

DRAFT FOR PUBLIC REVIEW

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

Environmental Assessment/Regulatory Impact Review/ Initial Regulatory Flexibility Analysis

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Abstract: This analysis examines a proposed change to the management of Pacific halibut charter and commercial longline fisheries in International Pacific Halibut Commission Regulatory Areas 2C and 3A in the Gulf of Alaska. The No Action alternative would maintain the current guideline harvest level program for the charter fisheries in these areas. Alternative 2 would implement a catch sharing plan for the two fisheries that would set an initial allocation for each sector (Element 1), and allow for seasonal increases in allocation by allowing individuals who hold charter halibut limited entry permits to lease commercial individual fishing quotas (IFQ) for use by anglers in the charter sector (Element 5). Potential catch accounting systems for IFQ leases for use in the charter sector are under consideration (Element 6). Additional policy decisions on the regulatory cycle for implementing changes to management measures to restrict the charter sectors to its allocations (Element 2), potential new management measures (Element 3), and potential timelines for shortening the delay in implementing revised regulations (Element 4), would not be implemented in regulation at any time but contained within the plan. Final action is scheduled for October 2008. If the Council's preferred alternative is approved by the Secretary of Commerce, implementation would be expected no sooner than the 2010 charter halibut season.

TABLE OF CONTENTS

1	ENVIRONMENTAL ASSESSMENT	1
1.1	INTRODUCTION	1
1.2	BACKGROUND.....	2
1.2.1	<i>The Guideline Harvest Level</i>	2
1.3	PURPOSE AND NEED.....	6
1.4	ACTION AREA	7
1.5	RELATIONSHIP OF THIS ACTION TO FEDERAL LAW	7
1.6	RELATED NEPA DOCUMENTS	7
1.7	DESCRIPTION OF THE ALTERNATIVES	7
1.8	AFFECTED ENVIRONMENT	16
1.9	POTENTIAL ENVIRONMENTAL IMPACTS.....	17
1.10	POTENTIAL IMPACTS ON RESOURCE COMPONENTS.....	18
1.10.1	<i>The Pacific halibut stock assessment and harvest policy</i>	18
1.10.2	<i>Groundfish</i>	27
1.10.3	<i>Impacts on Endangered or Threatened Species</i>	29
1.10.4	<i>Impacts on Seabirds</i>	31
1.10.5	<i>Impacts on Marine Mammals</i>	31
1.10.6	<i>Impacts on Biodiversity and the Ecosystem</i>	32
1.10.7	<i>Impacts on the Social and Economic Environment</i>	33
1.11	CUMULATIVE EFFECTS	33
2	REGULATORY IMPACT REVIEW	34
2.1	INTRODUCTION	34
2.2	ALTERNATIVES CONSIDERED.....	34
2.2.1	<i>Alternative 1. Status quo</i>	35
2.2.2	<i>Alternative 2. Sector Allocations</i>	35
2.3	BACKGROUND.....	40
2.3.1	<i>Previous Council Actions</i>	40
2.3.2	<i>Previous Management Proposals</i>	40
2.3.3	<i>Historic Halibut Catches</i>	42
2.3.4	<i>Charter Harvest by Week in 2006</i>	44
2.4	STATUS QUO.....	46
2.4.1	<i>Current Guideline Harvest Level (GHL) Charter Regulations</i>	46
2.4.2	<i>Coast-wide Assessment</i>	46
2.4.3	<i>Changes in the Status Quo</i>	47
2.4.4	<i>Projected CEYs and GHLs</i>	48
2.5	ANALYSIS OF NEW ALTERNATIVES.....	49
2.5.1	<i>Element 1 – Initial Allocation</i>	49
2.5.2	<i>Future Harvest Projections</i>	59
2.5.3	<i>Expected effects of a Charter Allocation by Sector</i>	72
2.5.4	<i>Element 2 – Annual Regulatory Cycle</i>	94
2.5.5	<i>Element 3 – Management Tool Box</i>	95
2.5.6	<i>Element 4 – Timeline</i>	103
2.5.7	<i>Element 5 – Supplemental Individual use of GAF</i>	106
3	INITIAL REGULATORY FLEXIBILITY ANALYSIS	117
3.1	A DESCRIPTION OF THE REASONS THIS ACTION IS BEING CONSIDERED	118
3.2	OBJECTIVE STATEMENT OF PROPOSED ACTION AND ITS LEGAL BASIS	118
3.3	A DESCRIPTION SMALL ENTITIES AND AN ESTIMATE OF THE NUMBER OF SMALL ENTITIES TO WHICH THE PROPOSED ACTION WILL APPLY	119
3.3.1	120
3.3.2	<i>Charter Fishery</i>	120
3.4	RECORDKEEPING REQUIREMENTS	122

3.5	IDENTIFICATION OF RELEVANT FEDERAL RULES THAT MAY DUPLICATE, OVERLAP OR CONFLICT WITH THE PROPOSED ACTIONS	122
3.6	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 .	122
4	REFERENCES.....	123
5	LIST OF PREPARERS.....	126
6	INDIVIDUALS CONSULTED.....	126
7	APPENDIX A: ARIMA ESTIMATES OF FUTURE CHARTER HARVEST.....	127
	7.1.1 <i>Projections of Future Charter Harvest.....</i>	127
	APPENDIX 200X PACIFIC HALIBUT CATCH SHARING PLAN FOR AREA 2C & AREA 3A	137

LIST OF TABLES

Table ES-1	Projected charter harvest and GHL under the status quo, 2007–2011	8
Table ES-2	Combined commercial and charter catch limit using slow up-fast down	10
Table ES-3	Proposed Management Measures by Tier	14
Table ES-4	Estimated Effect of Management Measures.....	14
Table 5	Area 2C and 3A charter catch of Pacific halibut (all pounds are net weight)	4
Table 6	Proposed Management Measures by Tier	10
Table 7	Estimated Effect of Management Measures.....	10
Table 8	Resource components potentially affected by the proposed alternatives.....	17
Table 9	Estimated rockfish and lingcod harvest (number of fish) by charter anglers by area and year.	29
Table 10	ESA listed and candidate species that range into the BSAI and GOA groundfish management areas.	30
Table 11	Area 2C halibut removals (Mlb), 1995–2008	43
Table 12	Area 3A halibut removals (Mlb), 1995–2008	43
Table 13	IPHC staff CEY projections for Area 2C and 3A, 2008–2013	49
Table 14	Option 1a – 125% of 1995–1999 average charter harvest (current GHL)	51
Table 15	Option 1b – 125% of 2001–2005 average charter harvest	51
Table 16	Option 1c – current GHL as percent in 2004	52
Table 17	Option 1d – 2005 charter harvest as a percent	52
Table 18	Option 2a – 125% of the 1995-1999 average charter harvest (Mlb).....	53
Table 19	Option 2b – 125% of the 2000-2004 average charter harvest (Mlb).....	53
Table 20	Option 2c – 125% of the 2001-2005 average charter harvest	53
Table 21	Area 2C and 3A CEY by year, 1995-2013.....	54
Table 22	Suboption allocation under Option 2a at given changes in the CEY	55
Table 23	Projected charter allocations (2008 through 2015) under Option 2a by suboption (Mlb).	56
Table 24	Suboption allocation under Option 2b at given changes in the CEY	56
Table 25	Projected charter allocations (2008–2015) under Option 2b by suboption (Mlb).....	57
Table 26	Suboption allocation under Option 2c at given changes in the CEY	57
Table 27	Projected charter allocations (2008–2015) under Option 2c by suboption (Mlb).....	58
Table 28	Option3a–Option 3c based on 50% fixed pounds and 50% fixed percentage	59
Table 29	Projected allocations under each option when the combined commercial and charter catch limits have wide deviations from those projected.....	59
Table 30	Charter harvest (in Mlb) and standard errors	60
Table 31	Projected charter halibut harvests in Area 2C under the status quo, 1996–2011	62
Table 32	Projected charter halibut harvests in Area 3A under the status quo, 1996–2011	62
Table 33	Area 2C allocation amount (Mlb) and its relation to projected harvest, 2007–2011	66
Table 34	Percentage difference between charter harvest and its allocation under each Area 2C option	67
Table 35	Area 3A allocation amount and its relation to projected harvest, 2007-2011	68
Table 36	Percentage difference between charter harvest and its allocation under each Area 3A option	68
Table 37	Charter mean net weight (lb), Areas 2C and 3A, 1995-2006.....	69

Table 38	Number of halibut the charter could harvest and remain under the assumed allocation based on average halibut weights that year	72
Table 39	Estimates of potential Area 2C charter income (in million dollars) for the years 2007-2011 based on the various allocations.....	74
Table 40	Estimates of potential Area 3A charter income (in million dollars) for the years 2007-2011 based on the various allocations.....	74
Table 41	Vessels, catch, and ex-vessel prices from the Area 2C and 3A halibut fishery, 1995–2007.....	78
Table 42	IFQ and QS transfer data for Areas 2C and 3A, 1995–2006	79
Table 43	Projected Area 2C commercial allocations (Mlb) under each of the charter allocation options, 2007–2011	79
Table 44	Percentage of Area 2C combined commercial and charter catch limit allocated to the charter sector	80
Table 45	Projected Area 3A commercial allocations (Mlb.) under each of the charter allocation options 2007–2011	81
Table 46	Percentage of Area 3A combined commercial and charter catch limit allocated to the charter sector	81
Table 47	Nominal ex-vessel value of fish and shellfish harvested by vessels used to harvest halibut in Area 2C or 3A.....	83
Table 48	Area 2C communities where halibut charter trips terminated in 2006, by number of anglers and week of the month.....	92
Table 49	Area 3A communities where halibut charter trips terminated in 2006, by number of anglers and week of the month.....	93
Table 50	Measures by tier	95
Table 51	Estimated effect of management measures	96
Table 52	One trip per vessel per day	97
Table 53	No retention by skipper and crew	97
Table 54	Second fish of a minimum size	98
Table 55	Second fish at or below a length limit.....	99
Table 56	Annual limits	99
Table 57	Estimated savings from a one-fish bag limit, 2006 conditions	100
Table 58	2006 harvest by month	101
Table 59	How changes in average weight can affect the accuracy of prior estimates	102
Table 60	LEP qualifying entities and vessels.....	107
Table 61	IFQ and GAF available for leasing under Provision A-2 (2006 conditions)	108
Table 62	Estimated maximum 2011 demand for GAF in area 2c by allocation scenario.....	109
Table 63	Estimated maximum 2011 demand for gaf in area 3a by allocation scenario.....	110
Table 64	Distribution of vessels by area and endorsement level (number).....	110
Table 65	Distribution of vessels by area and endorsement level (percentage)	111
Table 66	Harvest levels under which proposed GAF leasing amounts would no longer be adequate to cover historical usage.....	112
Table 67	Portion of fleet likely to be unable to provide historical opportunities/experience.....	112
Table 68	Area 2C harvest data	127
Table 69	Area 3A harvest data.....	127
Table 70	Mean Area 2C harvest estimates unadjusted for 2007 or 2008 management measures.....	131

Table 71	Post-management action harvest as a percentage of pre-management action harvest by management measure	131
Table 72	Unadjusted and adjusted estimates of mean harvest in Area 2C with confidence intervals (MIb).....	132
Table 73	Mean Area 3A harvest estimates unadjusted for management measures.....	135
Table 74	Unadjusted and adjusted estimates of mean harvest in Area 3A with confidence intervals (MIb).....	135

LIST OF FIGURES

Figure ES-1	Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for a ban on skipper and crew harvest	9
Figure ES-2	Past Area 2C harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures continued through 2011	9
Figure 3	IPHC regulatory areas in the northern Pacific Ocean and Bering Sea	1
Figure 4	The IPHC’s stock assessment and catch limit setting process.	19
Figure 5	Area 2C Total Constant Equilibrium Yield (CEY), 1999-2008. (Source: IPHC).....	20
Figure 6	Area 3A Total Constant Equilibrium Yield (CEY), 1999-2008. (Source: IPHC).....	21
Figure 7	Food web that depicts halibut in white boxes (on left for juvenile halibut and on right for adult halibut), their predators and fisheries in black (above halibut), their prey in dark grey (below halibut) and species that are both predators and prey in light grey (in proximity to halibut). The sizes of the boxes represents the relative biomass of species/groups.....	32
Figure 8	Charter halibut harvest as a percentage of combined commercial IFQ and charter harvest, 1995-2006.....	44
Figure 9	Cumulative percentage of halibut charter catch by week during 2006	45
Figure 10	Weekly percentage of total charter harvest during 2006.....	46
Figure 11	Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for a ban on skipper and crew harvest	63
Figure 12	Past Area 2C harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures continued through 2011	64
Figure 13	Average net weight of halibut harvested by user group, 1995–2006	70
Figure 14	Mean halibut weights for fish harvested in the area around Juneau, Glacier Bay, and Sitka, 1995–2006.....	71
Figure 15	Mean net halibut weights for the areas around Yakutat, Valdez, and Whittier, 1995–2006.....	71
Figure 16	The average pounds of halibut harvested per vessel in the Area 2C and 3A IFQ fishery, 1995–2006.....	84
Figure 17	ARIMA Model for Area 2C	129
Figure 18	ARIMA Model for Area 3A.....	129
Figure 19	Historic Area 2C harvests compared with model estimates of the mean of future harvests adjusted for status quo management measures	133
Figure 20	Historic Area 2C harvests compared with model estimates of the mean of future harvests adjusted for a 1-fish bag limit in 2009	134
Figure 21	Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures and expected 2008 management measures.....	136

ABBREVIATIONS

ABC	Allowable Biological Catch
ADF&G	Alaska Department of Fish and Game
BOF	Alaska Board of Fisheries
CEQ	Council on Environmental Quality
CEY	Constant Exploitation Yield
CFR	Code of Federal Regulations
CSP	Catch Sharing Plan
DSR	Demersal Shelf Rockfish
EA	Environmental Assessment
E.O.	Presidential Executive Order
EIS	Environmental Impact Statement
EPA	Environmental Protection Act
FMP	Fishery Management Plan
FR	Federal Register
GAF	Guided Angler Fish
GHL	Guideline Harvest Level
GOA	Gulf of Alaska
GSM	Guided Sport Moratorium
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
IRFA	Initial Regulatory Flexibility Analysis
lb	Pounds
LEP	Limited Entry Permit
Mlb	Millions of Pounds
Council	North Pacific Fishery Management Council
NEI	Northern Economics, Inc
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
OFL	Overfishing Level
OMB	Office of Management and Budget
PSEIS	Programmatic Supplemental Environmental Impact Statement
PSR	Pelagic Shelf Rockfish
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SAFE	Stock Assessment and Fishery Evaluation
SBA	U.S. Small Business Administration
SWHS	Statewide Harvest Survey
TAC	Total Allowable Quota
USFWS	United States Fish and Wildlife Service

EXECUTIVE SUMMARY

The analysis contained in this document examines two alternatives for managing the charter halibut fisheries in International Pacific Halibut Commission (IPHC) Regulatory Areas 2C and 3A in the Gulf of Alaska. Alternative 1 is the No Action Alternative. Alternative 2 would create a catch sharing plan for the two areas, under which the Council would set initial allocations of halibut harvests between the charter sector and commercial Individual Fishing Quotas (IFQ) sector. This could accommodate seasonal increases in allocation, as needed, by allowing individual charter halibut limited entry permit holders to lease commercial halibut IFQ for use by anglers in the charter sector.

Environmental Assessment

The Environmental Assessment (EA) assesses the potential biological, social, and economic impacts of implementing regulations to set an initial sector allocation between the charter and commercial halibut fisheries in IPHC Regulatory Areas 2C and 3A.

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 to (1) create a catch sharing plan that would set an initial allocation between the charter halibut and commercial longline halibut sectors, and tighten the timeline between occurrence of an overage and a management response; and (2) design a program to compensate the commercial sector for any future reallocations, above the level set at initial allocation. Along with restrictive control measures that were considered by the Council separately from these proposed actions, because the GHL has been exceeded in Area 2C and Area 3A each year since its implementation in 2004, the proposed sector allocations are intended to stop the *de facto* reallocation from the commercial sector to the charter sector. Over the past 11 years, charter halibut harvests have grown at an annualized rate of 6.8 percent in Area 2C, and 4.1 percent in Area 3A. 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, are all at their highest level in the recorded data period of 1998 through 2006. The number of clients per trip (which is one of the best measures of upward pressure on demand) has increased steadily in recent years. This increase indicates that the number of clients is rising faster than the number of trips, and likely indicates healthy demand for the services provided by the charter sector.

List of Alternatives

While there appear to be just two alternatives under consideration, this is misleading. Alternative 2 contains multiple “options,” as well as a series of six primary decision “elements.” Therefore, the proposed action comprises a complex suite of management and regulatory permutations, some complementary, others mutually exclusive. As the analysis demonstrates, the action under consideration explores more than one configuration for Alternative 2 with which to contrast to the requisite “No Action” alternative.

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. It includes current Federal and State regulations that would otherwise remain unchanged. Current Federal regulations for Area 2C include (1) a two-fish bag limit, with one of the two fish required to be 32 inches or less; (2) a prohibition on the catch and retention of halibut by charter vessel guides, operators, and crew; and (3) a limit on the number of lines used to fish

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

Element 2 – Annual regulatory cycle.

The initial charter allocation would be a common harvest pool for all charter limited entry permit holders. It would not close the fishery when the charter allocation is exceeded. Instead, the allocation would be linked to an annual regulatory analysis of management measures (delayed feedback loop) that take into account the projected CEY for the following year and any overages by the charter industry in the past year(s). This system would work best if there is not a time lag between the overage year and the year of implementation of new regulations. The Council will not revisit or readjust the sector split. An allocation overage would trigger the regulatory process automatically, in contrast with current GHM management. Any underages would accrue to the benefit of the halibut biomass and would not be reallocated or paid forward.

Element 3 – Management toolbox

Tier 1 measures will be utilized by the Council to try to manage the charter common pool for a season of historic length and a two-fish daily harvest limit. Tier 2 measures will be utilized if Tier 1 measures are inadequate to constrain harvest by the charter common pool to its allocation. Due to the delayed feedback loop in implementation of management measures, management measures will, in general, be more restrictive to ensure that the charter sector allocation is not exceeded. In providing predictability and stability for the charter sector, it is likely that charter fish may be left in the water.

Tier 1	Tier 2
One Trip per Vessel per Day	Annual Catch Limits
No Retention by Skipper and Crew	One Fish Bag Limit for all or a portion of the Season
Line Limits	Closure for all or a portion of the Season
Second Fish of a Minimum Size	
Second Fish at or below a Specific Length	

Element 4 – Timeline⁵. The current timeline for the proposal is as described below.

Example Scenario 1: four-year feedback loop

Charter fishery ends 2007

October 2008: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2008: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2009: IPHC adopts combined catch limits for 2009.

February 2009: Council takes final action on management measures that would be implemented in year 2010.

Removals” and deduct the floating portion of the allocation from a combined charter and commercial sector fishery catch limit.

⁵ 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.

Winter 2009: NMFS publishes the rule that would be in effect for 2010.

Example Scenario 2: three-year feedback loop

Charter fishery, with in-season monitoring⁶, ends 2007

October 2007: Council receives ADF&G report on charter halibut harvest estimates for 2007. The report would likely be based on projections of the current year logbook data. Some data will still be in the process of being entered, so the data will be considered preliminary. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2007: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2008: IPHC adopts combined catch limits for 2008.

February 2008: Council takes final action on management measures that would be implemented in year 2009⁷

Winter 2008: NMFS publishes the rule that would be in effect for 2009

Element 5 – Supplemental, individual use of commercial IFQ to allow charter limited entry permit holders 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. A 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 pounds or 10 percent (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 percent 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 guided sport 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- guided sport bag limit on any given day.
- G. Charter operators landing GAF on private property (e.g., lodges) and motherships would be

⁶ In-season monitoring is a mechanism that could shorten the feedback loop by one year.

⁷ The Council has asked that the analysis address what would be needed to implement a February preferred alternative in June of the same year.

- 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 will need to be developed for the GAF fish landed in 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 make sure that accurate removable poundage is accounted for and to allow length measurement information gathered to be used in the formulation of the average weight used in the conversion of IFQs to GAF.

Effect of Alternatives

The proposed alternatives address allocation of the Pacific halibut resource. The proposed alternative to the status quo would neither affect harvest levels nor fishing practices of individuals participating in the charter halibut fishery. 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. None are expected to affect the physical environment, benthic community, marine mammals, seabirds, or non-specified groundfish species. There is insufficient data to evaluate whether groundfish stocks may be affected by the proposed alternative. There may be an effect on the human environment as there are winners and losers under any sector allocation.

Regulatory Impact Review

The economic impacts of the alternatives considered in this analysis are discussed in terms of the status quo and the elements and options under Alternative 2. 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 IPHC Areas 2C and 3A, and may be adjusted downward based on the total CEY that is determined by the IPHC. Such an adjustment occurred in Area 2C in 2008; the GHL was reduced from 1.432 Mlb to 931,000 lb. Alternative 2 would alter how the charter sector's catch limit is determined. An allocation to the charter sector in each of the two areas would be based on a combined commercial and charter catch limit that would be set annually by the IPHC⁸ as (a) a percentage; (b) a fixed poundage allocation; or (c) a combination of the two approaches. Alternative 2 also would allow charter limited entry permit holders to lease commercial halibut IFQ as a mechanism for individuals to increase the charter allocation above the initial charter sector allocation set by the Council under this action. The Guided Angler Fish (GAF) that would result from the commercial halibut IFQ would be converted from pounds to numbers of fish using an average halibut weight, as determined by the ADF&G. The same conversion factor would be used to convert GAF back into pounds of IFQ, if unused GAFs are returned to the commercial sector. GAF would be harvested under the same bag and size limits that are set for the unguided sport sector.

Alternative 1. Status quo

The status quo is defined by the management measures that are currently in place, or are expected to be in place in the near future. Projected charter harvests were calculated using those management measures. Those projections can then be compared to GHLS that are expected to be set, based on IPHC CEY projections.

If the charter sector's harvest exceeds the GHL (in year 1) based on a report by ADF&G (in year 2), NMFS would notify the Council of the overage, in writing within 30 days of being advised of the

⁸The IPHC currently only sets a commercial catch limit. However, their staff has indicated that they could establish an annual combined commercial and charter catch limit, if they were requested to do so by the Council.

overage. The Council has identified a suite of management tools that it would consider for implementation if an overage occurs (in year 2 or 3). An appropriate combination of management measures in a new analysis could be implemented by the Secretary of Commerce to constrain charter harvests (in year 3 or 4).

Area 2C The Area 2C GHLL was reduced from 1.432 Mlb to 931,000 lb in 2008. Status quo management measures in 2008 include the reduced GHLL, the proposed halibut charter limited entry program, a 2-fish daily bag limit with a requirement that one of the two halibut be less than or equal to 32", a prohibition on harvesting of halibut by captain and crew, and a line limit that is set equal to the number of clients on the vessel, or six lines, whichever is fewer. NMFS currently is preparing a new analysis and rulemaking to implement a 1-fish bag limit in Area 2C for the 2009 charter season. This follows implementation of a 1-fish bag limit that NMFS implemented on May 28, 2008⁹ at 73 FR 30504.

A temporary restraining order on the 1-fish bag limit was granted on June 10, 2008¹⁰. An amended order was issued on June 13, 2008¹¹. And a preliminary injunction was granted on June 20, 2008¹². A NMFS news release¹³ summarizes court decisions that rescinded the 1-fish bag limit.

The United States District Court for the District of Columbia has imposed a preliminary injunction against new regulations in Southeast Alaska for sport charter halibut fishing. That means a two-fish bag limit for sport charter halibut fishermen, instead of the one-fish bag limit which was part of new regulations for the area.

The preliminary injunction follows a temporary restraining order, both with the effect of limiting halibut harvest on a charter vessel in International Pacific Halibut Commission Area 2C (Southeast Alaska) to no more than two halibut per person per calendar day 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 person sport fishing on a charter vessel in Area 2C retains only one halibut in a calendar day, that halibut may be of any length. Also, the carcass retention requirement from last year is in effect under the preliminary injunction issued by the Court.

The suspended regulations would have limited sport charter vessel anglers to keeping one halibut per calendar day in Area 2C. The purpose of the suspended regulations was to keep halibut harvests in Area 2C within the guideline harvest level established in federal regulations, as recommended by the North Pacific Fishery Management Council.

NOAA Fisheries is reviewing the Court's decision from the June 20 hearing and will make a determination on how to proceed in the very near future. No new court date has yet been set. All other requirements and limitations that were published with the suspended regulations are still in effect. These requirements and limitations include the maximum line limits and the prohibition of retention of halibut by a guide, operator, or crew. Please refer to 50 CFR sec. 300.65 and 300.66 for details.

Area 3A The GHLL remains unchanged at 3.650 Mlb in Area 3A. Because no new information is available to indicate whether an overage occurred in 2007, and by how much, the analysis assumes that the management measures will remain unchanged¹⁴. A two-fish daily bag limit, a prohibition on halibut harvests by skipper and crew, and line limits equal to the number of paying clients aboard the vessel are assumed to be in place for the entire 2007–2011 time period. The charter limited entry program is also

⁹ http://www.fakr.noaa.gov/frules/73fr30504_1.pdf

¹⁰ <http://www.fakr.noaa.gov/sustainablefisheries/halibut/charter/courtorder0608.pdf>

¹¹ <http://www.fakr.noaa.gov/sustainablefisheries/halibut/charter/amendedorder061308.pdf>

¹² <http://www.fakr.noaa.gov/sustainablefisheries/halibut/charter/order062008.pdf>

¹³ <http://alaskafisheries.noaa.gov/newsreleases/2008/halibut062308.htm>

¹⁴ In mid-September 2008, ADF&G will release estimates of 2007 charter halibut harvests. The Council is scheduled to review the ADF&G report and possibly select a preferred alternative from a supplemental analysis of possible management measures to limit charter halibut harvests in Area 3A in the event of an overage at the same October 2008 meeting that the Council will select a preferred alternative for this action.

assumed to be in place in the future, but it is not expected to impact the amount of charter harvest. Client demand in Area 3A is assumed not to change as a result of maintaining these management measures.

Projections Because changes in the size limit of the second fish are expected to impact client demand in Area 2C, harvest projections are included that account for that demand change. A projection was also made that assumed no change in client demand. Because of uncertainty in changes in client demand, the two projections were averaged to calculate the point estimates used in this analysis¹⁵. The harvest projections using the other demand assumptions are included in the analysis, but for simplicity are not directly compared to the allocation options.

Charter harvest projections were provided by the Northern Economics, Inc (NEI) staff for the years 1995 through 2011. Harvest projections were made using an ARIMA model. Estimates included 95 percent confidence intervals around the harvest point estimates. The reader is cautioned that the standard errors and the resulting 95 percent confidence intervals represent the confidence intervals associated with our estimates of the mean harvest estimate. They are not 95 percent confidence intervals for the harvest itself. In other words the analysis estimates the mean harvest prediction not a 95 percent confidence interval of harvest itself. For more information see Section 0.

Projections for the years 2007 through 2011 are used to compare projected charter harvest to various charter allocations Table A- ES-1). Comparing the Area 2C harvest projections and the GHL estimates that were provided by the IPHC indicates that the charter sector would not stay within its allocation from 2008 through 2011. The GHLs from 2007 through 2011 fall outside of the 95 percent confidence intervals for the means estimated for those years. Therefore, implementing a two-fish daily bag limit and requiring that one of the fish be no greater than 32 inches in Area 2C is expected to allow the charter sector to harvest more than their GHL over the time period being considered. Stricter management measures would likely be required to keep the charter sector within its GHL. *These projections will be too low if harvest effort or average weights go up suddenly. These increases will erode the estimated harvest savings of the management measures and harvest could be more similar to the unadjusted projection than the adjusted projection.*

Charter harvests in Area 3A are projected to increase every year from 2007 through 2011. It is projected to increase to about 3.5 Milb. Harvest projections indicate the charter sector would stay within its 3.65 Milb GHL every year, during 2007 through 2011. *This projection assumes that skipper and crew have been reporting their harvest as charter harvests in the Statewide harvest surveys. If this assumption is incorrect then harvest will be higher by approximately 10 percent and above the GHL.* Based on those projections, additional charter harvest restrictions would not be required to keep the fleet within its GHL. However, because of the trend that indicates the charter harvest is increasing, the charter fleet may exceed their GHL in the future.

See Sections 2.5.2 and 0 for a discussion of the unadjusted and adjusted harvest projections and below for figures showing the adjusted and unadjusted projections.

¹⁵ Appendix A provides a detailed discussion of the models used to project future ADF&G harvest estimates and the rationale for using the average of the high and low harvest projections.

