on March 15, 2000, may be found in 50 CFR 679.45. Under that cost recovery program IFQ permit holders incur a cost recovery fee liability for every pound of IFQ halibut and sablefish that is landed under his or her IFQ permit(s). The IFQ permit holder is responsible for paying the fee liability for all IFQ halibut and sablefish landings on his or her permit(s) to NMFS on or before the due date of January 31, following the year in which the IFQ landings were made. For each permit, the dollar amount of the fee due is determined by multiplying the annual IFQ fee percentage (3 percent or less) by the ex-vessel value of each IFQ landing. If the permit holder has more than one permit, the total amounts of each permit are summed to determine his or her total cost recovery fee.

Section 304(d)(2)(B) of the Magnuson-Stevens Act sets a maximum cost recovery fee of 3 percent of the ex-vessel value of fish harvested under an IFQ program. NMFS may reduce the fee percentage, if actual management and enforcement costs are a lesser percentage. NMFS will not know the actual annual costs of IFQ-related management and enforcement until after the end of each federal fiscal year

(September 30). Because the fee is not set until after much of the fishing year is complete, IFQ permit holders are encouraged to have access to sufficient funds to cover a 3 percent fee, if it is required

The cost recovery fee is paid by both halibut and sablefish IFQ permit holders. The structure of the cost recovery program does not facilitate applying different fee percentages to IFQ holders in different areas, nor does it allow halibut and sablefish IFQ permit holders to be charged different fee percentages. Any increase in the cost recovery fees as part of this program will be borne by halibut and sablefish IFQ permit holders, based on the ex-vessel value landings.

Part of the reason both halibut and sablefish IFQ permit holders pay the same rate is that it is not possible to divide costs of the program at a species or area level. NMFS calculates the overall enforcement and management cost of the program, but cannot differentiate costs by species or area. For example, NMFS does not track the time spent answering questions about the program from people holding Area 2C QS versus people holding Area 3B QS. Tracking costs at that level is not realistic.

The halibut and sablefish cost recovery fee for 2011 was set at 1.6 percent of ex-vessel landings and reportedly yielded \$5.22 million to cover management and enforcement costs. Both changes in the ex-vessel price of halibut/sablefish and the amount of halibut/sablefish harvested can affect the revenue generated from the cost recovery fee. A summary of the annual cost recovery fee for 2011 is presented in the annual report to the fleet (<http://www.fakr.noaa.gov/ram/ifq/rtf11.pdf>).

As discussed throughout this amendment, halibut IFQ permit holders in Areas 2C and 3A are expected to benefit from this program, because the charter sector harvests in those areas will be limited to a percentage of a CCL. They will also have the opportunity to lease halibut IFQ to the charter sector. While we cannot project how much IFQ will be leased by the charter sector, the ability to lease IFQ is expected to benefit IFQ holder in those areas, by allowing them to increase revenue through leases or perhaps higher ex-vessel prices, if fewer fish enter the commercial market.

The QS holders that only fish halibut west of Area 3A and the sablefish IFQ permit holders will realize higher⁷⁵ cost recovery fees, but will not benefit from leasing IFQ to the charter sector. Their cost recovery fee is expected to increase, and the sablefish IFQ permit holders will not recover those costs through higher ex-vessel prices associated with changes in sablefish sold as a result of this program. Halibut permit holders west of Area 3A may recoup some of the cost recovery fee through higher ex-vessel prices, but revenue changes that result from changes in the quantity of halibut sold is unlikely to completely offset the costs. Some QS holders hold both halibut and sablefish QS. Based on current QS holdings reported by RAM (as of July 2008), 625 persons hold halibut and sablefish QS. These persons will likely derive some benefits from the program. However, the 226 sablefish QS holders that do not hold any halibut QS are expected to pay an increased cost recovery fee and not benefit directly from the program. However, it is not possible to determine if the fee they pay before or after the plan is implemented truly reflects the costs they impose on NMFS for the management and enforcement of the sablefish portion of the IFQ program. Also as discussed earlier, the GAF holders are not subject to cost recovery fees, since they are collected from the person leasing the QS if they are used as GAF.

2.6 Community Impacts

2.6.1 Community Engagement, Dependence, and Vulnerability

Vulnerability of communities to adverse community-level impacts from the proposed halibut CSP is in part a function of dependence of the community on the potentially affected Area 2C and Area 3A halibut fisheries and the economic resiliency of the community. Dependency is influenced by the relative importance of fisheries in the larger community fisheries sector(s), as well as the relative importance of the overall community fishery sector(s) within the larger community economic base (both in terms of private

⁷⁵ These increases are expected to be relatively small, but will depend on the amount of GAF used in the charter fishery. Angler demand for GAF will ultimately determine its use.

sector business activity and public revenues). Also important to adverse community-level impact outcomes is the specific nature of local engagement in the potentially affected fisheries and alternative employment, business, and public revenue opportunities available within the community as a result of the location, scale, and relative economic diversity of the community.

The potential for beneficial community-level impacts from the proposed halibut CSP in any given community is in part a function of dependence of the community on the potentially affected halibut fisheries. For all communities whose has residents listed as the permit holder in the IFQ and charter fisheries that dependence is illustrated in Table 2-74. Dependency is influenced by the relative importance of each halibut fishery in the larger community fisheries sector(s), as well as the relative importance of the overall community fishery sector(s) within the larger community economic base (both in terms of private sector business activity and public revenues). Also important to beneficial community-level impact outcomes is the specific nature of local engagement in the potentially affected GOA halibut fisheries and alternative employment, business, and public revenue opportunities available within the community as a result of the location, scale, and relative economic diversity of the community.

Table 2-74 Graphic representation of annual average engagement in potentially affected Gulf groundfish and halibut fisheries for profiled Alaska communities

Community	Relative Community Size	Gulf Halibut Engagement	
		Local Commercial Halibut Quota Share Holders	Local Sport Charter Permit Holders
Anchorage	●	○	●
Homer	○	●	●
Ketchikan	○	○	●
Kodiak	○	●	●
Petersburg	○	●	•
Sitka	○	●	●

Key for Table

Type/Level of Engagement	•	○	●
Community Size	2010 population = less than 1,000	2010 population = 1,000 – 10,000	2010 population = greater than 10,000
GOA commercial Halibut Participation	2003-10 annual avg. = 0.1 – 49.9 QS holders	2003-10 annual avg. = 50.0 – 199.9 QS holders	2003-10 annual avg. = 200 or more QS holders
GOA Sport Charter Halibut Participation	2011 (only) = 1 – 19 permit holders	2011 (only) = 20 – 39 permit holders	2011 (only) = 40 or more permit holders

2.6.1.1 Potential Beneficial Impacts to GOA Communities Engaged in the Commercial Halibut Fishery

The levels of potential beneficial impacts to the commercial halibut fisheries in the relevant regulatory areas depend on the alternative selected and future CCLs. Based on the information from 2012, the charter catch limit would have been reduced from 931,000 lb under the GHL in 2012 to 633,000 lb under the 2012 PPA or 720,000 lb under Option 2. Relative to the GHL the charter catch limit would have been decreased by 298,000 lb under the 2012 PPA or 211,000 lb under Option 2. That fish would have been directly reallocated to the commercial sector. Based on the average Area 2C exvessel price, from 2011, of \$5.52/lb, those gains equate to an increase in IFQ holder exvessel revenue of about \$1.16 million to \$1.64 million. In Area 3A, estimates under Option 2 indicate the charter catch limit would have been reduced from 3.103 Mlbs under the GHL in 2012 to 2.343 Mlbs. under the 2012 PPA or 2.629 Mlbs. Relative to the GHL the charter catch limit would have been decreased by 758,000 lb under the 2012 PPA or 474,000 lb under Option 2. That fish would have been directly reallocated to the commercial sector. Using the average Area 3A exvessel price of \$5.43/lb from 2011, those gross exvessel revenue gains equate to an increase in IFQ holder exvessel revenue of about \$2.6 million to \$4.1 million. These estimates do not include benefits to the crew, processors of those fish, support industries that supply goods and services, consumers of commercially harvested halibut, or communities that receive fish tax revenue from the landings.

When spread among all commercial halibut operations in the area, including operations/vessels that are owned outside of Alaska, these increases are not likely to be significant at the community level for any of the participating Alaska communities (especially when paired with offsetting decreases in returns from the charter fisheries in some communities), although beneficial impacts may be evident to some at the individual operation level. Additionally, all things being equal, Area 2C and Area 3A QS values may be expected to increase, all else being equal, but the likely amount of this potential increase is unknown.

2.6.1.2 Potential Beneficial Impacts to GOA Communities Engaged in the Sport Charter Halibut Fishery

For the sport charter halibut sector the CSP alternatives are expected to only increase charter catch limits at higher levels of abundance. Benefits to the communities engaged in the charter fishery would occur if the CSP resulted in less restrictive bag limits than the GHL at higher levels of abundance. At lower levels of abundance the charter sector and communities engaged in charter fishing are not expected to have beneficial impacts.

Any increases are not likely to be significant at the community level for any of the participating Alaska communities (especially when paired with offsetting returns from the IFQ fisheries). Beneficial impacts may be evident to some individual operations at the higher halibut CCL levels. Beneficial impacts will be realized only if the increased allocation at higher CCL levels translates into greater demand for charter trips. Any increased demand would also be expected to increase the value of Gulf halibut sport charter permits held to some degree, but the likely amount of this potential increase, which would occur over time as fishery conditions change, is unknown.

2.6.1.3 Potential Beneficial Impacts to GOA Communities Engaged in the Subsistence Halibut Fishery

Locally important subsistence halibut fishing takes place in many GOA communities. Table 2-75 provides an overview of the distribution of Alaska subsistence halibut fishers by area; there were 26 Alaska communities whose residents had combined estimated subsistence halibut harvests of approximately 7,000 lbs or more (net weight) in 2010, and residents of these communities accounted for 88 percent of the total Alaska subsistence halibut harvest in that year (Alaska Department of Fish and Game 2011:14). Residents of the Kodiak area (including the city of Kodiak and areas of Kodiak Island

connected to it by road) ranked first with 21 percent of the total Alaska harvest and Sitka ranked second with about 10 percent; there were 68 other Alaska communities with at least one resident who participated in the subsistence halibut fishery in 2010 (Alaska Department of Fish and Game 2011:14).

Table 2-75 Alaska Halibut Subsistence Fishers, 2010

Tribe or Rural Community Area	Number of Fishers	Percent of Fishers
Area 2C (Southeast Alaska)	3,020	60.5%
Area 3A (Southcentral Alaska)	1,574	31.5%
Other Areas	397	8.0%
Total	4,991	100.0%

Source: Alaska Department of Fish and Game 2011

The changes to the commercial and charter catch limits are not expected to substantially affect the subsistence halibut fisheries in Areas 2C or Area 3A. The amount of halibut that is available for subsistence use in areas 2C and 3A are not expected to decline, given that halibut are allocated to subsistence users before the charter or IFQ catch limits are determined. To the extent that halibut CSP alters catch distribution in a manner that leads to improved halibut catch rates by subsistence users, they would benefit. If the changes in catch limits cause greater competition with subsistence users, negative impacts would be realized. A community that has been identified as heavily reliant on subsistence halibut is Sitka. Sitka has been characterized in past debates as a community that can be impacted by increased effort in near shore halibut fisheries. If charter trips are more likely to fish the same areas used by subsistence harvesters, negative impacts could be realized if the charter catch limits increased to the point subsistence catch rates were affected. However, because all of the CSP would decrease the charter catch limit, at low levels of halibut abundance, this effect is unlikely to occur. The same impact could be realized if commercial harvesters fished the same areas as the subsistence users.

2.6.1.4 Potential Beneficial Impacts to GOA Communities Engaged in the Unguided Sport Halibut Fishery

Like subsistence halibut fishing, unguided sport halibut fishing also takes place across a wide range of communities, but unlike subsistence halibut fishing, unguided sport halibut fishing also occurs at locally important levels in non-rural communities. While increased vitality of halibut stocks would benefit all user groups redistributing GOA halibut is assumed not to affect the amount of halibut that is available to the unguided sport sector in any of the regulatory areas, including areas 2C and 3A. Also like subsistence halibut fishing, to the extent that the action redistributes halibut fishing effort, unguided sport harvests could benefit. Benefits will be dependent on if the marginal allocation changes increase fishing effort in the locations most heavily utilized by unguided sport fishermen.

2.7 Analysis of Preliminary Preferred Alternative

2.7.1 Effects of allocation

The Preliminary Preferred Alternative would generate target harvests that are very similar to the allocations under 2008 Preferred Alternative but adjusted for switching to logbooks and eliminating crew harvest in Area 3A. Actual harvest will depend on the effectiveness of the bag limits implemented under the 2012 Approach. This primarily depends on the ability of ADF&G to predict future harvest under specific bag and size limits and adjust those limits to reflect the target catch limits.

The Council has stated that its objective is to keep total charter angler harvests at or below the sector's allocations. The Council previously considered and rejected using a five-year rolling average to determine if the charter sector had exceeded its allocation. The approach was dropped because of difficulties associated with using "old" data to manage current overages. In addition, concern over the accuracy of those data resulted in ADF&G reviewing its data collection programs. That review, in part, has resulted Council considering moving from SWHS to logbook harvests as a more timely data source.

2.7.2 Guided Angler Fish Program

In addition to identifying its selection of elements and options in its Preferred Alternative in 2008, the Council's motion also provided its rationale as to why it was important to include leasing of commercial IFQs as GAFs, after it selected its initial allocation between the sectors. The Council's first point was that a market based system was supported by the SSC and academic literature. The SSC indicated that a "market-based transferrable system is the only practical way to approach an optimal allocation over time." Noting that the initial allocations in Area 2C are unlikely to meet the precise needs of either sector, a provision for a market-based reallocation was thought to increase the probability of general acceptance and success of the program.

The second point made by the Council was that the use of GAFs was supported throughout the stakeholder process as a means to redistribute halibut after initial allocation. The Advisory Panel also voiced strong support for leasing. However, several charter operators weakly supported the leasing provision and some opposed it at, and since, the October 2008 meeting.

The Council noted that leasing provisions were universally supported by those community representatives, tribal representatives, representatives of CQEs, and conservation advocates that testified before the Council in October 2008. The commercial sector also voiced strong support for the leasing provision at that meeting. The Council felt that the limited support for leasing by some charter operators could be attributed to the lack of clarity at the time, of whether a one-fish bag limit would be implemented in Area 2C in the foreseeable future as a result of this action and the tense relationship between the sectors in some Area 2C communities. Council members felt that if charter operators knew that the Council would select the present components of this preferred alternative, they may have been more supportive of the GAF program. Council members also felt that the leasing provisions provide increased fishing opportunities for charter anglers. While the use of leased fish (GAF) would likely increase the cost of a trip, anglers who want the opportunity to harvest two fish per day in Area 2C would have that opportunity using GAF.

Leasing IFQ would provide commercial QS holders greater flexibility when developing their annual harvest strategy. Currently many QS holders are prohibited from leasing their IFQs. This program would allow Area 2C IFQ holders to lease 10 percent of their IFQ allocation or 1,500 lb (whichever is greater). For persons that are issued 1,500 lb or less of IFQ, they could lease their entire allocation. Area 3A IFQ holders to lease 15 percent of their IFQ allocation or 1,500 lb (whichever is greater). This new opportunity to lease their IFQs could provide greater economic benefits to them.

This analysis indicates that the cost recovery fee paid by the commercial sector would be used to cover the cost of the GAF program. CHP holders that lease the GAF would not be responsible for paying the cost recovery fee, since they do not generate exvessel revenue from the sale of halibut. Representatives of the commercial fleet, in 2008, have indicated that the fleet is willing to pay the cost of the GAF program through cost recovery. Members of the commercial fleet testified to the Council that they are willing to pay a larger percent of their exvessel revenue (it is limited to a maximum of 3 percent), if it is needed to fund the GAF program.

Arm's length contractual arrangements to lease IFQs would facilitate co-operative working relationships between sectors and may reduce current tensions. If both parties to the contract benefit from the arrangement, it could be expected to foster good working relationships. Over time, this cooperation could ease some of the tensions that developed in communities while this issue was debated.

Leasing insures better and timelier accounting. Tracking the use of GAF requires that individuals report GAF harvest through the NMFS approved electronic reporting system. Close to real time reporting is required to add and subtract fish from a CHP holder's GAF account so that NMFS management and enforcement staff know how many GAF are available to harvest with a specific CHP.

2.8 Net Benefit to the Nation

Based on the costs and benefits discussed in the RIR, any increase in net benefits to the Nation would be modest and net benefits may be negative. The relative consumer surplus in charter and commercial IFQ fisheries are expected to play the most significant role in the overall value of net benefits. However, the resolution of the struggle over apportionment of the available Pacific halibut CEY, between the commercial fixed-gear and charter fishing sectors, will enhance stability in both sectors over the long-run and help facilitate attainment of optimum yield for this high valued resource. Provision in this action of a “market-based” mechanism (albeit, not unconstrained), wherein willing buyers and willing sellers may negotiate mutually agreeable terms-of-trade, will facilitate the compensated redistribution of the resource to its highest and best short-term use, *ceteris paribus*. Changes in the total allocation and demand for “products” supplied by the respective sectors could impact income and employment, but redistribution of income and employment as a result of inter-sector competition for harvest-share should be reduced.

3 INITIAL REGULATORY FLEXIBILITY ANALYSIS

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.

This IRFA has been prepared instead of seeking certification. 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.

The RFA emphasizes predicting significant adverse economic impacts on small entities (e.g., businesses) as a group, distinct from other entities, which may result from regulations being proposed. Since the RFA is applicable to businesses, non-profit organizations, and governments, charter anglers fall outside of the scope of the RFA. Therefore, they will not be discussed in the RFA context. The focus of the RFA section is the charter halibut businesses and the commercial QS holders in Areas 2C and 3A.

The Pacific halibut resource is fully utilized by subsistence, personal-use, and unguided recreational users, as well as commercial and charter fishing operations in Areas 2C and 3A. The Council has adopted a GHF for the halibut charter sector, and a CHP on new entry into the halibut charter fishery. Those actions, however, have not resolved allocation issues between the charter sector and other users of the halibut resource. Concerns of reallocation between the commercial and charter halibut sectors still exist, and members of the commercial halibut sector are concerned about the stability of their access to the halibut resource. This action is expected to provide the basis for determining the initial commercial and charter allocations from a combined catch limit that would be determined by the IPHC, upon request of the Council.

A major motive in developing this program was to stabilize commercial and charter halibut harvests. Commercial halibut fishermen remain concerned that the charter fleet would erode their percentage of the harvest in the future. These concerns have created tension within communities that are dependent on both sectors exploiting the halibut resource. The Council believes that stabilizing the relative harvests of the two sectors would ease those tensions.

The allocation alternatives, based on historical charter harvests, would define the amount of halibut allocated to a charter sector common pool that would be accessible to all CHP holders. All licensed halibut businesses would be allowed to provide their clients the opportunity to harvest from that allocation. In the event the charter regulations in their area are more restrictive than the unguided angler regulations, CHP holders could lease GAF for their clients to use to harvest halibut under the same rules that govern the unguided halibut angler, exempting them from the more restrictive charter regulations.

3.1 Objective Statement of Proposed Action and its Legal Basis

The objective of the proposed action is to resolve harvest-share conflicts between the commercial and charter sectors of the halibut fishery in Area 2C and Area 3A (see section 1.3 for a list of the management objectives for this action). During the early 1990s, the charter fleet experienced substantial growth. Projections made in the mid-1990s, indicated that the charter fleet’s harvest of Pacific halibut could grow to a level equal to or greater than the commercial fleet’s catch in Areas 2C and 3A, by year 2008, if left unchecked. Those growth rates have not been realized, but charter harvests increased through 2008. In recent years charter harvests have declined relative to peak levels as a result of management measures in Area 2C and less favorable economic conditions affected both areas.

The Council stated its objective is to establish a catch sharing plan for the commercial and charter sectors. The charter sector’s allocation would be managed to ensure that charter halibut harvests stay within its allocation, on average. When establishing that allocation, the Council also considered the charter sector’s

need to have a stable in-season regulatory environment. Management of the charter sector is intended to ensure that it is given notice of management measures prior to the start of the fishing year using the 2012 model. The commercial IFQ program would be modified to allow the charter sector to lease commercial halibut IFQ. Leasing IFQ would allow the charter sector to grow, over the long term, but only when they compensate the commercial sector for the additional halibut taken.

The Halibut Act grants the Council authority to oversee allocations of the halibut fishery in Alaskan and federal waters. Setting overall removals of halibut is under the authority of the International Pacific Halibut Commission.

3.2 A description of small entities and an estimate of the number of small entities to which the proposed action will apply

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) and small government jurisdictions.

Section 601(3) of the RFA defines a “small business” as having the same meaning as “small business concern” which is defined under section 3 of the Small Business Act. “Small business” or “small business concern” includes any firm that is independently owned and operated and not dominate in its field of operation. The Small Business Act 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 percent participation by foreign business entities in the joint venture.”

The U.S. Small Business Administration (SBA) has developed size standards to carry out the purposes of the Small Business Act, and those size standards can be found in 13 CFR 121.201. The size standards are matched to North American Industry Classification System industries. A business involved in providing fishing charter services is a small business if it is independently owned and operated and not dominant in its field of operation and if it has combined annual receipts not in excess of \$7.0 million. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$4 million for all its affiliated operations worldwide. A business involved in both the commercial harvesting and processing of seafood products is a small business if it meets the \$4 million criterion for fish harvesting operations.