Table A- ES-1 Projected charter harvest and GHL under the status quo, 2007–2011

Year	IPHC Area 2C				IPHC Area 3A			
	Projected Harvest (Mlb)	Lower 95% CI (Mlb)	Upper 95% CI (Mlb)	GHL (Mlb)	Projected Harvest (Mlb)	Lower 95% CI (Mlb)	Upper 95% CI (Mlb)	GHL (Mlb)
2007	1.456	1.376	1.536	1.432	3.152	3.003	3.300	3.65
2008	1.496	1.406	1.586	0.931	3.372	3.206	3.539	3.65
2009	1.570	1.470	1.671	1.074	3.482	3.297	3.667	3.65
2010	1.624	1.513	1.735	1.217	3.473	3.270	3.677	3.65
2011	1.693	1.571	1.815	1.432	3.560	3.338	3.782	3.65

Source: IPHC estimates of GHL and NEI estimates of charter harvest.

CAVEATS: The accuracy of the adjusted harvest projections in both Areas are subject to certain caveats. Charter harvest in Area 3A depends on whether or not skipper and crew have been reporting their halibut harvest as charter harvest. If they have been reporting it (as assumed in this analysis) then harvest is expected to be generally near or below the GHL. If skippers and crew have not been reporting their harvests while under charter in the SHWS, then no reduction in harvest from the skipper and crew ban on retaining halibut is expected. Under those circumstances actual harvest in Area 3A will more closely match the unadjusted harvest projection, which will exceed the GHL. Additionally, in Area 2C if the estimated effect of length restrictions instituted in 2007 by NMFS is eroded by increasing harvest effort or increasing average weights then overall actual harvest will more closely match the unadjusted harvest projection, which will exceed the GHL in Area 2C (Figure ES-1 and Figure ES-2).

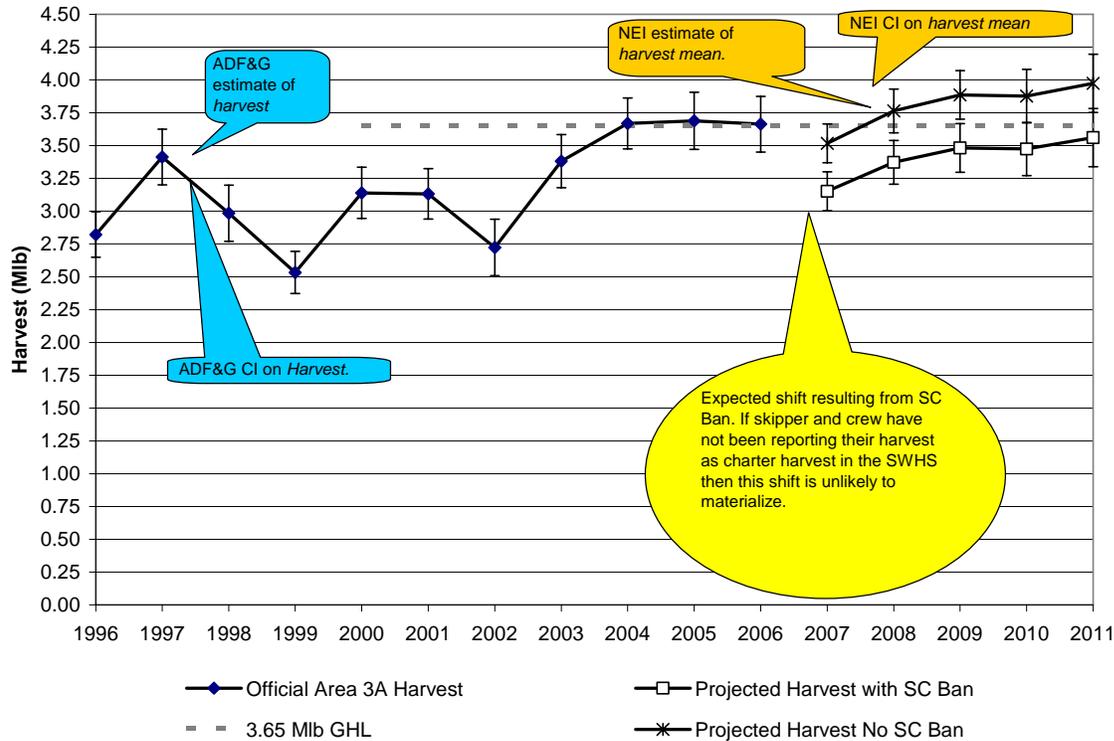


Figure ES-1 Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for a ban on skipper and crew harvest

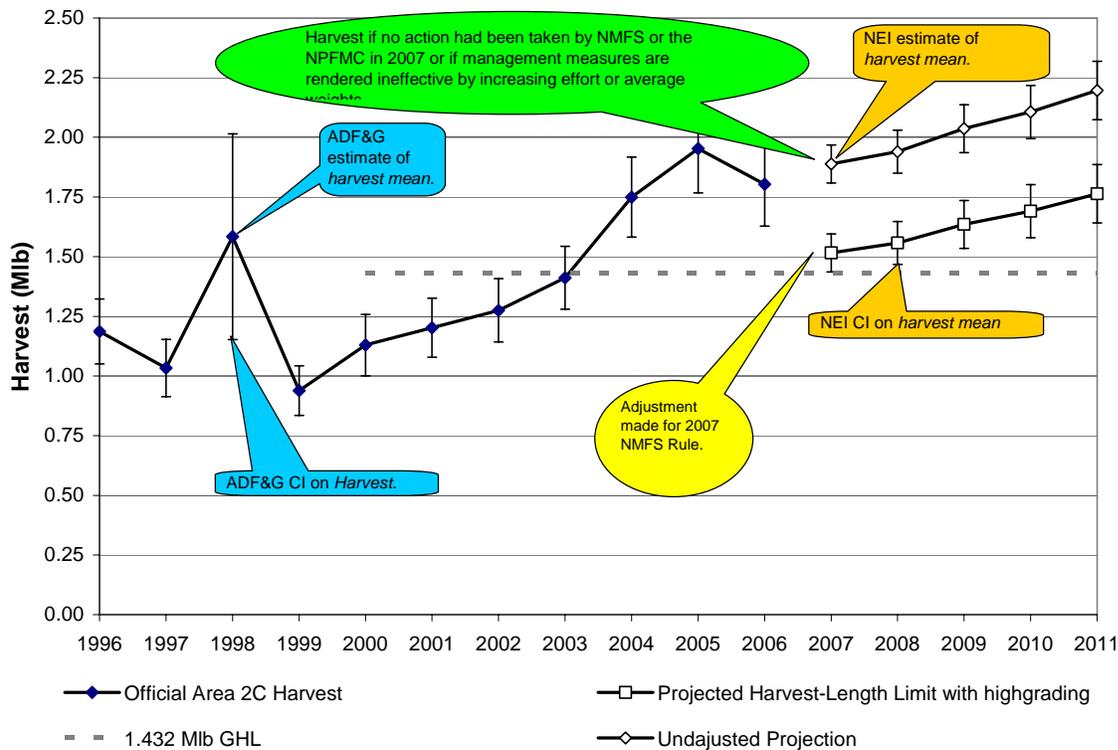


Figure ES-2 Past Area 2C harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures continued through 2011

Alternative 2. Establish a catch sharing plan that includes sector accountability

Element 1 – Initial Allocation

Element 1 would revise Federal halibut regulations to create a catch sharing plan for charter and commercial IFQ sectors in Areas 2C and 3A. Common pool allocations would be set for harvest by charter clients of charter LEP holders from a combined charter and commercial IFQ catch limit (set by the IPHC each year); the remainder would be allocated to the commercial IFQ sector. If the charter allocation is exceeded, the fishery would not be closed in-season. Instead, when an overage occurs, additional management measures would be implemented in future years to constrain harvests to the allocation. The timeline of how long it would take to determine when an overage has occurred, and when new management measures would be implemented, are discussed under Element 2. The system would work best if the time lag between the overage and when constraining management measures are implemented is minimized. However, it is anticipated that a two or three year lag may be unavoidable. Clients must abide by any annual, bag, or size limits that are in place for the halibut charter sector in an area when harvesting from the common pool. GAF may allow charter LEP holders to offer their clients the opportunity to harvest halibut under the same (presumably more liberal) regulations as those that apply to the unguided halibut sportfishing sector. Any such halibut, harvested outside of the charter fishery regulations, must be identified as GAF (or will be the subject of an enforcement action).

The Council is considering three basic methods to determine the size of the common pool allocation to the charter sector. The first method has four allocation options based on fixed percentages of a combined commercial and charter catch limit. The percentages are determined by using formulas based on historic charter harvest. The second method has three allocation options based on a fixed number of pounds of halibut. A suboption would cause the fixed pounds to vary, in steps associated with predefined changes in the area-specific CEY or combined commercial and charter catch limit. The suboption causes the fixed pound allocation to behave like a percentage based allocation that changes the amount of halibut assigned to the charter sector in predefined steps. The third set of options combines fixed pounds and fixed percentages; it uses half of the result from the fixed pound allocation and half the result of the fixed percentage option for the same base time period.

Charter harvest estimates were compared to each charter sector allocation to show which allocations would fund the common pool, without the need to impose additional or different management measures. Option 1a is calculated using 125 percent of the 1995 through 1999 average charter harvest (current GHL formula). That option results in the charter sector being allocated 13.1 percent of the combined commercial and charter catch limit in Area 2C, and 14.0 percent in Area 3A. IPHC staff has provided estimates of projected commercial and charter catch limits for the years 2007 through 2011 (Table ES-2). The catch limits incorporate the “slow up, fast down” methodology that is used by the IPHC.

Table A- ES-2 Combined commercial and charter catch limit using slow up-fast down

Year	2C	3A
2007	10.21	33.00
2008	7.91	27.62
2009	6.81	28.33
2010	6.76	30.29
2011	7.06	33.00

Source: IPHC

The projected poundage allocations that result during 2007-2011 are outside of the 95 percent confidence intervals of projected harvest in Area 2C. On average, the charter sector is projected to exceed its allocation by 552,000 lb per year over the five-year period. The reverse is the case in Area 3A, where the allocation is projected to exceed the charter harvest by an average of 886,000 Mlb per year.

Option 1b (125 percent of the 2001 through 2005 average charter harvest - GHL formula updated through 2005) results in the charter sector being allocated 17.3 percent of the combined commercial and charter catch limit in Area 2C, and 15.4 percent in Area 3A. The Area 2C allocation is projected to exceed charter harvest during 2007. During 2008 through 2011, the charter allocation is projected to fall below the 95 percent confidence intervals for charter harvest. Over the five-year average, the charter sector is projected to be over its allocation by an average of 230,000 lb. In Area 3A, the charter sector allocation is projected to exceed their harvest every year, during 2007 through 2011. *Both of these estimates are subject to the caveats noted above.*

Option 1c (current GHL as percent of 2004) results in the charter sector being allocated 11.7 percent of the combined commercial and charter catch limit in Area 2C, and 12.7 percent, in Area 3A. The Area 2C allocation is projected to be less than the charter sector's harvest each year. Over the five-year period, the charter sector is projected to exceed its allocation by an average of 660,000 lb per year. In Area 3A the charter allocation is projected to exceed their harvest each year. They are projected to harvest an average of 460,000 lb less than they would have been allocated, from 2007 through 2011.

Option 1d (2005 charter harvest) would yield an allocation of 15.1 percent of the combined commercial and charter catch limit in Area 2C, and 12.7 percent in Area 3A. The Area 2C allocation is projected to exceed charter harvest during 2007. During 2008 through 2011, the charter allocation is projected to be less than the 95 percent confidence interval for charter harvest. Over the five-year average, the charter sector is projected to be under its allocation by an average of 400,000 lb. In Area 3A, the charter sector allocation is projected to exceed its allocation every year during 2007 through 2011. Over that five-year period the charter sector would exceed its allocation by 460,000 lb per year. The Area 3A allocation is the same under both Options 1c and 1d.

The allocations under Option 2 would issue the charter sector a fixed number of pounds every year. Option 2a would allocate the Area 2C charter sector 1.43 Milb per year, and the Area 3A charter sector would be allocated 3.65 Milb per year. Option 2b would allocate the Area 2C charter sector 1.69 Milb per year, and the Area 3A charter sector would be allocated 4.01 Milb per year. Option 2c would allocate the Area 2C charter sector 1.90 Milb per year, and the Area 3A charter sector would be allocated 4.15 Milb per year. Allocations of that magnitude are projected to exceed the charter sector's harvest almost every year under Options 2b and 2c. The allocation under Option 2a is projected to fall within the 95 percent confidence interval for harvest in 2007 and 2008. During 2009 through 2011 the allocation is projected to be insufficient to meet harvest. In Area 2C, the charter sector's allocation is projected to be less than its harvest by an average of 140,000 lb (Option 2a). Its allocation is expected to exceed its harvest by an average of 120,000 lb (Option 2b), and 330,000 lb (Option 2c) over the 2007 through 2011 time period. In Area 3A, charter allocations are projected to exceed its harvest by an average of 240,000 lb (Option 2a), 600,000 lb (Option 2b), and 740,000 lb (Option 2c), over that same time period.

The suboption would implement a stair step up and stair step down that adjusts the charter allocation when the total CEY or combined commercial and charter catch limit changes a predefined amount. The starting point from which changes are measured is projected to have a substantial impact on future allocations in Area 2C. Allocations based on a stair-step using historic area-wide CEYs will tend to reduce the charter allocation. Allocations based on a stair-step using 2008 coast-wide CEY is projected to increase the allocation over time. Stair-steps that are linked to the 2008 combined commercial and charter catch limit do not trigger a change in the allocation over the time period being considered.

If Option 2a were selected, no changes would occur to the charter allocation when the CEY changes by less than 15 percent from the baseline amount. Changes greater than that amount, would trigger adjustments in the charter allocation. The first step changes the initial allocation by 15 percent, in the direction of the CEY or combined catch limit change. Each additional 10 percent change triggers an additional 10 percent change in the charter sector's allocation, again, in the same direction. In Area 2C, the first step is triggered by a 15 percent change in the CEY or combined catch limit, and results in the

allocation increasing (decreasing) 210,000 lb. In Area 3A, the allocation is changed by 550,000 lb. Each additional 10 percent increase (decrease) in the CEY results in the charter sector's allocation increasing (decreasing) 140,000 lb in Area 2C, and 360,000 lb in Area 3A.

Because the initial allocation is larger under Option 2b, the changes in the allocation at each step are also larger. In Area 2C, the initial 15 percent increase (decrease) in the allocation increases (decreases) the amount by 250,000 lb. Each additional 10 percent increase (decrease) increases (decreases) the allocation by 170,000 lb. In Area 3A, the initial change is 600,000 lb, and each additional 10 percent change adjusts the allocation by 400,000 lb.

Since the initial allocation is larger under Option 2c than either of the other two options, the changes in the allocation, at each step, are also larger. In Area 2C, the initial 15 percent increase (decrease) in the allocation increases (decreases) the amount by 280,000 lb. Each additional 10 percent increase (decrease), increases (decreases) the allocation by 190,000 lb. In Area 3A, the initial change is 620,000 lb, and each additional 10 percent change moves the allocation by 410,000 lb.

Option 3 allocations are based on 50 percent of the percentage allocation and 50 percent of the fixed pound allocation. Because the allocations are based, in part, on fixed pounds, the charter sector allocation has a floor below which the allocation would not decrease, unless resource conservation considerations dictate a reduction. By design, the allocations under Option 3 always fall between the allocations that would occur using the same years under Options 1 and 2. *When biomass is increasing, however, the allocation is smaller than the percentage based alternatives under Option 1, using the same base period years. A decreasing biomass will result in the allocation being smaller than the fixed poundage allocation, but larger than the percentage based allocation.*

Option 3a (based on 1995 through 1999) results in an Area 2C allocation that is projected to be within the 95 percent confidence interval of 2007 harvest. During 2008 through 2001, the allocation is projected to be less than the charter harvest. Over the five-year period, on average, the charter sector's allocation is projected to be 350,000 lb less than its harvest. In Area 3A, the allocation is projected to exceed harvest every year. Over the five-year period, on average, the charter sector's allocation is projected to be 560,000 lb over its projected harvest.

Option 3b is based on the years 2000 through 2004. Because those years were not included as the baseline in an alternative under Option 1, the percentage was calculated for Option 3 using the same formula used in Options 1a and 1b. Option 3c is based on the years 2001 through 2005. Both Options 3b and 3c are projected to yield allocations that are larger than the charter sector's projected harvest during 2007. In 2008 the charter allocation is expected to fall within the 95 percent confidence interval for charter harvest. Charter harvests are projected to exceed the allocation from 2009 through 2011. In Area 2C, the charter harvests, on average, are projected to exceed the Option 3b allocation harvest by 110,000 lb, and the Option 3c harvest, by 160,000 lb. In Area 3A, the allocations, on average, are projected to exceed the Option 3b harvest by 1.02 Mlb, and the Option 3c harvest, by 600,000 lb.

In summary, the only allocations that would exceed the status quo harvest projections are Option 2b and Option 2c in Area 2C. All other allocation options are projected to be less than needed for the allocation proposed, given the status quo management measures. In Area 3A all of the allocations are projected to be sufficient to meet projected harvest over the time period considered. However, if the growth trends of harvest continue into the future, the fixed poundage options (Options 2a through 2c) are projected to result in the need for more restrictive management measures before the other allocations.

Element 2 – Annual regulatory cycle

Management of the charter halibut sector to its allocation would be achieved through an annual (if necessary) 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). No regulations would be implemented to achieve this policy objective.

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) would be in effect. In other words, the Council would not seek to monitor the harvest inseason, and close the fishery when the allocation is reached. Rather, it believes its restrictions would be sufficient to achieve the sector allocation. The Council would not revisit or readjust the sector split. 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.

The Council has wrestled with what has been described as a “delayed feedback loop,” within the confines of State of Alaska data availability and Federal rulemaking. Three to four years may elapse between the years in which (1) an 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 Council could select 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. The Federal rulemaking requirements are unchanged and the Council plans to use the ADF&G Statewide Harvest Survey (SWHS) data that is released in September each year, therefore only the Council process can be streamlined to achieve its objective. Because the timing of the release of the SWHS data does not allow for the development of a RIR/IRFA in October, only a supplement to a previous analysis could be prepared in time for Council review and action in October each year. NMFS has recommended the Council select its preferred alternative for the next year’s charter season by October and for Council staff to submit the completed RIR/IRFA by mid-October to facilitate implementation for the following season. Implementation likely would occur no sooner than June each year. If this schedule can not be met, then regulations would be implemented for the subsequent fishing year. Alternate policies are discussed under Element 4.

Depending on the initial allocation and amount of IFQ leasing that occurs in each of the regulatory areas, between none and two catch sharing plans (CSP) analyses could be submitted each year (one each for Area 2C and Area 3A), or they could be combined into a single analysis and rulemaking. Some streamlining during regional review may occur as these analyses become annual updates of previously reviewed documents, as compared with wholly original analyses. No resolution to a bottleneck is foreseen in which CSP analyses compete with other higher priority analyses for review and implementation.

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 ES-3). Tier 1 measures would be considered by the Council to manage the charter common pool allocation for a season of historic length and a two-fish daily harvest limit. Tier 2 measures would be utilized if Tier 1 measures are inadequate to constrain charter harvest to its allocation. 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 A- ES-3 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 A- ES-4 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%
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 analysis for NPFMC (2007c) updated with ADF&G's final 2006 harvest estimates.

2. Neither 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.

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

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 coverage. The preferred regulatory timeline would be identified in the text of the catch sharing plans (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.

Element 4 outlines two scenarios for the timing of the selection of a preferred alternative for future regulatory actions. The primary difference between the two proposed scenarios is when ADF&G provides an estimate of charter harvests (step 2), i.e., post-season or in-season.

The Council may select its preferred approach from one or more of those described below or an as yet not previously identified 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 2-4 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.

Option. Forego SSC review of the RIR/IRFA. The Council could forego SSC review of the revised analysis since the analytical methodology has previously been approved by the SSC and Council. The analysis includes 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.

- 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 [http://www.fakr.noaa.gov/npfmc/current_issues/halibut_issues/Area2CGHL_Sup1007.pdf]. A complete, revised EA/RIR/IRFA would be prepared by Council staff immediately after final action and submitted to the Secretary.
- C. Dual preferred alternative. The Council could select alternate preferred alternatives (presumably in October based on a supplemental analysis) for management restrictions for the charter sector prior to the determination of the allocation by the IPHC (in January) using the Council's 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 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 Council's 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 IPHC annual management 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, exclusive use of Guided Angler Fish

Element 5 would revise commercial halibut IFQ regulations to allow halibut charter LEP holders to lease commercial IFQ from commercial QS holders. Such leases would provide guided anglers with additional harvesting opportunities, in excess of the annual charter common pool allocation. The LEP holder would request NMFS Restricted Access Management Program to convert the leased IFQ into Guided Angler Fish (GAF). When using GAFs, guided angler's harvesting opportunities would never exceed the daily bag and size limits in place for unguided halibut sport fishing anglers.

The most important implications under Element 5 include the following.

- In Area 3A, the proposed IFQ leasing levels should provide adequate GAF to preserve historic harvest opportunities, and allow charter sector growth in the near future.
- In Area 2C, the proposed IFQ leasing levels may inhibit charter sector growth by 2011 depending on 1) which allocation the Council selects; 2) future growth in the number of charter clients; and 3) halibut biomass in that area.
- IFQ, and consequently GAF, availability will vary with biomass, average weights, and IPHC policy decisions.
- There are little data to suggest what price LEP holders might pay for leasing GAF.
- The element contains GAF-equivalent leasing limits for LEP holders. LEP on vessels with an endorsement for 6 or fewer passengers would be limited to leasing 200-GAF or 400-GAF per season. The element contains a sub-option whereby LEPs used on vessels with passenger endorsements greater than 6 could lease 400-GAF or 600-GAF. The higher leasing allowances (e.g., 400-GAF, 600-GAF) would preserve historic harvest opportunities under a restrictive management regime such as a one-fish bag limit. The exception is for approximately 15 percent of the fleet in Area 3A, which has higher than average harvest levels. These vessels would need higher GAF leasing limits under a one-fish bag limit.
- For determining average harvest weights:
 - The current system of calculating average charter harvest weights from the previous year would not be available for IFQ conversion until the end of the following season. For

example, the final estimate of average weight for 2007, would not be available until September 2008;

- If there is a change in the average weight from year to year, it would become apparent 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 would likely cancel out only for charter LEP holders and IFQ holders who convert on a regular basis over an extended number of years, assuming all else is equal;
- The time lag in estimation of average weight may also affect catch accounting. It is assumed that GAF harvest is tallied as commercial catch, since it is converted from IFQs (i.e., it will not count against the charter common pool allocation). 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 conversions. If conversions are a small proportion of the commercial catch limit, the error may not be worth addressing;
- Perhaps a more important consideration is whether the average weight of the charter harvest (common pool) should be used to convert IFQ for 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 halibut under certain conditions. 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, this would result in a higher average weight. Alternatively, if GAF are utilized late in the season, when supplemental halibut are needed to continue operation (i.e., the common pool is depleted), the average size fish may be smaller, due to local depletion caused by removals earlier in the season;
- Under certain conditions that average weight of GAF may not exceed that of common pool fish. For example, if the charter fishery is restricted by a one-fish bag 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.

Element 6 – Catch Accounting System

Element 6 encompasses the record keeping and reporting requirements to implement the Council's preferred alternative. An interagency working group has developed a draft implementation plan for the proposed action. If adopted by the Council, and approved by the Secretary, the Council's preferred alternative could be implemented no sooner than 2010.

Economic Impacts of the Alternatives

The analysis assumes that the proposed charter sector allocation would be a common pool of fish that clients of charter LEP 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) or regulatory changes. Exceeding the common pool allocation would result in more stringent management measures being implemented to reduce harvest in future years. The leasing of commercial IFQ may also be allowed under this amendment. Leasing of IFQ would allow individual charter LEP holders that hold GAF, to use those fish to exceed charter harvest regulations (up to the regulations for the unguided sport fishery).

This analysis does not provide quantitative estimates or confidence intervals for the magnitude of net national benefits under each element and option. Nor are those quantitative estimates provided for regional economic impacts of the alternatives considered in this analysis. Because those estimates cannot be provided, given the information available, the analysis does not identify an optimal allocation. To provide these data, information on the contribution to national welfare of all commercial removals would be needed. That information is currently unavailable for the commercial sector and an analysis to estimate those impacts is outside the scope of what can be completed as part of this document.

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. Collecting that information would be expensive and time consuming. Even if these data were available, 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, would be suboptimal in the future. Leasing IFQ from the commercial sector could aid in adjusting the allocation to one that benefits both the commercial and charter sector. The benefits of the leasing provision for the charter sector will depend on the availability of halibut for lease and the market price for that halibut. If halibut is available and clients are willing to incur a higher cost for a trip, the leasing of halibut would tend to benefit both sectors.

Charter Sector

The charter sector is comprised of business operators who are licensed by the State of Alaska to provide guided sport trips. It is not possible to provide estimates of the charter sector’s net revenue. Additional information on both the revenues generated by the charter sector and the costs associated with providing those trips would be needed. There is not a complete set of data on the prices charged for a charter trip in Areas 2C and 3A. General information on trip prices is reported in the RIR, but reflect only a small sampling drawn from promotional advertising sources. Those samples are not intended to represent the mean trip price in a given area. Information is available from ADF&G saltwater logbooks on the number of trips taken in each area. In 2006, the charter business took over 92,000 and 138,000 clients fishing in Areas 2C and 3A respectively. While official figures are not available, average charter prices can range between \$150 and \$300 depending on the type and length of the trip. Using an average price of \$225 per client, the halibut allocation to the charter sector, and average harvest rates per client the analysis provides a rough estimate of gross revenues solely from trip fees of between \$7.4 million and \$17.8 million in Area 2C and \$26.3 and \$38.1 million in Area 3A. These numbers do not account for lodging revenues paid to charter lodge operators or other expenditures (e.g., plane tickets) made by charter clients. Consequently these numbers may not be considered an estimate of the economics value, direct or indirect, or the charter fleet. In addition, net revenues in the charter sector cannot be provided. Area-wide data are not available for either gross revenues or costs of operating the charter business. Both of these pieces of information are needed to estimate net revenues. The authority, cost, and time required to collect these data exceed those available for this action.

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 harvests are controlled by some combination of management measures. Criddle concluded that, when a sportfishing charter fleet is comprised of small homogeneous charter businesses (presumably, in the absence of significant excess capacity), 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 fishing is allowed, or limits on the

number of clients, are examples of management measures that could increase the costs of providing trips. It is anticipated that all rents in the charter fleet would be dissipated under the LEP if the capacity of the fleet does not limit competition for clients. If competition for clients is limited by the number of charter operators, then it is anticipated that the charter sector could generate some rents.

The Council considered adding (removing) management restrictions to (from) the charter sector when their harvest is 0, 5, or 10 percent above (below) their allocation. These benchmarks would provide a black and white definition of when management measures should be modified. However, the accuracy and timeliness of the charter harvest estimates and policy decisions/rulemaking could make modification of the management measures to conform with these benchmarks difficult.

If management measures restrict charter harvests to its allocation, increased demand for charter trips would be offset by more restrictive management measures. In this case, increases in demand for charter trips would not be expected to directly impact the commercial sector. The commercial sector would only 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 increasing that sector's allocation. It is also possible the commercial sector could petition the Council in the future to modify the charter allocation

The Council is also considering allowing charter LEP holders to lease GAF from the commercial sector. We cannot predict the quantity of halibut that would be transferred, if leasing is allowed. However, both the charter operator and the commercial harvester must agree to the transfer for it to occur (i.e., the charter operator must pay a sufficient amount for the IFQs to compensate the commercial QS holder for forgone net revenues (Criddle 2006). Because the charter LEP holders do not benefit from consumer surplus, and commercial QS holders do not benefit from post-harvest surplus, they are not considered by the participants when determining whether to transfer IFQ.

Charter LEP holders who purchase GAF 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 results from increasing or decreasing the amount of commercial harvest in Areas 2C and 3A are expected to be very small as a result of this proposed amendment. 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 its harvest during periods when the combined commercial and charter catch limit is steady, the commercial harvest would be increased and post harvest surplus would increase.

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 charter 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. Persons that sell their

QS could expect to receive less for them. Shares would be acquired by “eligible” persons who believe stock abundance will increase over the longer-term. As a result, Area 2C QS holdings would be further concentrated. For these QS holders, constraints on charter harvest growth would help preserve their portion of the combined commercial and charter 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 commercial allocations in Area 3A are projected to be at or above historic 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 historic average allocations is realized, the QS values may increase.

Increased demand for charter trips does not affect participants in the commercial fishery when the charter sector is constrained (Criddle 2006). The proposed harvest limits are assumed to constrain the amount of halibut the charter sector can harvest to within 0, 5, or 10 percent of their allocation, so the commercial allocation would not be reduced to accommodate increased charter harvests. It is also important to note that unless there are stock conservation concerns, charter overages would have a minor impact on future combined commercial and charter catch limits.

The commercial sector, however, would be directly impacted¹⁶ 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 the amount of halibut allocated to charter users, projected at the beginning of the year to go unused, 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 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. The commercial sector is only 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. Because individual commercial harvesters generate different amounts of net revenue from its 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.)

Charter Clients

Charter client trips would not be constrained by the amount of halibut available to its sector in-season under the status quo or the allocation options being considered. 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

¹⁶ This assumes the charter and commercial sector share a combined commercial and charter catch limit as recommended by the IPHC staff.

keep the sector's harvest within its allocation, or supply of charter trips could be restricted in future seasons, as an off-set for overages in the past. Because excess capacity is expected to exist under the proposed charter LEP, at least in the short term, a charter client would be expected to pay a price for a trip that would allow the charter operator to earn normal profits (NPFMC 2006a).

Status quo regulations are expected to be more restrictive in Area 2C than in Area 3A. We have assumed the continuation of current regulations in both areas. However, a one-fish bag limit may be implemented in 2009 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 2-fish bag limit and a possession limit of 4-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 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.

Differential trip pricing could 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, they may need to compensate the charter operator for the additional cost associated with the lease of the GAF. It is not possible to know how charter LEP 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.

We assume that the LEP would not be a constraint to persons booking a trip. Competition for clients is expected to keep trip prices at a level that would allow charter LEP 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 charter LEP holders attempt to attract clients during the non-peak seasons. Discounted trips have historically been available before mid-June and after mid-August.

Halibut Processors

Halibut processors process both commercial and charter client's 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 into a variety of markets. Representatives of the commercial sector have indicated that processors may receive about \$0.35 per pound for custom processing of halibut (frozen). They also indicated that halibut is important because it helps to keep product flowing through the plants when other fisheries are closed or deliveries are slow. Without a sufficient supply of halibut they 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 \$1.50 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, ex-vessel price increases 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 2006). The decrease in post-harvest surplus cannot be estimated for the various common pool allocation options and is outside the scope of this analysis. However, the options that generate the smallest charter allocation would result in the largest post-harvest surpluses accruing to consumers of commercially caught halibut. 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.

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 measures in future years. However, changes in regional economic impacts are not reflected in net national benefits.

Under the status quo, 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 (anticipated) stricter management measures imposed to keep the sector within its GHJ. 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 2008 levels.

No options are being considered that limit the harvest of the charter sector within a fishing season, once the season's allocation is established. However, the management measures that are expected to be imposed on the Area 2C charter sector, possibly in 2009, would likely reduce client demand for trips (e.g., a one-fish bag limit). 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 in this amendment 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.

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, nor to personal-use or subsistence harvesters. Because halibut removals by these groups are deducted from the CEY, prior to determination of the allowable catch limit, the amount of halibut harvested by the commercial and charter sectors does not impact the halibut available to these groups.

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. The public comments 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. Neither the NOAA Office of Law Enforcement or the USCG has expressed concerns to the Council about boater safety.

1 ENVIRONMENTAL ASSESSMENT

1.1 Introduction

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) provides an analysis of alternatives for implementing Federal regulations for a catch sharing plan (CSP) for the commercial Individual Fishing Quota (IFQ) and charter halibut fisheries. The proposed CSP would set an initial allocation between the two sectors and allow charter limited entry permit holders to lease commercial halibut IFQs for use by anglers in the charter sector, thereby compensating the commercial sector for seasonal increases in the charter sector allocation. The National Environmental Policy Act (NEPA), Executive Order 12866, and the Regulatory Flexibility Act require 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 are addressed in Section 1.3;
- Section 1.7 describes the alternatives considered for analysis;
- Section 1.8 describes the affected environment;
- Sections 1.9 and 1.10 discusses the approach taken to evaluate the biological and environmental impacts of the alternatives as required by NEPA, as well as impacts on endangered species and marine mammals;
- Section 2 presents the Regulatory Impact Review (RIR), which describes potential economic impacts from the alternatives; and
- Section 3 presents the Initial Regulatory Flexibility Analysis (IRFA), which evaluates the impacts on directly regulated small entities.
- Section 5 contains the list of preparers.

This Environmental Assessment (EA) assesses the potential biological, social, and economic impacts of implementing regulations to revise management of the charter halibut fisheries in International Pacific Halibut Commission (IPHC) Regulatory Areas 2C and 3A. This analysis considers regulatory changes to, (1) permit setting of a sector allocation between the charter and commercial IFQ halibut fisheries through a catch sharing plan (CSP), and (2) allow charter halibut limited entry permit (LEP) holders¹⁷ to lease commercial halibut IFQ, to increase opportunities for harvesting halibut by anglers in the charter sector.

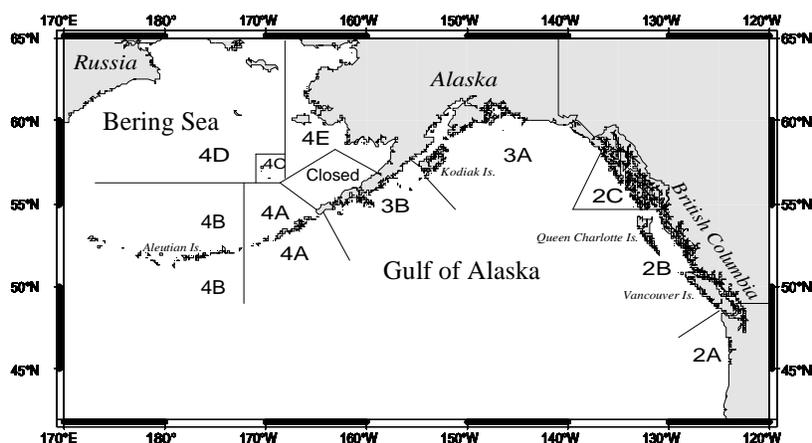


Figure 3 IPHC regulatory areas in the northern Pacific Ocean and Bering Sea

¹⁷ A proposed charter halibut limited entry permit program is under Secretarial review and would have to be approved and implemented before the present action could be implemented.

1.2 Background

The IPHC promulgates regulations governing the Pacific halibut (*Hippoglossus stenolepis*) 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 (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 estimates, the total “non-commercial” removals for the up coming 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”).¹⁸ The actual commercial longline catch limit is set with reference to this Fishery CEY.

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

In 1995, the Council adopted a problem statement recognizing that the increasing amount of harvest in the guided recreational 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 the guided recreational sectors.

1.2.1 The Guideline Harvest Level

Since 1993, the Council has discussed the expansion of the charter halibut sector. The issue gained prominence in 1993, when some coastal Alaskan communities, such as 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

¹⁸ The IPHC does not currently account for mortality resulting from the release of fish in the sport fishery.

GHL policy, intended to control total removals of halibut in the guided recreational sector. In September 2007, 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.

On January 28, 2002, the National Marine Fisheries Service (NMFS) published a proposed rule (67 FR 3867) in the *Federal Register* that specified GHLs, and a system of harvest reduction measures that could be used to maintain the guided recreational 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 guided recreational 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 (APA), 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 APA. The final rule established the GHLs as a level of acceptable annual harvests for the guided recreational halibut fishery in Areas 2C and 3A. The GHLs equal 1,432,000 lb net weight in Area 2C, and 3,650,000 lb net weight in Area 3A. In 2004, charter harvest exceeded the GHL in Area 2C, and charter harvests in both areas have continued to grow since then. Final harvest estimates for the 2006 charter fishing season indicate the GHL was exceeded by 26 percent (372,000 lb) in Area 2C, and by <1 percent (14,000 lb) in Area 3A. In 2007, the GHL in Area 2C was exceeded by 19 percent (269,000 lb); charter harvests in Area 3A were under the GHL by 246,000 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 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 be reduced to 1,217,200 lb. If the total CEY declined by between 25 percent and 34 percent, then the GHL would be reduced to 1,095,480 lb. If the total CEY continued to decline by at least 10 percent, the GHL would be reduced by an additional 10 percent, until it reached a baseline level of 708,000 lb. If the area halibut biomass increased, the GHL could be increased only to its initial level, but no higher.

The initial GHL formula allowed for a 25 percent increase, above past charter harvests. The charter sector requested that a fixed 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 historic length, using area-specific measures to control harvests to the GHL. The GHL in Area 3A has never been reduced. The Area 2C GHL was reduced in 2008, to 931,000 lb (<http://www.fakr.noaa.gov/notice/73fr6709.pdf>), as charter halibut harvests in Area 2C have continued to grow. The 2C GHL was exceeded for the first time

in 2004, its first year of implementation, and has been exceeded in each successive year, by increasing amounts (Table A- 5).

Table A- 5 Area 2C and 3A charter catch of Pacific halibut (all pounds are net weight)

Area 2C				
Year	Guided (Mlb)	Harvest	Guided (percent of GHL)	Harvest
1995	0.986		67	
1996	1.187		83	
1997	1.034		72	
1998	1.584		110	
1999	0.938		66	
2000	1.132		79	
2001	1.202		84	
2002	1.275		89	
2003	1.412		99	
2004	1.750		122	
2005	1.952		136	
2006	1.804		126	
2007	1.701		119	
Area 3A				
Year	Guided (Mlb)	Harvest	Guided (percent of GHL)	Harvest
1995	2.845		78	
1996	2.822		77	
1997	3.413		94	
1998	2.985		82	
1999	2.533		69	
2000	3.140		86	
2001	3.132		86	
2002	2.724		75	
2003	3.382		93	
2004	3.668		100	
2005	3.689		101	
2006	3.664		100	
2007	3.404		93	

While the charter vessel halibut fishery in Area 3A has been at or slightly above its GHL, the Area 2C fishery clearly has been exceeding 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 anglers 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 Council’s GHLs but rather to initiate some control on what appeared to be a constantly increasing charter vessel harvest.

In a letter to the IPHC on March 1, 2007, the Secretary of State, with concurrence from the Secretary, 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 be 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.

Regulatory action to remedy this problem by June 2007, the seasonal beginning of the principal sport fishing effort, required the Secretary, 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. If a charter vessel angler retains 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).

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 Council's alternatives were designed specifically to maintain the charter vessel fishery to its GHL. In June 2007, the Council adopted a preferred alternative that contained two options. The Council recommended that the selection between the options depend on whether the CEY decreases 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 remains the same in 2008 (Option A) and a different, more restrictive, suite of restrictions if the GHL decreases 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 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 Milb. This was a 4.3 Milb reduction from the 2007 total CEY of 10.8 Milb 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 11 plaintiffs requesting a temporary restraining order (TRO) 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 TRO 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 (81.3 cm). On June 19, the court granted plaintiffs a preliminary injunction which continued the effect of the TRO.

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.

This brief history of management of the charter halibut fishery demonstrates its contentiousness. Charter vessel operators and anglers strongly resist anything more restrictive than the traditional two-fish daily bag limit, but open access in the charter sector allows for virtual unlimited increases in halibut harvests by that fleet. The IPHC balances such increases 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.

1.3 Purpose and Need

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 historic 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 is occurring. 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

percent¹⁹] 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 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.

1.4 Action Area

The action considered in the analysis would occur in IPHC regulatory Area 2C and Area 3A. These alternatives are permanent and would be in place for the entire fishing season.

1.5 Relationship of this action to Federal law

While NEPA and the 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 (EOs):

- 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 (a 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, Council 2003);
- Draft EA for measures to reduce charter harvest in Area 2C to the GHF (Council 2007b); and
- EA regulatory amendment to define subsistence halibut fishing in Convention Waters (Council 2003b).

1.7 Description of the Alternatives

While, technically, there appear just two alternatives under consideration, this is misleading. Because of the structure of Alternative 2, containing as it does, multiple “options”, as well as a series of six primary

¹⁹ The Council will determine a range around the charter harvest estimate that would not automatically trigger a new analysis of revised management measures.

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

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 select 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.

Depending on the initial allocation and amount of IFQ leasing that occurs in each of the regulatory areas, between none and two catch sharing plans (CSP) analyses could be submitted each year, or they could be combined into a single analysis and rulemaking. Some streamlining during regional review may occur as these analyses become annual updates of previously reviewed documents, as compared with wholly original analyses. No resolution to a bottleneck is foreseen in which CSP analyses compete with other higher priority analyses for review.

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 ES-3). Tier 1 measures would be considered by the Council to manage

²³ Under Option 3, the Council could select either of two approaches that will be analyzed: a) as stated under footnote (1) and b) the Council would 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.

the charter common pool allocation for a season of historic length and a two-fish daily harvest limit. Tier 2 measures would be utilized if Tier 1 measures are inadequate to constrain charter harvest to its allocation. 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 A- 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 A- 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 analysis for NPFMC (2007c) updated with ADF&G's final 2006 harvest estimates.

2. Neither 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.
 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 – Timeline²⁴. The current timeline for the proposal is as described below. Element 4 outlines two scenarios for the timing of the selection of a preferred alternative for future regulatory actions. The primary difference between the two proposed scenarios is when ADF&G provides an estimate of charter harvests (step 2), i.e., post-season or in-season.

²⁴ 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.

Example Scenario 1: four-year feedback loop

Charter fishery ends 2007

October 2008: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2008: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2009: IPHC adopts combined catch limits for 2009.

February 2009: Council takes final action on management measures that would be implemented in year 2010.

Winter 2009: NMFS publishes the rule that would be in effect for 2010.

Example Scenario 2: three-year feedback loop

Charter fishery, with in-season monitoring, ends 2007

October 2007: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2007: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2008: IPHC adopts combined catch limits for 2008.

February 2008: Council takes final action on management measures that would be implemented in year 2009²⁵

Winter 2008: NMFS publishes the rule that would be in effect for 2009

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 its preferred approach from one or more of those described below or an as yet not previously identified 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

²⁵ The Council has asked that the analysis address what would be needed to implement a February preferred alternative in June of the same year. NMFS has replied that staff requires a final action in October of year 1 for implementation in time for the charter halibut season in year 2.

releases the data and the October Council meeting. A December final action would allow 2-4 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.

Option. Forego SSC review of the RIR/IRFA. The Council could forego SSC review of the revised analysis since the analytical methodology has previously been approved by the SSC and Council. The analysis includes 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.

- 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 [http://www.fakr.noaa.gov/npfmc/current_issues/halibut_issues/Area2CGHL_Sup1007.pdf]. A complete, revised EA/RIR/IRFA would be prepared by Council staff immediately after final action and submitted to the Secretary.
- C. Dual preferred alternative. The Council could select alternate preferred alternatives (presumably in October based on a supplemental analysis) for management restrictions for the charter sector prior to the determination of the allocation by the IPHC (in January) using the Council's 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 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 Council's 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 to allow Charter limited entry permit holders 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. A 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 percent (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 percent 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 guided sport 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- guided sport 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.

Alternative 1 is the No Action Alternative. The Guideline Harvest Level (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 in 2004-2006. 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.

Fundamentally, there is little difference between the operation of the GHGs and the proposed allocation to the charter sector; however, the charter harvest limits could be set higher than the GHGs in the proposed action. 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 state regulations. Prior to state actions in 2006²⁶ and federal action in 2007, charter halibut harvests had been effectively unrestricted because the GHG is not a “hard” cap.²⁷

Taking no action would continue management under GHGs in Areas 2C and 3A. It may require annual regulatory adjustments to optimally match charter halibut harvests to the respective GHGs. The Council has acknowledged the inefficiency of managing the charter sector under the GHGs by its initiation of this analysis and is considering a separate analysis of share-based allocation systems for a “permanent solution.”

Alternative 2 would 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 is considering 10 options under Alternative 2, Element 1 for initial sector allocations in each area. These include 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 define 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 define the management ‘tool box’ that would be available to the Council to adjust future harvest levels. Element 4 provides examples of how the timeline for management decisions and actions to adjust the charter sector’s harvests would be applied, if they are needed. Element 5 defines how charter LEP holders would acquire and use commercial IFQ to supplement the halibut that is available from their common pool. Finally, Element 6 provides a discussion of the catch accounting system that would be needed to monitor two classes of halibut that would be harvested by the charter sector under Alternative 2.

The Council’s December 2007 motion also addressed three recordkeeping and reporting methods (electronic reporting, harvest tags, and punch cards), but deferred to the recommendations by NMFS and ADF&G for the determination of appropriate and necessary recordkeeping tools. These are discussed in the Regulatory Impact Review (RIR).

Other alternatives. The Council previously considered and rejected an alternative that would have allowed compensated reallocation shifts between the halibut commercial IFQ and charter sectors. Options considered allowing the development of a common pool management system and/or the development of an individual private management system. Three suboptions included potential common pool

²⁶ Emergency orders were 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 in 2006 and 2007 for Area 2C and in 2007 for 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.

²⁷ The fishery is not closed when the GHG is reached.

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 affected the implementation of both types of systems http://www.fakr.noaa.gov/npfmc/current_issues/halibut_issues/HalibutReallocation907.pdf. 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.

1.8 Affected Environment

The NEPA documents listed below contain extensive information on the fishery management areas, marine resources, ecosystem, social and economic parameters of these fisheries, and the annual harvest specifications. Rather than duplicate an affected environment description here, readers are referred to those documents. All of these public documents are readily available in printed form or over the Internet at links given in the references. Because this action is limited in area and scope, the description of the affected environment is incorporated by reference from the following documents:

Groundfish Programmatic EIS. The Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement (PSEIS) evaluates the fishery management policies embedded in the GOA and BSAI groundfish FMPs against policy level alternatives and the setting of TACs, allowable biological catch (ABC), and overfishing level (OFL) at various levels (NMFS 2004). The PSEIS is available at <http://www.fakr.noaa.gov/sustainablefisheries/default.htm>. The following sections of this document are particularly relevant:

- Section 3.3 contains a description of the physical oceanographic environment for BSAI and GOA waters.
- Section 3.5.2 contains descriptions of prohibited species management, life history characteristics, trophic interactions, past and present effects analysis, comparative baseline and cumulative effects analysis.
- Section 3.5.3 contains descriptions of target groundfish species management, life history characteristics, trophic interactions, past and present effects analysis, comparative baseline and cumulative effects analysis.
- Section 3.9.2.4 contains socio-economic information on fishing sectors, including the hook and line sectors.

Harvest Specification EIS. The EIS analyzed the Council's harvest strategy for the GOA fisheries (NMFS 2007). The EIS included ecosystem considerations section of the Stock Assessment and Fishery Evaluation (SAFE) reports. The EIS also contains a detailed discussion of the prohibited species catch limits, which include a discussion on the management of halibut bycatch. <http://www.fakr.noaa.gov/analyses/specs/eis/default.htm>.

Essential Fish Habitat Identification and Conservation in Alaska EIS. (NMFS 2005b) This EIS reexamines the effects of fishing on EFH in waters off Alaska, presents a wider range of alternatives, and provides a thorough analysis of potential impacts on EFH caused by the groundfish fishery. The analysis

provides a description of managed groundfish species, marine mammals, and the socioeconomic environment in the Central GOA trawl fishery. The analysis indicates that there are long-term effects of fishing on benthic habitat features off Alaska and acknowledges that considerable scientific uncertainty remains regarding the consequences of such habitat changes for the sustained productivity of managed species. The EIS is found at <http://www.fakr.noaa.gov/habitat/seis/efheis.htm>.

Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement (SEIS). (NMFS 2001) The SEIS evaluates alternatives to mitigate potential adverse effects as a result of competition for fish between Steller sea lions under a no action alternative as well as other alternatives that would substantially reconfigure the GOA and BSAI groundfish fishery. Impacts are disclosed, both significantly positive and significantly negative as required by NEPA. A biological opinion prepared according to the Endangered Species Act is included for the preferred alternative. This document also describes the life history characteristics of Steller sea lions and potential interactions with the groundfish fishery. For more information see <http://www.fakr.noaa.gov/sustainablefisheries/seis/sslpm/default.htm>.

For those groundfish stocks where information is available, none are considered overfished or approaching an overfished condition and all are managed within the annual harvest specifications. The ABC, OFL, and TAC amounts for each target species or species group for 2006 is specified in the *Federal Register* (71 FR 10870, March 3, 2006). The status of each target species category, biomass estimates, and acceptable biological catch specifications are presented both in summary and in detail in the annual SAFE reports. The SAFE report also updated the economic status of the groundfish fisheries off Alaska and presented the ecosystem considerations relevant to the GOA. This EA incorporates by reference stock status information in the SAFE reports (Council 2007a, 2007b).

The IPHC annually publishes a summary of current management, research, and harvest recommendations for its annually meeting. This document may be found on the IPHC’s website at <http://www.iphc.washington.edu/halcom/default.htm>.

1.9 Potential environmental impacts

The proposed catch sharing plan for Area 2C and Area 3A is limited in scope and would not likely affect all environmental components within that Area. Table A- 8 shows the three potentially affected components: groundfish, halibut stocks, and the socioeconomic environment. The potential effects of the alternatives on the resource could be caused by changes to the amount of incidental catch of groundfish species (principally rockfishes) and halibut mortality.

Negative impacts on non-halibut prohibited species, 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. Salmon is the primary prohibited species other than halibut targeted in the sport fishery. Information is not available to predict small changes in harvest patterns 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 A- 8 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	N	N	<u>Y</u>	N	N	N	N	<u>Y</u>

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 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 affected by allocation conflicts for fully utilized species such as halibut, rockfish, and salmon. A detailed discussion of potential socioeconomic impacts is provided in chapter 7.0.

No effects are expected on the physical environment, benthic community, 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 and important breeding areas as described in previous NEPA documents (Section 3.0). 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.

The significance ratings are significantly beneficial, significantly adverse, insignificant, and unknown. Where sufficient information on direct and indirect effects is available, rating criteria are quantitative in nature. In other instances, where less information is available, the discussions and rating criteria are qualitative. Instances where no criteria exist to determine an aspect of significance (significant adverse, insignificant, or significant beneficial) are termed “not applicable” in the criteria tables.

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.

1.10 Potential Impacts on Resource Components

1.10.1 The Pacific halibut stock assessment and harvest policy

The IPHC sets area catch limits for the commercial fishery in proportion to halibut abundance. This harvest philosophy protects against overharvest of what may be separate, but unknown, genetic populations, and spreads fishing effort over the entire range to prevent regional depletion. Small scale local depletion does not have a significant biological effect on the resource as a whole. The IPHC considers the halibut resource to be a single population. Egg and larval drift and subsequent counter migration by young halibut cause significant mixing within the population. Ultimately, counter migration and local movement tend to fill in areas with low halibut density, although continued high exploitation would maintain local depletion. However, estimates of local biomass and information about immigration and migration rates on a high geographical resolution are not available to manage small areas.

The annual exploitable biomass and Fishery CEY for each IPHC regulatory area was estimated in 2008 using the following steps (B. Clark, pers. commun.):

1. Estimate the coastwide exploitable biomass;
2. Apportion exploitable biomass among regulatory areas using a three year average of survey CPUE rates weighted by bottom area;
3. Calculate Total CEY in each area by applying an area-specific target harvest rate (20% in Areas 2, 3 and 4A; 15% in Areas 4B and 4CDE); and
4. Calculate Fishery CEY in each area.

The commercial catch limit is based on the Fishery CEY. In setting the commercial catch limits, the IPHC considers area-specific harvest policy objectives. The Commission staff applies the Slow Up-Fast Down (SUFD) policy to the Fishery CEY in developing its commercial fishery catch limit recommendations for the Commission. Thus, the commercial catch limits may be greater than or less than, and do not necessarily equal, the Fishery CEY. In Alaska, the catch limit is set only for the commercial fishery. Therefore, changes in the charter harvest have a delayed effect on the commercial catch limits and not an immediate, pound-for-pound effect.

The Commission’s Slow Up-Fast Down policy is intended to limit abrupt changes in Fishery CEY from one year to the next in the following manner. If a Fishery CEY is greater than the previous year’s catch limit, only 33.3% of the increase is captured when determining the staff’s recommendation for the current year’s catch limit recommendation. If the Fishery CEY is lower than the previous year’s catch limit, only 50% of the decrease is captured in the staff’s catch limit recommendation. Thus, the catch limit is responsive to changes in abundance as well as changes in assessment methodology without causing abrupt annual fluctuations.

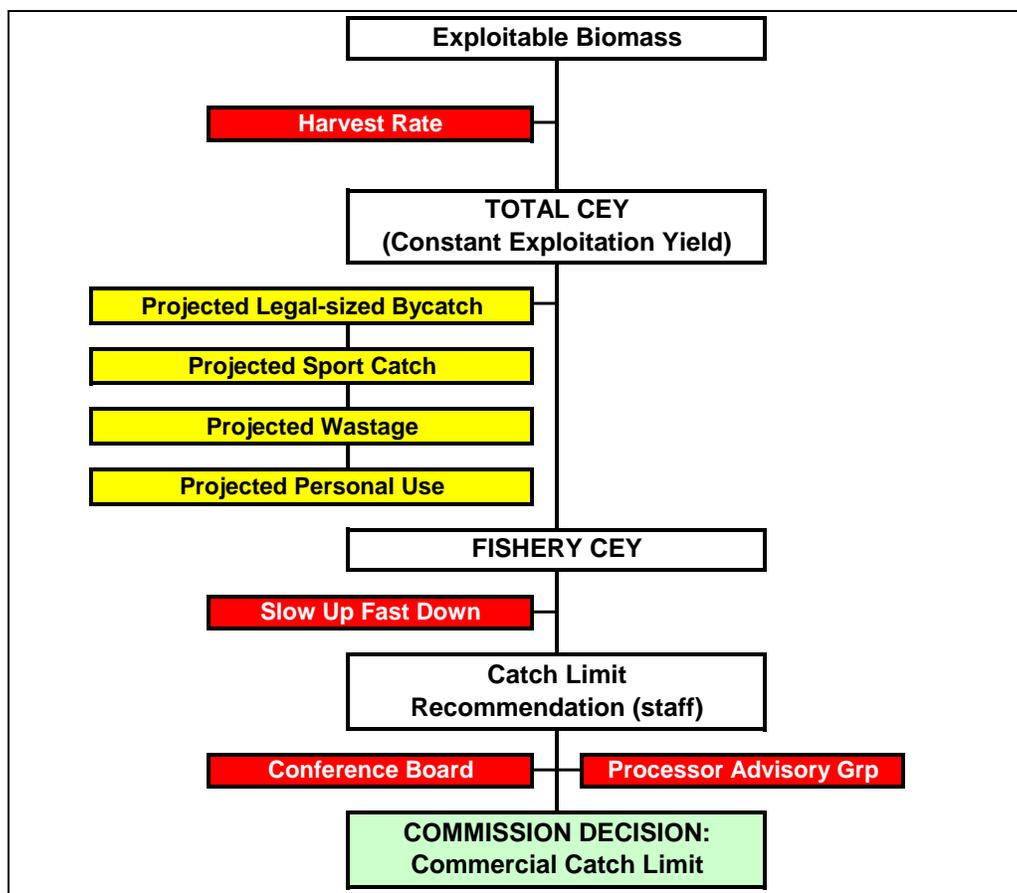


Figure 4 The IPHC’s stock assessment and catch limit setting process.

As reported in an IPHC news release²⁸, the 2007 Pacific halibut stock assessment implemented a coastwide estimation of biomass, compared with previous assessments which assessed stock biomass for each individual IPHC regulatory area. This approach was introduced for the 2006 stock assessment but was not endorsed by the Commission at its 2007 Annual Meeting which requested that staff conduct a public workshop on the new assessment approach. Following the June 2007 stock assessment workshop

²⁸ <http://www.iphc.washington.edu/halcom/newsrel/2008/nr20080122.htm>

and an external peer review of the assessment²⁹, the Commission and its advisory bodies endorsed the coastwide approach to the assessment of halibut stock abundance at the 2008 Annual Meeting. The staff's catch limit recommendations, arising from IPHC survey-based apportionment of the coastwide biomass, were accepted for most areas. As a follow-up, the Commission requested a public workshop in 2008 to investigate additional apportionment methods. For 2008, the Commission adopted a 20% harvest rate in Areas 2C through 4A. Thus, for 2008 the Commission recommended commercial fishery catch limits of 6.21 M lb for Area 2C and 24.22 M lb for Area 3A.

Under the coastwide assessment, the coastwide biomass estimate for 2008 was 13% lower due to a revised production model used in the stock assessment and lower fishery and survey CPUE in 2007. The coastwide Total CEY was 17% lower for 2008 due to the lower biomass estimate and adoption of a standard 20% harvest rate for all of Area 2 (compared with 25% in 2007). For Area 3A, the Total CEY was lower using the coastwide assessment in 2008 because of a lower coastwide biomass estimate and lower survey apportionment to this area. The 2007 catch limit was in line with the CEY using the coastwide assessment. Regarding Area 2C, the Total CEY was lower in 2008 than in 2007 because of the adoption of a standard 20% harvest rate (compared to 25% in 2007), and from the slight drop in the area biomass estimate.