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 percent 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 has the power to control less than 50 percent 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 venturers if the ostensible subcontractor would 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.

3.2.1 Charter Fishery

Halibut charter businesses regulated under this action are all or are almost all expected to be small entities, based upon SBA criteria that their annual gross revenue, from all sources, does not exceed \$7.0 million. Exceptions to this assumption are the charter permits issued to MWR entities. These entities, due to their affiliation with the Federal Government are not considered either small or large entities. There are a total of three entities that hold seven MWR permits Eielson Air Force Base MWR, Seward Army Resort, and US Army Morale Welfare and Recreation (Ft Greely). The other exception would be lodges that hold CHPs and generate more than \$7 million in revenue. Because revenue data are not collected from these businesses, it is not possible to provide average business revenues. Instead general data are used to discuss why they are thought to meet the small entity classification.

In Area 2C, RAM data indicate there are 582 charter permits. Those vessels were held by 274 entities. Because revenue figures from individual charter “operators” are not available, the analysis attempts to provide an estimate.

Table 2-64 provides estimates of gross revenue earned by an average charter operator in Area 2C. The data indicates that an average permit holder would need to hold about 140 permits to generate \$7.0 million in gross revenue (from only the charter fees). Revenues from other sources, like food and lodging would reduce the number of permits needed to reach the \$7.0 million threshold. While it is not uncommon in this sector for a single entity to hold and operate multiple charter vessels, the analysis concludes that all operators are likely to be small businesses, based upon the \$7.0 million SBA threshold for RFA. The largest companies involved in the fishery are fishing lodges or resorts that offer accommodations, as well as an assortment of visitor activities, and may be large entities under the SBA size standard. Key informant interviews conducted for previous charter issues indicated that the absolute largest of these companies may gross more than \$7.0 million per year, but it is also possible that all of the entities involved in the charter halibut industry grossed less than that amount. This analysis is unable to verify these estimates.

Table 3-1 Charter Harvest Permits and permit holders

Permit Type	Number of Permits valid as of August 23, 2012	# of permit holders as of Aug 23, 2012	Avg # Permits / holder
CHP (Assumed to be small entity)	537	262	2.0
CQE (small entity)	44	11	4.0
MWR (Neither large or small entity)	1	1	1.0
2C Total	582	274	2.1
2C Charter Small Entities	581	273	2.1
CHP (Assumed to be small entity)	441	317	1.4
CQE (small entity)	56	8	7.0
MWR (Neither large or small entity)	6	3	2.0
3A Total	503	328	1.5
3A Charter Small Entities	493	325	1.5
All Total	1,085	596	1.8
Total Charter Small Entities	1,074	588	1.8

Source: RAM CHP data August 2012

In Area 3A, RAM data show that there were 503 charter permits in August 2012. Those vessels were operated by 328 different entities. As in Area 2C, revenue figures from individual charter operators are not available. The analysis deduces that all single-vessel operators are likely small businesses based on their ability to generate revenue. Table 2-66 indicates that the average vessel generates about \$62,000 in gross revenue. To reach the \$7.0 million threshold a permit holder would need about 110 permits. There is no business in the affected area operating this many vessels. Thus, the analysis concludes that most operators are likely to be small businesses.

Because five small entities held permits in both Area 2C and Area 3A and three were not considered small entities, there are a total of 588 small entities in the charter fishery. Nineteen of those entities represent CQE communities. The remaining 569 entities are holders of “regular” CHPs.

3.2.2 Commercial fishery

Businesses operating in the commercial halibut sector would be directly regulated by this action. Halibut IFQ holders are directly regulated by the Council requesting the IPHC to implement a combined catch limit. This action creates a single pool of fish from which the two commercial (i.e., setline and charter) sectors would harvest halibut in Area 2C and Area 3A. Halibut QS holders would also be directly regulated by allowing Area 2C and Area 3A commercial QS holders to lease IFQ to the charter sector as GAF. Finally, **all halibut and sablefish QS holders in Alaska would be directly regulated**, because they would be required to pay the cost recovery fee to help cover the costs of the management of the IFQ/GAF programs.

The preferred alternative could directly regulate as many as 2,666 halibut QS holders and 839 sablefish QS holders (RAM data); however, the actual number of such entities that may be directly regulated is 2,899, because some individuals hold both types of QS. Persons only holding CDQ allocations would not be included under this cost recovery program and are excluded from the counts above.

An AKFIN summary of 2010 vessel level data indicates that 65 IFQ vessels would not have met the small entity definition, either because they exceeded the \$4.0 million threshold or through their affiliation with other entities. This is the most recent year revenue data are available. Assuming those same revenue and

affiliation levels continue through 2012, it means the remaining 2,824 vessels would have been classified as small entities.

Table 2-58 indicates that 23 individuals hold both CHP and QS. All these individuals would be considered small entities. Based on the information presented above, and not double counting persons that hold both CHPs and QS, there are an estimated 3,370 small charter or IFQ entities affected by this action.

Small Organizations

The RFA defines “small organizations” as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. Community Quota Entities (CQE) are included in this category. CQEs were created to administer IFQ for the rural Alaska communities defined under 50 CFR 300.65(g)(1). Not all of the communities eligible to create a CQE have taken advantage of that option. The communities that have formed a CQE, as of August 2012, are listed in Table 2-15. That table indicates that 11 CQEs have been formed in Area 2C and eight in Area 3A. Each community holds the maximum number of CQE permits, so a total of 100 permits have been issued for use in these communities. These 19 communities could benefit from the more liberal GAF and IFQ transfer provisions afforded CQEs as part of this amendment. Ten additional rural Alaska communities defined at 50 CFR 300.65(g)(1) could also take advantage of these provisions, if they determine it is beneficial and form a CQE.

Table 3-2 Area 2C and Area 3A communities that have formed CQEs.

Area 2C	Area 3A
Hydaburg	Larsen Bay
Pelican	Ouzinkie
Hoonah	Old Harbor
Angoon	Chenega Bay
Thorne Bay	Port Graham
Coffman Cove	Seldovia
Edna Bay	Nanwalek
Point Baker	Port Lions
Port Alexander	
Port Protection	
Whale Pass	

3.3 Recordkeeping requirements

Common pool allocations would continue to be managed using the Saltwater Logbook reporting system developed by ADF&G. Data to estimate annual removals from the common pool do not need to be collected and entered in the management database daily to ensure regulations are followed. The Saltwater Logbook does require that the information for each trip or day of fishing be completed before the halibut are offloaded. Therefore, the logbook system that requires weekly reports on the number of paying clients, “comp’ed” clients, and their harvest has been determined to be sufficient to track and enforce the common pool allocation. Real time completion of the logbook would allow enforcement and sampling officials to verify catch by angler on a specific trip.

The GAF allocation would need to be managed in real time, using an IFQ style electronic reporting system. The Council intends that NMFS would implement a reporting system to collect data from all

persons that obtain or use GAF. As close to real time data as possible are needed to allow fishery managers and enforcement officers to know, at a given time, how many GAF a person holds and how many they have used. The costs to the CHP holders are not expected to increase dramatically under the common pool structure. The GAF may increase costs, but the program is voluntary and CHP holders can weigh their own costs and benefits of participating in the program. NMFS would implement a GAF electronic reporting system for charter operators to complete a landing report for the number of GAF retained each calendar day. This daily reporting requirement would enable immediate confirmation that adequate GAF exist in the account to cover the landing and afford the charter operator instant access to updated account information. Charter operators reporting retained GAF would incur hardware, software, and Internet access costs to log on to the reporting system via the NMFS Alaska Region web site. NMFS estimates that it would take 18 minutes to submit a GAF landing report. Assuming a personnel cost of \$25 per hour, the cost burden for the industry to complete a GAF landing report is estimated to be \$7.50 per trip. The professional skills that would be necessary for a charter operator reporting GAF include basic computer and data entry skills.

There are unique monitoring and enforcement implications for each of the two types of “charter halibut” under the proposed alternative: common pool and GAFs. The Council has stated its intent that the common pool be monitored using ADF&G data (either SWHS or logbook data, whichever is determined to be the best scientific information available). Port samplers and enforcement personnel would be allowed on private property to inspect GAF landings. This alters the current regulations that limit port samplers and enforcement personnel access to charter landings that occur on private property. The Council also intends that length measurements of GAFs be collected by port samplers for accurate accounting.

3.4 Identification of Relevant Federal Rules that May Duplicate, Overlap or Conflict with the Proposed Actions

The GHL is currently used to define a target charter harvest level in Areas 2C and 3A. Implementation of 2012 Approach, proposed by the Council, would supersede the GHL by setting a target harvest amount for the charter sector common pool based on a percentage of the combined charter and setline catch limit. That target harvest amount would replace the GHL. The NMFS would remove the GHL program and the one fish bag limit from regulation if the common pool allocation is implemented.

The proposed GAF program would require NMFS to amend the commercial IFQ regulations to allow commercial IFQ holders in Areas 2C and 3A to lease commercial halibut IFQ to CHP holders. Leasing of commercial IFQ is currently limited to specific cases that are not covered under the preferred alternative. Expansion of the leasing provisions would be strictly limited to transfers between IFQ permit holders and CHP holders. Current leasing restrictions would need to be modified to allow limited transfers to charter CHP holders.

This analysis did not identify any additional measures that may duplicate, overlap or conflict with the proposed actions.

3.5 Description of Alternatives to the Proposed Action that Would Accomplish the Stated Objectives of the MFCMA and Would Minimize any Negative Economic Impacts on Small Entities

The objective of this action, as discussed in section 1.3, is to develop a catch sharing plan that limits both the commercial setline fishery and the charter anglers to a predetermined amount of a combined catch limit that is set annually by the IPHC. This analysis examined multiple alternatives, including (1) the status quo, (2) Alternative 2, which contains multiple options under six primary decision elements to allocate a combined catch limit between the commercial setline fishery and charter fishery in Areas 2C and 3A and allow the leasing of commercial IFQs by CHP holders, so that their clients could fish under

regulations for unguided anglers, and (3) the Preferred Alternative to set (i) an initial allocation between the sectors in each area, (ii) specific management measures that to manage the fishery would be constructed annually based on the 2012 Approach, and (iii) a Guided Angler Fish program to allow leased commercial IFQs to expand charter angler fishing opportunities.

The Council and NMFS have considered and rejected numerous alternatives to achieve the objectives of this action (to allocate halibut catch between the charter and commercial setline fisheries). The history of the GHL program and its ineffectiveness (until 2009) at limiting halibut harvest to the GHL in Area 2C are described briefly in Sections 2.3 and 2.4. The Council approved a charter IFQ program in April 2001, but rescinded the program in 2005, before it was implemented. Since that time the Council has implemented the GHL program and numerous amendments to limit growth in the charter sector. Management options previously considered but included seasonal closures, size limits, daily bag limits, annual bag limits, restrictions on the number of trips that a firm could take in a year, and limits on the number clients a firm could allow to harvest halibut from each vessel. Each of these alternatives has been rejected, because they were deemed to be ineffective or imposed unnecessary negative economic impacts (primarily on small entities). For example, some measures considered would allow inseason management changes in the charter sector that could create logistical problems when booking clients or economic burdens associated with refunding deposits, if the bag limits or size limits change inseason. The preferred alternative eliminates inseason management changes and the need for additional regulatory amendments, while achieving the objectives identified for the action. Indeed, no other alternative identified by the Council appeared to have the potential to accomplish the goals set out for this action, while minimizing the adverse economic impacts on directly regulated small entities, when compared to the proposed action.

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5 LIST OF PREPARERS

Jane DiCosimo and Mark Fina
North Pacific Fishery Management Council
605 West 4th Avenue, Suite 306
Anchorage, AK 99501

Darrell Brannan
17307 SE CR 234
Micanopy, FL 32667

Jonathan King
Northern Economics
880 H. Street, Suite 210
Anchorage, AK 99501

Scott Meyer
Alaska Department of Fish and Game
Homer, AK

Rachel Baker, Dr. Ben Muse, Jason Gasper
NMFS Alaska Region
709 W. 9th St.
Juneau, AK 99802-1668

Dr. Lewis Queirolo
NMFS Alaska Region
440 Eagle Crest Rd.
Camano Island, WA 98282

Gregg Williams, Dr. Bruce Leaman, Dr. Steven Hare
International Pacific Halibut Commission
2320 W. Commodore Way Suite 300
Seattle, WA 98199-1287

Kerim Aydin, PH.D., Sarah Gaichas, Ph.D.
NMFS Alaska Fisheries Science Center
7600 Sand Point Way, Bldg. 4
Seattle, WA 98115

6 INDIVIDUALS CONSULTED

Sue Salvesson, Jay Ginter, Jessica Gharrett,
Tracy Buck, Peggy Murphy
National Marine Fisheries Service
Juneau, Alaska

Tom Pearson
NMFS SF
Kodiak, Alaska

Jeff Passer, Ron Antaya, Kevin Heck
NOAA Office of Law Enforcement
Juneau, Alaska

John Lepore, Susan Auer, Maura Sullivan,
Jonathan Pollard
NOAA Office of General Counsel
Juneau, Alaska

Ken Goldman, Charlie Trowbridge, Willy Dunne
ADF&G Commercial Fisheries
Homer, Alaska

Cleo Brylinksy
ADF&G Commercial Fisheries
Sitka, Alaska

Nick Sagalkin
ADF&G Commercial Fisheries
Kodiak, Alaska

Sue Aspelund, Stefanie Moreland
ADF&G Commercial Fisheries
Juneau, Alaska

Nicole Kimball
Alaska Department of Fish and Game
Anchorage, AK

APPENDIX A: COMMUNITY PROFILES

COMMUNITY ASSESSMENT

This community assessment analyzes the community or regional components of changes associated with the implementation of halibut catch sharing plan for Area 2C and 3A. The analysis contains quantitative data on fishery participation and primarily a qualitative analysis of impacts. For the purposes of this analysis, assignment of IFQ QS and CHPs (and CQE permits) to a region or community has been made based upon ownership address information as listed in the National Oceanic Atmospheric Administration (NOAA) Restricted Access Management Division data (both QS and charter permit holders). Ownership location does not directly indicate where profits accrue, services are purchased, or crew reside. The region or community of ownership, however, does provide a rough indicator of the nature of ownership ties (and a proxy for associated economic activity, as no existing datasets provide information on where GOA halibut revenues are spent).

For shore-based processors, regional or community designation was based on the location of the plant itself (rather than ownership address) to provide a relative indicator of the local volume of fishery-related economic activity, which can also serve as a rough proxy for the relative level of associated employment and local government revenues. This is also consistent with other recent NPFMC FMP social impact assessment practice.

There are, however, substantial limitations on the data that can be utilized for these purposes, based on confidentiality restrictions. A prime example of this is where a community is the site of a single processor, or even two or three processors.¹ No information can be disclosed about the volume and/or value of landings in those communities. This, obviously, severely limits quantitative discussions of the potential impacts of the GOA halibut PSC reduction alternatives. In short, the frame of reference or unit of analysis for the discussion in this section is the individual sector, and the analysis looks at how participation in fisheries most likely to be affected by the proposed management actions has been differentially distributed across communities and regions within this framework. The practicalities of data limitations, however, serve to restrict this discussion.

The second approach to producing this community analysis involved selecting a subset of Alaska communities engaged in the halibut fisheries for characterization to describe the range, direction, and order of magnitude of social- and community-level engagement and dependency on those fisheries. The approach of using a subset of communities rather than attempting characterization of all of the communities in the region(s) involved was chosen due to the practicalities of time and resource constraints. Further, this characterization was initially undertaken with existing information only and did not involve fieldwork in any of the communities, which served to limit a detailed understanding of the current and oft-changing dynamic interaction of the specific public and private subsectors or groups of resource users likely to be directly or indirectly affected by the proposed action or alternatives in any given community.

The total set of communities engaged in the Area 2C and Area 3A halibut fisheries is numerous and heterogeneous. Communities (and types of potential impacts) vary based upon the type of engagement of the individual community in the IFQ and charter fisheries. This approach examines, within the community or region, the local nature of engagement or dependence on the fishery in terms of the various sectors present in the

¹ The number of data points that need to be lumped to comply with data confidentiality restrictions varies by data source. The CFEC requires aggregation of four data points to permit reporting of what would otherwise be confidential data, while virtually all other data sources require the aggregation of three data points to permit disclosure. In this section, because several data sources draw at least in part on CFEC data, volume and value data are presented only when four or more data points are aggregated.

community and the relationship of those sectors (in terms of size and composition, among other factors) to the rest of the local social and economic context. This approach then qualitatively provides a context for potential community impacts that may occur as a result of fishery management-associated changes to the locally present sectors in combination with other community-specific attributes and socioeconomic characteristics.

Simplifying assumptions also needed to be made as to which communities to include in the profiles, given the large number of communities participating in the fisheries, the desire to focus on the communities most engaged in/dependent on the relevant fisheries (and therefore most likely to be directly affected by proposed management actions), and a recognition that communities with multi-sector activity would likely be most vulnerable to adverse impacts related to the potential fishery management changes. As a result, the communities selected for inclusion in the set of community profiles were a subset of Alaska communities that had both Charter and IFQ activity.

- Anchorage²
- Homer
- Ketchikan
- Kodiak
- Petersburg
- Sitka

These Alaska communities were selected because of their proximity to the Area 2C and Area 3A halibut regulatory areas and their dependence on the halibut resource. Their variation in location, size, relative participation in halibut fisheries, and structure provides contrast. While other communities could have been selected based on their participation in either the charter or IFQ fishery, these communities tend to be active in both.

COMMERCIAL FISHERY

Information on the distribution of commercial halibut quota share (QS) holders under the halibut Individual Fishing Quota (IFQ) program in areas 2C and 3A is presented in Table 1. The information in that table is from the most recent 2012 RAM data file. It indicates that halibut QS is held by persons from many states, but QS holding are concentrated in Alaska and Washington. As shown, 1,385 of 1,697 Area 2C halibut QS holders are reported to have an Alaska address. These QS holders held 82.8 percent of the Area 2C QS. In Area 3A, persons reporting an Alaska address held 60.5 percent of the QS. Persons reporting a Washington address held 24.6 percent of the QS. Combined Alaska and Washington QS holders held over 85 percent of the Area 3A QS.

² The Anchorage community profile is based upon the Municipality of Anchorage, which encompasses a number of communities/named places within its boundaries, including, among others, Girdwood and Eagle River. Some QS data are reported separately for Anchorage, Girdwood, and Eagle River. It has the more IFQ holders than all of the cities excluded from the profile, except Juneau.

TABLE 1 AREA 2C AND AREA 3A HALIBUT QS HOLDERS AND PERCENTAGE OF QS HELD BY STATE OR REGION

State/Other	Area 2C		Area 3A	
	QS Holders	% of QS Held	QS Holders	% of QS Held
AB		0.0%	2	0.1%
AK	1,385	82.8%	1,643	60.5%
AR	1	0.0%		0.0%
AZ	2	0.1%	11	0.3%
BC		0.0%	1	0.0%
CA	7	0.2%	32	2.5%
CO	3	0.0%	6	0.6%
FL	8	0.4%	6	0.2%
HI	4	0.1%	6	0.7%
IA		0.0%	6	0.1%
ID	7	0.6%	4	0.0%
KY		0.0%	1	0.0%
MA		0.0%	1	0.0%
ME	1	0.0%	1	0.0%
MI	7	0.3%	4	0.0%
MN		0.0%	6	0.4%
MO	1	0.1%		0.0%
MS		0.0%	4	0.4%
MT	3	0.2%	7	0.4%
NC		0.0%	2	0.0%
ND		0.0%	1	0.0%
NH		0.0%	1	0.0%
NJ		0.0%	1	0.0%
NM		0.0%	3	0.2%
NV	4	0.7%	4	0.4%
NY	1	0.0%		0.0%
OH	1	0.1%		0.0%
OK		0.0%	3	0.1%
OR	32	2.1%	118	8.0%
PA		0.0%	1	0.0%
SD	3	0.1%	2	0.1%
TX		0.0%	1	0.0%
UT	3	0.2%	3	0.2%
VA		0.0%	1	0.0%
VI		0.0%	1	0.0%
VT	1	0.0%	1	0.0%
WA	222	11.8%	299	24.6%
WI	1	0.0%	3	0.0%
WY		0.0%	2	0.0%
Total	1,697	100.0%	2,188	100.0%

Source: RAM 2012 QS holder data

Table 2 provides parallel information, but expressed in terms of Alaska community holdings rather than state holdings. In Area 2C, 329 QS holders listing a Petersburg address held 26.8 percent of the QS and 319 QS holders from Sitka held 17.7 percent of the QS. No other community was reported to have more than 10 percent of the Area 2C QS held by residents. In Area 3A, 279 QS holders listing a Kodiak address held 16.4 percent of the QS and 270 QS holders from Homer held 8.3 percent of the QS. No other community was reported to have more than 5 percent of the QS held by residents.