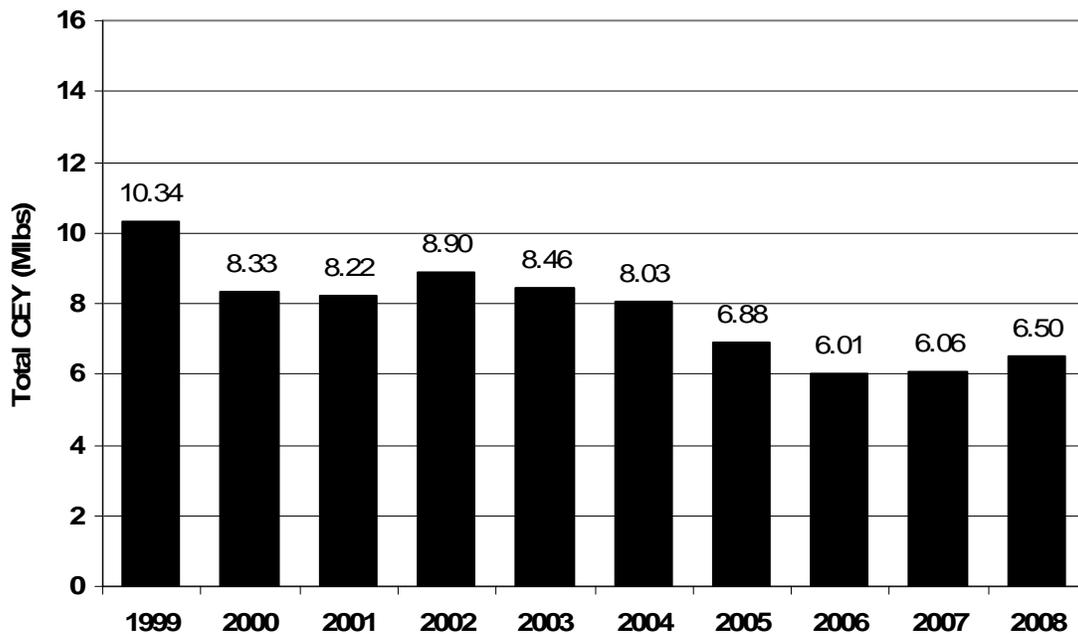


Figure 5 Area 2C Total Constant Equilibrium Yield (CEY), 1999-2008. (Source: IPHC)

²⁹ <http://www.iphc.washington.edu/halcom/meetings/workshop2007/wrkshpreview.htm>

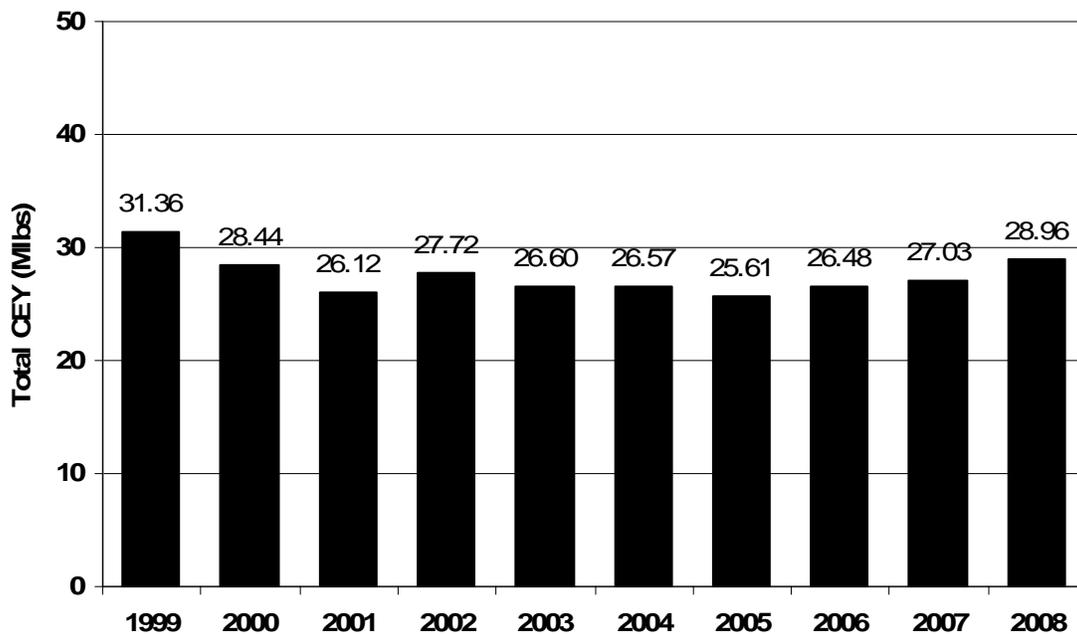


Figure 6 Area 3A Total Constant Equilibrium Yield (CEY), 1999-2008. (Source: IPHC)

The use of a coastwide assessment with a single coastwide selectivity, differing harvest rates by regulatory area, and partitioning of coastwide biomass with survey estimates of distribution creates some substantial changes in CEY and recommended catch limits among areas. Lower recommended catch limits are identified for Area 2, while Areas 3 and 4 have higher recommended catch limits. A large component of these differences is associated with the different distribution of biomass associated with survey partitioning of a coastwide total biomass, compared with the traditional closed-area biomass distribution. As noted in the 2005 stock assessment, the survey distribution of biomass is more consistent with other estimates of biomass distribution that are not dependent on the stock assessment (Clark 2006).

The IPHC staff recognizes that adoption of the coastwide assessment and survey apportionment results in a significant shift in the estimated distribution of exploitable biomass. A recent analysis concludes that exploitation rates on the eastern portion of the stock have been too high in the past decade, resulting in lower biomass in Area 2, than would be realized if harvest rates had been near the target level. Ultimately, a lowered harvest rate will permit rebuilding of the exploitable biomass in Area 2 and an increase in available yield. The pace of that rebuilding will be affected by the strength of year classes recruiting to the fishery over the next several years.

The IPHC staff continues to recommend a slow rate of increase in catch limits when estimated CEY is increasing and a more rapid reduction of catch limits when CEY is decreasing.

The IPHC staff presented CEY and combined catch limit projections for Areas 2C and 3A for 2008-2015 after the April 2008 Council meeting (Table A-9 and Table A-10). Stock projections appear favorable in both areas, with the following caveats and assumptions (B. Leaman, pers. commun., IPHC). First, the apportionments to respective areas remain unchanged. The projections are based on the most current survey apportionment distributions. While it is unlikely to remain static in the foreseeable future, the expected annual changes would likely be small. Perhaps more importantly, however, is that annual area removals are held to the specified level resulting from a 20% harvest rate. Past performance suggests this may be difficult to achieve unless the US and Canada manage to their domestic agreements of sport fish targets.

Table A- 9 Area 2C projections (M Lb) of halibut biomass, yield, catch limits, and harvest (2008 through 2015).

Year	Exploitable Biomass	Target Harvest Rate	CEY	Other Removals	FCEY	Catch Limit (year-1)	Catch Limit	Realized Harvest Rate
Low R Projections								
2008	32.4	0.2	6.5	1.654	4.8		7.91	0.30
2009	36.8	0.2	7.4	1.654	5.7	7.91	6.81	0.23
2010	41.8	0.2	8.4	1.654	6.7	6.81	6.76	0.20
2011	46.4	0.2	9.3	1.654	7.6	6.76	7.05	0.19
2012	49.9	0.2	10.0	1.654	8.3	7.05	7.47	0.18
2013	51.6	0.2	10.3	1.654	8.7	7.47	7.87	0.18
2014	51.7	0.2	10.3	1.654	8.7	7.87	8.15	0.19
2015	50.2	0.2	10.0	1.654	8.4	8.15	8.23	0.20
Average R Projections								
2008	32.5	0.2	6.5	1.654	4.8		7.91	0.29
2009	36.8	0.2	7.4	1.654	5.7	7.91	6.81	0.23
2010	41.8	0.2	8.4	1.654	6.7	6.81	6.76	0.20
2011	46.5	0.2	9.3	1.654	7.7	6.76	7.06	0.19
2012	50.4	0.2	10.1	1.654	8.4	7.06	7.51	0.18
2013	52.8	0.2	10.6	1.654	8.9	7.51	7.98	0.18
2014	53.9	0.2	10.8	1.654	9.1	7.98	8.36	0.19
2015	53.6	0.2	10.7	1.654	9.1	8.36	8.60	0.19
High R Projections								
2008	32.4	0.2	6.5	1.654	4.8		7.91	0.30
2009	36.8	0.2	7.4	1.654	5.7	7.91	6.81	0.23
2010	41.9	0.2	8.4	1.654	6.7	6.81	6.76	0.20
2011	46.7	0.2	9.3	1.654	7.7	6.76	7.07	0.19
2012	50.9	0.2	10.2	1.654	8.5	7.07	7.55	0.18
2013	54.0	0.2	10.8	1.654	9.1	7.55	8.09	0.18
2014	56.1	0.2	11.2	1.654	9.6	8.09	8.58	0.18
2015	57.0	0.2	11.4	1.654	9.8	8.58	8.97	0.19

Source: IPHC Staff

Table A- 10 Area 3A projections (M Lb) of halibut biomass, yield, catch limits, and harvest (2008 through 2015)

Year	Exploitable Biomass	Target Harvest Rate	CEY	Other Removals	FCEY	Catch Limit (year-1)	Catch Limit	Realized Harvest Rate
Low R Projections								
2008	144.3	0.2	28.9	3.061	25.8		27.62	0.21
2009	164.0	0.2	32.8	3.061	29.7	27.62	28.33	0.19
2010	186.2	0.2	37.2	3.061	34.2	28.33	30.28	0.18
2011	206.7	0.2	41.3	3.061	38.3	30.28	32.94	0.17
2012	222.1	0.2	44.4	3.061	41.4	32.94	35.75	0.17
2013	230.1	0.2	46.0	3.061	43.0	35.75	38.15	0.18
2014	230.5	0.2	46.1	3.061	43.0	38.15	39.78	0.19
2015	223.9	0.2	44.8	3.061	41.7	39.78	40.43	0.19
Average R Projections								
2008	144.8	0.2	29.0	3.061	25.9		27.62	0.21
2009	164.0	0.2	32.8	3.061	29.7	27.62	28.33	0.19
2010	186.3	0.2	37.3	3.061	34.2	28.33	30.29	0.18
2011	207.4	0.2	41.5	3.061	38.4	30.29	33.00	0.17
2012	224.4	0.2	44.9	3.061	41.8	33.00	35.94	0.17
2013	235.4	0.2	47.1	3.061	44.0	35.94	38.63	0.18
2014	240.2	0.2	48.0	3.061	45.0	38.63	40.74	0.18
2015	239.0	0.2	47.8	3.061	44.7	40.74	42.08	0.19
High R Projections								
2008	144.3	0.2	28.9	3.061	25.8		27.62	0.21
2009	164.0	0.2	32.8	3.061	29.7	27.62	28.33	0.19
2010	186.5	0.2	37.3	3.061	34.2	28.33	30.30	0.18
2011	208.1	0.2	41.6	3.061	38.6	30.30	33.05	0.17
2012	226.7	0.2	45.3	3.061	42.3	33.05	36.12	0.17
2013	240.6	0.2	48.1	3.061	45.1	36.12	39.11	0.18
2014	249.8	0.2	50.0	3.061	46.9	39.11	41.70	0.18
2015	254.1	0.2	50.8	3.061	47.8	41.70	43.72	0.18

Source: IPHC

Additional detailed descriptions of surveys, stock assessments, and research on halibut can be found in the 2007 Report of Assessment and Research Activities (IPHC 2008). The management, production history, and life history of halibut are further described in Section 3.7.2 of the SEIS (NMFS 1998) and the 2005 IPHC annual report (IPHC 2005).

Pacific halibut is fully utilized in Area 2C and Area 3A. Three major categories of use occur in Alaska for halibut: commercial, sport, and subsistence (Figure 5). Commercial harvests account for the largest portion of total use in Area 2C, comprising approximately 72 percent of the removals, not including approximately 5 percent of bycatch and wastage. Sport users are divided into two subcategories: guided (charter) and non-guided. Approximately 13 percent of the total removals come from the charter sector and 7 percent from the non-guided sector. Subsistence (also called personal use) comprises the smallest portion at 4 percent of the total removals. Wastage removals represent the mortality of legal-sized halibut due to lost or abandoned gear, and of sublegal-sized halibut discarded in the halibut fishery. Since the implementation of the quota share fisheries in the 1990s, the total mortality of legal-sized halibut from lost gear in all areas has remained under 0.5 Mlb annually. Bycatch mortality accounts for halibut that die

from being caught in other fisheries. The 2006 bycatch mortality estimate of 0.16 Mlb in Area 2C is the lowest since 1987 but similar to the estimates for the last several years (Table A- 11).

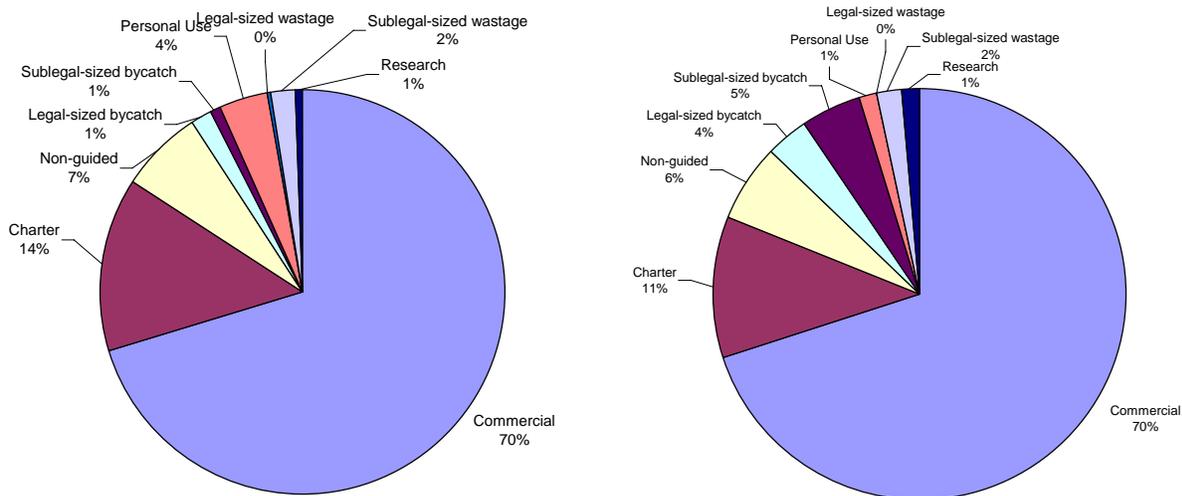


Figure 7 Five-year average (2002–2006) proportion halibut removed by category in Area 2C (top) and Area 3A (bottom).

Removals totalled approximately 14.73 Mlb. The bycatch categories in Table A- 11 include legal and sub-legal mortalities. The legal mortality category is composed of halibut caught in the non-halibut commercial fishery that are discarded, but are of at least 32 inches in length. Sub-legal halibut are those discarded in the commercial that are less than 32 inches in length.

Table A- 11 Five-year summary of removals by category for Area 2C and Area 3A in millions of pounds.

Year	Commercial		Research Fish	Bycatch mortality		Wastage		Non-guided sport	Charter	Subsistence
	Quota	Removals	Removals	Legal	Sub-legal	Legal	Sub-legal	Removals	Removals	Removals
2C										
2003	8.50	8.41	0.12	0.17	0.17	0.03	0.10	0.85	1.41	0.63
2004	10.50	10.30	0.12	0.15	0.21	0.03	0.28	1.19	1.75	0.68
2005	10.93	10.63	0.14	0.14	0.20	0.03	0.23	0.85	1.95	0.60
2006	10.63	10.49	0.10	0.22	0.20	0.02	0.28	1.00	1.80	0.60
2007	8.51	8.49	0.15	0.21	0.13	0.17	0.27	0.84	1.70	.580
3A										
2003	22.63	22.75	0.42	1.36	1.43	0.07	0.61	2.05	3.38	0.28
2004	25.06	25.05	0.45	1.52	2.08	0.08	0.67	1.94	3.67	0.40
2005	25.47	26.03	0.81	1.32	1.81	0.16	0.57	1.98	3.69	0.43
2006	25.20	25.71	0.47	1.43	1.62	0.05	0.70	2.14	3.66	0.38
2007	26.20	26.31	0.35	0.99	1.78	0.05	0.92	1.64	3.40	0.38

1.10.1.1 Commercial removals

The original groundfish fishery management plan for the Gulf of Alaska designated Pacific halibut as a prohibited species to any new commercial development due to its historical usage by the longline (or setline) fishery. The commercial halibut fishing fleet is diverse, using various types of longline gear and strategies. An individual fishing quota program was implemented in 1995 (50 CFR 300.60 through 300.65). The IFQ program enabled an eligible vessel to fish any time between March 5 and November 15 in 2006. Total setline CEY for Alaska waters is estimated to be high, at 69 Mlb in 2008, which indicates the halibut resource is very robust. In Area 2C, the fishery CEY has ranged from 8.5 Mlb to 10.93 Mlb

during the last five years. The fishery CEY has ranged from 22.6 Milb to 26.2 Milb in Area 3A during the same period.

Halibut begin recruiting to longline gear at approximately 60 cm in length, but the commercial minimum size limit is 32 inches (82 cm). The fishery ranges from shallow inshore waters to as deep as 275 meters along the continental shelf. The directed catch consists of individuals chiefly from 7 kg to 121 kg. The average size in the commercial catch in 1996 was between 9 kg and 20 kg depending on the area caught; the average age was 12 years (Forsberg, J., Unpub 1997).

The IFQ program has kept catches within harvest limits, reduced the amount of lost gear and wastage due to “ghost fishing,” and allowed the commercial fishery to operate during a long period which has had the ancillary effect of increasing safety. The annual amount of IFQ for the commercial hook-and-line fisheries is established annually by the Secretary of Commerce, based on recommendations from the IPHC.

Harvest from the commercial fishery is tracked by NMFS using a catch accounting system that deducts harvest from an IFQ holder’s account. This information is also used to enforce the total annual quota, as well as individual IFQ accounts. Thus, since the IFQ program, annual harvest limits have not been exceeded by a significant margin. The IFQ program has an overage/underage provision that balances an IFQ holder’s account, year to year. This regulation results in a long-term balance of harvest at the catch limit and allows IFQ holders to move small amounts of halibut between years.

Halibut bycatch and wastage occurs in the groundfish and salmon fisheries operating in waters off Alaska. The effects of these fisheries on halibut are primarily managed by conservation measures developed and recommended by the Council over the entire history of the federal Fishery Management Plan for Groundfish in the Gulf of Alaska (GOA) and implemented by Federal regulation. These measures can be found at 50 CFR 679.21 and include catch limitations on a year-round and seasonal basis. These management measures are discussed further in the following documents:

- Sections 3.6.1 and 3.6.2 of the GOA Groundfish FMP (Council 2005) cover management of the bycatch of halibut in the groundfish fisheries. The FMPs are available at <http://www.fakr.noaa.gov/npfmc/default.htm>;
- Section 3.5 of the PSEIS (NMFS 2004) reviews the effects of the groundfish fishery on halibut. The PSEIS is available at <http://www.fakr.noaa.gov/sustainablefisheries.seis/intro.htm>; and
- Charter 7 of the Alaska Groundfish Harvest Specification EIS (NMFS 2007) provides an overview of prohibition species catch management, including halibut bycatch.

The annual amount of halibut bycatch and wastage is treated as a hard cap in groundfish fisheries. Fisheries are often closed to directed fishing when halibut bycatch allocations are taken. As a result, fishing mortality has remained relatively constant; with the total amounts depending on the type of fisheries being prosecuted and total effort. Bycatch and wastage have accounted for approximately 4 percent of the total removals in Area 2C and 11 percent of the total removals in Area 3A.

The catch limit for the commercial longline fishery is set once all other removals are deducted from the available yield. The increase in charter removals results in a reduction of the commercial sector harvest over an extended period of time. In a given year, non-commercial removals are not necessarily deducted on a pound-for-pound basis. For example, harvest quota for the commercial fishery set in 2007 includes historical sport harvest from 2006, but the 2007 sport harvest is unknown. Thus, an increase of sport harvest above the level predicted in 2006 is accounted for in future commercial quotas. In 2008, The IPHC used the GHL as an estimate of charter halibut harvest removals. Over the long-term, this overage is balanced, resulting in a loss of commercial quota share. This same relationship would occur if any other non-commercial removals increased rapidly (and unpredictably) from year to year. Of the non-commercial removals accounted for by the IPHC, the charter harvest has increased at a rapid rate,

whereas other removals have remained relatively constant. The relationship between the charter and commercial sectors has resulted in consideration of numerous actions to control charter halibut removals, including the proposed action to set an allocation for each sector.

1.10.1.2 Sport fishing removals

Sport fishing for halibut in Southeast Alaska is an important recreational activity for resident and non-resident anglers. Sport harvests rapidly increased in the late 1980s to mid-1990s as indicated by a continued increase in targeted effort (Tersteeg and Jaenicke 2005). A portion of the marine sport fishing effort is directed at halibut and state-managed groundfishes, including rockfishes, lingcod, and sharks. Fishing effort is mostly concentrated around Juneau, Ketchikan, Sitka, Wrangell, and Petersburg. However, substantial effort is reported near remote fishing lodges and smaller communities throughout the region, such as Craig, Gustavus, and Yakutat (Tersteeg and Jaenicke 2005). These remote communities offer charter and bareboat services. Bareboat services allow anglers to rent a vessel that is unguided. These anglers are generally provided with instruction from a lodge about good fishing locations and technique.

As reported in IPHC (2005), Alaska sport harvest estimates are derived from a statewide postal survey in conjunction with creel surveys at points of landing. Final estimates lag by one year and are derived from a combination of linear projections of halibut harvested in the previous five years, current average weights, and current in-season data. Charter halibut harvests between 1995 and 2005 nearly doubled in Area 2C (from 986,000 to 1,950,000 lb) and account for approximately 13 percent of the average halibut removals during the last five years.

Regulations by both federal and state agencies affect the halibut fishery. Federal sportfishing regulations are found at 50 CFR 300.62. The 2006 annual measures for halibut fisheries were published at 71 FR 10850, Part 24. The GHF regulations are published at 50 CFR 300.65.

Federal regulations require the following:

- The daily bag limit is two halibut with four in possession;
- The sport fishing season is from February 1 to December 31;
- No person shall fillet, mutilate, or otherwise disfigure a halibut in any manner that prevents the determination of minimum size or the number of fish caught while onboard the catcher vessel.
- No halibut caught for sport harvest shall be offered for sale, bartered, or traded;
- No halibut caught while sport fishing shall be possessed on board a vessel when other fish or shellfish aboard the said vessel for destined for commercial use, sale, trade, or barter; and
- The operator of a charter vessel shall be liable for any violations of these regulations committed by a passenger aboard said vessel.

State of Alaska fishing seasons and reporting requirements for the charter fishery are listed below.

- Anglers must have a current year's Alaska sport fishing license, with three exceptions:
 - Resident and non-resident anglers younger than 16 do not need a sport fishing license;
 - Alaska resident anglers 60 and older must have a free ADF&G Permanent ID Card; or
 - Alaska resident disabled veterans (50 percent or greater) must have a free ADF&G Disabled Veteran's Permanent ID Card.
- When a fish is landed and killed it becomes part of the bag limit of the person originally hooking it. Once you have attained your bag limit, you are not allowed to catch and keep halibut for anyone else on the vessel that same day.

The sport fishery has a certain level of catch-and-release mortality, which results from physiological injury, stress, or handling. The mortality rate may be cumulative in some high-use fisheries because fish may be released multiple times. The level of mortality depends on several factors, including the hooking location, handling time, type of gear used, environmental characteristics (e.g., warm water), and a species physiology. Meyer (2007) provides a brief discussion of release mortality as it relates to Pacific halibut.

This discussion was provided in Appendix A to NMFS (2007). Meyer (2007) estimated that the release mortality rate for Pacific halibut was approximately 5 percent in Area 2C, which means approximately 5 percent of halibut caught and released die soon after being caught.

1.10.1.3 Subsistence removals

The distinctions between sport and subsistence are clouded by differing legal and cultural interpretations by both resource managers and users, although current gear restrictions may be used post facto to assign a user category to a landing. The IPHC did not have a formal regulatory definition of subsistence prior to 2002; however, it did attempt to track subsistence harvest taken under a personal use category, leaving only sport harvests under the sportfishing category. In 2002, the IPHC adopted regulatory language defining subsistence (“Customary and Traditional Fishing in Alaska”). Federal regulations now recognize and define a legal subsistence fishery for halibut in Alaska (70 FR 16742, April 1, 2005). Subsistence removals totaled 1.13 Mlb (net weight) in 2006 (Fall et al. 2007) from 14,300 permit holders. Subsistence harvest is tracked by ADF&G using survey respondent methods, including public outreach, mailed household surveys, and community visits. Fall et al. (2007) provides a detailed description of the survey methods and response rates. Subsistence/personal use harvest has remained relatively stable during the last three years (Table A- 9). Subsistence fishery regulations are found at 50 CFR 300.60–300.66.

Effect of alternatives: The proposed alternatives address resource allocation issues. The proposed alternative to the status quo would neither affect harvest levels and fishing practices of individuals participating in the charter halibut fishery nor the health of the halibut stock. Regardless of the amount of halibut biomass taken by a sector, no adverse impacts to the halibut resource would be expected because the IPHC factors most resource removals in the halibut stock assessment when setting annual catch limits. Therefore, none of the proposed alternatives is expected to significantly impact the halibut stock.

1.10.2 Groundfish

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 (Scott Meyer, pers. comm., ADF&G Sportfish Division). 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 GHL, under the No Action Alternative, or under any of the proposed allocation options under Alternative 2 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 options under Alternative 2.

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 that 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. The BOF allocated the demersal shelf rockfish complex (DSR) in the Southeast Outside management area between the sport fishery and commercial fishery 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 anglers in Southeast Alaska. All non-pelagic rockfish caught had to be retained until the bag limit was reached. Non-resident 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 sport fishermen.

The 2006 SAFE report (NMFS 2006) indicated that a directed DSR commercial fishery did not occur in 2006 because of concerns about exceeding the ABC and TAC. Instead, commercial fishermen took an incidental catch of 215 mt of DSR. Approximately 64 mt of DSR was harvested in the guided and unguided sport fishery, with 7 mt released. It exceeded its allocation by about 5.5 mt, while the commercial fishery took significantly less than its allocation. Combined, the two fisheries removed approximately 287 mt of DSR, which was 70 percent of the 410 mt combined TAC..

Recreational anglers 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 is under their respective OFL and ABC in 2006. The ABC for the assemblage in the western Yakutat region and Eastern Alaska/Southeast Outside district was 736 mt in 2006 and 751 mt in 2007. The commercial catch totaled 174 mt in 2006, which was below the ABC which is set equal to the TAC. The OFL was 6,662 mt for the GOA, with 2,498 mt of commercial catch for the entire GOA. Harvest in the sport fishery is not at a level high enough to cause PSR to exceed the OFL. In 2004, the total harvest of all rockfish in the sport fishery (including non-pelagic rockfish species) was 22.7 mt, which when added to the commercial catch would not have exceeded the ABC or 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 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 A- 12). A harvest increase in the sport sector resulting from the alternatives would likely be small given the existing regulatory constraints.

Table A- 12 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

Source: ADF&G, Statewide Harvest Survey data.

Effect of alternatives: 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 2007. DSR and pelagic shelf rockfish harvest in 2007 was well under the OFL, ABC, and TAC for the commercial and sport fisheries combined.

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 OFL. The impact of the alternatives on these species is expected to be insignificant.

1.10.3 Impacts on 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 listing 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 A- 13 identifies the species listed as endangered and threatened under the ESA.

Table A- 13ESA 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	<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).

1.10.4 Impacts on Seabirds

Because halibut fisheries are federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings³⁰ 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 which may indicate a potential for interaction with halibut fisheries. The most numerous seabirds in Alaska are northern fulmars, storm petrels, kittiwakes, murrelets, 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 proposed alternatives to the status quo 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; this fishery is subject to strict seabird avoidance requirements (<http://www.fakr.noaa.gov/protectedresources/seabirds/guide.htm>). None of the alternatives would affect takes of listed species and therefore, none of the alternatives are expected to have a significant impact on endangered or threatened species.

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. 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.

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

³⁰ 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)).