TABLE 2 AREA 2C AND AREA 3A HALIBUT QS HOLDERS BY ALASKA COMMUNITY

City	Area 2C		Area 3A		City	Area 2C		Area 3A	
	QS Holders	% of QS Held	QS Holders	% of QS Held		QS Holders	% of QS Held	QS Holders	% of QS Held
ANCHOR POINT		0.0%	17	0.4%	MEKORYUK		0.0%	2	0.2%
ANCHORAGE	5	0.3%	116	3.2%	METLAKATLA	10	0.5%		0.0%
ANDERSON		0.0%	2	0.0%	MEYERS CHUCK	1	0.0%		0.0%
ANGOON	9	0.3%		0.0%	MOOSE PASS		0.0%	2	0.0%
AUKE BAY	20	1.2%	7	0.2%	NAKNEK	2	0.0%	1	0.0%
CENTRAL		0.0%	2	0.0%	NIKISKI		0.0%	5	0.1%
CHENEGA BAY		0.0%	1	0.0%	NIKOLAEVSK		0.0%	13	0.3%
CHIGNIK LAGOON		0.0%	1	0.0%	NINILCHIK		0.0%	10	0.2%
CHINIAK		0.0%	2	0.1%	NOME	1	0.0%	1	0.1%
CHUGIAK		0.0%	2	0.0%	NORTH POLE		0.0%	2	0.1%
CLAM GULCH		0.0%	12	0.3%	OLD HARBOR		0.0%	6	0.1%
COFFMAN COVE		0.0%	1	0.1%	OUZINKIE		0.0%	14	0.3%
COPPER CENTER		0.0%	1	0.0%	PALMER		0.0%	13	0.4%
CORDOVA	3	0.0%	109	3.7%	PELICAN	10	1.1%	6	0.1%
CRAIG	58	2.8%		0.0%	PETERSBURG	329	26.8%	85	6.6%
DELTA JUNCTION		0.0%	15	0.6%	PILOT POINT	1	0.0%		0.0%
DILLINGHAM	3	0.0%	4	0.4%	POINT BAKER	10	0.2%		0.0%
DOUGLAS	21	1.9%	15	0.7%	PORT ALEXANDER	5	0.1%	1	0.0%
DUTCH HARBOR		0.0%	2	0.0%	PORT GRAHAM		0.0%	3	0.0%
EAGLE RIVER	1	0.0%	22	1.3%	PORT LIONS		0.0%	8	0.1%
EDNA BAY	7	0.4%		0.0%	SAINT GEORGE ISLAND	1	0.0%	1	0.0%
ELFIN COVE	24	1.1%	6	0.1%	SAINT PAUL ISLAND	1	0.0%	1	0.0%
ELMENDORF AFB		0.0%	1	0.0%	SALCHA		0.0%	1	0.0%
FAIRBANKS	4	0.1%	8	0.0%	SAND POINT		0.0%	1	0.0%
FRITZ CREEK	2	0.1%	10	0.3%	SELDOVIA		0.0%	26	1.4%
GALENA	1	0.0%		0.0%	SEWARD	2	0.0%	46	1.8%
GIRDWOOD		0.0%	6	0.0%	SITKA	319	17.7%	128	3.8%
GUSTAVUS	15	0.7%	5	0.1%	SKAGWAY	2	0.0%		0.0%
HAINES	63	3.0%	14	0.3%	SOLDOTNA		0.0%	49	1.1%
HALIBUT COVE		0.0%	5	0.2%	SOUTH NAKNEK	1	0.0%	1	0.0%
HOMER	5	0.1%	270	8.3%	STERLING		0.0%	9	0.1%
HOONAH	28	1.3%	7	0.2%	TENAKEE SPRINGS	2	0.0%	3	0.1%
HYDABURG	6	0.1%		0.0%	THORNE BAY	7	0.2%		0.0%
HYDER	2	0.0%		0.0%	TOGIAK	5	0.0%	1	0.0%
INDIAN		0.0%	1	0.0%	TWIN HILLS	1	0.0%	1	0.0%
JUNEAU	162	8.5%	48	1.8%	VALDEZ		0.0%	21	0.3%
KAKE	20	1.2%		0.0%	WARD COVE	17	0.7%		0.0%
KASILOF	1	0.0%	24	0.5%	WASILLA	5	0.2%	28	0.8%
KENAI	2	0.0%	63	1.6%	WHITTIER		0.0%	1	0.0%
KETCHIKAN	82	4.5%	7	0.4%	WILLOW		0.0%	8	0.2%
KLAWOCK	5	0.0%	2	0.1%	WRANGELL	98	7.7%	11	0.3%
KODIAK	3	0.0%	279	16.4%	YAKUTAT	1	0.0%	45	0.7%
MANOKOTAK	2	0.0%	2	0.0%	Total	1,385	82.8%	1,643	60.5%

Table 3 identifies the top ten Alaska ports in which IFQ halibut were landed. During 2009 the top four ports remained unchanged, while the four ports of Sitka, Juneau, and Petersburg declined in their rankings. Cordova increased in the rankings to tenth. Alaska has steadily decreased; primary “outside” ports include Seattle and Bellingham.

TABLE 3 TOP TEN ALASKA IFQ HALIBUT PORTS IN RANK ORDER FOR 2011 PERFORMANCE

Port ^a	2011 Net pounds ^{b,c,d}	2011 Percent total Landed ^{c,d}	2011 Rank	2010 Rank	2009 Rank	2008 Rank	2007 Rank	2006 Rank	2005 Rank
Homer	5,602,098	18.91	1	1	1	1	1	1	1
Kodiak	5,556,759	18.76	2	2	2	2	2	2	2
Seward	3,503,326	3.99	3	3	3	3	3	3	3
Dutch/Unalaska	2,759,320	9.31	4	4	4	4	5	5	4
Sand Point	*	*	5	7	10	5	8	8	8
Sitka	1,301,520	0.04	6	5	5	6	4	4	5
Akutan	*	*	7	10	8	9	11	14	13
Juneau	1,069,186	3.61	8	6	6	8	7	6	6
Petersburg	920,944	3.11	9	8	7	7	6	7	7
Cordova	876,310	2.96	10	12	11	11	10	10	9
All ports	29,623,468	100	NA ^e						

^a "All ports" includes all ports used by the fleet.

^b Halibut weights are in net (headed and gutted) pounds.

^c Asterisk represents confidential data.

^d Sum includes all port data.

^e NA = nonapplicable

GOA HALIBUT SPORT FISHERY

Table 4 provides information on the number of sport charter halibut permit holders, permits by area (2C and 3A), and total permits held by owner's community for 2012 by state and Alaska community are reported. As suggested by the large number of communities represented by permit holders whose permanent mailing address, CHPs, CQEs, and MWR permits are widely held across a number of Alaska communities, although there is not an insignificant number of permit holders in any of the communities profiled in this analysis.

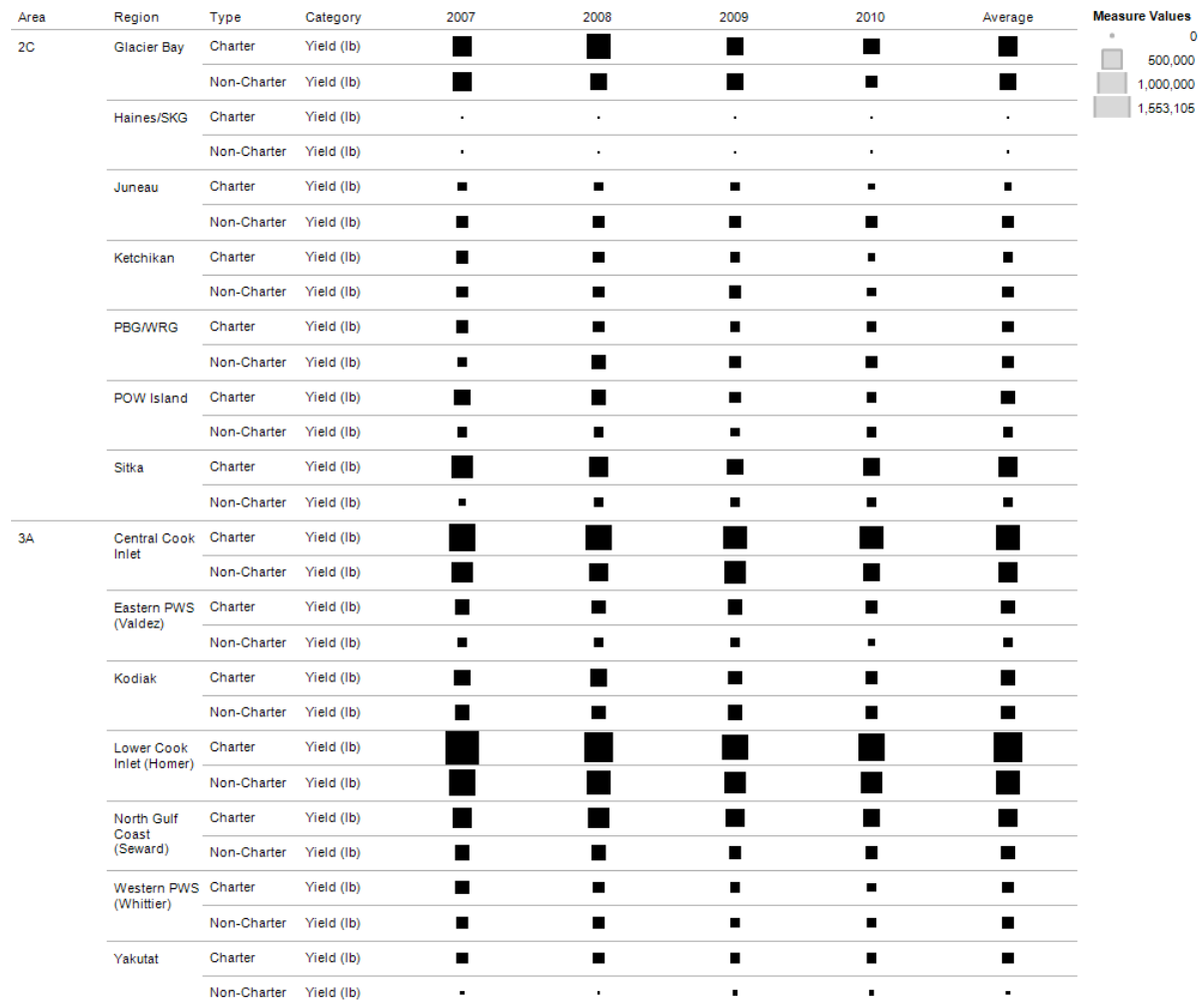
TABLE 4 SPORT CHARTER HALIBUT FISHING PERMITS, AREAS 2C AND 3A, 2012

Area 2C				Area 3A			
State	CHPs	AK Community	CHP	State	CHPs	AK Community	CHP
AK	492	ANGOON	14	AK	472	ANCHOR POINT	18
AR	2	AUKE BAY	14	CA	5	ANCHORAGE	55
AZ	3	COFFMAN COVE	7	CO	3	ANDERSON	1
CA	6	CRAIG	48	ID	2	ANIAK	1
CO	2	EDNA BAY	4	MN	4	BIG LAKE	2
FL	1	EIELSON AFB	1	MO	2	CHUGIAK	3
GA	2	ELFIN COVE	16	OR	2	CLAM GULCH	3
HI	1	FRITZ CREEK	1	TX	1	CORDOVA	3
ID	3	GUSTAVUS	4	UT	1	EAGLE RIVER	3
LA	1	HAINES	2	WA	10	EIELSON AFB	1
ME	1	HOONAH	9	WY	1	ELFIN COVE	7
OR	7	HYDABURG	4	Total	503	FAIRBANKS	2
PA	1	JUNEAU	22			FORT GREELY	1
SD	2	KETCHIKAN	119			FRITZ CREEK	1
UT	21	KLAWOCK	12			GIRDWOOD	1
VA	1	NAUKATI BAY	1			HOMER	65
WA	36	PALMER	1			JUNEAU	1
Total	582	PELICAN	9			KASILOF	4
		PETERSBURG	15			KENAI	6
		POINT BAKER	8			KODIAK	70
		PORT ALEXANDER	8			LARSEN BAY	8
		SITKA	142			MOOSE PASS	1
		SOLDOTNA	3			NANWALEK	7
		TENAKEE SPRINGS	2			NINILCHIK	31
		THORNE BAY	8			NORTH POLE	4
		WARD COVE	9			OLD HARBOR	3
		WASILLA	1			OUZINKIE	8
		WHALE PASS	4			PALMER	4
		WRANGELL	4			PEDRO BAY	1
		Total	492			PORT GRAHAM	7
						PORT LIONS	13
						SALCHA	1
						SELDOVIA	8
						SEWARD	47
						SITKA	3
						SOLDOTNA	38
						STERLING	4
						VALDEZ	12
						WASILLA	7
						WHITTIER	6
						YAKUTAT	11
						Total	472

Source: RAM CHP data

Figure 1 provides information on sport halibut harvest for areas 2C and 3A, by charter and non-charter vessels, in terms of the number of fish harvested, the average weight per fish, and the total yield (millions of pounds of halibut), for each year 2003-2010 and the annual averages 2003-2010 for each of those variables. Figure 1 provides a graphic representation of sport charter and non-charter harvest by subarea within areas 2C and 3A for 2007-2010 as well as an annual average for those years for an easy comparison of the size of the yield for charter and non-charter catch within any particular subarea as well as between subareas.

FIGURE 1 SPORT HALIBUT CHARTER AND NON-CHARTER HARVEST BY AREA AND COMMUNITY: TOTAL YIELD (LBS), 2007-2010



Source: NMFS. 2012a. Sport Halibut Management; Guided Sport Halibut: ADF&G Charter Halibut Harvest Data 2007-2010. <http://www.fakr.noaa.gov/sustainablefisheries/halibut/sport.htm>

Embedded in the in the totals above are permits held by CQEs. These permits are held by an entity representing the community and permits are made available to individuals within the community, or under limitations neighboring communities, to use to provide economic opportunities. Eleven entities representing the communities of Angoon, Coffman Cove, Edna Bay, Hoonah, Hydaburg, Pelican, Point Baker, Port Alexander, Port Protection, Thorne Bay, and Whale Pass each hold four CQE permits for Area 2C (see Table 2-15 of RIR). An additional seven Area 2C communities are eligible for the CQE permits. Eight entities representing the communities of Old Harbor, Chenega Bay, Seldovia, Larsen Bay, Nanwalek, Ouzinkie, Port Graham, and Port Lions each hold seven CQE permits for Area 3A. Six additional Area 3A communities are eligible to apply for CQE permits. If all the currently issued permits are active they would provide opportunities for 100 charter operators to be active at any given time. Whether the permits are all active is dependent on the communities being able to attract charter clients to their remote locations. The issues associated with attracting clients and restrictions on CQE usage are discussed in detail in the FR notice (www.fakr.noaa.gov/frules/75fr554.pdf).

Table 5 reports the top 10 ports in Area 2C and Area 3A based on charter trips in 2009. The communities are listed as reported in the SL_PORTSITE³ in AKFIN database of ADF&G logbooks, except Waterfall was added to Ketchikan. Some of the ports represent similar geographic areas (e.g., Juneau and Auke Bay). This information was presented to provide similar information to the top 10 landings ports for the IFQ fishery.

The information in the table indicates fairly consistent rankings over the 2005 through 2009 fishing years. Communities that are dependent on charter fishing have fairly consistent levels of participation relative to other communities. When overall trip numbers decline, for most communities in 2009, the declines are typically realized by all communities that are home to charter businesses.

TABLE 5 TOP 10 AREA 2C AND AREA 3A PORTS FOR HALIBUT CHARTER TRIPS IN 2009

Area 2C						Area 3A					
Community	2005	2006	2007	2008	2009	Community	2005	2006	2007	2008	2009
SITKA	6,208	7,249	7,506	7,152	4,961	HOMER	6,729	6,882	7,061	6,201	5,106
KETCHIKAN	2,456	2,846	4,102	4,461	3,339	DEEP CREEK	3,563	4,088	4,283	4,155	3,145
CRAIG	1,656	2,131	2,331	2,230	1,257	SEWARD	3,458	3,742	4,300	4,143	3,137
GUSTAVUS	914	890	1,096	1,136	1,065	ANCHOR POINT	2,025	1,587	1,675	1,385	1,426
ELFIN COVE	1,074	1,190	1,115	1,234	832	KODIAK	981	1,053	1,215	1,267	874
AUKE BAY	460	544	580	574	675	VALDEZ	1,153	1,050	1,022	868	838
PETERSBURG	741	646	677	647	574	WHITTIER	600	554	648	697	580
HOONAH	156	509	563	501	378	YAKUTAT	703	695	674	702	518
YES BAY	170	287	331	401	299	LARSEN BAY	291	445	497	444	452
JUNEAU	262	310	246	250	292	NINILCHIK	578	503	439	479	348

Note: Ketchikan includes Waterfall

Table 6 compares the information presented in the previous sections. This table allows direct comparisons of the percentage of QS and CHP ownership by community. The general trend is that communities that are home to owners of QS are also home to owners of CHPs. This indicates that many communities derive benefits from both the IFQ fishery and the charter fishery. Communities whose residents derive limited benefits from the IFQ sector also derive limited benefits from the charter sector, and vice versa.

³ This is the port site listed in the logbooks.

TABLE 6 COMPARISON OF QUOTA SHARE AND CHP OWNERSHIP BY COMMUNITY

City	Area 2C				Area 3A			
	QS Holders	% of QS Held	CHPs	% of CHPs Held	QS Holders	% of QS Held	CHPs	% of CHPs Held
ANCHOR POINT		0.0%		0.0%	17	0.4%	18	3.8%
ANCHORAGE	5	0.3%		0.0%	116	3.2%	55	11.6%
ANDERSON		0.0%		0.0%	2	0.0%	1	0.2%
ANGOON	9	0.3%	14	2.8%		0.0%		0.0%
ANIAK				0.0%			1	0.2%
AUKE BAY	20	1.2%	14	2.8%	7	0.2%		0.0%
BIG LAKE				0.0%			2	0.4%
CENTRAL		0.0%			2	0.0%		
CHENEGA BAY		0.0%			1	0.0%		
CHIGNIK LAGOON		0.0%			1	0.0%		
CHINIAK		0.0%			2	0.1%		
CHUGIAK		0.0%		0.0%	2	0.0%	3	0.7%
CLAM GULCH		0.0%		0.0%	12	0.3%	3	0.6%
COFFMAN COVE		0.0%	7	1.5%	1	0.1%		0.0%
COPPER CENTER		0.0%			1	0.0%		
CORDOVA	3	0.0%		0.0%	109	3.7%	3	0.7%
CRAIG	58	2.8%	48	9.6%		0.0%		0.0%
DELTA JUNCTION		0.0%			15	0.6%		
DILLINGHAM	3	0.0%			4	0.4%		
DOUGLAS	21	1.9%			15	0.7%		
DUTCH HARBOR		0.0%			2	0.0%		
EAGLE RIVER	1	0.0%		0.0%	22	1.3%	3	0.6%
EDNA BAY	7	0.4%	4	0.9%		0.0%		0.0%
EIELSON AFB			1	0.2%			1	0.2%
ELFIN COVE	24	1.1%	16	3.2%	6	0.1%	7	1.5%
ELMENDORF AFB		0.0%			1	0.0%		
FAIRBANKS	4	0.1%		0.0%	8	0.0%	2	0.4%
FORT GREELY				0.0%			1	0.2%
FRITZ CREEK	2	0.1%	1	0.2%	10	0.3%	1	0.2%
GALENA	1	0.0%				0.0%		
GIRDWOOD		0.0%		0.0%	6	0.0%	1	0.2%
GUSTAVUS	15	0.7%	4	0.8%	5	0.1%		0.0%
HAINES	63	3.0%	2	0.4%	14	0.3%		0.0%
HALIBUT COVE		0.0%			5	0.2%		
HOMER	5	0.1%		0.0%	270	8.3%	65	13.3%
HOONAH	28	1.3%	9	1.9%	7	0.2%		0.0%
HYDABURG	6	0.1%	4	0.9%		0.0%		0.0%
HYDER	2	0.0%				0.0%		
INDIAN		0.0%			1	0.0%		
JUNEAU	162	8.5%	22	4.5%	48	1.8%	1	0.2%
KAKE	20	1.2%				0.0%		
KASILOF	1	0.0%		0.0%	24	0.5%	4	0.8%

Table 7 Continued

City	Area 2C				Area 3A			
	QS Holders	% of QS Held	CHPs	% of CHPs Held	QS Holders	% of QS Held	CHPs	% of CHPs Held
KENAI	2	0.0%		0.0%	63	1.6%	6	1.2%
KETCHIKAN	82	4.5%	119	24.0%	7	0.4%		0.0%
KLAWOCK	5	0.0%	12	2.3%	2	0.1%		0.0%
KODIAK	3	0.0%		0.0%	279	16.4%	70	14.7%
LARSEN BAY				0.0%			8	1.9%
MANOKOTAK	2	0.0%			2	0.0%		
MEKORYUK		0.0%			2	0.2%		
METLAKATLA	10	0.5%				0.0%		
MEYERS CHUCK	1	0.0%				0.0%		
MOOSE PASS		0.0%		0.0%	2	0.0%	1	0.2%
NAKNEK	2	0.0%			1	0.0%		
NANWALEK				0.0%			7	1.6%
NAUKATI BAY			1	0.2%				0.0%
NIKISKI		0.0%			5	0.1%		
NIKOLAEVSK		0.0%			13	0.3%		
NINILCHIK		0.0%		0.0%	10	0.2%	31	6.3%
NOME	1	0.0%			1	0.1%		
NORTH POLE		0.0%		0.0%	2	0.1%	4	0.8%
OLD HARBOR		0.0%		0.0%	6	0.1%	3	0.6%
OUZINKIE		0.0%		0.0%	14	0.3%	8	1.9%
PALMER		0.0%	1	0.2%	13	0.4%	4	0.9%
PEDRO BAY				0.0%			1	0.2%
PELICAN	10	1.1%	9	1.9%	6	0.1%		0.0%
PETERSBURG	329	26.8%	15	2.9%	85	6.6%		0.0%
PILOT POINT	1	0.0%				0.0%		
POINT BAKER	10	0.2%	8	1.8%		0.0%		0.0%
PORT ALEXANDER	5	0.1%	8	1.7%	1	0.0%		0.0%
PORT GRAHAM		0.0%		0.0%	3	0.0%	7	1.6%
PORT LIONS		0.0%		0.0%	8	0.1%	13	2.9%
SAINT GEORGE ISLAND	1	0.0%			1	0.0%		
SAINT PAUL ISLAND	1	0.0%			1	0.0%		
SALCHA		0.0%		0.0%	1	0.0%	1	0.2%
SAND POINT		0.0%			1	0.0%		
SELDOVIA		0.0%		0.0%	26	1.4%	8	1.8%
SEWARD	2	0.0%		0.0%	46	1.8%	47	10.2%
SITKA	319	17.7%	142	28.9%	128	3.8%	3	0.6%
SKAGWAY	2	0.0%				0.0%		
SOLDOTNA		0.0%	3	0.6%	49	1.1%	38	8.1%
SOUTH NAKNEK	1	0.0%			1	0.0%		
STERLING		0.0%		0.0%	9	0.1%	4	0.8%
TENAKEE SPRINGS	2	0.0%	2	0.4%	3	0.1%		0.0%
THORNE BAY	7	0.2%	8	1.7%		0.0%		0.0%
TOGIK	5	0.0%			1	0.0%		
TWIN HILLS	1	0.0%			1	0.0%		
VALDEZ		0.0%		0.0%	21	0.3%	12	2.5%
WARD COVE	17	0.7%	9	1.7%		0.0%		0.0%
WASILLA	5	0.2%	1	0.2%	28	0.8%	7	1.5%
WHALE PASS			4	0.9%				0.0%
WHITTIER		0.0%		0.0%	1	0.0%	6	1.2%
WILLOW		0.0%			8	0.2%		
WRANGELL	98	7.7%	4	0.8%	11	0.3%		0.0%
YAKUTAT	1	0.0%		0.0%	45	0.7%	11	2.4%

Because communities tend to be dependent on both sectors the impacts of this action will have distributional effects on individuals within the community, but in general have more limited impacts at the community level. Impacts at the community level will be dampened because any negative impacts realized by one sector will be partially or totally offset by benefits to the other sector.