1.10.6 Impacts on Biodiversity and the Ecosystem

Halibut is one of four groundfish, in terms of biomass as measured by the trawl surveys, which dominate the Gulf of Alaska ecosystem (S. Gaichas pers. comm.). The others include arrowtooth flounder, walleye pollock, and Pacific cod (in order of importance). Halibut is an apex predator in the GOA and appears to be dependent on pollock stocks, as pollock comprised over half of adult halibut's diet composition measured in the early 1990s. Most mortality on halibut comes from fishing because they have few natural predators, especially as adults (Figure 8).

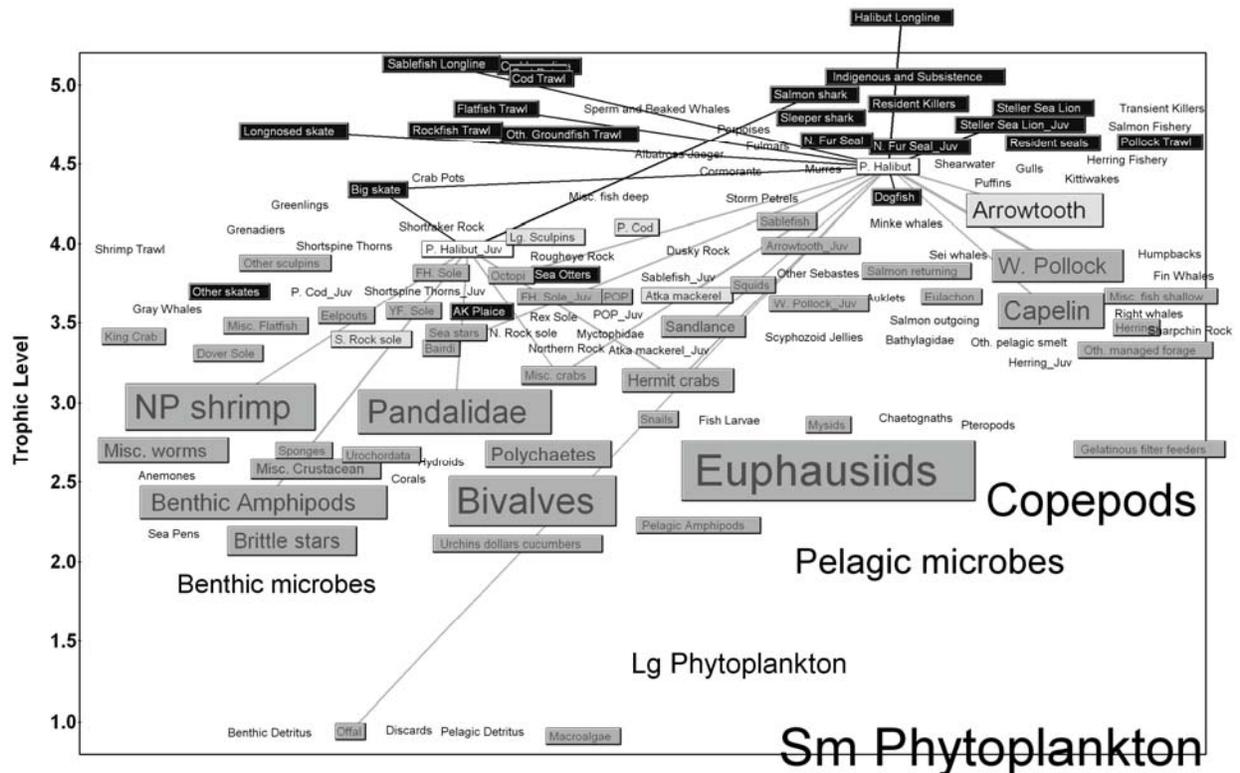


Figure 8 Food web that depicts halibut in white boxes (on left for juvenile halibut and on right for adult halibut), their predators and fisheries in black (above halibut), their prey in dark grey (below halibut) and species that are both predators and prey in light grey (in proximity to halibut). The sizes of the boxes represents the relative biomass of species/groups.

Halibut harvests by the charter fishery, as well as all other fishery harvests, removes predators, prey, or competitors and thus could conceivably alter predator-prey relationships *relative to an unfished system*. Studies from other ecosystems have been conducted to determine whether predators were controlling prey populations and whether fishing-down predators produced a corresponding increase in prey. Similarly, the examination of fishing effects on prey populations has been conducted to evaluate impacts on predators. Finally, fishing-down of competitors has the potential to produce species replacements in trophic guilds. Evidence from other ecosystems presents mixed results about the possible importance of fishing in causing population changes of the fished species' prey, predators, or competitors. Some studies showed a relationship, while others showed that the changes were more likely due to direct environmental influences on the prey, predator, or competitor species rather than a food web effect. Fishing does have the potential to impact food webs, but each ecosystem must be examined to determine how important it is for that ecosystem.

Little research has been conducted on the specific trophic interactions of halibut. With trophic interactions and inter-specific competition so poorly understood, it is not possible to clearly specify the effects to the ecosystem of the charter halibut fishery. However, given the nature of the action, the presumed effects of the alternatives on the ecosystem are insignificant.

1.10.7 Impacts on the 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 Chapter 7. Chapter 8 contains the IRFA, conducted to evaluate the impacts of the suite of potential alternatives being considered, including the preferred alternatives, on small entities, in accordance with the provisions of the RFA.

1.11 Cumulative Effects

Effects of an action can be direct or indirect. According to the definition in the Council on Environmental Quality (CEQ) regulations (40 CFR 1500.1) providing guidance on NEPA, direct effects are caused by the action and occur at the same time and place, while indirect effects are those caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Although the CEQ regulations draw this distinction between direct and indirect effects, legally both must be considered equally in determining significance. In practice, “the distinction between a reasonably foreseeable effect and a remote and speculative effect is more important than the question of whether an impact is considered direct or indirect” (Bass et al. 2001, p. 55).

The 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 itself would not entail changes in stock levels, and any environmental effects, such as the removal of halibut biomass from the ecosystem, are so minor as to make it difficult to reasonably predict further indirect effects of those changes.

Possible future actions currently under consideration by the Council include a wide range of changes to the GHM policy, limited entry, and the development of a share-based allocation program to individual charter LEP holders. ADF&G is currently reviewing possible change to state regulations affecting all state guide operations to limit the lines being fished on a charter vessel to the number of paying clients (already in effect in Southeast Alaska) and prohibiting retention of halibut by skippers and crew while charter fishing. The State of Alaska is also considering more sweeping limitations on the charter sector and is exploring opportunities for delegation of authority to the State to manage halibut (<http://www.sf.adfg.state.ak.us/statewide/guides/GSpecIssues.cfm>).

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 Gulf of Alaska. Measures intended to regulate the harvests of halibut under a preferred alternative to create a catch sharing plan would be delayed to a future action. A future Council action may supersede the preferred alternative in this analysis; however the nature of future Council action is speculative. Thus, no reasonably foreseeable future actions would have impacts that would cause significant cumulative effects when combined with the effects from this action.

2 Regulatory Impact Review

2.1 Introduction

Since the early 1990s the Council has been developing proposals to set an allocation between the halibut charter and commercial IFQ fisheries to establish a timely and accountable management regime for the charter fishery. Measures considered by the Council and those that have been implemented by the Secretary are well documented and are summarized in the EA. The management measures currently in place, or under Secretarial review, are not expected to sufficiently limit charter harvests to maintain a division of halibut between the commercial IFQ sector and the charter sector.

To address the charter sector's future harvests the Council has developed this proposed amendment to the halibut management regulations. In the following problem statement, the Council addresses the need to resolve the conflicts between sectors and the resulting instability:

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's problem statement also contains a statement of management objectives. The complete statement of management objectives is included in the EA on page 4. In general, it states that the Council's intent is to establish a catch sharing plan for the commercial and charter sectors. Its intent is to consider the charter sector's need to have a stable in-season regulatory environment, while at the same time allocating the available halibut resource in IPHC Areas 2C and 3A, among the commercial and charter sectors. The charter sector would be managed to ensure that its harvest stays within its allocation.

The halibut IFQ program constrains commercial harvests. The IFQ program could be modified to allow the charter sector to lease commercial IFQ. Management of the charter sector would be done to ensure that it is given advance notice and predictability with respect to management tools and season length. To achieve these goals, management measures would not be adjusted in-season, but instead during the soonest year after the overage as possible. The Council also stated its intent to review whether the charter sector is staying within its allocation, and that the Council would tend to err on the side of more restrictive management measures, when in doubt.

The Council is considering three basic approaches for setting a halibut allocation for the charter sector. Option 1 would allocate the charter sector a percentage of the halibut available to the combined charter and commercial sectors. Option 2 would allocate a fixed number of pounds to the charter sector. Included under Options 2a through 2c is a suboption for a stair-step up and down. If the suboption is included as part of the fixed allocation, the charter sector would not be allocated a fixed amount of halibut. Instead, the amount allocated would change with the CEY or combined commercial and charter catch limit, so the outcome more closely resembles a percentage-based allocation. Option 3 would combine the two previous options (Option 2 would not include the suboption) and use a formula to allocate one-half the allocation from both a percentage and a fixed allocation.

2.2 Alternatives Considered

In part because of the uncertainties regarding charter halibut harvests that could result from current management measures, and because of the time lag in implementing new regulations, the Council is focusing on defining an acceptable charter harvest level, and the suite of management measures that may be implemented in future years, if the charter sector exceeded its allocation in an area. The common pool allocation is defined in Element 1 of the Council's motion. It defines the allocation formula and historic

catch years that would be used to allocate halibut to the charter sector. Element 2 defines the annual regulatory cycle, focusing on how the halibut charter fisheries' common pool of halibut would be regulated, if the common pool is over-harvested. If the charter sector's allocation is under-harvested, charter management measures could be relaxed to allow the sector to harvest their full allocation in subsequent years, although no automatic roll-over to the following season would be established. Element 3 defines the management tools that would be available to the Council to adjust future harvest levels. Element 4 provides examples of regulatory development time lines for management decisions and actions, if needed to adjust the charter sector's harvests. Element 5 defines how charter LEP holders may acquire and use commercial IFQ to supplement the halibut available in the common pool. Element 5 also defines the management structure for the allocation and harvest guided angler fish (GAF). Finally, Element 6 provides a discussion of the catch accounting system needed to monitor common pool harvests, in combination with GAFs that were purchased from the commercial sector. It is anticipated that a different catch accounting system would be used for the halibut harvested under the common pool and those from the GAF program.

2.2.1 Alternative 1. Status quo

The current management program that has been implemented by the Secretary of Commerce (or that is expected to be implemented) comprise the status quo. The charter sector is currently operating under a GHF. The Area 2C GHF for 2008, was set at 931,000 lb. It has been reduced from the 1.432 Mlb in 2007 because of a decrease in the Area 2C CEY. The Area 3A GHF has been set at 3.65 Mlb every year the GHF has been in place. In IPHC Area 3A, the status quo charter fishery includes a two-fish bag limit. In addition, the skipper and crew are prohibited from retaining halibut while clients are onboard the vessel. In Area 2C, the charter sector regulations include all those management measures, in addition to a line limit. A two-fish bag limit, where one fish must be no greater than 32", was implemented in 2008, to help keep the charter sector within their GHF. It was anticipated that a one-fish bag limit would be implemented in Area 2C, but the court system mandated that NMFS keep the two-fish limit in place.

The status quo does not allow the charter sector to lease halibut from the commercial sector. IFQ regulations prohibit commercial QS holders from leasing IFQ other than under very specific and limited circumstances, unless the lease is of Class A shares. Other classes of QS cannot be leased to other commercial harvesters. No IFQ can currently be leased to anyone outside of the commercial sector.

2.2.2 Alternative 2. Sector Allocations

2.2.2.1 Element 1 – Initial Allocation

Option 1: Fixed percentage³¹

	Area 2C	Area 3A	Based on ³² :
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

³¹ Under Option 1, the Council would request that the IPHC set a combined charter and commercial sector fishery catch limit and apply the allocations between the two sectors that would be recommended by the Council in a catch sharing plan.

³² Baseline formula for allocation options are provided for reference only

the regulatory allocation process automatically, in contrast with current GHM management. Any under-harvest of the charter pool would accrue to the benefit of the halibut biomass (i.e., would not be reallocated or paid forward). The Council would not revisit or readjust the sector split. The Council assumes (and would request) that the International Pacific Halibut Commission set a combined charter and commercial sector fishery catch limit and would apply the allocations between the two sectors that would be recommended by the Council's catch sharing plan.

2.2.2.3 Element 3 – Management tools

Tier 1 measures would be used by the Council to manage the charter common pool for a season of historic length and a two-fish daily harvest limit. Tier 2 measures would be used if Tier 1 measures prove inadequate to constrain harvest by the charter sector to its common pool allocation. Due to the delayed feedback loop in implementation of revised management measures, initial management measures will, in general, be more restrictive, to ensure that the charter sector allocation is not exceeded. In providing predictability and stability for the charter sector, it is possible that some halibut allotted to the charter sector may be left in the water.

Tier 1	Tier 2
One Trip per Vessel per Day	Annual Catch Limits
No Retention by Skipper and Crew	One Fish Bag Limit for all or a portion of the Season
Line Limits	Closure for all or a portion of the Season
Second Fish of a Minimum Size	
Second Fish at or below a Specific Length	

2.2.2.4 Element 4 – Timeline

The current timeline for the proposal is as described below.

Example Scenario 1: four-year feedback loop

Charter fishery ends 2007

October 2008: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2008: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2009: IPHC adopts combined catch limits for 2009.

February 2009: Council takes final action on management measures that would be implemented in year 2010.

Winter 2009: NMFS publishes the rule that would be in effect for 2010.

Example Scenario 2: three-year feedback loop

Charter fishery, with in-season monitoring, ends 2007

October 2007: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2007: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2008: IPHC adopts combined catch limits for 2008.

February 2008: Council takes final action on management measures that would be implemented in year 2009

Winter 2008: NMFS publishes the rule that would be in effect for 2009

2.2.2.5 Element 5 – Supplemental individual use of GAF

Element 5 defines a program for supplemental individual use of commercial IFQ to allow charter limited entry permit holders to lease commercial IFQ, in order to provide anglers with additional harvesting opportunities, not to exceed limits in place for unguided anglers.

- A. Leasing commercial IFQ for conversion to Guided Angler Fish (GAF).
 - 1. A 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 percent (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 percent 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 guided sport 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-guided sport 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.

2.2.2.6 Element 6 – Catch accounting system

A catch accounting system must be developed for both the common pool allocation and fish that are harvested as GAF. The options being considered include:

- 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 in 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 make sure that accurate removable poundage is accounted for and to allow length measurement information gathered to be used in the formulation of the average weight used in the conversion of IFQs to GAF.

The Council adopted the language (above) as part of its intent for catch accounting systems for the charter sector. There are unique monitoring and enforcement implication for each of the two types of charter fish: common pool and GAFs. The Council has stated its intent to monitor the common pool using ADF&G

data. The Council added a third statement regarding its intent that length measurements of GAFs be collected for accurate accounting.

The Council also adopted the following language (see box) as its intent for the development of a catch accounting system for GAFs. It specifically did not adopt these three proposed options for analysis that were recommended by its Halibut Stakeholder Committee in December 2007. It adopted them for NMFS to consider in its development of an implementation plan for the Council's preferred alternative. Such clarification will assist NMFS in its development of a discussion of potential alternate catch accounting systems; this discussion will be included in the next draft of this analysis. NMFS and ADF&G will be better able to estimate costs for data collection and monitoring requirements after the implementation options have been better identified by the Council. At final action, the Council may choose to select a preferred GAF catch accounting system or defer that decision to the agencies.

Recordkeeping and Reporting. *One of the critical issues for successful implementation of a successful interim management regime for charter halibut operators is to shorten the feedback loop for collection of data regarding charter harvests. The Council has requested that staff include in their report a discussion of options for shortening the feedback loop.*

It is also the intent of the Council in proposing these options that the real time collection of data should not be used for in-season management changes or in-season closures; rather, it is the intent of the Council that these options be used to shorten the data collection feedback loop to facilitate the timely advance adoption of management tools designed to achieve the charter sector allocation without in-season changes or in-season closures, in order to maintain, to the extent possible, a season of historic length with a minimum two fish bag limit.

Option 1. Electronic Reporting. Each GSM permit holder would be assigned a unique reporting number and would use that number to electronically report the number of halibut caught by clients, that day, on a daily basis. The electronic reporting would be done either through an Internet website or a dial-in telephone system. As additional verification each client would sign the mandatory logbook next to the entry containing their name, license number, number and type of fish caught, and any other required information. Logbooks would continue to be submitted weekly.

Option 2. Harvest Tag. Uniquely numbered harvest tags would be distributed to each GSM permit holder at the beginning of the season and additional tags would be available throughout the season, if needed. The number of harvest tags would be greater than the number of fish allocated to the charter sector for that year (i.e., the tags are not a management tool for restricting or closing charter fishing in-season). When a halibut is landed, the harvest tag would be required to be inserted in the fish's jaw and the harvest tag number recorded in the log book entry for the angler license number of the person who caught the fish. When the fish is processed, the tag would be removed and mailed in, using pre-addressed, stamped envelopes supplied for that purpose. GSM operators would pay a fee to cover the cost of the envelopes and tags. Harvest tags would preferably be bar coded to enable machine reading, with peel off bar code stickers for placement in the log book.

Option 3. Punch Cards. Each GSM permit holder would be issued a supply of uniquely numbered punch cards, with punch outs equal to any daily bag limit for that year, or six halibut (whichever is fewer). The cards would be issued at the beginning of the season and additional cards would be available, as needed (i.e., the cards are not a management tool for restricting or closing charter fishing in-season). Each day every client angler would be assigned a punch card and that punch card number would be entered in the log book next to the license number. As each halibut is landed by a client, their respective card would be punched, and at the end of the day the client would sign the punch card in the space provided. The punch card would then be sealed in a supplied stamped and addressed envelope, which would be mailed by the permit holder. GSM permit holders would pay a fee to cover the cost of the punch cards and mailing envelopes. Any log book entry for which a signed punch card is not received would be corrected to read the maximum number of fish printed on a punch card (i.e., the daily bag limit or six fish).

[Implementation and Enforcement section will be provided by NMFS as a supplemental.]

2.3 Background

2.3.1 Previous Council Actions

In the past, the Council has considered and rejected a program that would allocate a fixed amount or percentage of the halibut resource to the charter sector and close the charter fishery to retention once its allocation is harvested. This type of management has traditionally been referred to as an allocation with a “hard cap,” because the charter sector would be prohibited from retaining halibut to prevent them from exceeding its allocation³⁵. When its allocation was harvested, the charter sector would be prohibited from retaining additional halibut that year, but would not be prohibited from providing charter trips for other species, halibut trips outside Areas 2C and 3A, or halibut trips within Areas 2C or 3A where halibut would not be retained.

Members of the charter industry have 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 business. For example, charter operators have indicated that many of their clients book trips a year in advance. If the charter season’s historic length were disrupted the following year, it could force the business to refund deposits for trips scheduled after the closure. The inconvenience to the client would reduce their level of satisfaction with the business that was forced to cancel their trip. Charter operators have also stated on the record that client satisfaction 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 concerned that those clients may be unwilling to book future trips with that business.

The client’s 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 advertised charter trip is important to trip providers. Altering the management structure in-season could impact the charter LEP holders’ ability to provide the trips.

2.3.2 Previous Management Proposals

This is not the first time the Council has considered restrictions to the charter sector. The GHF program was intended to limit charter halibut harvests and has resulted in numerous regulatory amendments to implement and amend the program. Dividing the halibut available for harvest by the two sectors has been considered previously. Proposed actions attempted to address the open-ended reallocation from the commercial IFQ sector to the charter sector. A division of the available halibut was included when the Council approved the halibut charter IFQ program in 2005. That program was rescinded by the Council before the Secretary took action. A hard cap for charter sector harvests has never been implemented.

The Council developed and approved a moratorium on new entry into the halibut charter sector in 2007; a previous analysis to implement a LEP was rejected in favor of a more comprehensive rationalization program to include the charter sector into the commercial halibut IFQ program. The Council and many long time members of the charter industry felt that limiting new entry was an important protection for the existing charter fleet, if their sector’s harvest is capped. If the charter LEP is not implemented, the existing charter LEP holders would compete against each other and new entrants into the charter sector for the available halibut and charter clients. Implementing the charter LEP would limit the number of charter business and vessels that can participate in the fishery at any one time.

³⁵ Closures would be initiated using the best in-season harvest data available.

If approved by the Secretary, the Council's preferred alternative would limit the number of vessels that may take clients halibut fishing at any one time and the number of clients each vessel may carry on a trip (NPFMC 2007(a)). A maximum³⁶ of 689 permits would be issued in Area 2C and 611 permits would be issued in Area 3A. Those numbers represent 35 more permits than vessels that were used to carry clients in Area 2C during 2005. In Area 3A, 44 additional permits could be issued than were fished in 2005. The charter LEP analysis acknowledged that charter LEP holders could take more trips with the qualified vessels than they had taken historically. They would also be allowed to increase the average number of clients taken on a trip, if the number of clients they carried varied during the endorsement qualification period. Either of those outcomes would increase the number of clients that fish for halibut in a year. Increases in the number of clients fishing, everything else being equal, would result in additional halibut being harvested.

The proposed charter LEP also contains a provision that designates some of the permits as non-transferable. Permits would be designated as non-transferable if the participation history of the vessel/business generating the permit was at a lower level than required to earn a transferable permit. Issuing some non-transferable permits would reduce the maximum harvest capacity of the fleet over time. Harvest capacity would be reduced when recipients of non-transferable licenses leave the fishery.

Continued growth in halibut harvests by charter clients reduces the portion of the CEY that is available to the directed commercial halibut fishery. The process used by the IPHC to determine the amount of halibut available for the charter and commercial IFQ fisheries is discussed here to show why increases in charter sector harvests reduce the percentage of the CEY available to the commercial IFQ fishery. Total CEY is currently calculated by applying a fixed harvest rate (20 percent) to the exploitable biomass estimate. The fishery CEY is calculated by subtracting an estimate of all other non-commercial removals³⁷ 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 are accounted for before the fishery CEY is set. The entire process is described in more detail in the EA.

Two general types of management measures have been recently considered that could constrain the growth in halibut harvests. The first type of measure imposes a restriction on when, where, or how fishing may occur; limits the number of halibut that a charter client may retain; or limits the size of halibut that may be retained. Examples are restricting crew harvests, reducing bag limits, and implementing restrictions on the sizes of halibut that could 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 (NPFMC 2006b). These management measures are expected to slow the growth of charter harvests by varying amounts. However, it is difficult to constrain the total charter harvests over time as the sector adapts to the implementation of those measures. Such adaptations would necessitate the implementation of increasingly stringent management measures over time.

³⁶ Moratorium qualification requirements are based on activity of the business in the year prior to implementation and during the years 2004 or 2005. Because the moratorium analysis could not determine which businesses will fish during the year prior to implementation (or even what year the "year prior to implementation" would be), it estimated the maximum number of permits that could be issued. Over time, the number of permits that are actively being fished should decrease, since about 25% of the permits would be non-transferable because the vessel generating the permit took less than 15 trips in 2004 or 2005.

³⁷ The non-commercial removals include projected Legal-Sized bycatch harvest, projected Sport Catch, projected Wastage, and projected Personal Use/Subsistence.

2.3.3 Historic Halibut Catches

The Pacific halibut resource is fully utilized. The halibut resource has traditionally been harvested by commercial, sport (guided and non-guided), and subsistence users. The IPHC did not have a formal regulatory definition of subsistence prior to 2002; however, it did attempt to track subsistence harvest taken under a personal use category, leaving only sport harvests under the sportfishing category. In 2002, the IPHC adopted regulatory language defining subsistence (“Customary and Traditional Fishing in Alaska”). Federal regulations now recognize and define a legal subsistence fishery for halibut in Alaska. Additional information may be found in the EA.

Sportfishing for halibut in Southeast Alaska is an important recreational activity for resident and non-resident anglers. Meyer (2005) reported that participation in the marine sport fisheries of Southcentral Alaska has more than doubled in the last 15 years. A major portion of the marine fishing effort is directed at halibut and state-managed groundfishes, including rockfishes, lingcod, and sharks. However, sport harvest of halibut exceeds that of all other sport harvested marine finfishes. Harvest in Southcentral Alaska increased from 40,000 fish in 1980, to 286,000 fish in 2000. The 2003 harvest of 278,000 halibut made up 69 percent (in number) of the statewide recreational harvest. Sport harvests of halibut rapidly increased in the late 1980s to mid-1990s, due to continued increases in targeted effort (Tersteeg and Jaenicke 2005). In IPHC Area 3A, sport catch, both charter and unguided, primarily occurs on the Kenai Peninsula. Fishing effort in Area 2C is mostly concentrated around Juneau, Ketchikan, Sitka, Wrangell, and Petersburg. However, substantial effort is also expended near remote fishing lodges and smaller communities throughout the region, such as Craig, Gustavus, and Yakutat (Jaenicke 2005).

Alaska sport harvest estimates are derived from statewide postal survey estimates of harvest in numbers of fish, in conjunction with onsite sampling for average weight at points of landing. Estimates usually lag by one year. Halibut removals for Areas 2C and 3A are presented in Table A- 14 and Table A- 15, respectively. In summary, charter halibut harvests between 1997 and 2007, increased by more than 60 percent in Area 2C (from 1.03 Milb to 1.70 Milb). In Area 3A charter harvests have varied from a low of 2.53 Milb in 1999, to a high of 3.69 Milb in 2005. However the harvests in 1997 and 2007 are about equal. Charter halibut harvests amounted to approximately 11 percent and 10 percent of total halibut removals in Areas 2C and 3A in 2005, compared with 7 percent and 9 percent, respectively, in 1999.

Area 2C commercial halibut removals have fluctuated between 1995 and 2007, from a low of 7.76 Milb in 1995 to a high of 10.49 Milb in 2005. During the years 1997 through 1999, removals were between 9.66 Milb and 9.90 Milb. Removals were between 8.27 Milb and 8.45 Milb over the four year period from 2000 through 2003. From 2004 through 2006, removals increased to just under 10.5 Milb in each year. In Area 3A commercial removals followed a similar trend to Area 2C. Removals ranged from 18.14 Milb in 1995, to 25.96 Milb in 2007. Commercial removals were highest from 1997 through 1999 and the years 2004 through 2007. Removals were over 24 Milb each of those years.

The number of halibut QS holders has declined since they were initially issued (NMFS 2007). In Area 2C 2,389 QS holders were initially issued halibut QS. As of the end of 2006, the number of halibut QS holders had declined to 1,353. That represents a decrease of 1,036 QS holders. In Area 3A, 3,073 QS holders were given an initial halibut allocation. By 2006, the number of QS holders was reported to be 1,774. So, 1,299 QS had left the halibut fishery between the initial allocation and the end of 2006. This was not an unexpected, nor undesirable outcome of the IFQ program.