In communities that are more heavily reliant on one sector over the other, positive or negative impacts may be more pronounced. A comparison of Petersburg and Ketchikan is provided as an example, owners listing Petersburg as their mailing address held 26.8 percent of the Area 2C QS and 6.6 percent of the Area 3A QS. CHP holders listing Petersburg as their address held only 2.9 percent of the Area 2C CHPs. Ketchikan is listed as the mailing address on 4.5 percent of the Area 2C QS and 0.4 percent of the Area 3A QS. Ketchikan is listed as the owner's mailing address on 24.0 percent of the CHPs for Area 2C (119 permits). This indicates that Petersburg is more likely to be negatively impacted by decreases to the commercial IFQ allocation than Ketchikan. Ketchikan is likely to experience greater benefits from an allocation that gives a greater percentage of the CCL to the charter sector. However, the magnitude of benefits to Ketchikan and other cities that are in close proximity to large lodge operations will depend on the interaction between the lodge and the community. If lodges obtain labor and supplies from the community and tourists spend time in the town, the benefits will be greater. If lodge clients arrive in the community and limit their interaction with businesses, outside of the lodge, benefits to the local community will be lessened.

COMMUNITY PROFILES

Much of the background information in this section was presented in Appendix 7 of the recent GOA halibut PSC Analysis prepared by AECOM and reviewed by the Council.

Detailed information on the range of GOA groundfish fishing communities relevant to the proposed action may be found in a number of other groundfish-related documents, including the *Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement* (NMFS 2004) and *Sector and Regional Profiles of the North Pacific Groundfish Fishery* (Northern Economics and EDAW 2001), and in a technical paper (Downs 2003) supporting the *Final Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (NMFS 2005) as well as that Environmental Impact Statement itself. These sources also include specific characterizations of the degree of individual community and regional engagement in, and dependency upon, the North Pacific groundfish fishery. For this analysis, these documents, as well as other NPFMC-related documents concerning other fisheries but containing detailed community profile information for a number of the GOA groundfish-related communities, are incorporated by reference, including the *Five-Year Review of the Crab Rationalization Management Program for Bering Sea and Aleutian Islands Crab Fisheries – Appendix A: Social Impact Assessment* (AECOM 2010); *Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska – Final Report* (EDAW 2005);. Additionally, *Community Profiles for North Pacific Fisheries – Alaska* (Sepez et al. 2005) was used in framing the summary community profiles presented here.

In general, the fishing communities that are expected to be potentially directly and adversely affected by the proposed action alternatives are those GOA groundfish communities where potentially affected CHP and halibut QS holders and vessel owners reside; where vessels make deliveries to shore-based processors and generate associated economic activities and public revenues, including those derived from landing or severance taxes; where vessel support services are provided; where vessels are otherwise located or homeported during the year and generate some level of related economic activity; and where skippers and crew reside. Community-level information for some of these potential data categories, however, is not available or is too inconsistently collected to be useful for multi-community analyses. Information on vessel homeport (or the meaning of homeport designations for given vessels), for example, is known to be inconsistent enough for homeport designation to be of little utility as an indicator of location of vessel-associated economic activity in general; direct information on the

location of vessel purchases of support services specifically is not readily available. Information on the community of long-term residence of vessel skippers and crew and processing crew that work aboard the potentially affected vessels or in the shore-based processors active in the GOA groundfish fisheries is not readily available.

In general, it is not possible to quantitatively differentiate potential impacts of the proposed CSP halibut allocations on an individual community basis. Taken from a community perspective, however, qualitative analysis of the alternatives inherent in the following profiles suggests that, while impacts may be noticeable at the individual operation level for at least a few vessels and/or a few shore-based processors (and potentially at the individual operation level for at least a few local support service providers for those vessels and/or processors), the impacts at the community level for any of the involved fishing communities would likely be less than significant as gauged through the use of existing data. The sustained participation of these fishing communities would not be put at risk by any of the alternative halibut PSC modifications being considered.

The following sections provide a community-by-community characterization of the local community context of GOA groundfish fishery participation as well as participation in GOA halibut commercial, sport, and subsistence fisheries for those communities.

ANCHORAGE

LOCATION

The City of Anchorage is located between the two northern arms of the Cook Inlet and is considered the primary urban center of the state. Anchorage, a Unified Home Rule Municipality, also encompasses the nearby communities of Girdwood and Eagle River, which are located on the Turnagain Arm and the southern shore of the Knik Arm, respectively. Anchorage is connected to the Alaska state highway and railway systems, and thus is accessible by road and rail as well as by air and water (Sepez et al. 2005:167, 169). Anchorage is adjacent to the Central Gulf FMP area and halibut regulatory area 3A (Figure 1).

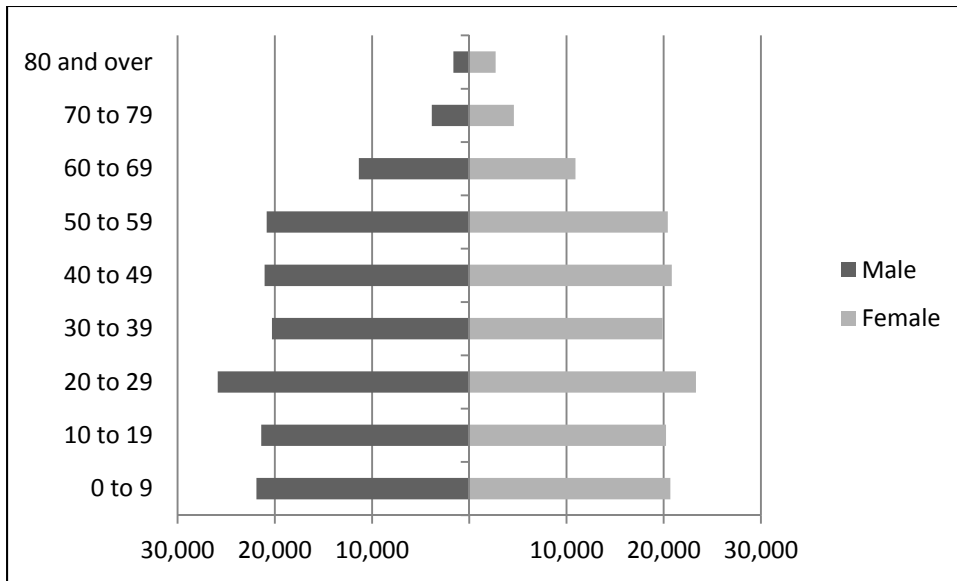
HISTORY

Anchorage is located in what traditionally was an Athabascan area, as coastal Athabascans once lived along the shores of the Cook Inlet. Anchorage began as a staging area for gold miners in 1887 and in 1922. The community was incorporated as a city in 1920 and experienced an increase in development during World War II and the Cold War due to its strategic position to Japan and the Soviet Union, respectively. A massive earthquake damaged much of Anchorage in 1964, but the city was ultimately rebuilt and grew as a result of development associated with the oil and gas industry (Sepez et al. 2005:168–169).

COMMUNITY DEMOGRAPHICS

According to U.S. Census figures from 2010, a total of 290,826 people reside in Anchorage and its neighboring communities. The gender composition of the municipality was relatively balanced, as demonstrated in Figure 2, and the largest cohort of residents consisted of individuals aged 20 to 29. Anchorage is more similar to state and national averages than are a number of the smaller fishing communities profiled in this section that feature relatively greater male populations typically associated with seafood processing and/or other industrial enclave type of development.

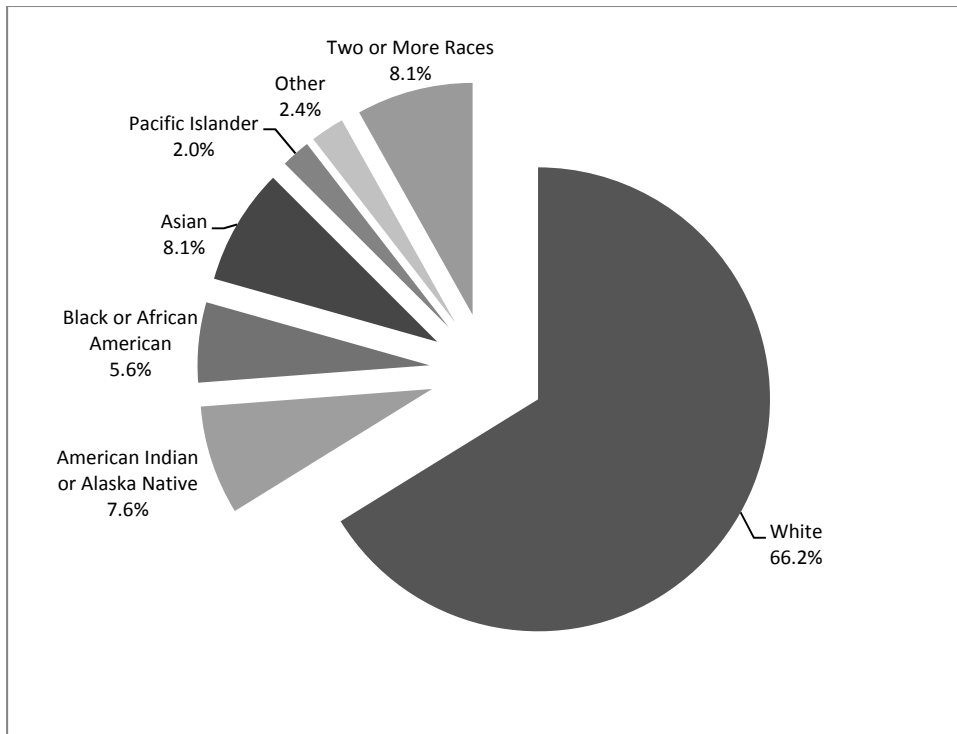
FIGURE 2 ANCHORAGE 2010 POPULATION STRUCTURE



Source: U.S. Census 2011

Census figures from 2010 show that 66.0 percent of the residents of Anchorage identified themselves as White, 7.9 percent as American Indian or Alaska Native, 5.6 percent as Black/African American, 8.1 percent as Asian, 2.0 percent as Pacific Islander, and 10.4 percent as “some other race” or “two or more races.” Finally, 7.6 percent of the residents of any race in Anchorage identified themselves as Hispanic. Based on race and ethnicity combined, 37.4 percent of Anchorage’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]). Figure 3 provides a graphical representation of the racial structure of Anchorage in 2010 (DCED 2011a). In general, compared to a number of the smaller fishing communities profiled in this section, Anchorage’s population is diverse but has a relatively small Alaska Native population segment, typically associated with historically Alaska Native communities, as well as a relatively small Asian/Pacific Islander/Other population segment often associated with seafood processing operations that draw a proportionately large number of workers from a non-local labor pool.

FIGURE 3 ANCHORAGE 2010 RACIAL STRUCTURE



Source: DCED 2011a

Housing data from the U.S. Census, as shown in Table 6, indicate that 97.1 percent of all Anchorage residents lived in non-group quarters housing, with total housing units in Anchorage numbering 113,032. Of those housing units, approximately 95.0 percent were occupied. Family households number 70,544, with an average household size of 1.6 persons. The proportionally few residents living in group quarters differentiates Anchorage from a number of the smaller fishing communities profiled in this section that typically have substantial numbers of relatively transient residents living in group housing associated with larger seafood processing operations.

TABLE 8 ANCHORAGE 2010 HOUSING INFORMATION

Total Population	290,826	100%
Living in Non-Group Quarters	282,376	97.1%
Living in Group Quarters	8,450	2.9%
Total Housing Units	113,032	100%
Occupied Housing (Households)	107,332	95.0%
Vacant Housing	5,700	5.0%
Family Households	70,544	65.7%
Average Household Size	1.60	na

na = not applicable

Source: DCED 2011a

LOCAL ECONOMY

As discussed by Sepez et al. (2005:169), Anchorage is the primary commercial center for the state. As such, oil and gas industries, finance and real estate, transportation, communications, and government agencies are headquartered in Anchorage. Tourism plays an important role in the Anchorage economy, as many hotels, inns, and lodges offer accommodations throughout the city. According to the local chamber of commerce, many visitors rent recreational vehicles to see the state and use Anchorage as a “base” (ACOC 2011).

Seasonal fluctuations affect employment rates, but the latest estimates based on the 2005-2009 U.S. Census American Community Survey suggest that 140,992 people were employed in Anchorage, with an unemployment rate of 7.3 percent. Per capita income for people in Anchorage was estimated at \$33,436, median household income was \$70,151, and median family income was \$81,348. An estimated 7.8 percent of Anchorage’s residents were considered low-income, defined as those individuals living below the poverty threshold (DCED 2011b). As shown in Table 9, the economy of Anchorage is relatively diversified, with the top occupations in retail, office administration (likely related to the large number of government entities headquartered there), and food service. The top employers include those related to government, as well as a major local hospital and university campus.

TABLE 9 ANCHORAGE TOP FIVE OCCUPATIONS AND EMPLOYERS

Occupations	
1	Retail Salespersons
2	Cashiers
3	Office and Administrative Support Workers
4	Office Clerks
5	Food Preparation and Serving Workers
Employers	
1	Anchorage School District
2	State of Alaska
3	Providence Hospital
4	Municipality of Anchorage
5	University of Alaska Anchorage

Source: ADOLWD 2011a

COMMERCIAL FISHERY ENGAGEMENT

As discussed by Sepez et al. (2005:170), the municipality of Anchorage is an important city for commercial fishing for a variety of reasons:

- Anchorage has its own coastal character and fishing grounds (Cook Inlet).
- Anchorage is a regional commercial port of the entire state.
- A concentration of resources, facilities, population, and transportation has converted Anchorage into a nexus for the fish processing industry.
- A wide variety of support services are offered.

Anchorage is the primary distribution center for the state, with the Port of Anchorage terminal berths handling approximately 85 percent of the general cargo for the Alaska Railbelt area (Sepez et al. 2005:170). As the primary commercial center, support services for commercial fishing vessels are varied and include hardware stores, mechanics, and other repair facilities—typically outfitted with machinery not found in more rural Alaskan communities.

GOA Commercial Halibut. The annual average number of commercial GOA halibut QS holders in Anchorage between 2003 and 2011 was 125.4; the highest number of individual QS holders occurred in 2003, with 162, but the number steadily decreased until 2010, when the number of individual QS holders was 103. In 2011, the number of individual Anchorage resident GOA halibut QS holders was 105, which represented 4.1 percent of all GOA halibut QS holders. The amount of QS units held by these individuals was slightly less in terms of percentage, however, at 2.8 percent of all GOA halibut QS units held in 2011. While the number of Anchorage residents holding GOA halibut QS has decreased since 2003, the absolute number and percentage of QS units held by Anchorage residents has changed relatively little since 2003.

PROCESSING SECTOR

General. According to records from 2003, a total of 11 processing plants were present in Anchorage: Alaskan Sausage, Alaska Sea Pack, 10th & M Seafoods, Sockeye Alaska, Alaskan Smoked Salmon, Favco Inc., Great Pacific Seafood, Sagaya Wholesale, Samer-I Seafoods, Teddys Tasty Meals, and Yamaha Seafoods. However, the quantity of landings in Anchorage is relatively small due to fish regularly landed closer to the fishing grounds and transported to Anchorage for processing (Sepez et al. 2005:172).

GOA Halibut Processing. Anchorage shore-based processors were generally more active with regard to processing halibut, with one processor receiving halibut deliveries in 2009 and 2010, and two processors receiving deliveries in 2006 and 2008. These processing entities include Copper River Fine Seafoods Inc. and Favco Inc. In 2010, Copper River Fine Seafoods Inc. represented 2.5 percent of the total number of shore-based processors that received halibut deliveries in Alaska.

GOA HALIBUT SPORTFISHING

Anchorage residents held 56 sport charter fishing permits in 2012. All permits were in Area 3A and were held by 38 individual permit holders. Estimates of catch statistics for charter sportfishing for Anchorage residents specifically were not readily available, but overall statistics for Area 3A suggest that an annual average of 193,894 halibut were caught between 2003 and 2010, with the largest number of halibut caught in 2007 (236,133). The average weight per fish has declined since 2003, when it was 20.7 pounds, to 15.2 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 2.7 million pounds, well below the average of 3.4 million pounds for the years 2003 through 2010. The Central Cook Inlet was one of the most productive areas in terms of total yield for the years 2007 through 2010 for charter sportfishing, with only the Lower Cook Inlet (Homer) exhibiting higher estimated total yields in Area 3A.

Estimates for non-charter sportfishing in Area 3A as a whole were similar, with the largest number of fish caught and the highest yield both in 2007 (166,338 and 2.3 million pounds, respectively). Average weight for non-charter halibut has declined since 2003, when it was 17.3 pounds, to 12.8 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 1.59 million pounds, which was down from the average of 1.93 million pounds for the years 2003 through 2010. The Central Cook Inlet was also one of the most productive areas in terms of total yield for the years 2007 through 2010 for non-charter sportfishing, with only the Lower Cook Inlet (Homer) exhibiting higher estimated total yields in Area 3A.

HOMER

LOCATION

Homer is located on the southwestern edge of the Kenai Peninsula. Homer is approximately 120 miles southwest of Anchorage and faces Kachemak Bay to the south. Homer, incorporated as a First Class City within the Kenai Peninsula Borough, is connected to the Alaska state highway system, so it is accessible by road as well as by air and water (Sepez et al. 2005:228–229). Homer is adjacent to the Central Gulf FMP area and halibut regulatory area 3A.