Table A- 14Area 2C halibut removals (Mlb), 1995–2008

Year	Total CEY	Fishery CEY	Commercial Catch Limit	Commercial Catch	Sport Guided	Sport Unguided	Sport Total	Bycatch Mortality (Legal Sized Fish)	Personal Use (Subsistence)	Wastage (Legal Sized Fish)	TOTAL CEY REMOVALS
1995			9.00	7.76							7.76
1996			9.00	8.74							8.74
1997	13.92	11.41	10.00	9.75	1.03	1.14	2.17	0.26	n/a	0.04	12.23
1998	17.70	15.48	10.50	9.67	1.58	0.92	2.50	0.22	0.17	0.05	12.61
1999	12.80	10.49	10.49	9.90	0.94	0.90	1.84	0.23	0.17	0.07	12.22
2000	8.44	6.31	8.40	8.27	1.13	1.13	2.26	0.23	0.17	0.04	10.97
2001	11.20	8.78	8.78	8.27	1.20	0.72	1.93	0.22	0.17	0.04	10.63
2002	10.66	8.50	8.50	8.46	1.28	0.81	2.09	0.18	0.17	0.03	10.93
2003	12.00	9.11	8.50	8.29	1.41	0.85	2.26	0.17	0.17	0.03	10.91
2004	20.00	17.00	10.50	10.12	1.75	1.19	2.94	0.15	0.63	0.03	13.86
2005	14.90	11.80	10.93	10.49	1.95	0.85	2.80	0.14	0.60	0.04	14.07
2006	13.73	10.33	10.63	10.40	1.80	0.72	2.53	0.22	0.59	0.02	13.75
2007	10.80	7.61	8.51	8.34	1.70	0.84	2.55	0.21	0.58	0.02	11.70
2008	6.50	3.92	6.21								

Source: IPHC

Table A- 15Area 3A halibut removals (Mlb), 1995–2008

Year	Total CEY	Fishery CEY	Commercial Catch Limit	Commercial Catch	Sport Guided	Sport Unguided	Sport Total	Bycatch Mortality (Legal Sized Fish)	Personal Use (Subsistence)	Wastage (Legal Sized Fish)	TOTAL CEY REMOVALS
1995			20.00	18.14							18.14
1996			20.00	19.32							19.32
1997	40.66	33.55	25.00	24.24	3.41	2.10	5.51	1.15	0.10	0.07	31.07
1998	45.44	38.71	26.00	24.54	2.99	1.72	4.70	1.49	0.07	0.16	30.96
1999	31.80	24.67	24.67	24.31	2.53	1.70	4.23	1.60	0.07	0.10	30.31
2000	18.98	11.94	18.31	18.17	3.14	2.17	5.31	1.21	0.07	0.03	24.79
2001	27.80	21.89	21.89	21.10	3.13	1.54	4.68	1.70	0.07	0.03	27.58
2002	30.96	24.14	22.63	22.61	2.72	1.48	4.20	1.18	0.07	0.02	28.09
2003	40.00	34.22	22.63	22.32	3.38	2.05	5.43	1.36	0.07	0.09	29.28
2004	36.50	30.00	25.06	24.72	3.67	1.94	5.61	1.52	0.28	0.07	32.19
2005	32.90	26.30	25.47	25.23	3.69	1.98	5.67	1.32	0.43	0.08	32.73
2006	32.18	24.94	25.20	25.24	3.66	1.67	5.34	1.43	0.36	0.05	32.42
2007	35.78	28.21	26.20	25.96	3.40	1.64	5.05	0.99	0.38	0.05	32.43
2008	28.96	22.25	24.22								

Source: IPHC

2.3.3.1 Percentage of Halibut Harvested by Charter Sector

Figure 9 shows the percentage of the combined charter and IFQ halibut catch taken in the charter sector during the years 1995 through 2006³⁸. The percentage of the total halibut harvested by the charter sector in Area 2C shows no consistent increasing or decreasing trend from 1995 through 2000. However, from 2001 through 2006, the charter sector annually increased its percentage of the combined harvest. In Area 3A, the charter sector percentage of the total decreased from 1995 through 2000. Their percentage of the total spiked up in 2000, and then decreased through 2002. The percentage was then fairly stable from 2003 through 2006.

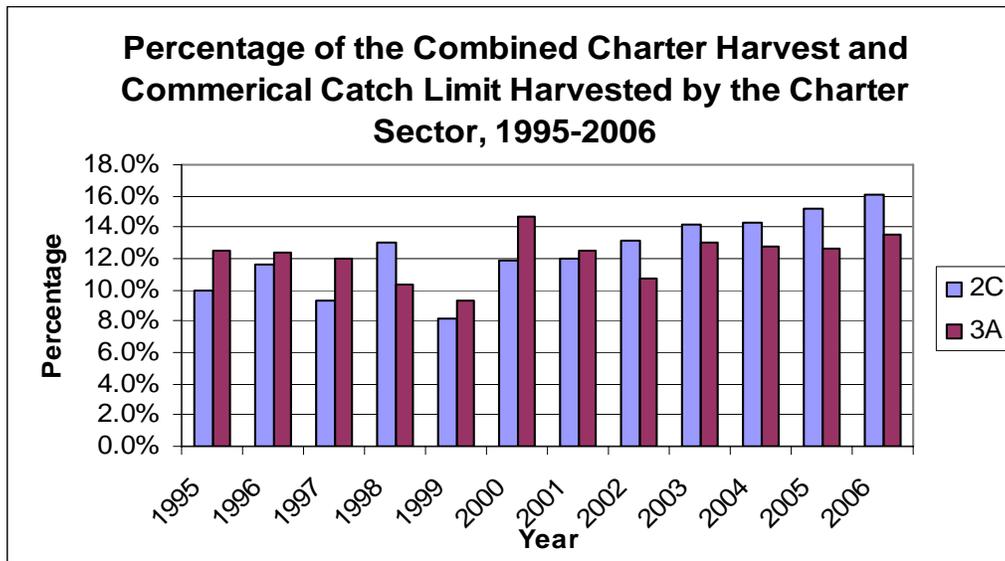


Figure 9 Charter halibut harvest as a percentage of combined commercial IFQ and charter harvest, 1995-2006.

2.3.4 Charter Harvest by Week in 2006

Figure 10 shows the cumulative percentage of charter harvest, by week, during 2006. The shape of the Area 2C and Area 3A harvest curves indicates that the weekly harvests are lower either early or late in the fishing year than they are during the peak season. During 2006, the Area 2C charter fleet harvested over 5 percent of its total harvest every week from June 5 through the week starting August 21. The percentage of total charter harvest dropped dramatically during the weeks before and after those dates. 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 they are linked to their cruise dates.

³⁸ 2006 estimates are preliminary

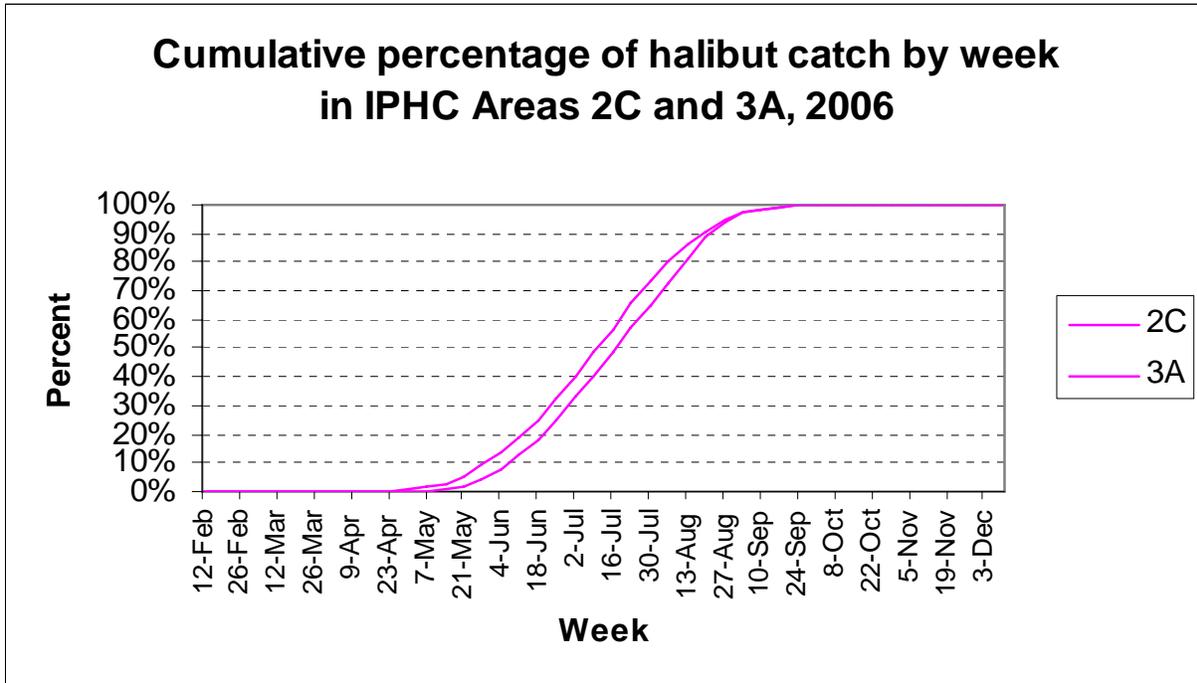


Figure 10 Cumulative percentage of halibut charter catch by week during 2006

Halibut harvests from Area 3A tend to follow the same general trend as discussed for Area 2C. The primary difference in the two areas is that Area 3A harvest tended to start sooner and taper off sooner than in Area 2C. The Area 3A charter fleet was harvesting over 4.1 percent of their total harvest during the week of May 22. By the week of August 14, the fleet was harvesting less than 5 percent of its annual total on a weekly basis.

Figure 11 shows the percentage of total charter halibut caught in Areas 2C and 3A, by week. This information again demonstrates that the Area 3A fishery has more activity earlier in the year and less later in the year than Area 2C. The Area 2C halibut charter fishery continued at peak summer levels for about two weeks longer than Area 3A, during 2006. Both areas had weeks when over 8 percent of the annual harvest was taken. The data in this section further enforce the importance of the charter fishery in June, July, and August. Limiting a charter operator’s ability to provide trips during those months would have the greatest impact on his or her business.

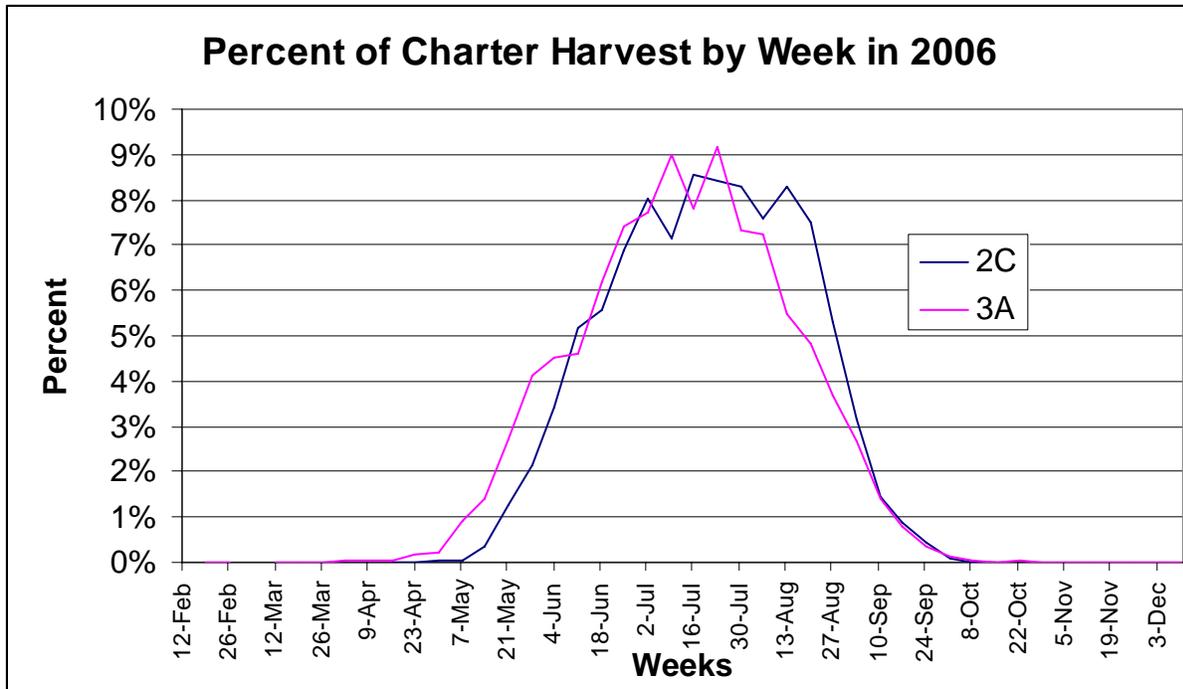


Figure 11 Weekly percentage of total charter harvest during 2006

2.4 Status Quo

2.4.1 Current Guideline Harvest Level (GHL) Charter Regulations

Current regulations define a guideline level of harvest for the charter sector. The GHL amount is linked to the CEY that is set by the IPHC for that year. The GHL defined a target harvest level for the charter sector of 1.432 Milb (equivalent to 13 percent of the CEY) in Area 2C, and 3.650 Milb (equivalent to 14 percent of the CEY) in Area 3A, respectively, from 2004 through 2007 (NPFMC 2007). In 2008, the CEY established by the IPHC was 6.500 Milb in Area 2C and 28.960 Milb in Area 3A. Because the Area 2C CEY was reduced, from 11.4 Milb in 2007, the 2008 CEY resulted in a GHL of 931,000 lb. The Area 3A remained unchanged at 3.650 Milb in 2008. The lower CEY in Area 2C reduced the GHL to 65 percent of its 2007 level. The Area 3A GHL has remained unchanged from 2004 through 2008 (Federal Register, 2008)³⁹.

2.4.2 Coast-wide Assessment

The historic (1995–2007) catch and CEY estimates used in this analysis are based on the area-wide assessment. Starting in 2008, the coast-wide assessment was used to derive CEYs used in this analysis. Prior to 2008, the IPHC had been considering switching to a coast-wide assessment to account for migration. The change in assessments has a larger impact on Area 2C, than it does on Area 3A. The following is excerpted from Clark and Hare (2006):

Growing concerns about net migration from the western to the eastern Gulf of Alaska have led the staff to doubt the accuracy of the closed-area assessments that have been done for many years. A coastwide assessment with survey apportionment was presented to the IPHC, in addition to the closed-area assessments, and was used to calculate the available yield in each area. The two assessments produced very similar estimates of total abundance (total exploitable biomass about

³⁹ Federal Register. 2008. Volume 73, No 24. Tuesday February 5, 2008.

400 Mlb, total available yield about 80 Mlb) but the distribution among areas was quite different, with the coastwide assessment showing more biomass and available yield in Areas 3B and 4 than the closed-area assessments and less in Area 2. Area 3A is about the same in both assessments.

The IPHC reported the coast-wide exploitable biomass was 414 Mlb in 2007. By 2008, the estimated exploitable biomass decreased to 361 Mlb (IPHC 2008). This represents a 53 Mlb decrease.

2.4.3 Changes in the Status Quo

The status quo for the charter sector in Area 3A has remained relatively stable over the development of this amendment package. A primary reason for the stable management has been that the charter sector has not exceeded the Area 3A GHL. The Area 2C regulations have changed substantially over the period of time this amendment has been developed. This section provides a description of recent changes in the Area 2C and 3A charter fishery. Much of the language in this section that describes the history of actions from 2007 through 2008 was drafted for the proposed rule for the Charter Halibut Permit program (NMFS AKR 2008).

Due to concerns that the Area 2C was being exceeded, a management response was initiated in 2007 by the IPHC, NMFS, ADF&G, and subsequently by the Council. The IPHC adopted a motion, at its January 2007 meeting to recommend reducing the daily bag limit for anglers 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.

In a letter to the IPHC on March 1, 2007, the Secretary of State, with concurrence from the Secretary, 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 be 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 (180.1 mt) lb to 432,000 lb (195.9 mt).

Regulatory action to remedy this problem by June 2007, the seasonal beginning of the principal sport fishing effort, required the Secretary, 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 retains 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).

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 Council's alternatives were designed to constrain the charter vessel fishery to its GHL. In June 2007, the Council adopted a preferred alternative that contained two options. The Council recommended that the selection between the options depend on whether the CEY decreases 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 remains the same in 2008 (Option A) and

a different, more restrictive, suite of restrictions if the GHL decreases 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 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 Mlbs (2,948.4 mt). This was a 4.3 Mlb (1,950.4 mt) reduction from the 2007 total CEY of 10.8 Mlbs (4,899.0 mt) which triggered a reduction in the Area 2C GHL to 931,000 lb (422.3 mt). 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 11 plaintiffs requesting a temporary restraining order (TRO) 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 TRO 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 (81.3 cm). On June 19, the court granted plaintiffs a preliminary injunction which continued the effect of the TRO.

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.

Based on these changes it has been determined that the status quo in this document will be a two-fish daily bag limit in both Areas 2C and 3A. In Area 2C one of the two halibut must have a head-on length of no more than 32 inches (81.3 cm). This a change from the April 2008 version of this amendment that assumed a two-fish daily bag in 2007 and a one-fish daily bag limit from 2008 through 2011.

2.4.4 Projected CEYs and GHLs

The IPHC has produced Total CEY projections for the years 2008–2013. Those projections show that Area 2C is at a low level in 2008, relative to previous years. The implementation of the coast-wide model plays an important role in the decrease. The IPHC is projecting that the Area 2C CEY would increase from 2008 through 2013. By 2011, the IPHC is projecting the CEY would return to a level that would once again allow the GHL to be set at 1.432 Mlb (IPHC 2008). Note that the GHL would be replaced by the proposed allocation, if implemented. Projections provided by the IPHC for the years 2008–2013 are provided in Table A- 16.

In Area 3A the CEY for 2008 is lower than recent years, but it remains large enough to yield a GHL of 3.65 Mlb. The Area 3A CEY is also expected to increase each year from 2008 through 2013. By 2013, the CEY is projected to be 162 percent of the 2008 level.

Table A- 16IPHC staff CEY projections for Area 2C and 3A, 2008–2013

Year	IPHC Area 2C		IPHC Area 3A	
	CEY (Mlb)	GHL (Mlb)	CEY (Mlb)	GHL (Mlb)
2008	6.5	0.931	29.0	3.65
2009	7.4	1.074	32.8	3.65
2010	8.4	1.217	37.3	3.65
2011	9.3	1.432	41.5	3.65
2012	10.1	1.432	44.9	3.65
2013	10.6	1.432	47.1	3.65

Source: IPHC Staff, 2008

2.5 Analysis of New Alternatives

This section of the analysis provides estimates of the various initial allocation options and provides a discussion of each of the other elements being considered by the Council.

2.5.1 Element 1 – Initial Allocation

This section presents information on data and methods used to calculate the initial allocation options being considered by the Council. The initial allocation would determine the size of the halibut common pool. All licensed charter business may allow their clients to harvest from the common pool. The total number of halibut each business may harvest is only limited by the number of clients they can attract, regulations imposed on the number of clients they may carry on a trip, and the individual client harvest regulations. The concept of Guided Angler Fish (GAF) is discussed later in the RIR. In the context of this amendment, GAF could be leased from the commercial sector, by Charter Halibut Permit holders, to increase their harvesting flexibility under current harvest regulations.

Three types of allocation options are being considered for the common pool. The first would allocate the charter sector a percentage of a combined commercial and charter catch limit. It is assumed that the IPHC would set the combined commercial and charter catch limit. The second option would allocate that charter sector a fixed number of pounds. Under the fixed-pound option, a suboption would convert the fixed-pound option to a percentage-based option that moves in predefined steps associated with total CEY or combined commercial and charter catch limit changes. The final set of options uses 50 percent of the allocation that results from both a fixed pound and percentage allocation. That option sets a floor for the charter allocation, while allowing half of the charter allocation to vary with changes in the Area CEY.

During the April 2008 Council meeting, the issue of where the charter allotment would be removed during the IPHC allocation processes was raised. It was noted by the public that when the charter allotment was removed from the available halibut CEY could affect the commercial allocation. Because of that discussion, IPHC staff members were requested to present their opinion on the where the charter allocation should be removed as part of the overall process. The next two paragraphs summarize their conclusions.

The IPHC believes that the charter sector's allocation should be part of a combined commercial/charter fishery catch limit. Indeed, the Commission believes that all recreational fishing should be included in any allocation framework to avoid leakage from the guided into the unguided sector, should a guided limit be reached or to artificially avoid being reached. In any case, use of a combined catch limit would be a simpler approach and be both more transparent and more comprehensible to the user groups. It is also more equitable, putting both sectors on equal footing concerning the impacts and effects of bycatch and other non-directed removals. Thus, as part of a combined catch limit, both the charter and commercial sectors would share in the benefits and costs of managing the resource for long term sustainability. The IPHC staff has recommended to the Council in correspondence and testimony that the Commission could

approve, as it does in other areas, a combined charter/commercial Catch Limit for allocative use by the Council. Placing recreational fisheries within a combined catch limit would also allow the Commission's policy of phasing in changes in catch limits to be applied equitably to all user groups.

There is precedent for a combined catch limit. In Area 2A (WA/OR/CA), the catch by all directed fishery users is managed with one overall catch limit. A catch sharing plan developed by the Pacific Fishery Management Council in 1988 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 since 2004 within a single catch limit, which is approved by IPHC. In both instances, domestic federal and/or state agencies are involved with further management of sector fisheries to most effectively achieve the IPHC catch limit.

2.5.1.1 Option 1

Option 1 would set the allocation for charter sector as a percentage of a combined charter and commercial catch limit. The combined commercial and charter catch limit would be set by the IPHC if this option is selected, but has not been calculated historically. The percentages would be determined by dividing 125 percent of the historic charter catches by the sum of the combined commercial catch limits and charter harvests over the years selected. The formula used for the calculation of Options 1a and 1b is shown below:

$$\text{Charter}\% = \frac{(CHarv * 1.25)}{CHarv + CL} \times 100$$

In the formula, "Charter%" represents the percentage of a combined charter and commercial sector fishery catch limit, to be developed by the IPHC⁴⁰, that is set aside as the charter allocation. "CHarv" is the sum of the charter sector's harvest over the years included in the allocation formula. "CL" is the sum of the commercial catch limit set by the IPHC for the years included in the allocation. If this allocation alternative is selected, the percentages for Area 2C and 3A would be fixed. The percentages may only be changed if the Council initiates an amendment to revise them. This is the same formula that was used to calculate the original GHL.

Table A- 17 shows the raw data used in the formula which should allow the reader to understand how the percentages were derived. The raw data are presented at the third decimal place. At the request of the Council, the allocation percentages that are calculated have been rounded to the nearest 1/10 of a percent⁴¹. The bottom row of Table A- 17 shows that the charter sector would be allocated 13.1 percent of the Area 2C combined commercial and charter catch limit if Option 1a is selected. The allocation for Area 3A is equal to 14.1 percent of that area's combined commercial and charter catch limit.

⁴⁰ The Council would request that the IPHC set a combined charter and commercial sector catch limit each year. Currently the IPHC does not generate that number.

⁴¹ The number places after the decimal point and the allocation percentages have changed from previous drafts.

Table A- 17 Option 1a – 125% of 1995–1999 average charter harvest (current GHL)

Year	Area 2C					Area 3A				
	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%
1995	0.986	9.000	9.986	1.233	12.3%	2.845	20.000	22.845	3.557	15.6%
1996	1.187	9.000	10.187	1.483	14.6%	2.822	20.000	22.822	3.527	15.5%
1997	1.034	10.000	11.034	1.292	11.7%	3.413	25.000	28.413	4.266	15.0%
1998	1.584	10.500	12.084	1.980	16.4%	2.985	26.000	28.985	3.731	12.9%
1999	0.939	10.490	11.429	1.173	10.3%	2.533	24.670	27.203	3.167	11.6%
Avg.				1.432	13.1%				3.650	14.1%

Source: ADFG

Table A- 18 shows that the charter sector would be allocated 17.2 percent of the Area 2C combined commercial and charter catch limit if Option 1b is selected. The formula used to make the calculation is the same in Option 1a and 1b, but different years of data are used. The allocation for Area 3A is equal to 15.4 percent of that area’s combined commercial and charter catch limit. Option 1b yields an Area 2C allocation that is more than 4 percent larger than the combined commercial and charter catch limit in Option 1a. The Option 1b allocation for Area 3A is more than 1 percent larger than the combined commercial and charter catch limit in Option 1a.

Table A- 18 Option 1b – 125% of 2001–2005 average charter harvest

Year	Area 2C					Area 3A				
	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%
2001	1.202	8.780	9.982	1.503	15.1%	3.132	21.890	25.022	3.915	15.6%
2002	1.275	8.500	9.775	1.594	16.3%	2.724	22.630	25.354	3.404	13.4%
2003	1.412	8.500	9.912	1.765	17.8%	3.382	22.630	26.012	4.227	16.3%
2004	1.750	10.500	12.250	2.187	17.9%	3.668	25.060	28.728	4.586	16.0%
2005	1.952	10.930	12.882	2.441	18.9%	3.689	25.470	29.159	4.611	15.8%
Avg.				1.898	17.2%				4.149	15.4%

Source: ADFG

Option 1c uses a slightly different formula to calculate the percentage of the combined commercial and charter catch limit that would be allocated to the charter sector. The formula for this option is shown below:

$$\% Alloc = \frac{CurrentGHL}{CHarv + CL} \times 100$$

“CHarv” is the charter sector’s harvest during 2004. “CL” is the commercial catch limit set by the IPHC for 2004. The allocation calculation and results for Option 1c are shown in Table A- 19. This option yields the smallest charter allocation of the Option 1 suboptions for both Area 2C and Area 3A.

When the Council passed this motion in October 2007, the GHL poundages in Area 2C and 3A had never changed. However, in 2008 the Area 2C GHL was reduced to 931,000 lb, because of a smaller CEY. The intent of this option is to set a fixed percentage for the charter allocation. To achieve a fixed percentage, an assumption needed to be made regarding the appropriate baseline GHL poudage. This analysis assumes the current GHL should be set equal to the GHL in place the year the Council’s motion was passed. This assumption was made, because allowing the current GHL to vary would change the allocation percentage.

Table A- 19Option 1c – current GHL as percent in 2004

Year	Area 2C					Area 3A				
	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%	Charter Harvest	Commercial Catch Limit	Total	Char*1.25	Charter%
2004	1.750	10.500	12.250	1.432	11.7%	3.668	25.060	28.728	3.650	12.7%

Source: ADFG

Option 1d calculates the charter sector allocation by dividing the 2005 charter harvest by the sum of the 2005 charter harvest and the 2005 commercial catch limit. The actual formula used is shown below:

$$\% Alloc = \frac{CHarv}{CHarv + CL} \times 100$$

The results of this calculation show that the Area 2C charter allocation would equal 15.2 percent of a combined charter and commercial catch limit (Table A- 20). In Area 3A, the percentage of the combined catch limit would be set at 12.7 percent. Once set, the percentages derived under Option 1 would not change unless the Council develops a new amendment to change them. However, fluctuations in the combined commercial and charter catch limit set by the IPHC would result in changes to the number of pounds allocated to the charter sector.

Table A- 20Option 1d – 2005 charter harvest as a percent

Year	Area 2C				Area 3A			
	Charter	Longline	Total	% Alloc	Charter	Longline	Total	% Alloc
2005	1.952	10.930	12.882	15.2%	3.689	25.470	29.159	12.7%

2.5.1.2 Option 2

Option 2, under Element 1, would set the charter allocation at a fixed number of pounds. The pounds allocated to the charter sector would never vary, unless resource conservation issues require a reduction in the allocation. Under extreme stock collapse conditions, the commercial allocation could be set at zero pounds, before the charter allocation would be reduced.

Three options are being considered to determine the fixed number of pounds. Only two use the same time periods that were used under the percentage-based allocation options. The allocation is calculated using the simple arithmetic mean of the average charter harvest. The results are reported in Table A- 21, Table A- 22, and Table A- 23. Table A- 21 shows that the charter sector would be allocated 1.43 Mlb for Area 2C and 3.65 Mlb for Area 3A. The allocation is based on the same formula used to calculate the original GHL. As noted that the Area 2C GHL was reduced to 931,000 lb in 2008. The GHL was reduced because it is linked to changes in CEY. In 2008 the CEY declined to 6.5 Mlb. The 2008 CEY for Area 3A did not trigger a change in the GHL.

Table A- 21 Option 2a – 125% of the 1995-1999 average charter harvest (Mlb)

Year	Area 2C	Area 3A
1995	0.986	2.845
1996	1.187	2.822
1997	1.034	3.413
1998	1.584	2.985
1999	0.939	2.533
Allocation	1.43	3.65

Source: ADFG

Note: This is the current GHF formula but changes in the allocation are not linked to changes in the CEY.

Because the charter harvest was larger in 2000-2004 than in 1995-1999, the charter allocation under Option 2b (Table A- 22) is larger. Option 2b yields an allocation that is 1.69 Mlb in Area 2C and 4.01 Mlb in Area 3A. The Area 2C allocation increased by 260,000 lb, relative to the Option 2a allocation. In Area 3A, the allocation increased by 360,000 lb. While the allocation increased by more pounds in Area 3A, the percentage change in the allocation was greater in Area 2C.

Table A- 22 Option 2b – 125% of the 2000-2004 average charter harvest (Mlb)

Year	Area 2C	Area 3A
2000	1.132	3.140
2001	1.202	3.132
2002	1.275	2.724
2003	1.412	3.382
2004	1.750	3.668
Allocation	1.69	4.01

Source: ADFG

The largest charter allocation is generated using Option 2c (Table A- 23). That allocation option was based on the years 2001–2005. Option 2c yields an Area 2C allocation that is 570,000 lb more than Option 2a. In Area 3A, the allocation is 500,000 lb larger. So, relative to the current GHF years, the Area 2C allocation increases more in both pounds and percentage when compared to the Area 3A allocation using the years 2001–2005.

Table A- 23 Option 2c – 125% of the 2001-2005 average charter harvest

Year	Area 2C	Area 3A
2001	1.202	3.132
2002	1.275	2.724
2003	1.412	3.382
2004	1.750	3.668
2005	1.952	3.689
Allocation	1.90	4.15

Source: ADFG

By receiving a fixed poundage allocation, the charter sector is insulated from fluctuations in halibut stock abundance. Under a percentage based allocation, stock abundance changes would cause the charter sector's allocation to vary. The fixed poundage allocation has always appealed to some members of the charter sector, because it eliminates some of the uncertainties associated with their future allocation. This comes at a cost, because using this approach precludes charter LEP holders sharing in stock increases, should they occur.