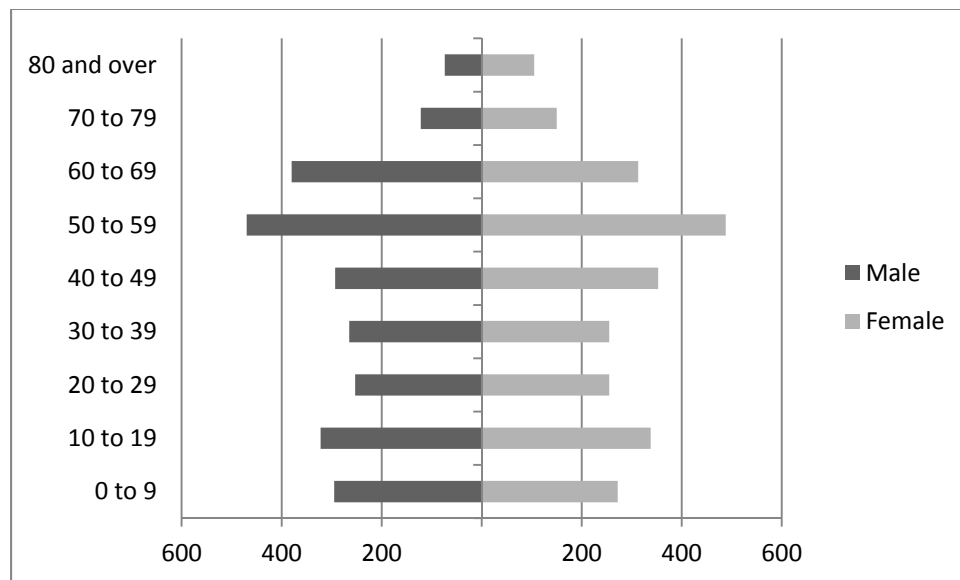
HISTORY

The City of Homer is an area historically considered to be Dena'ina Athabascan territory. The community was named after Homer Pennock, a gold mining company promoter. The Cook Inlet Coal Fields Company built much of the early community when coal was discovered in the 1890s. In addition to commercial fishing, the local economy has continued to depend on oil and coal for economic output (Sepez et al. 2005:228).

COMMUNITY DEMOGRAPHICS

According to U.S. Census figures from 2010, a total of 5,003 people reside in Homer. The gender composition of the community was relatively balanced, as demonstrated in Figure 4, and the largest cohort of residents consisted of individuals aged 50 to 59. Homer is more similar to state and national averages than are a number of the smaller fishing communities profiled in this section that feature relatively greater male populations typically associated with seafood processing and/or other industrial enclave type of development.

FIGURE 4 HOMER 2010 POPULATION STRUCTURE

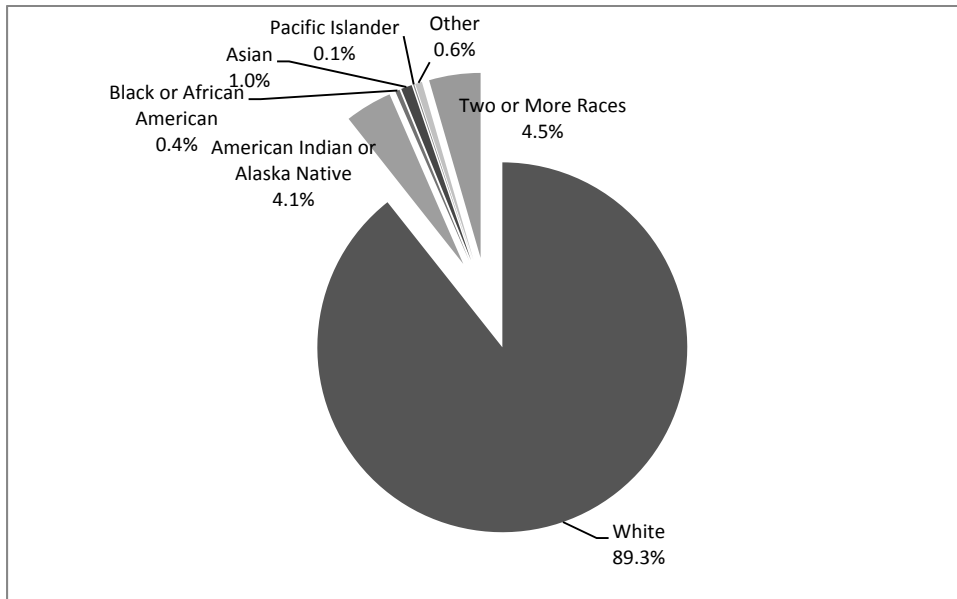


Source: U.S. Census 2011

Census figures from 2010 show that 89.3 percent of the residents of Homer identified themselves as White, 4.1 percent as American Indian or Alaska Native, 0.4 percent as Black/African American, 1.0 percent as Asian, 0.1 percent as Pacific Islander, and 5.1 percent as “some other race” or “two or more races.” Finally, 2.1 percent of the residents of any race in Homer identified themselves as Hispanic. Based on race and ethnicity combined, 11.7 percent of Homer’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]).

Figure 5 provides a graphical representation of the racial structure of Homer in 2010 (DCED 2011c). In general, compared to a number of the smaller fishing communities profiled in this section, Homer’s population has a relatively small Alaska Native population segment, typically associated with historically Alaska Native communities, as well as a relatively small Asian/Pacific Islander/Other population segment often associated with larger seafood processing operations that draw a proportionally large number of workers from a non-local labor pool.

FIGURE 5 HOMER 2010 RACIAL STRUCTURE



Source: DCED 2011c

Housing data from the U.S. Census, as shown in Table 10, indicate that 98.6 percent of all Homer residents lived in non-group quarters housing, with total housing units in Homer numbering 2,692. Of those housing units, approximately 83.0 percent were occupied. Family households number 1,296, with an average household size of 2.21 persons. The relatively few residents living in group quarters differentiates Homer from a number of the smaller fishing communities profiled in this section that typically have substantial numbers of relatively transient residents living in group housing associated with larger seafood processing operations.

TABLE 10 HOMER 2010 HOUSING INFORMATION

Total Population	5,003	100%
Living in Non-Group Quarters	4,932	98.6%
Living in Group Quarters	71	1.4%
Total Housing Units	2,692	100%
Occupied Housing (Households)	2,235	83.0%
Vacant Housing	457	17.0%
Family Households	1,296	58.0%
Average Household Size	2.21	na

na = not applicable

Source: DCED 2011c

LOCAL ECONOMY

As discussed by Sepez et al. (2005:228–229), Homer’s economy is dominated by commercial and sport fishing, as well as fish processing and marine-related support services. These services include welding, electronics, and canvas work. Tourism has become more important to the local economy in the recent past. According to the local community’s website, marine trades are a primary industry cluster, with education and healthcare vital to the economy, “and contribut[ing] to Homer’s quality of life.” In recent years, Homer has become popular as a retirement community and summer home destination (City of Homer 2011).

Like many Alaskan communities, seasonal fluctuations affect employment rates, but the latest estimates based on the 2005-2009 U.S. Census American Community Survey suggest that 2,670 people were employed in Homer, with an unemployment rate of 7.7 percent. Per capita income for people in Homer was estimated at \$30,317, median household income was \$54,730, and median family income was \$67,188. An estimated 8.2 percent of Homer’s residents were considered low-income, defined as those individuals living below the poverty level threshold (DCED 2011d). As shown in Table 11, the economy of Homer, while dependent on commercial fishing, is dominated by education, retail, and healthcare-related occupations. The top employers include the local school district, two healthcare centers, the local main grocery store, and the City of Homer.

TABLE 11 HOMER TOP FIVE OCCUPATIONS AND EMPLOYERS

Occupations	
1	Teachers and Instructors
2	Cashiers
3	Retail Salespersons
4	Recreational Therapists
5	Registered Nurses
Employers	
1	Kenai Peninsula Borough School District
2	South Peninsula Hospital
3	South Peninsula Behavioral Health Services
4	Safeway
5	City of Homer

Source: ADOLWD 2011b

COMMERCIAL FISHERY ENGAGEMENT

OVERVIEW

The population of Homer swells in the summer as individuals come to the community for commercial fishing-related employment. Homer has a large deep-water dock capable of accommodating 340-foot-long vessels, as well as a boat harbor with over 900 slips (Sepez et al. 2005:229). The sportfishing sector is of substantial economic importance to the community, so marine outfitters and other support services are more common in Homer than in smaller communities.

HARVEST SECTOR

GOA Commercial Halibut. The annual average number of commercial GOA halibut QS holders in Homer between 2003 and 2011 was 209.6; the highest number of individual QS holders occurred in 2003, with 236, but they ultimately decreased to a low of 192 in 2009. In 2011, the number of individual Homer resident GOA halibut QS holders was 195, which represented 7.6 percent of all GOA halibut QS holders. The amount of QS units held by these individuals was slightly less in terms of percentage, however, at 7.1 percent of all GOA halibut QS units held

in 2011. While the number of Homer residents holding GOA halibut QS has decreased since 2003, the absolute number of QS units held has increased and the percentage of QS units held by Homer residents has increased from 6.9 percent in 2003 to 7.1 percent in 2011.

PROCESSING SECTOR

General. According to descriptions in 2005, a total of six processing plants were present in Homer. A total of 2,660 tons of fish from federally managed fisheries were processed in 2000, with 142 halibut and 109 groundfish vessels making deliveries (Sepez et al. 2005:231).

GOA Halibut Processing. Homer shore-based processors were more active with regard to processing halibut, with four processors receiving halibut deliveries in 2010, and three processors receiving deliveries in 2009 and 2008. These processing entities include Coal Point Trading Company, Kachemak Bay Seafoods, The Auction Block Company, and The Fish Factory. In 2010, the four processors in Homer represented 10.0 percent of the total number of shore-based processors that received halibut deliveries in Alaska.

GOA HALIBUT SPORTFISHING

Homer residents held 66 sport charter fishing permits in 2012. All permits were in Area 3A and were held by 56 individual permit holders. Estimates of catch statistics for charter sportfishing for Homer residents specifically are not readily available, but overall statistics for Area 3A suggest that an annual average of 193,894 halibut were caught between 2003 and 2010, with the largest number of halibut caught in 2007 (236,133). The average weight per fish has declined since 2003, when it was 20.7 pounds, to 15.2 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 2.7 million pounds, well below the average of 3.4 million pounds for the years 2003 through 2010 (Table 13b). In terms of total yield, the charter activity in the Lower Cook Inlet, near Homer, was the highest among all subareas in 2C and 3A for the years 2007 through 2010.

Estimates for non-charter sportfishing in Area 3A as a whole were similar, with the largest number of fish caught and the highest yield both in 2007 (166,338 and 2.3 million pounds, respectively). Average weight for non-charter halibut has declined since 2003, when it was 17.3 pounds, to 12.8 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 1.59 million pounds, which was down from the average of 1.93 million pounds for the years 2003 through 2010 (Table 13b). In terms of total yield, the non-charter activity in the Lower Cook Inlet, near Homer, was also the highest among all subareas in 2C and 3A for the years 2007 through 2010.

KETCHIKAN

Sepez et al. (2005:108-112) is the source for most of the information provided in this profile. Additional information for Ketchikan may be obtained from that document.

LOCATION

Ketchikan is located on the southwestern coast of Revillagigedo Island, near the southern boundary of Alaska. It is 235 miles south of Juneau. The area encompasses 3.4 square miles of land and 0.8 square miles of water.

COMMUNITY DEMOGRAPHICS

In 2000, there were 7,922 residents in 3,197 households. A small segment of the population (2.3%) lived in group quarters. The racial composition was as follows: White (67.4%), American Indian and Alaska Native (17.6%), Asian (6.9%), Black (0.7%), Native Hawaiian and Other Pacific Islander (0.2%), two or more races (6.7%), and other (0.5%). A total of 22.7% of the population recognized themselves as all or part Alaska Native or American Indian. In addition, 3.4% of residents were Hispanic. The gender makeup was relatively equal, at 50.4% male and 49.6% female. The median age of Ketchikan was 35.8 years, very similar to the U.S. national average of 35.3 years. In terms of educational attainment, 88.6% of residents aged 25 and over held a high school diploma or higher degree.

HISTORY

The area of Ketchikan is traditional Tlingit Indian territory. Tongass and Cape Fox Tlingits historically used Ketchikan Creek as a fish camp, which they called “kitschk-hin,” meaning creek of the “thundering wings of an eagle.” Permanent White settlement of Ketchikan began in 1885, when Mike Martin bought 160 acres from Chief Kyan of the Tlingits; this land later became the township. The growth of Ketchikan’s population has always depended on the area’s rich natural resources, including fish, timber, and minerals. Throughout the 20th Century, fish canneries and sawmills went through boom and bust cycles. Today, Ketchikan is a racially diverse community and a major fishing hub for southeast Alaska.

CURRENT ECONOMY

The largest economic driving force in Ketchikan is the commercial fishing industry. Many residents hold commercial fishing permits, or work in commercial fish processing plants and supporting industries. In addition, several small timber companies operate in Ketchikan. The tourism industry is growing in importance. The city has become a major port-of call for Alaska-bound cruise ships, and an estimated 500,000 cruise passengers visit Ketchikan each year.

In 2000, the median per capita income in Ketchikan was \$22,484 and the median household income was \$45,802. The unemployment rate was 5.7%, and 29.1% of residents aged 16 years and older were not in the labor force (i.e. not seeking work). Approximately 7.6% of local residents were living below the poverty level.

COMMERCIAL

Ketchikan is a major commercial fishing hub for the southeast region, and fishing makes up the lion’s share of economic activity within the city. Eighty-two local residents held 4.5 percent of the QS for Area 2C and seven held 0.4 percent of the QS for Area 3A.

SPORT FISHING

Ketchikan is the largest sport fishing hub in southeast Alaska. Fishermen come from all over Alaska, Canada, the lower 48 states, and around the world to fish the productive waters in the area.

In 2012, there were 119 CHPs held by persons listing a Ketchikan address. Sport fishing license sales in Ketchikan for 2000 totaled 34,509; the majority of these (27,829) were to non-Alaska residents. This constituted the highest number of licenses sold in any Alaskan community except Anchorage. Major sport species include all five species of Pacific salmon, halibut, trout, steelhead, and char.

KODIAK

LOCATION

The community of Kodiak, located near the northeastern end of Kodiak Island in the Gulf of Alaska, is the largest island in Alaska and second in size within the United States only to the island of Hawaii. It is 252 air miles southwest of Anchorage, a 45-minute flight (AECOM 2010:2-195). Kodiak Island is only reachable by air and sea, but the on-island road system in the greater Kodiak area connects the community of Kodiak proper to the unincorporated communities of Chiniak and Womens Bay, as well Kodiak Station, the site of the largest U.S. Coast Guard installation in the country. Kodiak is incorporated as a Home Rule City within the Kodiak Island Borough (Sepez et al. 2005:201). Kodiak is adjacent to the Central Gulf FMP area and halibut regulatory area 3A.

HISTORY

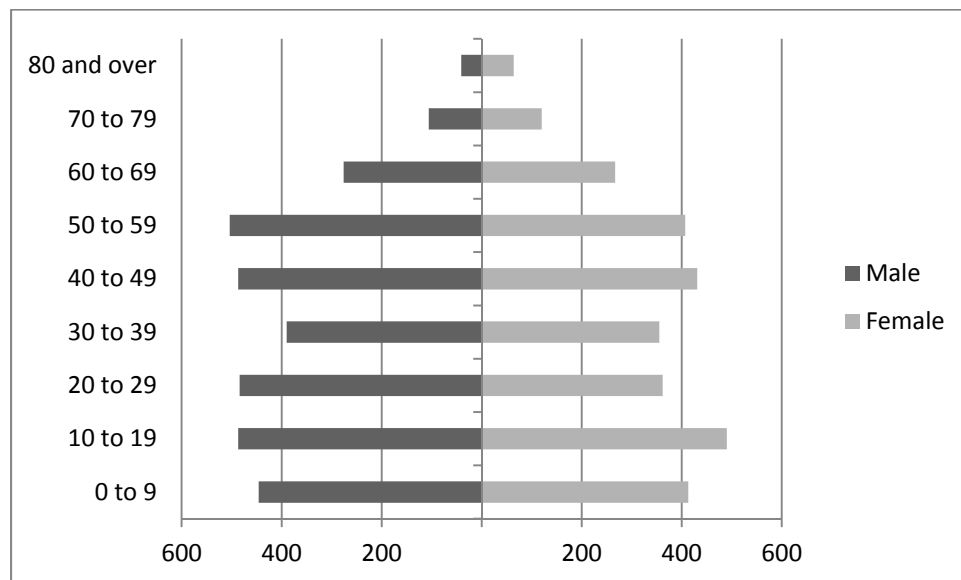
Kodiak is in an area considered to be the traditional territory of the Alutiiq people and has been inhabited for the last 8,000 years. Russian explorers made contact with Alutiiq people in 1763 and the Russians established a sea otter hunting camp in 1784. Kodiak became the capital of the Russian colony in Alaska. Alaska ultimately became a U.S. territory in 1867 and a fish cannery opened locally in 1882. Kodiak became a major marshaling area during World War II. By the 1960s, the community had become a center for fish processing. A 9.2 magnitude earthquake

and subsequent tsunami destroyed much of the community in 1964, but the community ultimately rebuilt and reestablished a groundfish processing industry by the 1970s (Sepez et al. 2005:200–201).

COMMUNITY DEMOGRAPHICS

According to U.S. Census figures from 2010, a total of 6,130 people reside in Kodiak. There were proportionally more males in the population than most communities profiled, and the largest cohort of residents consisted of individuals aged 10 to 19. The gender composition of Kodiak varies from state and national averages, especially during those years when individuals would be mostly likely to be in the active labor pool, indicative of being the work location of an industry or industries with predominately male, relatively transient workforces whose members have come to Kodiak for employment. However, Kodiak’s population is not as disproportionately male as some of the smaller communities profiled that are tied to very large seafood processing operations relative to the overall population base, reflective of a more diverse economy and larger population base in Kodiak.

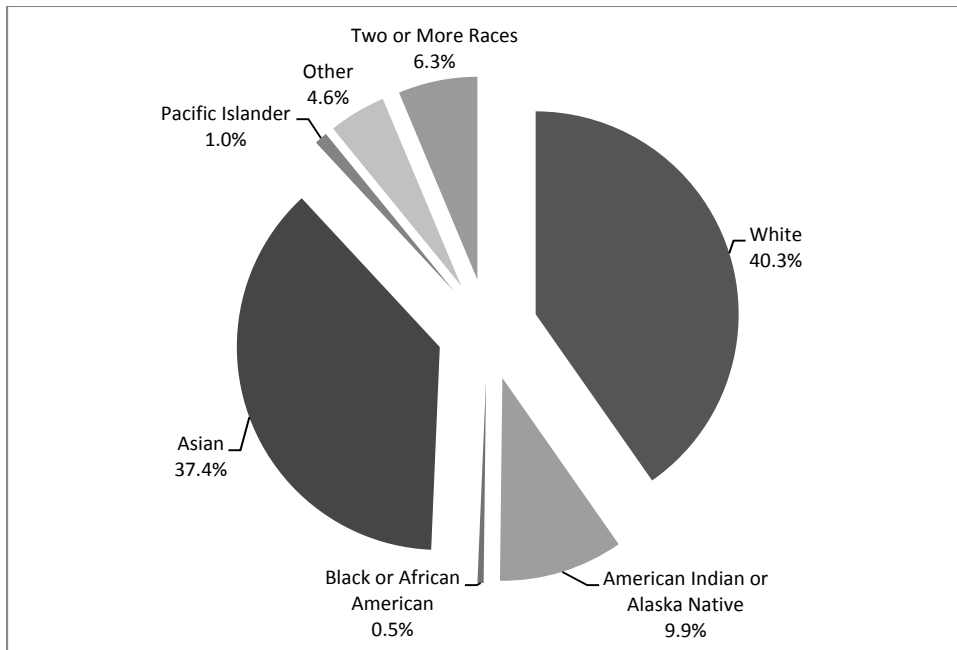
FIGURE 6 KODIAK 2010 POPULATION STRUCTURE



Source: U.S. Census 2011

Census figures from 2010 show that 40.3 percent of the residents of Kodiak identified themselves as White, 9.9 percent as American Indian or Alaska Native, 0.5 percent as Black/African American, 37.4 percent as Asian, 1.0 percent as Pacific Islander, and 10.9 percent as “some other race” or “two or more races.” Finally, 9.4 percent of the residents of any race in Kodiak identified themselves as Hispanic. Based on race and ethnicity combined, 62.7 percent of Kodiak’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]). Figure 7 provides a graphic representation of the racial structure of Kodiak in 2010 (DCED 2011g). In general, compared to a number of smaller fishing communities, Kodiak has a relatively small Alaska Native population segment, but one that is larger than those communities that were not originally Alaska Native communities. Similar to the smaller profiled fishing communities of King Cove and Sand Point, however, Kodiak has a sizeable Asian/Pacific Islander/Other population segment that is often associated with larger seafood processing operations that draw a proportionately large number of workers from a non-local labor pool.

FIGURE 7 KODIAK 2010 RACIAL STRUCTURE



Source: DCED 2011g

Housing data from the U.S. Census, as shown in Table 12, indicate that 97.7 percent of all Kodiak residents lived in non-group quarters housing, with total housing units in Kodiak numbering 2,178. Of those housing units, approximately 93.6 percent were occupied. Family households number 1,342, with an average household size of 2.94 persons. The relatively few residents living in group quarters differentiates Kodiak from many other communities dominated by seafood processing, as those communities typically have substantial numbers of relatively transient residents living in group housing. Despite a large seafood processing population, these workers tend to be long-term Kodiak residents and do not live in group quarters housing, although many may have originally come to the community for seafood processing employment opportunities before settling in the community for the longer term.

TABLE 12 KODIAK 2010 HOUSING INFORMATION

Total Population	6,130	100%
Living in Non-Group Quarters	5,986	97.7%
Living in Group Quarters	144	2.3%
Total Housing Units	2,178	100%
Occupied Housing (Households)	2,039	93.6%
Vacant Housing	139	6.4%
Family Households	1,342	65.8%
Average Household Size	2.94	na

na = not applicable

Source: DCED 2011g

LOCAL ECONOMY

As described in AECOM (2010:2-198), the economic underpinning of the community of Kodiak is commercial fishing, with much of the direct and indirect economic activity in Kodiak relying to a greater or lesser degree on fishing activity as a base. Though commercial fishing remains a central element underpinning the local economy, Kodiak's economy is quite diversified, particularly by rural Alaska standards. The local U.S. Coast Guard installation, although relatively self-sufficient in a number of respects, contributes substantially to the local economy. Tourism has grown in importance in recent years as an economic driver but is not nearly as important to economy as the commercial fishing and government sectors.

The latest estimates based on the 2005-2009 U.S. Census American Community Survey suggest that 3,335 people were employed in Kodiak, with an unemployment rate of 5.3 percent. An estimated 10.8 percent of Kodiak's residents were considered low-income, defined as those individuals living below the poverty level threshold (DCEd 2011h). As shown in Table 13, the economy of Kodiak is dominated by the commercial fishing industry, with the top occupation related to fish processing. Four of the top five employers are fish processing companies in Kodiak.

TABLE 13 KODIAK TOP FIVE OCCUPATIONS AND EMPLOYERS

Occupations	
1	Meat, Poultry, and Fish Cutters and Trimmers
2	Cashiers
3	Office Clerks
4	Retail Salespersons
5	Sales and Related Workers
Employers	
1	International Seafoods of Alaska
2	Trident Seafoods
3	Ocean Beauty Seafoods
4	North Pacific Seafoods
5	Kodiak Island Borough School District

Source: ADOLWD 2011d

GOA Commercial Halibut. The annual average number of commercial GOA halibut QS holders in Kodiak between 2003 and 2011 was 229.4; the highest number of individual QS holders occurred in 2003, with 250, but the number has decreased on the whole until 2010, when the number of individual QS holders was 215. In 2011, the number of individual Kodiak resident GOA halibut QS holders was 217, which represented 8.4 percent of all GOA halibut QS holders. The amount of QS units held by these individuals was slightly more in terms of percentage, however, at 14.5 percent of all GOA halibut QS units held in 2011. While the number of Kodiak residents holding GOA halibut QS has decreased since 2003, the absolute number and percentage of QS units held by Kodiak residents has increased since 2003.

PROCESSING SECTOR

General. Kodiak's shoreplants have played a substantial role in the history of the community, influencing its economic and demographic patterns over the years. Even among the eight major contemporary processing plants, there is a considerable amount of diversity in the size, volume, and species processed. Locally based processors vary in product output and specialization, ranging from large quantity canning of salmon, processed at several different locations within Kodiak, to fresh and fresh-frozen products, as well as niche markets servicing the sport-fishing industry (AECOM 2010:2-228).

GOA Halibut Processing. Most of the Kodiak shore-based processors that were engaged in the groundfish processing were involved in halibut processing, with seven processors receiving halibut deliveries since 2009. These processing entities were Alaska Fresh Seafoods, International Seafoods of Alaska, Island Seafoods, North Pacific Seafoods, Ocean Beauty Seafoods, Trident Seafoods, and Westward Seafoods. In 2010, these seven processors represented 17.5 percent of the total number of shore-based processors that received halibut deliveries in Alaska.

GOA HALIBUT SPORTFISHING

Kodiak residents held 70 sport charter fishing permits in 2012. All permits were in Area 3A and were held by 42 individual permit holders. Estimates of catch statistics for charter sportfishing for Kodiak residents specifically are not readily available, but overall statistics for Area 3A suggest that an annual average of 193,894 halibut were caught between 2003 and 2010, with the largest number of halibut caught in 2007 (236,133). The average weight per fish has declined since 2003, when it was 20.7 pounds, to 15.2 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 2.7 million pounds, well below the average of 3.4 million pounds for the years 2003 through 2010. The Kodiak region was one of the more average areas in terms of charter total yield for the years 2007 through 2010, with areas near Seward, Anchorage, and Homer exhibiting higher estimated total yields in Area 3A.

Estimates for non-charter sportfishing in Area 3A as a whole were similar, with the largest number of fish caught and the highest yield both in 2007 (166,338 and 2.3 million pounds, respectively). Average weight for non-charter halibut has declined since 2003, when it was 17.3 pounds, to 12.8 pounds in 2010. In 2010, the estimated yield of halibut in Area 3A was 1.59 million pounds, which was down from the average of 1.93 million pounds for the years 2003 through 2010 (Table 13b). The Kodiak region was also one of the more average areas in terms of non-charter total yield for the years 2007 through 2010, with areas near Anchorage and Homer exhibiting higher estimated total yields in Area 3A.

PUBLIC REVENUES

According to an earlier analysis (AECOM 2010:2-269), Kodiak Island Borough fish tax revenue sharing for 2010 totaled \$1.3 million. Compared against total borough revenues of \$15.6 million for the year ended June 30, 2010 (Kodiak Island Borough 2011:14), it is not likely that a changes in taxes of the magnitude that would occur in this amendment, would be significant.

PETERSBURG

LOCATION

Petersburg is located on the northwest end of Mitkof Island along the Frederick Sound in the southeastern portion of the state. Petersburg is approximately 115 miles to the southeast of Juneau, and 670 miles east of Anchorage. Petersburg is only accessible by air and sea, and is on the mainline of the Alaska state ferry. Petersburg is incorporated as a Home Rule City and is not part of an organized borough (Sepez et al. 2005:126–128). Petersburg is adjacent to the Eastern Gulf FMP area and halibut regulatory area 2C.

HISTORY

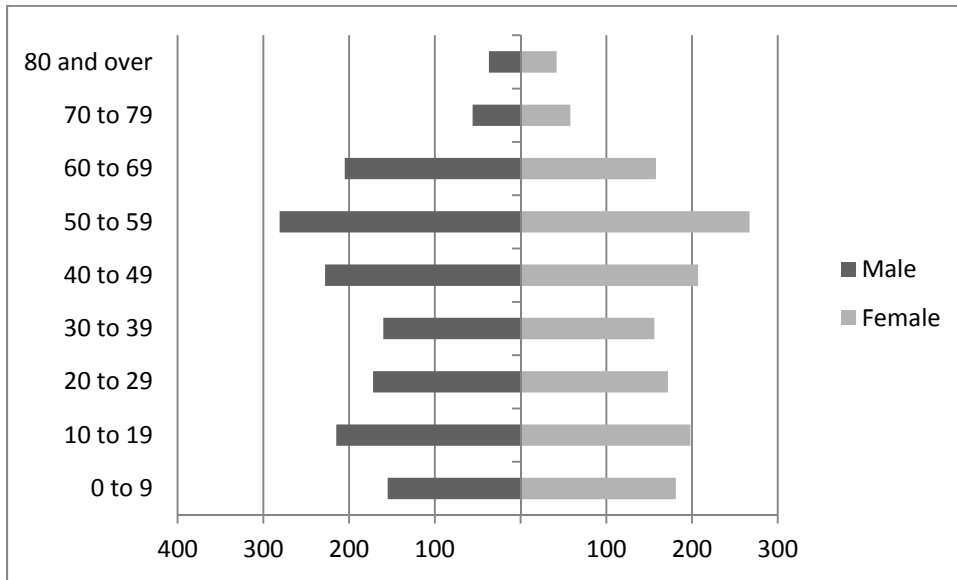
Petersburg is in an area considered to be traditional Tlingit territory. The community is named after Peter Buschmann, a Norwegian immigrant who came to the area in the 1890s and established a fish cannery shortly after arriving. The city was formed in 1910 and many of the residents were of Norwegian origin. In the early part of the 20th century, a shrimp processor and a cold storage plant were established and have been in continuous operation since (Sepez et al. 2005:126–127).

COMMUNITY DEMOGRAPHICS

According to U.S. Census figures from 2010, a total of 2,948 people reside in Petersburg. The gender composition of the community was relatively balanced, as demonstrated by Figure 8, and the largest cohort of residents consisted of individuals aged 50 to 59. Petersburg is more similar to state and national averages than are a number

of the smaller fishing communities profiled in this section that feature relatively greater male populations typically associated with seafood processing and/or other industrial enclave type of development.

FIGURE 8 PETERSBURG 2010 POPULATION STRUCTURE

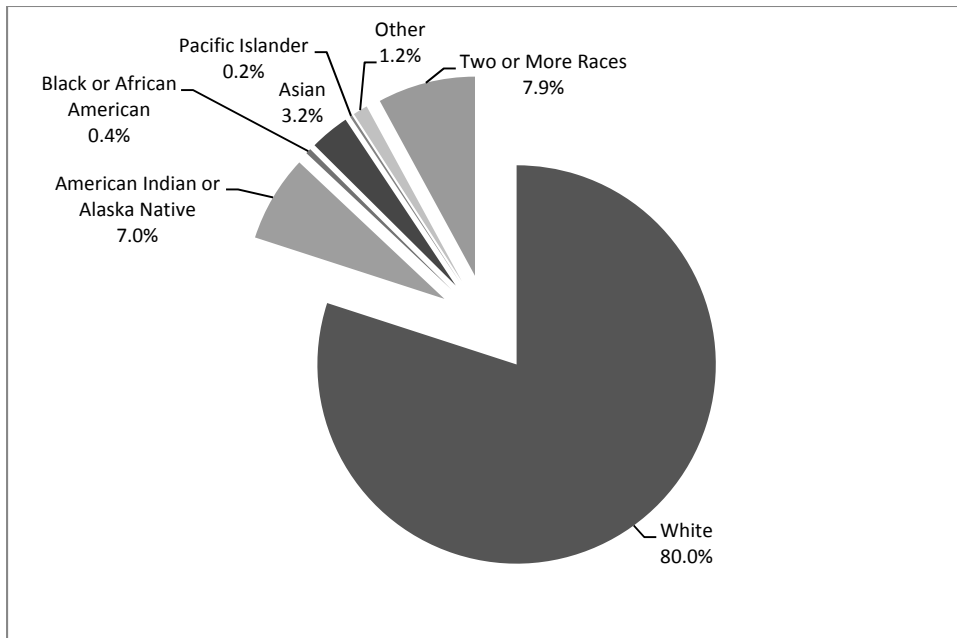


Source: U.S. Census 2011

Census figures from 2010 show that 80.0 percent of the residents of Petersburg identified themselves as White, 7.0 percent as American Indian or Alaska Native, 0.4 percent as Black/African American, 3.2 as Asian, 0.2 percent as Pacific Islander, and 9.1 percent as “some other race” or “two or more races.” Finally, 3.7 percent of the residents of any race in Petersburg identified themselves as Hispanic. Based on race and ethnicity combined, 21.8 percent of Petersburg’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]).

provides a graphic representation of the racial structure of Petersburg in 2010 (DCED 2011i). In general, compared to a number of the smaller fishing communities profiled in this section, Petersburg’s population has a relatively small Alaska Native population segment, typically associated with historically Alaska Native communities, as well as a relatively small Asian/Pacific Islander/Other population segment often associated with larger seafood processing operations that draw a proportionally large number of workers from a non-local labor pool.

FIGURE 9 PETERSBURG 2010 RACIAL STRUCTURE



Source: DCED 2011i

Housing data from the U.S. Census, as shown in Table 14, indicate that 98.5 percent of all Petersburg residents live in non-group quarters housing, with total housing units in Petersburg numbering 1,356. Of those housing units, approximately 92.3 percent were occupied. Family households number 791, with an average household size of 2.32 persons. The relatively few residents living in group quarters differentiates Petersburg from a number of the smaller fishing communities profiled in this section that typically have substantial numbers of relatively transient residents living in group housing associated with larger seafood processing operations.

TABLE 14 PETERSBURG 2010 HOUSING INFORMATION

Total Population	2,948	100%
Living in Non-Group Quarters	2,905	98.5%
Living in Group Quarters	43	1.5%
Total Housing Units	1,356	100%
Occupied Housing (Households)	1,252	92.3%
Vacant Housing	104	7.7%
Family Households	791	63.2%
Average Household Size	2.32	na

na = not applicable

Source: DCED 2011i

LOCAL ECONOMY

As discussed by Sepez et al. (2005:127), Petersburg's economy is tied closely to commercial fishing, with multiple processors operating cold storage facilities and custom packing services. Other primary employment sectors in the community include federal, state, and city government agencies and a range of support and retail businesses; the timber industry, previously important to the community, has virtually exited Petersburg in recent years. The community also experiences some tourism during the summer months as smaller cruise ships pull into Petersburg and other tourists come to spend time in the area fishing and sightseeing. A number of bed and breakfasts, cabins, lodges, and hotels provide lodging for tourists, and guided fishing and hunting tours are available (PCOC 2011).

Seasonal fluctuations affect employment rates, but the latest estimates based on the 2005-2009 U.S. Census American Community Survey suggest that 1,607 people were employed in Petersburg, with an unemployment rate of 2.4 percent. Per capita income for people in Petersburg was estimated at \$30,520, median household income was \$69,345, and median family income was \$91,068. An estimated 8.7 percent of Petersburg's residents were considered low-income, defined as those individuals living below the poverty level threshold (DCED 2011j). As shown in Table 15, the economy of Petersburg is dominated by the seafood industry, with other top occupations in healthcare, retail, education, and construction. The top employers include those related to the seafood industry, city and state government, education, and the local medical center.

TABLE 15 PETERSBURG TOP FIVE OCCUPATIONS AND EMPLOYERS

Occupations	
1	Meat, Poultry, and Fish Cutters and Trimmers
2	Healthcare Support Workers
3	Retail Salespersons
4	Teacher Assistants
5	Construction Laborers
Employers	
1	Icicle Seafoods
2	Petersburg School District
3	City of Petersburg
4	Petersburg Medical Center
5	State of Alaska

Source: ADOLWD 2011e

GOA Commercial Halibut. The annual average number of commercial GOA halibut QS holders in Petersburg between 2003 and 2011 was 213.6; the highest number of individual QS holders occurred in 2003 and 2006, with 221, but the total number has decreased since to a low of 205 in 2010 and 2011. In 2011, the number of individual Petersburg resident GOA halibut QS holders represented 8.0 percent of all GOA halibut QS holders. The amount of QS units held by these individuals was slightly higher in terms of percentage, however, at 9.2 percent of all GOA halibut QS units held in 2011. While the number of Petersburg residents holding GOA halibut QS has decreased on the whole since 2003, the absolute number and percentage of QS units held by Petersburg residents has changed little since 2003.

PROCESSING SECTOR

General. According to records from 2003, a total of 12 seafood processors filed an "intent to operate," which indicated an increase over the seven processors that operated in the community in 2000. Landings in Petersburg included approximately 931 tons of federally managed species, which were primarily halibut and groundfish.

Approximately 21,660 tons of salmon were also landed in Petersburg in the recent past (2000) (Sepez et al. 2005:128–129).

GOA Halibut Processing. Petersburg shore-based processors were generally more active with regard to processing halibut, with at least two processors receiving halibut deliveries since 2006. These processing entities included Coastal Cold Storage, Icicle Seafoods, and Norquest Seafoods (in 2008) and Icicle Seafoods and Trident Seafoods (in 2009 and 2010). In 2010, the two processing entities represented 5.0 percent of the total number of shore-based processors that received halibut deliveries in Alaska.

GOA HALIBUT SPORTFISHING

Petersburg residents held 17 sport charter fishing permits in 2012. All permits were in Area 2C and were held by 13 individual permit holders. Estimates of catch statistics for charter sportfishing for Petersburg residents specifically are not readily available, but overall statistics for Area 2C suggest that an annual average of 82,299 halibut were caught between 2003 and 2010, with the largest number of halibut caught in 2007 (109,835). The average weight per fish has increased since 2007, when it was 17.5 pounds, to 26.4 pounds in 2010. In 2010, the estimated yield of halibut in Area 2C was 1.1 million pounds, which was below the average of 1.6 million pounds for the years 2003 through 2010 (Table 13b). The Petersburg/Wrangell subregion in Area 2C was not as productive in terms of charter total yield for the years 2007 through 2010, compared to many other subareas exhibiting higher estimated total yields, especially Sitka and Glacier Bay.

Estimates for non-charter sportfishing in Area 2C as a whole were similar, with the largest number of fish caught occurring in 2007 and the highest yield occurring in 2008 (68,498 and 1.3 million pounds, respectively). Average weight for non-charter halibut has declined on the whole since 2003, when it was 18.5 pounds, to 16.7 pounds in 2010. In 2010, the estimated yield of halibut in Area 2C was 0.9 million pounds, down slightly from the average of 1.00 million pounds for the years 2003 through 2010 (Table 13b). The Petersburg/Wrangell subregion in Area 2C was not as productive in terms of non-charter total yield for the years 2007 through 2010, either, compared to other subareas exhibiting higher estimated total yields, especially Glacier Bay.

SITKA

LOCATION

Sitka is located in Southeast Alaska, on the western side of Baranof Island near Mt. Edgecumbe, a 3,200-foot extinct volcano. Sitka is approximately 93 miles southwest of Juneau, and 590 miles southeast of Anchorage. Sitka is only accessible by air and sea, and is on the Alaska Marine Highway system. Sitka is a Home Rule municipality and the city and borough governments have been unified since 1971 (Sepez et al. 2005:141). Sitka is adjacent to the Eastern Gulf FMP area (Southeast Outside District) and halibut regulatory area 2C.

HISTORY

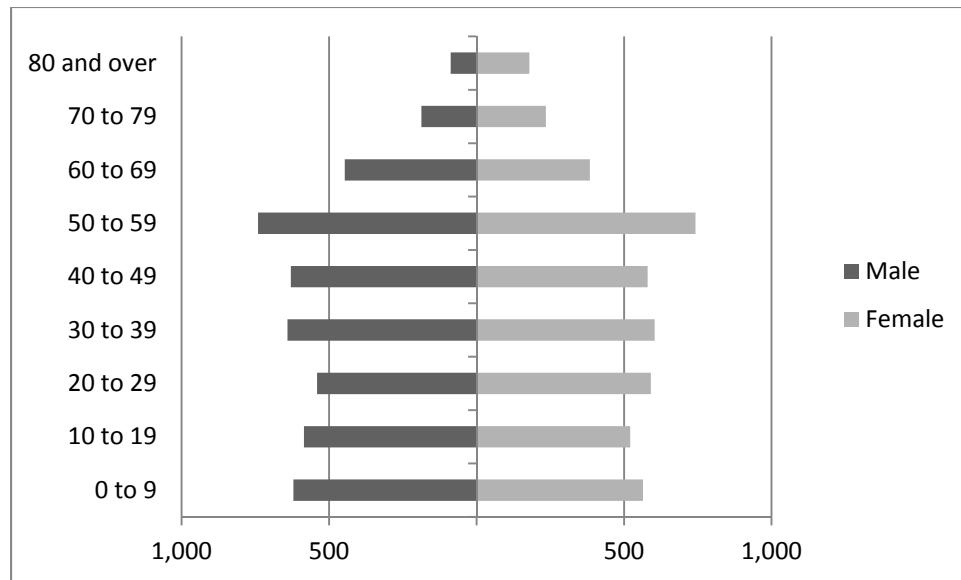
Sitka was originally a Tlingit village called “Shee Atika,” and was first contacted in 1741 by members of the Russian Vitus Bering expedition. By the first years of the 19th century, the Russian American Company had built a fort in Sitka, which was burned down by Tlingits in 1802. Two years later, the Russians retaliated and destroyed the Tlingit fort, forcing survivors to evacuate and effectively excluding the Tlingit people from the area for some time. Sitka had become the capital of Russian Alaska by 1808 and served as the major port on the north Pacific coast. Sitka became the center for traded goods like furs, lumber, salmon, and ice, for many nations. Once Alaska was purchased by the United States in 1867, Sitka remained the territorial capital until 1906, when the territorial government was moved to Juneau. One of the earliest canneries in Alaska was built in Sitka in 1878. Gold mines contributed to Sitka’s growth at the dawn of the 20th century and the city was incorporated in 1913. During World War II, the protection of Sitka and its port facilities was considered a high priority; the town was fortified, and the U.S. Navy built an air station across the harbor on Japonski Island, which brought with it 30,000 military personnel and 7,000 civilians. Today, Sitka is home to Mt. Edgecumbe High School, a state-run boarding school largely serving

Alaska Native students from rural communities (located on the former military installation), as well as a number of commercial fishing operations and a large tourism sector (Sepez et al. 2005:140–141).

COMMUNITY DEMOGRAPHICS

According to U.S. Census figures from 2010, a total of 8,881 people reside in Sitka. The gender composition of the community was relatively balanced, as demonstrated by Figure 10, and the largest cohort of residents consisted of individuals aged 50 to 59. Sitka is more similar to state and national averages than are a number of the smaller fishing communities profiled in this section that feature relatively greater male populations typically associated with large-scale transient worker based seafood processing and/or other industrial enclave type of development.