2.5.1.2.1 Option 2 Suboption

A suboption has been included under the fixed poundage option that would require the charter allocation to increase or decrease in predefined steps when the halibut CEY changes by specified amounts. The suboption does not apply to the percentage-based allocation under Option 1 or the allocations that combine fixed and percentage based allocations (Option 3), because those allocations are already directly linked to changes in a combined commercial and charter catch limit. Selecting the Option 2 suboption, results in an allocation to the charter sector that behaves much more like Option 1 than a fixed poundage allocation. Anytime the CEY changes by a predetermined amount, the charter allocation would be revised to the corresponding allocation level. Allowing the charter allocation to vary with CEY changes 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 its allocation. However, if Option 2 was not modified to include the stair step up and down, the commercial sector would have been required to absorb the entire reduction of available halibut.

The suboption under Option 2 would modify the charter allocation, based on predefined steps. The Council requested that those steps be based on charges to either the baseline years proposed, the total CEY, or the baseline of the combined commercial and charter catch limit.

The CEYs for the years 1995–2007, presented in Table A- 24, are based on area assessments. The CEYs presented for 2008 and later are based on the coast-wide assessment. In area 2C, the use of earlier years, especially if the CEYs are not recalculated using the coast-wide assessment, would be more likely to trigger a reduction in the charter allocation in the near future. The IPHC was asked if they could provide estimates of the 2006 through 2008 CEY and the 2006 through 2008 combined commercial and charter catch limit using the coast-wide assessment. Staff was notified that the data were not available to estimate the CEY or the combined catch limit prior to 2008. Therefore, the analysts are unable to analyze the options that use those data in years prior to 2008.

Table A- 24 Area 2C and 3A CEY by year, 1995-2013

Year	2C	3A
1995	10.03	27.89
1996	11.19	27.25
1997	12.35	33.39
1998	12.92	32.97
1999	12.50	32.02
2000	11.15	26.62
2001	10.80	29.35
2002	11.18	29.63
2003	11.14	31.28
2004	14.31	34.83
2005	14.55	34.91
2006	13.70	32.02
2007	11.40	37.20
2008*	6.50	29.00
2009*	7.40	32.80
2010*	8.40	37.30
2011*	9.30	41.50
2012*	10.10	44.90
2013*	10.60	47.10

Source: IPHC

Note: * means the CEY is based on a coastwide assessment.

Changes in the charter allocation, when the CEY changes a specified percentage from the baseline amount, are shown in the tables below. The tables show the initial allocation and the revised allocation if the CEY changes by the percentages listed in the table. Table A- 25 shows changes in the charter allocation if Option 2a were selected. No changes occur to the charter allocation when the CEY increases or decreases by less than 15 percent from the baseline amount. Increases greater than or equal to 15 percent would trigger changes in the charter allocation. The first step changes the initial allocation by 15 percent. Each additional 10 percent change in the CEY triggers an additional 10 percent change in the charter sector's allocation. In Area 2C, the first step is triggered by a 15 percent change in the CEY and results in the allocation increasing or decreasing 210,000 lb. In Area 3A, the allocation is changed by 550,000 lb. Each additional 10 percent change in the CEY results in the charter sector's allocation increasing or decreasing 140,000 lb in Area 2C, and 360,000 lb in Area 3A.

Table A- 25 Suboption allocation under Option 2a at given changes in the CEY

Area 2C		Area 3A	
Relative CEY	Allocation (Mlb)	Relative CEY	Allocation (Mlb)
+45 to +55%	2.08	+45 to +55%	5.29
+35 to +45%	1.93	+35 to +45%	4.93
+25 to +35%	1.79	+25 to +35%	4.56
+15 to +25%	1.65	+15 to +25%	4.20
-15 to +15%	1.43	-15 to +15%	3.65
-15 to -25%	1.22	-15 to -25%	3.10
-25 to -35%	1.07	-25 to -35%	2.74
-35 to -45%	0.93	-35 to -45%	2.37
-45 to -55%	0.79	-45 to -55%	2.01

Source: ADFG

Using the starting points being considered by the Council (where data are available) it is possible to show the allocations that are projected to occur from 2008 through 2015. Those are the years that IPHC was able to provide estimates of future CEYs and Combined Commercial and Charter Catch Limits.

Table A- 26 shows projections of charter allocations under the various suboptions being considered. There are four suboptions that define the starting point from where changes are measured based on CEY. Three of the suboptions define the starting point from which changes are measured using CEYs based on the Area-wide IPHC estimates. The years used in those suboptions to determine the baseline CEY starting point are 1995 through 1999, 2000 through 2004, and 2001 through 2005. One suboption is based on the Coast-wide calculation. That is the 2008 option. Finally one suboption measures changes from the 2008 Combined Commercial and Charter Catch Limit.

The Area 2C charter allocations in Table A- 26 show that the alternatives that use different types of starting points and yield very different outcomes. For example, suboptions based on CEYs using the area-wide calculation of CEY tend to yield allocations that are similar. They all begin with a 2008 allocation that is between 790,000 lbs and 930,000 lbs. Each allocation increases over time and peaks at 1.43 Mlbs. When the 2008 CEY, based on the coast-wide methodology, is used, the allocation starts at 1.43 Mlbs in 2008 and increases to 2.36 Mlb in 2015. The suboption based on the Combined Commercial and Charter Catch Limit is 1.43 Mlb over the entire time period considered. These allocations indicate that using historic CEYs may result in allocations that are only about one-half of the allocation that would result if 2008 CEYs based on the coast-wide method were used.

In Area 3A the allocations are more similar under the suboptions being considered. The reason the various suboptions yield similar results is the CEYs and Combined Commercial and Charter Catch Limits have less variability over the time period. Each of the suboptions are projected to yield an allocation of 3.65 Mlb in 2008. By 2015 the allocation is projected to increase to 5.29 Mlb to 5.65 Mlb. Therefore, the baseline period selected for area 3A has less of an impact on future allocations than 2C, over the years

considered. If future CEYs and Combined Catch Limits vary more in the future, in Area 3A, the selection of the base period will be more important.

Table A- 26 Projected charter allocations (2008 through 2015) under Option 2a by suboption (Mlb).

Option 2a	CEY				Combined Catch Limit 2008
	1995-1999	2000-2004	2001-2005	2008	
Year	Area 2C				
2008	0.93	0.93	0.79	1.43	1.43
2009	0.93	0.93	0.93	1.43	1.43
2010	1.07	1.07	1.07	1.79	1.43
2011	1.22	1.07	1.22	1.93	1.43
2012	1.43	1.43	1.22	2.08	1.43
2013	1.43	1.43	1.43	2.22	1.43
2014	1.43	1.43	1.43	2.36	1.43
2015	1.43	1.43	1.43	2.36	1.43
	Area 3A				
2008	3.65	3.65	3.65	3.65	3.65
2009	3.65	3.65	3.65	3.65	3.65
2010	4.20	4.20	4.20	4.56	3.65
2011	4.93	4.93	4.56	4.93	4.20
2012	5.29	5.29	4.93	5.29	4.56
2013	5.29	5.65	5.29	5.65	4.93
2014	5.65	5.65	5.29	6.01	5.29
2015	5.65	5.65	5.29	5.65	5.29

Source: IPHC projections of future CEYs and Combined Commercial and Charter Catch Limits. Council's Proposed allocations under Options 2a.

Table A- 27 shows the charter allocations that would result from CEY changes under Option 2b. Because the initial allocation is larger, the changes in the allocation at each step are also larger. In area 2C, the initial 15 percent increase or decrease in the allocation increases or decreases the amount by 250,000 lb. Each additional 10 percent increase (or decrease) increases (or decreases) the allocation by 170,000 lb. In Area 3A, the initial change is 600,000 lb, and each additional 10 percent change moves the allocation by 400,000 lb.

Table A- 27 Suboption allocation under Option 2b at given changes in the CEY

Area 2C		Area 3A	
Relative CEY	GHL	Relative CEY	GHL
+45 to +55%	2.45	+45 to +55%	5.82
+35 to +45%	2.29	+35 to +45%	5.42
+25 to +35%	2.12	+25 to +35%	5.01
+15 to +25%	1.95	+15 to +25%	4.61
-15 to +15%	1.69	-15 to +15%	4.01
-15 to -25%	1.44	-15 to -25%	3.41
-25 to -35%	1.27	-25 to -35%	3.01
-35 to -45%	1.10	-35 to -45%	2.61
-45 to -55%	0.93	-45 to -55%	2.21

Source: ADFG

Table A- 28 shows the projected allocation based on selecting various suboptions under Option 2b. The same percentage changes are triggered each year under Options 2a through 2c. The only difference in the outcomes is the starting allocation. Because the fixed allocation is larger under Option 2b than Option 2a the allocations under the suboptions are also larger. However, the trends of increases and decreases in allocation are the same. Allocations range from 930,000 lb in 2008 (under the 2001 through 2005 CEY suboption) to 2.79 Milb in 2015 (under the 2008 CEY suboption).

Table A- 28 Projected charter allocations (2008–2015) under Option 2b by suboption (Mlb).

Option 2b Year	CEY				Combined Catch Limit 2008
	1995-1999	2000-2004	2001-2005	2008	
Area 2C					
2008	1.10	1.10	0.93	1.69	1.69
2009	1.10	1.10	1.10	1.69	1.69
2010	1.27	1.27	1.27	2.12	1.69
2011	1.44	1.43	1.44	2.29	1.69
2012	1.69	1.69	1.44	2.45	1.69
2013	1.69	1.69	1.69	2.62	1.69
2014	1.69	1.69	1.69	2.79	1.69
2015	1.69	1.69	1.69	2.79	1.69
Area 3A					
2008	4.01	4.01	4.01	4.01	4.01
2009	4.01	4.01	4.01	4.01	4.01
2010	4.61	4.61	4.61	5.01	4.01
2011	5.42	5.42	5.01	5.42	4.61
2012	5.82	5.82	5.42	5.82	5.01
2013	5.82	6.22	5.82	6.22	5.42
2014	6.22	6.22	5.82	6.62	5.82
2015	6.22	6.22	5.82	6.22	5.82

Source: IPHC projections of future CEYs and Combined Commercial and Charter Catch Limits. Council's Proposed allocations under Options 2b.

Table A- 29 shows the charter allocations that would result from CEY changes under Option 2c. Because the initial allocation is larger than either of the other two options, the changes in the allocation, at each step, are also larger. In Area 2C, the initial 15 percent increase (or decrease) in the allocation increases (or decreases) the amount by 280,000 lb. Each additional 10 percent increase (or decrease) increases (or decreases) the allocation by 190,000 lb. In Area 3A, the initial change is 620,000 lb, and each additional 10 percent change moves the allocation by 410,000 lb.

Table A- 29 Suboption allocation under Option 2c at given changes in the CEY

Area 2C		Area 3A	
Relative CEY	GHL	Relative CEY	GHL
+45 to +55%	2.75	+45 to +55%	6.02
+35 to +45%	2.56	+35 to +45%	5.60
+25 to +35%	2.37	+25 to +35%	5.19
+15 to +25%	2.18	+15 to +25%	4.77
-15 to +15%	1.90	-15 to +15%	4.15
-15 to -25%	1.61	-15 to -25%	3.53
-25 to -35%	1.42	-25 to -35%	3.11
-35 to -45%	1.23	-35 to -45%	2.70
-45 to -55%	1.04	-45 to -55%	2.28

Source: ADFG

As stated earlier the allocations for the suboptions all follow the same trend for Options 2a through 2c. Because Option 2c is the largest fixed pound allocation, the suboption allocation projections are larger than Options 2a and 2b (Table A- 30). Option 2c allocation began at 1.04 MIb to 1.90 MIb (depending on the suboption selected) and increase to as much as 3.13 MIb in 2015 under the 2008 CEY suboption.

In summary, for Area 2C the 2008 suboption based on CEY always yields the largest allocation over the 2008 through 2015 time period. The smallest allocation is generated using the 2001 through 2005 CEY. Variation over the years considered is a result of the CEY changing from the base period to the future years. Using the Combined Commercial and Charter Catch Limit results is a constant allocation over the 2008 through 2015 time period. This occurs because the projected Combined Commercial and Charter Catch limit does not change by 15 percent or more between 2008 and 2015. In Area 3A, all of the projected allocations are within the Council’s proposed allocations under Options 2b.

Table A- 30 Projected charter allocations (2008–2015) under Option 2c by suboption (MIb).

Option 2c Year	CEY				Combined Catch Limit 2008
	1995-1999	2000-2004	2001-2005	2008	
Area 2C					
2008	1.23	1.23	1.04	1.90	1.90
2009	1.23	1.23	1.23	1.90	1.90
2010	1.42	1.42	1.42	2.37	1.90
2011	1.61	1.69	1.61	2.56	1.90
2012	1.90	1.90	1.61	2.75	1.90
2013	1.90	1.90	1.90	2.94	1.90
2014	1.90	1.90	1.90	3.13	1.90
2015	1.90	1.90	1.90	3.13	1.90
Area 3A					
2008	4.15	4.15	4.15	4.15	4.15
2009	4.15	4.15	4.15	4.15	4.15
2010	4.77	4.77	4.77	5.19	4.15
2011	5.60	5.60	5.19	5.60	4.77
2012	6.02	6.02	5.60	6.02	5.19
2013	6.02	6.44	6.02	6.44	5.60
2014	6.44	6.44	6.02	6.86	6.02
2015	6.44	6.44	6.02	6.44	6.02

Source: IPHC projections of future CEYs and Combined Commercial and Charter Catch Limits.

2.5.1.3 Option 3

Option 3 would determine the initial charter allocation by using 50 percent of the result of the percentage-based allocation and 50 percent of the fixed-poundage allocation over the same historic period of time. The years used to determine these allocation amounts are the same year combinations used for Option 2 to calculate the fixed poundage allocation. Option 3a is based on the percentages for Area 2C and 3A that were generated under Option 1a and the fixed pounds that were generated under Option 2a. The percentages from Option 1a and the fixed pounds from Option 2a were then divided by 2, to calculate the allocation estimates for Option 3a. The fixed poundage component of this alternative can be viewed as the floor of the charter allocation. If there is a sufficient amount of the combined commercial and charter catch limit, the charter sector would always receive that level of an allocation. The remainder of its allocation for the common pool would be determined by the percentage of the combined commercial and charter catch limit the charter sector is apportioned. That amount would fluctuate when the combined commercial and charter catch limit, set by the IPHC, changes.

Option 3b is based on the years 2000-2004. Because those years were not an alternative under Option 1, the percentage was calculated for Option 3 using the same formula used in Options 1a and 1b. One-half of the resulting percentage was used in Option 3b. The fixed poundage amount was calculated as half of Option 2b. Option 3c is calculated by taking half of the percentage calculated for Option 1b and half of the pounds calculated under Option 2c. The results of those calculations are shown in Table A- 31.

Table A- 31 Option3a–Option 3c based on 50% fixed pounds and 50% fixed percentage

Option	Area 2C		Area 3A	
	%	Mlb.	%	Mlb.
3a (125% of 1995-1999)	6.5%	0.72	7.1%	1.82
3b (125% of 2000-2004)	8.2%	0.85	8.0%	2.01
3c (125% of 2001-2005)	8.6%	0.95	7.7%	2.07

Source: ADFG

Staff was requested to consider the impacts that changes in the combined catch limit would have on this Option. To show a wide variety of outcomes the following table was developed. It is important to note that the future combined catch limit projections do not indicate that the highest or lowest combined catch limits will occur in the future. They are simply provided to show how Option 3 moderates large changes in combined catch limits.

Table A- 32 shows that Option 3a through Option 3c tend to moderate the charter allocation relative to Options 1 and Options 2. Therefore when combined commercial and charter catch limits decrease the charter allocation will decrease at a slower rate than the commercial sector (their percentage of the combined catch limit is larger. When the combined catch limit increases its allocation will increase at a slower rate than the commercial sector.

Table A- 32 Projected allocations under each option when the combined commercial and charter catch limits have wide deviations from those projected

Area 2C Options (Mlb)										
Combined Catch Limit (Mlb)	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
3	0.39	0.52	0.35	0.45	1.43	1.69	1.90	0.92	1.10	1.21
5	0.66	0.87	0.59	0.76	1.43	1.69	1.90	1.05	1.26	1.38
7	0.92	1.21	0.82	1.06	1.43	1.69	1.90	1.18	1.42	1.55
9	1.18	1.56	1.05	1.36	1.43	1.69	1.90	1.31	1.59	1.72
11	1.44	1.90	1.29	1.66	1.43	1.69	1.90	1.44	1.75	1.90
13	1.70	2.25	1.52	1.96	1.43	1.69	1.90	1.57	1.92	2.07
15	1.97	2.60	1.76	2.27	1.43	1.69	1.90	1.70	2.08	2.24
17	2.23	2.94	1.99	2.57	1.43	1.69	1.90	1.83	2.24	2.41
Area 3A Options (Mlb)										
15	2.12	2.31	1.91	1.91	3.65	4.01	4.15	2.89	3.21	3.23
20	2.82	3.08	2.54	2.54	3.65	4.01	4.15	3.24	3.61	3.61
25	3.53	3.85	3.18	3.18	3.65	4.01	4.15	3.60	4.01	4.00
30	4.23	4.62	3.81	3.81	3.65	4.01	4.15	3.95	4.41	4.38
35	4.94	5.39	4.45	4.45	3.65	4.01	4.15	4.31	4.81	4.77
40	5.64	6.16	5.08	5.08	3.65	4.01	4.15	4.66	5.21	5.15
45	6.35	6.93	5.72	5.72	3.65	4.01	4.15	5.02	5.61	5.54
50	7.05	7.70	6.35	6.35	3.65	4.01	4.15	5.37	6.01	5.92

2.5.2 Future Harvest Projections

During the October 2007 Council meeting, the Council, SSC, and AP were presented an analysis that provided projections of charter harvest for the 2006-2015 fishing years. After reviewing that information, the SSC recommended that the projections be revised using a different model and that the number of years projected forward be decreased. The analysis responded these suggestions, and suggestions from the April 2008 meeting, by using an ARIMA model (Auto-Regressive Integrated Moving Average) was run,

using ADFG harvest estimates from 1996-2006⁴². Data used in the model for Area 2C and Area 3A are shown in Table A- 33 In that table, harvest is the historic charter harvest, SE (yield) is the standard error of the yield variable, L95%CI is the lower bound of the 95 percent confidence interval, and U95%CI is the upper bound of the 95 percent confidence interval. The ARIMA model includes a weighting system that accounts for the standard errors associated with ADFG’s harvest estimates and autoregressive and moving average data components. Under this model, new charter harvest projections were made for the years 2007-2011. The shorter projection period was used because uncertainty of the results increases as the time increases between the actual harvest data and the year projected.

Table A- 33Charter harvest (in Mlb) and standard errors

Year	Harvest	SE(Yield)	L95%CI	U95%CI	RP
Area 2C					
1996	1.19	0.07	1.051	1.322	5.8%
1997	1.03	0.06	0.914	1.153	5.9%
1998	1.58	0.22	1.153	2.015	13.9%
1999	0.94	0.05	0.835	1.043	5.6%
2000	1.13	0.07	1.001	1.258	5.8%
2001	1.20	0.06	1.079	1.326	5.2%
2002	1.28	0.07	1.143	1.408	5.3%
2003	1.41	0.07	1.281	1.543	4.7%
2004	1.75	0.09	1.582	1.918	4.9%
2005	1.95	0.09	1.767	2.138	4.8%
2006	1.80	0.09	1.628	1.979	5.0%
Area 3A					
1996	2.82	0.09	2.648	2.995	3.1%
1997	3.41	0.11	3.201	3.625	3.2%
1998	2.98	0.11	2.771	3.199	3.7%
1999	2.53	0.08	2.373	2.693	3.2%
2000	3.14	0.10	2.945	3.335	3.2%
2001	3.13	0.10	2.940	3.325	3.1%
2002	2.72	0.11	2.509	2.938	4.0%
2003	3.38	0.10	3.180	3.584	3.0%
2004	3.67	0.10	3.474	3.863	2.7%
2005	3.69	0.11	3.471	3.906	3.0%
2006	3.66	0.11	3.451	3.876	3.0%

Source: ADFG

Table A- 34 shows estimates of future charter harvests in Area 2C for the years 2007-2011. The harvest estimates are made based on the status quo management measures that are expected to be in place during the year of the projection. In IPHC Area 2C, those measures include the length limit⁴³ imposed for 2007. The harvest estimates also assume that the one-fish bag limit would be in place for 2008–2011. Projections for 2008–2011 include those management measures in addition to the prohibition on harvest by skipper and crew and the limit on fishing lines to six or the number of clients on board the vessel, whichever is less. Because management measures, like the one-fish bag limit, are expected to impact client demand, harvest projections are included that estimate demand change. Estimates are also made

⁴² See Section7/Appendix A for a more complete description of the ARIMA model that was used.

⁴³ One halibut may be of any length and the second halibut must be less than 32”

that assume the management measures do not impact client demand. Given the uncertainty regarding how client demand would change in Area 2C, an estimate using the average of the two methods has also been included. The average of the two methods would be used in this document when comparing projected harvest to the sector allocations. The harvest projections using the other demand assumptions are included here, but for simplicity are not directly compared to the allocation options.

The Area 2C harvest projection table is divided into four sections. Unadjusted projections are shown on the left side of Table A- 34. Harvest projections are reported in millions of pounds and are included in the field labeled “Removal MIb”. **It should be noted that the estimated standard errors and confidence intervals are probably too small (see Appendix A for a more complete discussion).** If the projections are too small, then we cannot be 95 percent confident that the harvest in those future years would fall within the bounds of the upper and lower confidence intervals.

The three sections on the right side of Table A- 34 show the projected charter harvests that are adjusted to account for new management measures and changes in client demand that result from the new management measures. Columns under the “Status Quo-Less Effective” title multiply the unadjusted projections by a factor of 0.803 in 2007. In 2008–2011, because of the different management measures (e.g., one of the two fish can be no greater than 32 inches) that are expected to be in place those years, the factor is reduced to 0.771. These factors were derived using information developed by Northern Economics, Inc (NEI) as part of the Area 2C and Area 3A management actions to limit charter growth under the GHL. As discussed earlier, the upper and lower confidence intervals are calculated by multiplying the standard error by 1.96 and adding or subtracting the product to or from the adjusted harvest projection. The “Status Quo-Most Effective” section of the table adjusts the charter harvest projections by a factor of 0.739 in 2007 and 0.739 in 2008–2011. The “Status Quo-Average Effective” was calculated using the average of the factors under the less and most effective estimates. The result is that the unadjusted harvest projections were multiplied by 0.771 in 2007–2011 to calculate the adjusted harvest estimate. These are the projected harvest levels that would be used to compare the sector allocations proposed in this amendment.

Table A- 35 shows the harvest projections for Area 3A. Those projections include the skipper and crew harvest ban that is assumed to be in place through 2011. Management measures that are assumed to be in place for 2008-2011 are not expected reduce client demand for trips. Therefore, the projections do not need to account for changes in client demand as do the projections in Area 2C.

The ban on skipper and crew harvest imposed in 2007 is expected to reduce the unadjusted harvest projections by a factor of 0.896. NEI provided the estimated reduction percentage, based on their earlier work on management measures for the GHL. This factor is used to adjust all of the projected years of harvest in Area 3A, 2007-2011.

Table A- 34 Projected charter halibut harvests in Area 2C under the status quo, 1996–2011

Year	Unadjusted Projections				Status Quo-Less Effective			Status Quo-Average Effective			Status Quo-Most Effective		
	Removal (Mlb)	SE (Mlb)	L95% CI	U95% CI	Removal (Mlb)	L95% CI	U95% CI	Removal (Mlb)	L95% CI	U95% CI	Removal (Mlb)	L95% CI	U95% CI
1996	0.968	0.037	0.896	1.040									
1997	1.057	0.032	0.994	1.120									
1998	1.163	0.028	1.109	1.217									
1999	1.212	0.024	1.164	1.259									
2000	1.358	0.022	1.315	1.401									
2001	1.290	0.021	1.249	1.331									
2002	1.470	0.022	1.427	1.512									
2003	1.496	0.024	1.450	1.543									
2004	1.609	0.027	1.556	1.662									
2005	1.694	0.031	1.633	1.755									
2006	1.821	0.036	1.751	1.891									
2007	1.888	0.041	1.808	1.968	1.516	1.436	1.596	1.456	1.376	1.536	1.396	1.316	1.476
2008	1.940	0.046	1.850	2.030	1.558	1.468	1.648	1.496	1.406	1.586	1.434	1.334	1.524
2009	2.037	0.051	1.936	2.137	1.635	1.535	1.736	1.570	1.470	1.671	1.505	1.405	1.606
2010	2.106	0.057	1.995	2.217	1.691	1.580	1.802	1.624	1.513	1.735	1.557	1.446	1.668
2011	2.196	0.062	2.074	2.318	1.763	1.641	1.885	1.693	1.571	1.815	1.623	1.501	1.746

Source: NEI projections using ADFG data

Note: The upper confidence interval is calculated by multiplying the standard error by 1.96 and adding the result to the harvest projection. The same procedure is followed to calculate the lower bound, except the multiple of the standard error is subtracted from the harvest projection.

Table A- 35 Projected charter halibut harvests in Area 3A under the status quo, 1996–2011

Year	Unadjusted Projection				Adjusted for Status Quo		
	Yield Mlb	SE (Mlb)	L95%CI	U95%CI	Yield Mlb	L95%CI	U95%CI
1996	2.771	0.042	2.688	2.853			
1997	2.856	0.034	2.789	2.923			
1998	2.976	0.028	2.921	3.031			
1999	2.745	0.024	2.698	2.792			
2000	3.096	0.024	3.050	3.143			
2001	3.414	0.027	3.361	3.467			
2002	3.022	0.033	2.957	3.087			
2003	3.310	0.041	3.230	3.389			
2004	3.710	0.049	3.614	3.806			
2005	3.351	0.058	3.239	3.464			
2006	3.698	0.067	3.567	3.828			
2007	3.518	0.076	3.369	3.666	3.152	3.003	3.300
2008	3.764	0.085	3.597	3.930	3.372	3.206	3.539
2009	3.886	0.094	3.701	4.071	3.482	3.297	3.667
2010	3.877	0.104	3.673	4.080	3.473	3.270	3.677
2011	3.973	0.113	3.751	4.196	3.560	3.338	3.782

Source: NEI projections using ADFG data

Note: The upper confidence interval is calculated by multiplying the standard error by 1.96 and adding the result to

the harvest projection. The same procedure is followed to calculate the lower bound, except the multiple of the standard error is subtracted from the harvest projection.

CAVEATS: The accuracy of the adjusted harvest projections in both Areas are subject to certain caveats. Charter harvest projections in Area 3A depend on whether or not skipper and crew have been reporting their halibut harvest as charter harvest. If they have been reporting it (as assumed in this analysis) then harvest is expected to be generally near or below the GHL. If skippers and crew have not been reporting their harvests while under charter in the SHWS, then no reduction in harvest from the skipper and crew ban on retaining halibut is expected. Under those circumstances actual harvest in Area 3A will more closely match the unadjusted harvest projection, which will exceed the GHL. Additionally, in Area 2C if the estimated effect of length restrictions instituted in 2007 by NMFS if eroded by increasing harvest effort or increasing average weights then overall actual harvest will more closely match the unadjusted harvest projection, which will exceed the GHL in Area 2C (Figure ES-1 and Figure ES-2).