FIGURE 10 SITKA 2010 POPULATION STRUCTURE



Source: U.S. Census 2011

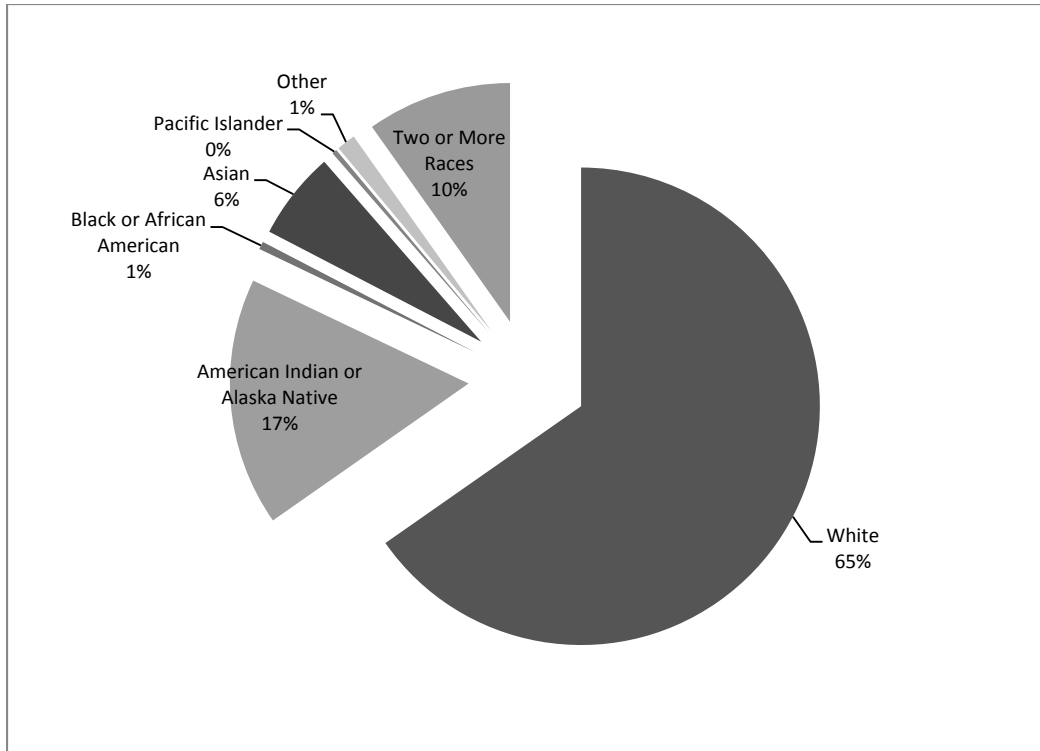
Census figures from 2010 show that 65.3 percent of the residents of Sitka identified themselves as White, 16.8 as American Indian or Alaska Native, 0.5 percent as Black/African American, 6.0 as Asian, 0.3 as Pacific Islander, and 11.1 percent as “some other race” or “two or more races.” Finally, 4.9 percent of the residents of any race in Sitka identified themselves as Hispanic. Based on race and ethnicity combined, 36.5 percent of Sitka’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]).

Figure 11 provides a graphic representation of the racial structure of Sitka in 2010 (DCED 2011m). In general, compared to a number of the smaller fishing communities profiled in this section, Sitka’s population has a relatively small Alaska Native population segment, typically associated with historically Alaska Native communities, as well as a relatively small Asian/Pacific Islander/Other population segment often associated with larger seafood processing operations that draw a proportionately large number of workers from a non-local labor pool.

Housing data from the U.S. Census, as shown in Table 16, indicate that 95.4 percent of all Sitka residents live in non-group quarters housing, with total housing units in Sitka numbering 4,102. Of those housing units, approximately 86.4 percent were occupied. Family households number 2,211, with an average household size of

1.5 persons. Although several seafood processors in Sitka are reported to have group housing for workers, the number of individuals living in group housing compared to the overall population is relatively small in contrast to some of the other, smaller fishing communities profiled in this section.

FIGURE 11 SITKA 2010 RACIAL STRUCTURE



Source: DCED 2011m

TABLE 16 SITKA 2010 HOUSING INFORMATION

Total Population	8,881	100%
Living in Non-Group Quarters	5,273	95.4%
Living in Group Quarters	255	4.6%
Total Housing Units	4,102	100%
Occupied Housing (Households)	3,545	86.4%
Vacant Housing	557	13.6%
Family Households	2,211	62.4%
Average Household Size	1.5	na

na = not applicable

Source: DCED 2011m

LOCAL ECONOMY

As discussed by Sepez et al. (2005:141–142), the economy of Sitka is relatively diversified compared to some of the smaller fishing communities profiled in this section. Commercial fishing is vitally important to the community, but

Sitka has also emerged as a major tourist destination as over 200,000 cruise ship visitors come into Sitka annually. The retail, transportation, government, and health care sectors are also well developed in the community.

Seasonal fluctuations affect employment rates, by the latest estimates based on the 2005-2009 U.S. Census American Community Survey, which suggest that 4,652 people were employed in Sitka, with an unemployment rate of 7.6 percent. Per capita income for people in Sitka was \$30,013, median household income was \$58,895, and median family income was \$71,068. An estimated 6.7 percent of Sitka’s residents were considered low-income, defined as those individuals living below the poverty level threshold (DCED 2011n). As shown in Table 17, four of the top five occupations in Sitka are in the retail or health care sectors, with the other top occupation in the seafood industry. The top employers include those related to the local health center, the school district, and city and borough government.

TABLE 17 SITKA TOP FIVE OCCUPATIONS AND EMPLOYERS

Occupations	
1	Retail Salespersons
2	Meat, Poultry, and Fish Cutters and Trimmers
3	Nursing Assistants
4	Registered Nurses
5	Cashiers
Employers	
1	Southeast Alaska Regional Health Consortium
2	Sitka Borough School District
3	State of Alaska (excludes U of A)
4	City and Borough of Sitka
5	Sitka Community Hospital

Source: ADOLWD 2011g

PROCESSING SECTOR

General. According to records from 2003, a total of eight seafood processors filed an “intent to operate,” which indicated a similar level of processing activity that was present in 2000. The processors in Sitka are geared toward salmon but also have the capacity to process sablefish, groundfish, halibut, and herring (Sepez et al. 2005:143).

GOA Halibut Processing. Sitka shore-based processors were generally more active with regard to processing halibut, with at least three processors receiving halibut deliveries since 2006. In 2010, a total of four shore-based processors received halibut deliveries. These processing entities included Absolute Fresh Seafoods, North Pacific Seafoods, Seafood Producers Cooperative, and Silver Bay Seafoods. In 2010, the four processing entities represented 10.0 percent of the total number of shore-based processors that received halibut deliveries in Alaska.

GOA HALIBUT SPORTFISHING

Sitka residents held 145 sport charter fishing permits in 2012. Almost all of the permits (142) were for Area 2C, while three permits were held for Area 3A. The permits were held by 65 individual permit holders. Estimates of catch statistics for charter sportfishing for Sitka residents specifically are not readily available, but overall statistics for Area 2C suggest that an annual average of 82,299 halibut were caught between 2003 and 2010, with the largest number of halibut caught in 2007 (109,835). The average weight per fish has increased since 2007, when it was 17.5 pounds, to 26.4 pounds in 2010. In 2010, the estimated yield of halibut in Area 2C was 1.1 million pounds, which was below the average of 1.6 million pounds for the years 2003 through 2010. The Sitka subregion in Area

2C was one of the most productive in terms of charter total yield for the years 2007 through 2010, with only the Glacier Bay subregion exhibiting similar estimated total yields.

Estimates for non-charter sportfishing in Area 2C as a whole were similar, with the largest number of fish caught occurring in 2007 and the highest yield occurring in 2008 (68,498 and 1.3 million pounds, respectively). Average weight for non-charter halibut has declined on the whole since 2003, when it was 18.5 pounds, to 16.7 pounds in 2010. In 2010, the estimated yield of halibut in Area 2C was 0.9 million pounds, down from the average of 1.00 million pounds for the years 2003 through 2010. The Sitka subregion in Area 2C was not as productive in terms of non-charter total yield for the years 2007 through 2010 compared to other subareas, exceeding only the Haines/Skagway subregion.

APPENDIX B: SUMMARY OF ECONOMIC IMPACTS BY SECTOR¹

CHARTER AND COMMERCIAL SETLINE SECTORS

The charter sector is composed of business operators who are licensed by the State of Alaska to provide charter trips. These businesses book clients for halibut charter fishing trips and offer a variety of different recreational experiences. Charter businesses provide the necessary guiding services, fishing equipment and knowledge to give clients the opportunity to harvest halibut and other species. They also provide assistance in cleaning the harvest, and may also help (or arrange to) preserve, store, and ship the harvest back to the client's home. Depending on client needs and location, they may provide half-day trips, full-day trips, multi-day trips, or any combination of those types of trips. Some operators are also part of a larger lodge business. Their clients often stay at the lodge and take halibut trips as part of their wilderness adventure. Also, a limited number of charter businesses own floating lodges where clients are housed on a larger vessel and may use smaller vessels to fish for halibut. Even with the variety of charter business structures, the fishing vessels used to take clients fishing are typically small vessels (e.g. six-pack vessels). However, some larger vessels are currently being used¹ in the fleet to carry more than six clients.

Clients of the different types of businesses would be impacted differently depending on the allocation and management measures that are implemented. For example, clients that are on a cruise may have half a day free to take a charter trip. These individuals do not have enough free time to take a whole day trip, so the half day trip better suits their needs.

Some of guided anglers are less interested in taking home a large amount of halibut (because of storage and shipping issues/expenses) and are more interested in the Alaska fishing experience. They would be less likely to be affected by a reduced bag limit. Clients that are local to the area may be more interested in harvesting halibut for the freezing and later consumption, and use the charter services as a means to access the resource. Their demand for a trip may be more impacted by a reduction in the daily bag limit.

Criddle (2004, 2006) described four types of management combinations for a halibut fishery shared by a commercial and charter sector. One combination provided an example of when the commercial fishery was managed under an IFQ-based system and the charter sector was managed under a regulated open access sport fishery. Under the regulated open access system, it is assumed that the charter sector's harvests are controlled by some combination of management measures. Those management measures could include gear restrictions, bag limits, possession limits, size restrictions, and closures. Criddle concluded that when a sportfishing charter fleet is composed of small homogeneous charter businesses, an increase in demand for trips would result in an increase in trip prices, in the short-run. Long-run effects depend on the types of management measures used to constrain charter harvests. Size limits, bag limits, annual harvest limits, line limits, and prohibition on captain and crew harvests, if some of the fish went to the clients, could reduce the angler or operator surpluses generated from the trips. Seasonal closures, restrictions on where fish is allowed, or limits on the number of clients are examples of management measures that could increase the costs of providing trips.

The charter harvest permit (CHP) program is not expected to limit the harvest of halibut from charter vessels, in the near term. The CHP may slow the rate at which effort in the fishery increases and help protect existing operations from competition associated with additional businesses. However, the excess capacity in the CHP is not expected to limit the amount of halibut the charter sector can harvest, at least in the near term. It is anticipated that all rents in the charter fleet would be dissipated under the CHP.

¹ From 2011 CSP analysis supporting 2008 CSP Preferred Alternative

Over time, increases in demand for charter trips are not expected to impact the commercial sector. If the proposed management measures restrict charter harvests to its allocation, increased demand for charter trips would be offset by more restrictive management measures. Some of the proposed measures like bag limits and size limits are expected to reduce client demand by reducing the angler surplus derived from a trip. The commercial sector would only be negatively impacted if the charter sector is not constrained to its allocation by additional management measures or if the charter sector is able to convince the Council and the Secretary to increase² its allocation.

The Council has also approved allowing CHP holders to lease GAF from the commercial sector. It is not possible to predict the magnitude of halibut that would be transferred under the 2008 preferred alternative (or the 2012 preliminary preferred alternative). However, for transfers to occur, the commercial harvester must agree to the transfer, and the charter business must pay a sufficient amount for the halibut to offset the forgone value of commercial net revenues (Criddle 2006). Because the charter operators do not benefit from consumer surplus and commercial harvesters do not benefit from postharvest surplus they are not considered when determining whether to buy or sell IFQ.

Charter businesses that purchase GAF from the commercial sector would realize increased costs. Those costs would be passed on to charter clients through higher trip prices. The increased costs and prices are expected to allow charter businesses to earn normal profits in the long run.

Changes in stock abundance also impact the charter and commercial sectors. Criddle (2006) notes that:

moderate fluctuations in stock abundance or in ex-vessel demand for commercial catch will not affect the total net benefits of sportfishing if the allocation between the commercial and sport fisheries is a fixed quota. If the allocation is percentage based, marginal increases in stock abundance will lead to short-term gains to charter operators while marginal decreases will lead to short-term losses.

Because this amendment assumes that a combined commercial and charter catch limit would be set annually by the IPHC, both changes in stock abundance and increased harvest by the unguided sport sector, bycatch mortality, personal use, subsistence, and wastage would reduce the commercial allocation if the charter sector was allocated a fixed number of pounds. If the charter sector is allocated a percentage of the combined commercial and charter catch limit (the 2008 preferred alternative), both the commercial and charter allocations would decrease when the combined catch limit is reduced. If the combined catch limit increases, both sectors would receive a larger allocation.

Impacts of moderate fluctuations in stock abundance would lead to changes in the commercial quota under a fixed or percentage based charter allocation. The changes in commercial quota would directly alter the magnitude of commercial harvest. Changes in the amount of halibut harvested by the commercial sector would impact ex-vessel prices, commercial net revenue, and post harvest surplus. Given research conducted by Herrmann et al on the price flexibility of Alaska halibut, the changes in ex-vessel price that results from increasing or decreasing the amount of commercial harvest in Areas 2C and 3A as a result of this amendment are expected to be very small. The increase in ex-vessel prices, which results from a decline in Area 2C and 3A halibut on the market, is not expected to be sufficient to offset the loss in revenue associated with selling fewer pounds. Therefore, an allocation to the charter sector that decreases the commercial allocation is expected to result in a small increase in ex-vessel price, but an overall decline in the net revenue of commercial harvesters. Post harvest surplus is directly related to the quantity of halibut on the market, so a decrease in commercial harvests would lead to a decrease in post harvest surplus (Criddle, 2006). If the allocation to the charter sector is set at a level that reduces their harvest during periods when the combined commercial and charter catch limit is steady, the commercial harvest would be

² It should also be noted that the commercial sector would benefit if they could convince the Council to increase their allocation.

increased (relative to the commercial harvest under a fixed pound allocation to the charter sector) and post harvest surplus would increase.

Stock fluctuations may impact the asset value of QS held by commercial harvesters. If halibut stocks in Areas 2C and 3A fluctuate over a small range frequently, they are not expected to impact QS values. However, if the stock size is expected to increase or decrease for a longer period of time it would impact QS asset values. In that situation, a decrease in stock size is expected to reduce QS values and an increase in stock size is expected to increase QS values. Redefining the amount of halibut that is assigned to the charter sector could have a similar impact on QS values. Because the asset value of QS is determined by the net revenue stream that is generated from the QS, if the charter allocation alters that net revenue over the long term it would impact the QS values. So, a long term allocation to the charter sector that reduces the commercial harvest would also tend to reduce QS values. QS values could also be reduced by other market conditions that impact ex-vessel demand. For example, increased farm raised production of halibut (or other close substitutes for halibut) could reduce the ex-vessel value of halibut and reduce QS values (Criddle, 2006).

Moderate stock fluctuations are not expected to change angler success rates or the total amount of halibut harvested by charter clients. CHP holders should still be able to take clients to areas where there are sufficient halibut to have a realistic chance to fill their bag limits, if the pool of halibut is relatively static. Local area depletion has been a concern for some locations in the past, but no information has been presented that those concerns have ever lead to a decline in areawide harvests for either the commercial or charter sectors. The charter sector has harvested close to or above their GHF and the commercial sector has always harvested close to their annual IFQ allocation.

CHARTER CLIENTS

Charter client trips would not be constrained by the amount of halibut available to their sector in-season under the status quo. However, demand for charter trips could decline as more restrictive management measures are imposed to limit charter harvests to the sector's allocation (e.g., a one fish bag limit in Area 2C). CHP holders would change the number of trips they offer or take more clients per trip to meet client demand under the CHP until the fleet is at full capacity. Because of the excess capacity that is expected to exist under the CHP, at least in the short term, charter clients are expected to pay prices for trips that would allow the CHP holders to earn normal profits (NPFMC 2006a). CHP holders would not raise trip prices to earn economic rents, because of the competition that would exist for clients. In the event that the CHP ever does become a constraint on the number of trips available to clients that could fish halibut, increases in trip demand could lead to higher trip prices.

Differential trip prices could result if clients wanted to use GAF to relax harvest restrictions. For example, if a client wanted to harvest 2-fish in Area 2C, they may need to compensate the charter operator for the additional cost associated with the lease of the GAF. The pricing structures for various types of trips are unknown. However, the use of GAF would increase trip costs and those costs are expected to be passed on to the client. CHP holders whose clients are willing to pay the higher cost are more likely to lease the GAF. These businesses could offer additional services (e.g., a lodge) that help spread the cost over more amenities, or they could cater to clients that are willing to pay a fee in addition to the base trip price for the privilege of retaining more or larger halibut.

Because of the structure of the charter industry and the competition for charter clients, CHP holders are expected set trip prices at levels that eliminate excess profits, all else equal. Since CHP holders are not expected to generate long-run producer surplus, the charter clients may be expected to generate all of the long-run net benefits for the charter sector.

Criddle et al. (2003) found that, during 1997 in the Kenai Peninsula region, the net benefits to consumers of halibut charter trips averaged about \$119 per trip for a non-resident and \$83 for a resident. Those numbers represent the averages for 61,709 trips by Alaskan residents and 86,970 trips for non-residents. The study also found that total consumer benefits were increasing, but at a decreasing rate. Therefore, additional charter trips would tend to increase total consumer surplus, but at a decreasing rate. The smaller marginal consumer surplus from each

additional trip would reduce the average net benefit per client. Charter clients are also expected to generate consumer surplus in other 2C and 3A regions, but the magnitude of the surpluses in those areas has not been estimated.

Status quo regulations are expected to be more restrictive in Area 2C than in Area 3A. Those management measures are expected to reduce both consumer demand and consumer surplus more than the regulations in place for Area 3A. In Area 3A, the charter clients would remain under a two-fish bag limit with no size limit on the second fish. The number of halibut that may be harvested by a client during the year is not further regulated in Area 3A. Because of the different management measures in place for the two areas, clients that have the opportunity may choose to take a trip in Area 3A instead of Area 2C. This behavior could shift demand from Area 2C to Area 3A. If non-residents increase the percentage of trips they take in Area 3A, overall consumer surplus may increase more than if participation patterns remained static.

We assume that the CHP is not a constraint to persons booking a trip. Competition for clients is expected to keep trip prices at a level that would allow CHP holders to only earn normal profits. All else being equal, the price of trips should not increase as a result of the status quo management measures. Seasonal discounts may continue to be offered, especially in Area 3A, as CHP holders try to attract clients during the non-peak seasons. Discounted trips have historically been available before mid-June and after mid-August.³

McDowell Group Inc. (2007) estimated that 1.7 million out-of-state visitors came to Alaska between May and September 2007. This represents an increase of 43 percent increase over 2001 levels. The increase from 2006 was 5.1 percent. Over 95 percent of travelers were on trips that included some pleasure activities. The increase was reported to be largely driven by increases in cruise ship passengers. Over 48 percent of the visitors (827,800), in the summer of 2007, arrived in the Alaska via cruise ship. A slightly larger percentage than arrived via air. The trend has been toward more visitors in the 55 to 64 age group. They represented 11 percent of the visitors in 1993 and 20 percent of the visitors in 2006. Perhaps as a result of more persons in the “baby boomer” age group traveling to Alaska the household income of the average tourist increased from about \$70,000 in 1993/94 to \$103,000 in 2006/07. The higher levels of disposable income provides consumers more choices of where and when to travel. Other reasons people may be electing to vacation in Alaska is the relatively weak U.S. dollar, concerns about safety when traveling outside of the U.S., and people living longer and more active lives. All of these issues could influence a person’s decision to take a charter trip when visiting Alaska.

HALIBUT PROCESSORS

Halibut processing takes place in both the commercial and charter sectors. Halibut harvested under Class B, C, or D quota shares in the commercial sector are sold to a registered halibut buyer by the IFQ holder. The halibut are then processed for long term storage or sold fresh to markets. Halibut harvested under Class A quota shares may be processed aboard the harvesting vessel. Persons processing halibut caught by charter clients may not resell the fish. Instead, they provide a service to the “owners” of the halibut so that the meat can be transported without spoiling. As part of the processing service they also, generally, divide halibut fillets into portion sized pieces before the halibut is vacuum packaged and frozen.

Firms may process both commercially harvested halibut for resale and charter harvested halibut for clients. Net profits for these firms, by mode of operation, are not known. So it is not possible to determine whether they would generate additional net revenue if the charter or commercial sectors were allocated more halibut. Processors that only provide services to one of the sectors would likely prefer that sector’s allocation not be reduced.

³ While charter operators may earn only normal profits on halibut charters, it is possible that some operators may earn additional profits on other aspects of their businesses, including lodge operations and charter support services.

Commercial Processing: As stated earlier, in the commercial sector, halibut harvested under Class B, Class C, or Class D QS cannot be processed on the harvesting vessel.⁴ The QS units in these classes are designated as catcher vessel shares and the halibut harvested under those QS units must be sold to a registered halibut buyer. Halibut harvested under Class A IFQs may be processed on the vessel where it was harvested. Freezer vessels used to harvest Class A shares may be any length. It is assumed that most of the Class A halibut harvested in the future will be processed onboard the harvesting vessel. So the economic benefits that accrue to the first processor would be earned by the QS holder. According to NMFS reports (<http://www.fakr.noaa.gov/ram/ifqreports.htm>), about 21 percent of the 2C QS is Class A and 26 percent of the 3A QS is Class A. The remaining 79 percent of 2C halibut quota and 74 percent of 3A quota would need to be processed after the fish leave the harvesting vessel. Depending on market conditions, the fish harvested under any QS Class could either be sent into the retail market fresh, frozen, or processed using another method (e.g. smoked).

The total income derived from commercial halibut processing is not known. Key informants have indicated that the processors may be charging from \$1.35 to \$2.00 per pound to custom process halibut.⁵ Custom processing fees are assumed to cover the costs of processing and generate some unknown amount of net revenue. Costs paid to have halibut custom processed are not assumed to represent the benefits (first wholesale price minus the costs to purchase and process the fish) that processors would derive from selling the fish.

The commercial halibut fishery was allocated 6.2 M. Lb. of halibut in Area 2C and 24.2 M. Lb. in Area 3A, during 2008. Assuming all of the halibut were processed using custom processors at \$1.75 per pound, the income generated would be \$11.8 million in Area 2C and \$41.6 million in Area 3A. Those revenues are not expected to represent the total value that halibut processors/sellers generate from the fish. First, it is unrealistic to assume that all of the halibut are custom processed into frozen fillets. Second, the benefits generated in the processing and marketing of halibut accrue beyond the first processor.

The postharvest surplus of halibut includes all levels of processing and marketing through final retail. It also includes the consumer surplus that is enjoyed by the final consumer of the fish. Because postharvest surplus of halibut is unknown, some general information is provided on the difference between ex-vessel prices and the retail price of halibut. The retail price of a whole⁶ halibut from the Pike Place Fish Market in Seattle was \$9.99 per pound⁷ (\$17.99 per pound for fillets) on May 27, 2008. The ex-vessel price of halibut in May 2008 was about \$4.00 per pound⁸ in Sitka. The difference between the actual ex-vessel price paid for halibut and the price of the fish sold to a final consumer represents the expenditures incurred and profits generated by persons beyond the vessel operator. If the examples presented above are typical of the overall prices, the difference between ex-vessel prices and final retail prices could be about \$6.00 per pound. Based on the example prices above, halibut harvested in Area 2C may generate \$37 million above the ex-vessel price. In Area 3A the revenue generated may be \$145 million. These examples are not intended to represent estimates of the total value. They are provided to show the

4 Class B shares may be harvested using a catcher vessel that is greater than 60' LOA. Class C shares may only be harvested on a catcher vessel that is less than or equal to 60' LOA. Class D shares may only be harvested from a catcher vessel that is less than or equal to 35' LOA. Federal regulations prohibit the processing of halibut onboard vessels fishing under these classes of QS.

5 Custom processing is when an entity is contracted to process halibut for another entity but does not take ownership of the fish.

6 Whole fish have been gutted and bled.

7 Prices according to the Pike Place Market website. www.pikeplacefish.com/store_product_1084.html.

8 The price per pound of halibut under 40 pounds was less than \$4.00 and the price of larger halibut was over \$4.00.

difference in first wholesale and retail prices for specific locations during May 2008. Those prices may not reflect the overall average ex-vessel and retail prices of halibut for the year across the United States. For example, internet and local grocery store advertisements during July 2008 report halibut prices over \$30 per pound⁹. Publix supermarkets in the Southeastern U.S. were selling fresh halibut for \$8.99 per 6 ounce serving during July 2008. However, retail prices for halibut can often be found for \$20 per pound or less. For example, the week of July 13th Fred Meyer offered fresh halibut portions on sale for \$12.99 per pound. The range of sales prices and the variety of products produced from halibut precludes the analyst from providing accurate estimates of the net revenue generated by processors and retailers of commercially harvested Alaska halibut without collecting detailed information that is currently unavailable.

Charter Processing: In most ports, halibut harvested while charter fishing may be processed for a fee if the clients cannot or do not wish to process the fish themselves or the charter operator does not provide the service as part of their package. Examples of the fees charged to freeze and vacuum pack halibut in Southeast and Southcentral Alaska communities during 2008 ranged from \$1.00 to \$1.35 per pound, incoming weights. These fees were taken from processor's websites. Not all of the firms that process charter harvested halibut were available, but the fees reported likely cover the range of the majority of halibut processed by charter vessels. Processors also offer other services to meet client demand. For example, the fish could be flash frozen for an additional charge (about \$0.25 per pound). Filleting the halibut before it is packaged and frozen typically added an additional \$0.10 to \$0.15 per pound to the processing cost. If a client only wanted the fish vacuum packed, the cost was typically reported to be \$0.75 to \$0.95 per pound. To have the halibut only frozen was reported to cost about \$0.60 to \$0.75 per pound in 3A communities and \$0.25 to \$0.50 in 2C communities. It is not known why the cost of only freezing the fish varied this much between 2C and 3A processors. One reason may be that only two processors were found that reported this service during the internet search. A larger sample size may have resulted in the costs of freezing halibut in the two areas being closer. If a client wanted the halibut processed, packaged, and shipped to their home, the client may expect to pay about \$4.50 to \$6.00 per pound according to processor's web sites.

It is not known how much of the halibut harvested by charter clients is processed at commercial facilities. Because of the distribution of resident and non-resident charter clients fishing in 2C and 3A it is likely that a higher percentage of the halibut harvested in 2C is frozen outside the harvester's home. Non-residents that are not staying in a lodge may need to hire a processor to care for their catch. Non-residents staying at a lodge will likely have their halibut processed as part of the overall cost of their trip. Some portion of the resident halibut harvesters will also employ commercial processors for convenience or because they will not return home soon enough to keep fresh fish without concerns of spoilage.

Because we do not know the amount of halibut harvested by clients on charter vessels or the cost each person pays for processing their catch, we could assume the each halibut was cleaned and dressed by the charter operator before it was delivered to the processor and the processing fee was \$1 per pound incoming weight. If 0.9 Mlb of halibut were delivered to be processed¹⁰ in 2C, the total revenue generated would be \$0.9 million. In area 3A, if 1.8 Mlb of fillets were processed the processor gross revenue would be \$1.8 million. These estimates cannot be directly compared to the \$8.95 million for marine recreational fishing processing in 2006 reported by Gentner et al (2008), because their report was not specific to halibut harvested from charter vessels.

If charter clients all paid \$6.00 per pound to have their fish processed, packaged, and shipped to their home, in Area 2C the cost would be \$5.4 million to have 0.9 Mlb shipped. In Area 3A the cost would be about \$10.8 million.

9 <http://www.gortonsfreshseafood.com/Gourmet-Fresh-Fish/Halibut-Selects.aspx>

10 This assumed that halibut were filleted before they were taken to the processor (about 50 percent of the whole weight), all halibut were commercially processed, and the charter sector harvested about 1.8 Mlbs in 2C. We would expect these assumptions to overestimate the charter processing revenues because not all halibut would have been commercially processed.

The costs/revenues discussed in this section are provided to show examples of the fees charged by processors and the gross revenues they may earn as a result of those fees. The results were based on several assumptions associated with the amount of halibut that would be processed and the average cost of processing. Neither of these assumptions can be verified with data that are currently available.

Commercial processors have indicated that halibut is important to their businesses because it helps to keep product flowing through the plant when other fisheries are closed or deliveries are slow. The stability that halibut provides these processors was sighted as important to their overall business. If halibut were not available almost year-around, it would have negative impacts on the number of days the processing facility is open. This may have negative spillover impacts (lower prices or no market for their harvest) on other small fisheries that may lose buyers. It is likely that processors of halibut harvested from charter vessels would make similar arguments about the importance of halibut to the profitability of their firm.

CONSUMERS OF COMMERCIAL HALIBUT

The Pacific halibut resource is fully utilized by commercial and sport fishermen in Areas 2C and 3A, and the open-ended reallocation from the commercial halibut sector to the charter halibut sector continues to exist. Continued growth in the amount of halibut harvested by the charter sector would decrease the amount of halibut available to consumers. Decreases in the amount available would result in increases in halibut prices, all else being equal. As stated earlier, the increase in ex-vessel price that would result from decreased supply is expected to be modest given the price-flexibility of halibut. Even though the price increases are expected to be relatively small, the combination of increased prices and reduced availability would decrease consumer surplus (Criddle 2006). The exact amount of the decrease surplus has not been estimated and is outside the scope of this analysis.

Allowing the charter sector to lease commercial IFQ would decrease consumer surplus to consumers of commercial halibut, if transfers occur. The leases would reduce the amount of halibut available to halibut consumers. Because of the direct relationship between consumer surplus and quantity supplied, benefits to consumers of commercial halibut would be reduced.

COMMUNITIES

Economic activity resulting from the charter and commercial halibut fisheries generates income for residents of the communities where the expenditures occur. Employment is also created in communities that provide goods and services to the fishing sectors. The regional economic benefits under the status quo would likely differ from those under an allocation to the charter sector that imposes additional management measures in future years. However, changes in regional economic benefits generally do not cause changes in net national benefits. The CHP analysis provided information on the communities where charter trips terminated in 2004 and 2005 (NPFMC 2006a). Information was also provided in that analysis showing the percentage of Area 2C and 3A commercial halibut QS held by residents of various communities. Those tables indicated that in many cases the charter and commercial fisheries operate in the same communities. When a community is home to both charter and commercial activity, the reduction in expenditures by one sector would be offset, at least to some degree, by the increased activity from the other sector. When the amount of fish available to both sectors decreases, as happened in Area 2C in 2008, the activity of both sectors is reduced. Because the activity of both sectors is reduced the regional benefits from the fisheries would decline, because the variable costs of the fleets are reduced.

Under the status quo, the amount of personal income and jobs generated by the charter sector is expected to increase in Area 3A in the long-run. In Area 2C the sector would experience declines in the short-term, as a result of stricter management measures imposed to keep the sector within the GHL (Table B-1). If the CEY increases to higher levels in the future the charter sector would be expected to increase the amount of personal income and jobs it creates above the 2008 levels. The economic activity reported in the University of Alaska Fairbanks angler survey (Lee et al. 1998, Herrmann et al. 2001) and the ADF&G angler survey conducted in 1997 (Howe et al. 1998) were used to estimate regional economic impacts for the Kenai Peninsula Borough (Criddle et al. 2003). The results

of that analysis showed that the 197,556 saltwater sportfishing trips in 1997 generated \$28.5 million in expenditures, \$12 million in personal income, and 822 jobs. These values over-estimate the impact of the halibut charter sector in the Kenai Peninsula because the values include non-guided fishing trips. However, the impacts do not account for the regional impacts generated by trips in other Area 2C and 3A communities. That analysis also provides estimates of the impact that changes in expected charter harvest and increases in trip prices would have on compensating variation, expenditures for sportfishing trips, personal income, and employment. Because the status quo is not expected to impact trip prices, that information is more relevant under a management system that alters those trip attributes. No options are being considered that limit the harvest of the charter sector within a fishing season. However, the management measures that were imposed on the Area 2C charter fleet under the GHM that have reduced client demand for trips. When the number of trips taken is reduced by additional management measures, the charter sector would need fewer supplies and it would reduce expenditures within the communities that supply those goods. When the charter sector purchases fewer goods and services within the community it has a negative impact on their economy and employment, if the reductions are not offset by increased purchases by the commercial sector. While the allocation considered in this amendment would shift the amount of halibut available to the commercial sector and charter sectors, the overall near-term CEY reductions are likely to have a larger impact on the regional economies than shifting the available halibut among sectors. Individuals within those communities are more likely to be impacted by allocation shifts than the regional economy, because spending by the two sectors would to some extent offset each other. The total reduction in trips by community cannot be estimated. Information on the expenditures by CHP holders by community is also unavailable. Collecting that information would be both expensive and time consuming, and is outside the scope of this amendment. Table B-2 shows that in Area 3A, the larger halibut ports and those on the road system seem to start providing trips before communities that are more remote. This may be the result of local residents driving to those areas from Anchorage and Fairbanks to take early season trips. The communities that are more remote need to attract clients from the outside. Those individuals may be seeking more than just a halibut trip. They may be seeking the cultural experience of visiting places that most tourists do not see. The halibut trip is a part of that overall experience

SELF-GUIDED ANGLERS AND SUBSISTENCE HARVESTERS

Continuation of the status quo is not expected to impose costs or provide additional benefits to self-guided anglers or subsistence harvesters. Because halibut removals by those two groups are unrestricted and deducted from the CEY prior to determination of the proposed combined commercial and charter catch limit, the amount of halibut harvested by the commercial and charter sectors do not impact the halibut available to these groups.

Imposing a limit on the amount of halibut charter clients may harvest or reducing their bag limit could result in some individuals that have access to a private boat fishing for halibut without a guide, when they would have used a guide service all else being equal. Increasing effort in the non-guided sector is more likely to occur in Area 3A where the percentage of clients from Alaska is greater than in Area 2C. Alaska residents are more likely to know someone that would allow them to fish on their boat than a visitor who came to Alaska on a cruise. If additional effort in the non-guided sector results in that sector harvesting more halibut, it could reduce the amount of halibut available to the charter and commercial sectors. Any change in costs would be related to the charter operations increased fishing radius or commercial operations decreasing their fishing radius from coastal towns seaward as they deplete the more accessible fishing grounds or attempt to reduce fishing costs. This forces resident sport and subsistence fishermen to travel farther in search of halibut, which increases fuel costs, heightens the risk of fishing in more exposed areas of the ocean, and potentially increases the number of trips needed to find halibut.

Table B-2 Area 3A communities where halibut charter trips terminated in 2006, by number of anglers and week of the month

Port of Landing	Week Fished During 2006																				TOTAL							
	3 to 17	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35		36	37	38	39	40 to 50		
ALL OTHER PORTS		5	2	1	14	24	10	29	44	78	99	80	108	101	117	187	194	187	182	112	153	77	41	13	5	1872		
RASPBERRY ISLAND									3	12																9	200	
AMOOK PASS												15	5	20	25	30	12	12	13	20	41	10	2				205	
PASAGSHAK BAY							16				9	15	4	6	5		18	10	12	13	16	17	11	22	33	13	220	
PORT WAKEFIELD												18	6						35	47	52	56			6		220	
PARKS CANNERY										10	35	16	8	15	2	12	4	11	24	24	19	32	12				224	
ANTON LARSEN BAY		6				2		4	12	19	35		3	36	49	23	9	13		9	11	11	15	4		2	263	
ZACHAR BAY									20	18	21	12	6	65	5	11	1	4	25	20	27	28	3	2		8	276	
UGAK BAY									6	36	30	24	22	15		12	17	32	9	31	11	14	23	13			295	
SELDOVIA										23	29	25	48	50	42	41	30	72	65	72	31	20	3	20	4		14	589
CORDOVA	4					2	19	16	14	48	43	47	48	44	10	50	32	37	36	46	59	32	7	14		8	616	
MILLERS LANDING					3	14	6	43	33	55	52	83	108	104	57	60	115	75	63	54	39						964	
OLD HARBOR					44	60	50	73	51	60	105	68	71	56	24	46	38	104	79	46	43	24	4				1046	
PORT LIONS						39	45			65	94	70	91	80	82	49	99	84	97	115	136	76	78	5		22	1327	
LARSEN BAY							68	64	86	140	121	109	105	88	80	102	160	143	167	81	53	16	13		161	1757		
HAPPY VALLEY				35	102	152	162	154	82	52	103	118	130	165	134	54	42	113	89	103	7	12					1809	
NINILCHIK				26	70	148	235	111	148	176	193	149	181	178	226	194	162	113	64	60	26	17					2477	
WHITTIER				13	51	78	89	176	61	169	198	263	255	156	192	262	162	161	101	114	102	39	72	20		9	2743	
YAKUTAT	34	41	37	59	50	49	62	79	131	202	159	284	220	157	40	61	85	194	223	204	190	219	246	120		55	3201	
KODIAK	5	3	8		41	62	86	84	129	206	170	301	338	380	282	430	423	397	391	340	323	172	190	114		52	4927	
VALDEZ	7	6	5	46	36	148	203	242	210	328	537	632	742	575	442	497	387	301	190	181	119	13	10			4	5861	
ANCHOR POINT			6	119	74	154	260	237	258	443	689	482	930	738	1219	638	640	402	333	257	244	57	6				8186	
DEEP CREEK			55	505	681	1311	1777	1569	1453	1437	1654	1383	1788	1271	2414	1440	1269	731	689	598	312	68					22405	
SEWARD	116	33	82	153	285	505	991	1207	948	1564	2040	2349	3000	2819	1624	2611	2482	2924	1398	1396	1025	298	194	51		25	30120	
HOMER	117	164	138	334	472	906	1408	1952	2267	3076	3454	3852	4352	4229	5599	3797	4011	2581	2911	1793	1228	987	481	212		157	50478	
3A Total	283	258	333	1291	1923	3654	5442	6079	6054	8220	9886	10432	12550	11331	12682	10693	10387	8725	7209	5799	4258	2277	1360	602		553	142281	

All other ports includes: Afognak, Ak Wilderness Safaris Lodge, Alderwood Retreat, Amook Island, Anchor River, Blue Dory Lodge, Chenega, Comfort Cove, Cranberry Creek, Dog Bay Harbor, Ellamar, Geographic Harbor, Halibut Cove, Hidden Basin, Icy Bay Lodge, Iliamna, Iliamna Bay, Iron Creek, Jakalof Bay, Kasitsna Bay, Kenai, Kiliuda Bay, Kukak Bay, Lowell Point, Ouzinkie, Poohs Landing, Port Vita, Port William, Rainbow Bay Resort, Ravencroft Lodge, Seal Bay (Sc), Selief Bay, Silver Salmon Creek, Tutka Bay, Uganik Bay, Uyak Bay, Whale Pass (Sc), Williamsport.

Source: ADF&G 2006 Logbook data for halibut charter trips

Table B-2 Area 3A communities where halibut charter trips terminated in 2006, by number of anglers and week of the month

Port of Landing	Week Fished During 2006																				TOTAL						
	3 to 17	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35		36	37	38	39	40 to 50	
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RASPBERRY ISLAND									3	12						11	19	21	29	37	26	16	17		9	200	
AMOOK PASS												15	5	20	25	30	12	12	13	20	41	10	2			205	
PASAGSHAK BAY							16			9	15	4	6	5		18	10	12	13	16	17	11	22	33	13	220	
PORT WAKEFIELD												18	6					35	47	52	56			6		220	
PARKS CANNERY										10	35	16	8	15	2	12	4	11	24	24	19	32	12			224	
ANTON LARSEN BAY		6				2		4	12	19	35		3	36	49	23	9	13		9	11	11	15	4	2	263	
ZACHAR BAY									20	18	21	12	6	65	5	11	1	4	25	20	27	28	3	2	8	276	
UGAK BAY								6	36	30	24	22	15		12	17	32	9	31	11	14	23	13			295	
SELDOVIA									23	29	25	48	50	42	41	30	72	65	72	31	20	3	20	4		14	589
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MILLERS LANDING					3	14	6	43	33	55	52	83	108	104	57	60	115	75	63	54	39					964	
OLD HARBOR					44	60	50	73	51	60	105	68	71	56	24	46	38	104	79	46	43	24	4			1046	
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YAKUTAT	34	41	37	59	50	49	62	79	131	202	159	284	220	157	40	61	85	194	223	204	190	219	246	120	55	3201	
KODIAK	5	3	8		41	62	86	84	129	206	170	301	338	380	282	430	423	397	391	340	323	172	190	114	52	4927	
VALDEZ	7	6	5	46	36	148	203	242	210	328	537	632	742	575	442	497	387	301	190	181	119	13	10		4	5861	
ANCHOR POINT			6	119	74	154	260	237	258	443	689	482	930	738	1219	638	640	402	333	257	244	57	6			8186	
DEEP CREEK			55	505	681	1311	1777	1569	1453	1437	1654	1383	1788	1271	2414	1440	1269	731	689	598	312	68				22405	
SEWARD	116	33	82	153	285	505	991	1207	948	1564	2040	2349	3000	2819	1624	2611	2482	2924	1398	1396	1025	298	194	51	25	30120	
HOMER	117	164	138	334	472	906	1408	1952	2267	3076	3454	3852	4352	4229	5599	3797	4011	2581	2911	1793	1228	987	481	212	157	50478	
3A Total	283	258	333	1291	1923	3654	5442	6079	6054	8220	9886	10432	12550	11331	12682	10693	10387	8725	7209	5799	4258	2277	1360	602	553	142281	

All other ports includes: Afognak, Ak Wilderness Safaris Lodge, Alderwood Retreat, Amook Island, Anchor River, Blue Dory Lodge, Chenega, Comfort Cove, Cranberry Creek, Dog Bay Harbor, Ellamar, Geographic Harbor, Halibut Cove, Hidden Basin, Icy Bay Lodge, Iliamna, Iliamna Bay, Iron Creek, Jakalof Bay, Kasitsna Bay, Kenai, Kiliuda Bay, Kukak Bay, Lowell Point, Ouzinkie, Poohs Landing, Port Vita, Port William, Rainbow Bay Resort, Ravencroft Lodge, Seal Bay (Sc), Selief Bay, Silver Salmon Creek, Tutka Bay, Uganik Bay, Uyak Bay, Whale Pass (Sc), Williamsport.

Source: ADF&G 2006 Logbook data for halibut charter trips