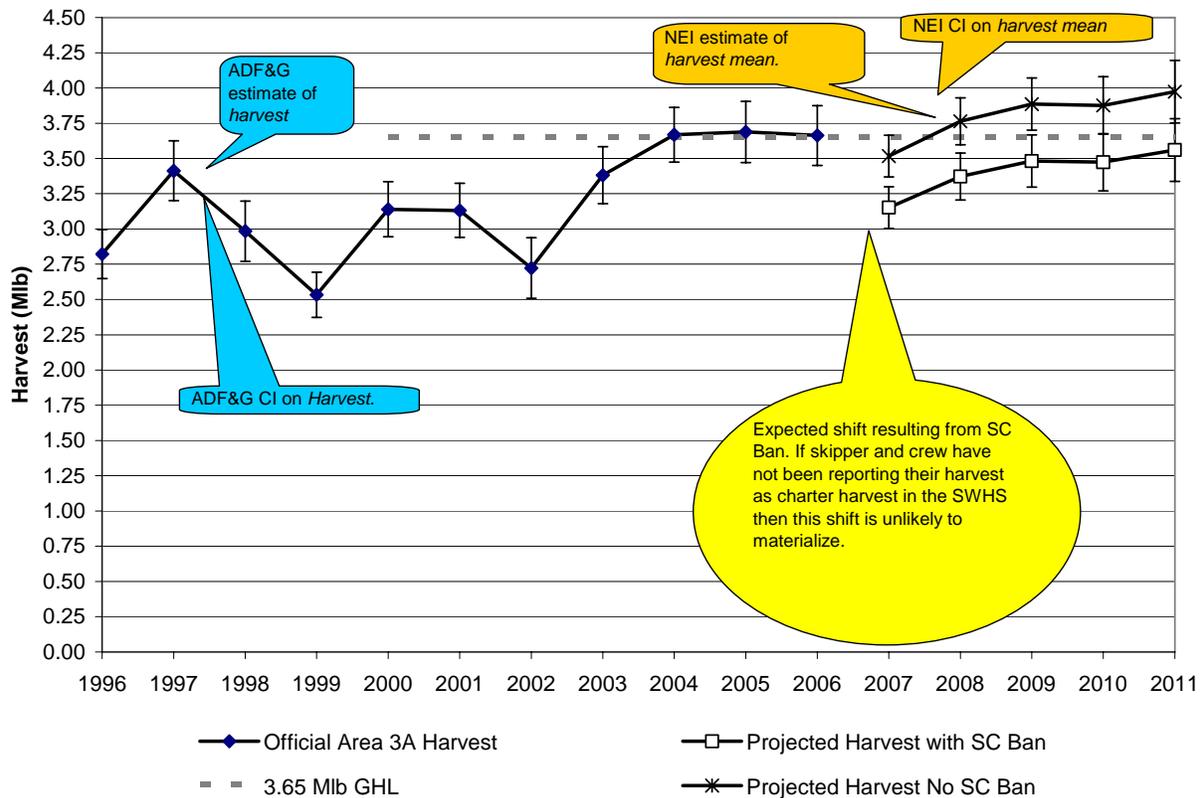


Figure 12 Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for a ban on skipper and crew harvest

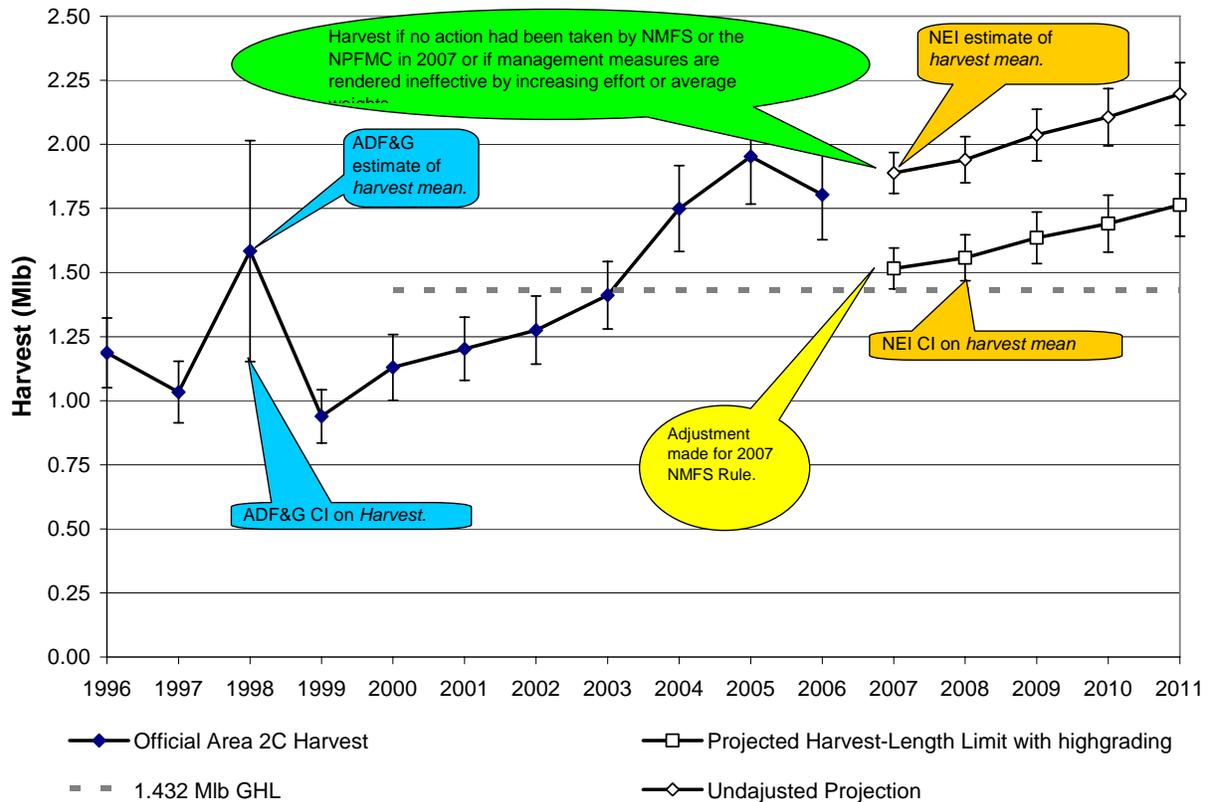


Figure 13 Past Area 2C harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures continued through 2011

2.5.2.1 Comparing Charter Allocations to Projected Harvest

To determine the effect of the proposed charter sector allocation options it is important to know whether the allocation would trigger additional management measure to constrain harvest, if management measures already in place could be loosened, or if it is appropriate to continue the current management program. Note that management measures apply to the common pool of halibut allocated to the sector. Another class of halibut that may be available to the charter sector is GAF. The concept of GAF is discussed in detail under Element 5. GAF that are leased from the commercial sector are outside of this discussion, because they are managed separately from the open access pool of halibut.

If the charter sector's allocation of common pool fish is just sufficient to meet the needs of the charter sector, then management measures would likely not change. However, if the allocation is too small to cover client demand for harvesting halibut, the management agencies would need to impose harsher management measures in the future, to constrain charter harvests. As stated in the Council's objectives, the goal is to keep the charter sector within 0, 5, or 10 percent of its allocation. If the client demand for trips and halibut is less than the sector allocation in that area, then some of the management measures that are in place could be eliminated.

When comparing the charter allocation to the projected harvest, it is important to consider the overall landscape of the halibut fishery. Based on input from the SSC, at their October 2007 meeting, the projections of future charter harvests used in this amendment were modified. The future time period covered by the projections was reduced to the five-year period from 2007–2011. Starting in 2008 the CEY in Area 2C that is set by the IPHC was substantially reduced. The CEY in Area 3A was also reduced, but not to the extent of the Area 2C reduction. Because of the smaller CEYs, the projected

allocations to the commercial sectors are smaller than historic averages. The allocations to the charter sector are also smaller than would have occurred under CEYs during 1995–2007, when its allocation is percentage based. IPHC CEY projections from 2008 through 2013 indicate that the CEY would increase in both areas each year. The increasing CEYs would increase the commercial, and perhaps charter, allocation. Therefore, the years reported in this amendment cover a period of time that is expected to yield historically low commercial, and perhaps charter, allocations.

Estimates of combined commercial and charter catch limits are not available prior to 2008. The IPHC staff stated they cannot provide those estimates because the data to generate the estimates are not available. Because the 2007 combined commercial and charter catch limit is not available, the analysts summed the commercial catch limit and the charter GHL to estimate it. The IPHC staff have provided estimates for the 2008 through 2011 combined commercial and charter catch limits. The estimates are to be considered as estimates and not projections. A series of caveats and assumptions were included with the projections and are listed below:

1. The optimistic biomass projections depend heavily on the large 1999 and 2000 year classes.
2. The projections assume the biomass apportionment remains the same as estimated for 2007.
3. The projections do not adjust apportionment from 2007.
4. The projections assume the SlowUp FastDown policy is strictly adhered to.
5. The projections assume that Other Removals for 2A, 2B does not include sport catch.
6. The projections assume that Other Removals for 2C, 3A does not include guided sport catch.
7. The projections assume a 0.2 target HR in Areas 2 and 3, and a target 0.15 HR in Area 4.
8. The projections assume other removals remain at 2007 levels and that Catch Limits are taken exactly.
9. The projections assume average recruitment as estimated for the 1990-98 year classes.
10. The projections assume a static size at age, and uses the same size at age for all regulatory areas.
11. The assessment still exhibits a retrospective behavior problem wherein successive assessments reduce the biomass level. That pattern of behavior is not mirrored in these projections.

Charter harvest estimates are compared to the charter sector allocations to show which allocations would fund the common pool without the need to impose different management measures. The projected harvests and allocations for Area 2C are presented in Table A- 36. The table shows the projected allocation for each of the Council’s alternatives. Those alternatives are then compared to the projected harvest for the years 2007–2011. For years when the allocation is less than the lower bound of the 95% confidence interval, the numbers in the table are in bold print and underlined. Because the allocations are less than the projected harvest, additional management measures may be needed to keep the charter sector under its allocation. When the allocation is greater than the upper bound of the 95% confidence interval, the numbers in the table are only in bold print. Finally, when the allocation falls within the calculated 95% confidence interval for harvest, the allocation amount is in normal font.

Table A- 36 Area 2C allocation amount (Mlb) and its relation to projected harvest, 2007–2011

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	<u>1.34</u>	<u>1.77</u>	<u>1.19</u>	<u>1.54</u>	1.43	<u>1.69</u>	<u>1.90</u>	1.38	<u>1.66</u>	<u>1.55</u>
2008	<u>1.04</u>	<u>1.37</u>	<u>0.93</u>	<u>1.19</u>	1.43	<u>1.69</u>	<u>1.90</u>	<u>1.23</u>	1.47	1.41
2009	<u>0.89</u>	<u>1.18</u>	<u>0.80</u>	<u>1.03</u>	<u>1.43</u>	<u>1.69</u>	<u>1.90</u>	<u>1.16</u>	<u>1.39</u>	<u>1.35</u>
2010	<u>0.89</u>	<u>1.17</u>	<u>0.79</u>	<u>1.02</u>	<u>1.43</u>	1.69	<u>1.90</u>	<u>1.16</u>	<u>1.38</u>	<u>1.35</u>
2011	<u>0.92</u>	<u>1.22</u>	<u>0.83</u>	<u>1.07</u>	<u>1.43</u>	1.69	<u>1.90</u>	<u>1.18</u>	<u>1.41</u>	<u>1.36</u>

Source: IPHC projections using NEI harvest projections from ADFG data.

Note: For years in bold and underlined print, the allocation is less than projected harvest; for years shown in bold print but not underlined, the projected harvest is under the allocation; and for years with normal fonts the allocation is within the 95% confidence interval of projected harvest.

Options 1a through 1d show the projected poundage that would result from the percentage based allocations during the years 2007 through 2011 (Table A- 36). Under each percentage based option, the charter allocation is projected to be less than their harvest during every year from 2008 through 2011. The smallest allocations are Options 1a and 1c, because they assign the smallest percentage of the combined commercial and charter catch limit to the charter sector. Based on these projections it appears that additional harvest restrictions would need to be placed on the charter sector to prevent them from exceeding its allocation. The fixed poundage options allocate the most halibut to the charter sector over the time period being considered. Options 2a, 2b, and 2c allocate 1.43 Mlbs, 1.69 Mlbs, and 1.90 Mlbs., respectively. Option 2a is projected to allocate about as much halibut as the charter sector is projected to harvest in 2007 and 2008. Growth in charter harvests is projected to exceed its allocation during the 2009 through 2011 time period. Under Option 2b, the charter sector allocation is projected to be greater than their harvest in 2007 through 2009. During 2010 and 2011 the charter sector allocation is projected to fall within the 95 percent confidence interval of harvest. Harvests under allocation Option 2c are not projected to exceed its allocation. The 1.90 Mlb annual allocation is projected to be sufficient to meet the charter sectors harvest under status quo harvest regulations. Finally, the allocation options that are calculated using 50 percent of a percentage allocation and 50 percent of a fixed poundage allocation are presented under Options 3a through 3c. None of those allocation options are projected to fully cover the Area 2C charter sector harvest.

The Council has stated that its objective is to keep the charter sector at or below its allocation. Previous versions of the draft the Council considered using a five-year rolling average to determine if the charter sector had exceeded its allocation. Because of difficulties associated with using the five-year rolling average, such as using “old” information to manage current overages, it was dropped. The Council is now considering adjusting their management measures when the charter sector is determined to be over or under its allocation by 0, 5, or 10 percent. Because of timing associated with getting final estimates of charter harvest, the official estimate of charter catch may not be available until the fall of the next year or later (see Element 2 of the RIR). Concern over the accuracy of those data has resulted in ADF&G reviewing the data program. That review is currently ongoing. Until that review is complete it may be inappropriate to define data sources to determine when overages have occurred.

The percentage the charter sector harvest differs from its allocation is provided in Table A- 37. In Area 2C, the charter fleet’s projected harvest⁴⁴ is expected to exceed its allocation, under the percentage based options and mixed percentage and poundage options, by more than 10 percent each year from 2009 through 2011. All these options are projected to trigger regulatory actions to further restrict the Area 2c charter harvest. The 1.43 Milb allocation that is fixed is also projected to require additional restrictions on charter harvest to keep the sector within their projected allocation. Option 2b (1.69 Milb) is projected to not require any additional management measures when it is implemented. Option 2c is the largest allocation and the charter sector harvest is expected to be less than its allocation. The harvest restriction could potentially be loosened in the short run, but if the trend of increasing harvests is realized the charter sector harvests would equal or exceed its allocation in the future.

It is important to note that the projections of charter harvest do not include any halibut leased as GAF. Leasing GAF would reduce the charter harvest overages and may reduce or eliminate the need for more restrictive management measures. The impact of GAF on future regulations will depend on the amount of GAF that is leased to the charter sector.

Table A- 37 Percentage difference between charter harvest and its allocation under each Area 2C option

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	-9%	18%	-22%	6%	-2%	14%	23%	-5%	12%	6%
2008	-44%	-9%	-62%	-25%	-5%	11%	21%	-21%	-1%	-6%
2009	-76%	-33%	-97%	-53%	-10%	7%	17%	-35%	-13%	-16%
2010	-83%	-39%	-105%	-59%	-14%	4%	15%	-40%	-17%	-21%
2011	-83%	-39%	-105%	-59%	-18%	0%	11%	-44%	-20%	-24%

Source: IPHC projections using NEI harvest projections from ADFG data.

It is important to note that, while some options result in the projected harvests and allocations being close together, it does not necessarily mean that it is a superior management alternative. It simply means that the allocation results are closer to the harvest level than is expected to occur under the status quo management regime. Some members of the charter sector would likely argue that the status quo management measures are too strict. The two-fish bag limit, with one fish being no greater than 32 inches, could reduce client demand and could reduce net revenue generated by Area 2C charter businesses. If the proposed one-fish bag limit is implemented in Area 2C in the future it could have a greater negative impact on client demand. These charter LEP holders may argue that a larger allocation that removes some of the recently imposed (or limitations that might be implemented in the future) management measures would be more acceptable. Commercial halibut harvesters, on the other hand, would likely argue that the pounds of halibut, generated by the QS they hold, are also being reduced by the smaller CEY. They could argue that the increases in ex-vessel price that result from the lower quantity of halibut produced, are not expected to offset the gross revenue reductions associated with the smaller harvest. These arguments, and the fact that the analysis cannot provide annual, quantitative estimates of net benefits to the Nation under each alternative, mean that the selection of an alternative must be based on the best judgment of the policy makers.

Table A- 38 shows the projected charter allocation in Area 3A under each option for the years 2007 through 2011. Projections of future harvests were provided by NEI and estimates of combined commercial and charter catch were provided by IPHC staff. Bolded numbers indicate the charter sector’s allocation is projected to exceed its allocation at the 95 percent confidence level. Pounds listed in normal

⁴⁴ Assumptions and methods used to develop the model are presented in Appendix A. Information included in that appendix address assumptions related to changes in client demand for charter trips.

fonts indicate the allocation falls within the 95 percent confidence interval of projected harvest. All of the allocation options for Area 3A are projected to meet or exceed charter harvests over the years being considered. Only under options 1c and 2a are the allocations not projected to exceed their harvest every year being considered. None of the options are projected to require more restrictive management measures over the years being considered.

Table A- 38Area 3A allocation amount and its relation to projected harvest, 2007-2011

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	4.32	5.71	3.86	4.98	3.65	4.01	4.15	3.99	4.63	4.01
2008	3.62	4.78	3.23	4.17	3.65	4.01	4.15	3.63	4.20	3.69
2009	3.71	4.90	3.31	4.28	3.65	4.01	4.15	3.68	4.26	3.73
2010	3.97	5.24	3.54	4.57	3.65	4.01	4.15	3.81	4.41	3.85
2011	4.32	5.71	3.86	4.98	3.65	4.01	4.15	3.99	4.63	4.01

Source: IPHC projections using NEI harvest projections from ADFG data.

Note: Years in Bold and underlined print the allocation is less than projected harvest, years that are shown in bold print the projected harvest is under the allocation, and years with normal fonts the allocation is within the 95 percent confidence interval of projected harvest.

Table A- 39 shows the percentage difference between the charter sector’s Area 3A harvest and its allocation. The projected increase in the combined commercial and charter catch limit is increasing at a faster rate than projected increases in charter harvest. Therefore, under the percentage based allocations the gap between the allocation and the harvest is increasing. This indicates that the percentage based allocations are projected to not require more restrictive management measures. Based on the criteria that management measures could be relaxed if the harvest is at least 0, 5, or 10 percent less than the allocation, management measures could be relaxed under the percentage based allocations. The fixed poundage allocation options indicate that harvest is increasing. Because harvest is increasing and the expanding commercial and charter catch limit does not impact the allocation, more restrictive management measures may be needed in the future to constrain harvest. Those measures are not projected to be needed before 2011 under option 2a and could be much later under the larger allocations (options 2b and 2c).

Table A- 39Percentage difference between charter harvest and its allocation under each Area 3A option

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	27%	45%	18%	37%	14%	21%	24%	21%	32%	21%
2008	7%	29%	-4%	19%	8%	16%	19%	7%	20%	9%
2009	6%	29%	-5%	19%	5%	13%	16%	5%	18%	7%
2010	12%	34%	2%	24%	5%	13%	16%	9%	21%	10%
2011	18%	38%	8%	29%	2%	11%	14%	11%	23%	11%

Source: IPHC projections using NEI harvest projections from ADFG data.

The allocation options being considered for Area 2C and 3A, while based on the same formulas, could have very different impacts. Because of the different impacts on the two areas, the Council may consider selecting a different option for each area. The analysis in this document was designed to give the Council that latitude.

When considering the estimates that are provided in this section, note that the results are dependent on the assumptions used to make the calculations. These are outlined next.

1. Charter sector harvests are estimated for the years 2007-2011. An ARIMA model was run in STATA using ADF&G estimates of harvest from the years 1996-2006. Standard Errors were provided by ADF&G to allow the analysis to estimate 95 percent confidence intervals for the mean of the harvest. Note that this data is not the same as estimating of the 95 percent confidence interval of the harvest itself.
2. Harvest estimates for the years 2007-2011 were based on the management measures anticipated to be in place those years. The IPHC Area 2C management measures for 2007 through 2011 include a ban on skipper and crew harvests; a line limit of six per vessel or the number of clients on board, whichever is lower; a two-fish bag limit; and a requirement that one of the two fish be less than 32". In IPHC Area 3A, a two-fish bag limit and a ban on skipper and crew harvest are expected to be in place every year from 2007- 2011.
3. An estimate of 2008-2011 combined charter and commercial catch limits was provided by IPHC staff. Those catch limits incorporated the slow-up and fast-down model applied to estimated fishery CEYs. The 2007 combined charter and commercial catch limit was calculated by adding the charter GHL to the commercial catch limit. Therefore, the 2007 combined charter and commercial catch limit does not incorporate the coast-wide model while the 2008 through 2011 estimates do.
4. The estimated combined commercial and charter catch limit is then multiplied by the percentage allocation in Options 1a-1c and Options 3a-3c to estimate the pounds that would be allocated under each option.
5. The commercial allocation is calculated by subtracting the projected charter allocation from the combined catch limit.
6. It should be noted that the projections assume the charter sector the combined catch limit is fully attained. That means the catch limit is neither exceeded, nor are fish left in the water. Any deviation from that assumption would affect the CEY for the following year, which would impact the Fishery CEYs and subsequent catch limits.

2.5.2.2 Changes in Average Size of Charter Halibut

Because the IPHC accounts for halibut in pounds and charter clients harvest fish, a conversion factor is needed to convert pounds of halibut into number of halibut. The conversion factor is important, because it varies from year-to-year and it affects when the charter sector is assumed to reach its allocation. To help explain the issue, consider the charter mean net weight in Areas 2C and 3A from 1995-2006. Those estimates are provided by ADF&G and are shown in Table A- 40. If the mean weights are biased, the estimates of charter harvest may be too low or too high.

Table A- 40 Charter mean net weight (lb), Areas 2C and 3A, 1995-2006

Year	Area 2C	Area 3A
1995	19.9	20.6
1996	22.1	19.7
1997	20.2	22.3
1998	29.1	20.8
1999	17.8	19.2
2000	19.8	19.7
2001	18.1	19.2
2002	19.7	18.2
2003	19.1	20.7
2004	20.7	18.6
2005	19.1	17.8
2006	19.9	17.9

Source: ADFG

Estimates of average weight, collected in Area 2C during 1995-1997, were not charter-specific because the user group (charter/private) was not recorded when fish were measured. Estimates of mean weights for these years are for a mixture of private-caught and charter-caught fish.

Figure 14 compares the Area 2C mixed charter and private mean weights for 1995-1997, with the charter-specific and private-specific mean weights for 1998-2006. The charter mean weight in 1998 is much higher than all subsequent years. Charter mean weight was relatively stable after that and not substantially different from the private mean weight from 1999 to 2004. It is possible that the 1998 charter mean weight estimate was biased high, because it does not fit the trend, and there would have to have been a large discrepancy between the charter and private mean weights for the mixed average to be so similar to the trend.

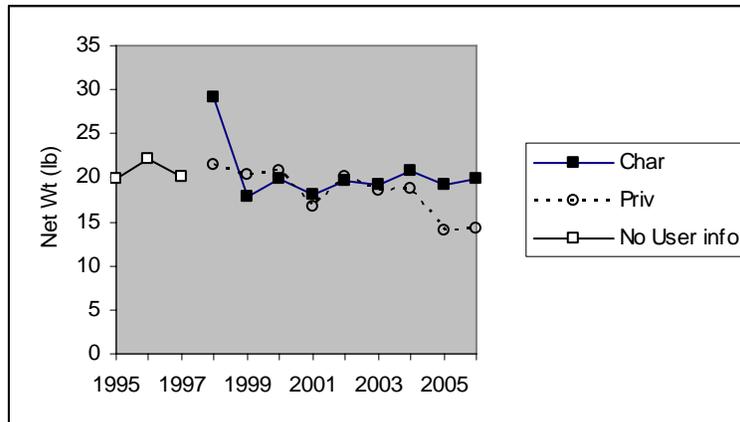


Figure 14 Average net weight of halibut harvested by user group, 1995–2006

Also, sampling was not conducted at all ports representing each of the various subareas within Area 2C or 3A each year. In order to estimate the total weight of the charter harvest, the estimates of the number of fish harvested in each subarea are multiplied by the mean weights representing harvest in each subarea. If there is no sampling and no mean weight estimate for a subarea, the mean weight from another area is typically substituted. No sampling was conducted in the Glacier Bay subarea until 2002 (Figure 15). The mean weight from Juneau was substituted for the years 1995-1999, and the mean weight from Sitka was substituted for the years 2000-2001. The chart below suggests that the mean weight in the Glacier Bay area was substantially higher than the substituted weights from Juneau or Sitka. Therefore, substituting mean weights from one area for another area could bias the estimates.

In addition, for Area 2C, no sampling has been conducted in the Haines/Skagway area due to the small magnitude of harvest. Mean weights from Juneau have been substituted all years. It is unknown whether this substitution is reasonable, but errors would have had little effect on the total estimates of removals, because the harvest at Haines/Skagway typically represents only about 1 percent of number of fish harvested in Area 2C.

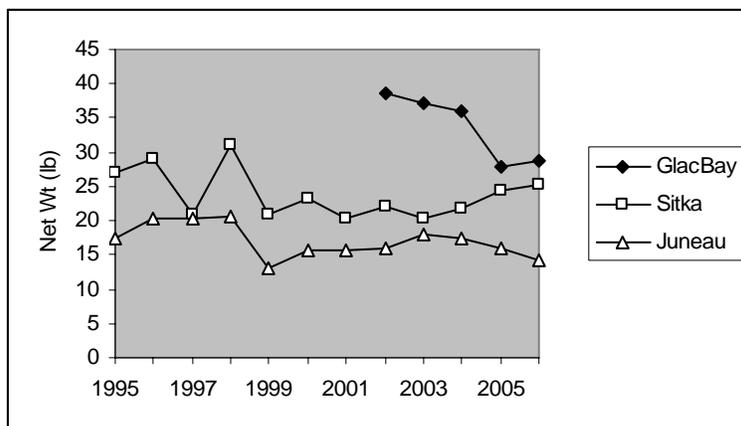


Figure 15 Mean halibut weights for fish harvested in the area around Juneau, Glacier Bay, and Sitka, 1995–2006

In Area 3A, no significant sampling was conducted at Whittier before 1999, or at Yakutat before 1998. Harvest estimates for Prince William Sound (PWS) were not broken out before 1999, so the Valdez mean weight was applied to all halibut harvested in PWS. In addition, Valdez mean weight data were applied to harvest in the Yakutat area.

Figure 16 shows that mean weight has been substantially higher at Yakutat than at Valdez every year since sampling began, and that mean weight at Valdez is higher than at Whittier. Since the mean weight at Whittier shows a slight downward trend since 1999, it is possible that mean weights were similar before that time. The effect of underestimating mean weight at Yakutat on the Area 3A GHL would have been minor, because the harvest at Yakutat represents a small proportion of the total Area 3A harvest.

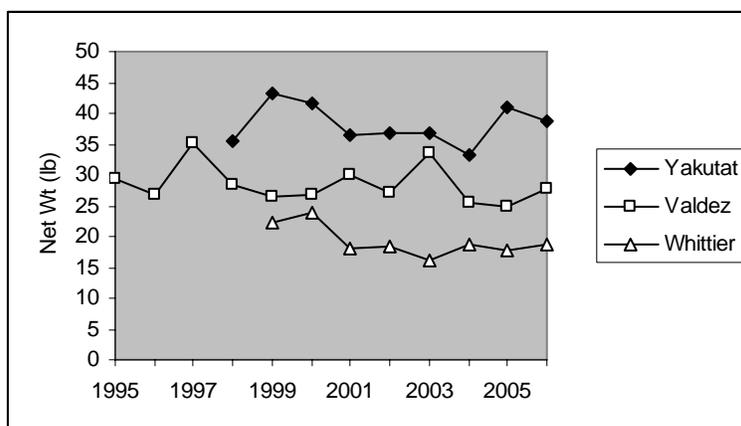


Figure 16 Mean net halibut weights for the areas around Yakutat, Valdez, and Whittier, 1995–2006

Assuming the charter sector is allocated 1.43 Milb in Area 2C and 3.65 Milb in 3A, we can compare the number of halibut that could be harvested and still remain under the allocation. These allocations are only used for illustrative purposes and are not intended to imply that the Council is considering this option above any others. Based on the calculations presented in Table A- 41, in Area 2C, a 1.43 Milb allocation would result in the charter sector being able to harvest between 69,082 and 80,337 halibut. The difference of about 11,000 halibut is due solely to the change in average halibut weight. Therefore, during years when average size of a halibut applied to the allocation is relatively large, the number of fish that could be harvested before exceeding its allocation would be reduced. Assuming a constant catch per client, fewer clients could take a trip before the allocation is taken, or before more restrictive management measures need to be implemented. When the average fish size used for the conversion is smaller, the charter sector

may harvest more fish, before it reaches its allocation. This also suggests, it is less likely to require additional management measures.

Table A- 41 Number of halibut the charter could harvest and remain under the assumed allocation based on average halibut weights that year

Year	2C	3A
1999	80,337	190,104
2000	72,222	185,279
2001	79,006	190,104
2002	72,589	200,549
2003	74,869	176,329
2004	69,082	196,237
2005	74,869	205,056
2006	71,859	203,911

Source: ADFG halibut net weight estimate for 1999-2006 and an assumed allocation of 1.43 Milb in Area 2C and 3.65 Milb in Area 3A.

2.5.3 Expected effects of a Charter Allocation by Sector

As noted in Scientific and Statistical Committee (SSC) minutes from the October 2007 meeting, 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 of all commercial removals. That information is currently unavailable for the commercial sector, and an analysis to estimate those impacts is outside the scope of what can be completed as part of this document.

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, ex-vessel demand for charter trips and angler willingness-to-pay for trips would also be required. Collecting that information would 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 made, 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, 2006). It is unreasonable to assume that overall net economic benefits could be sustained over time by a management agency altering the allocation.

2.5.3.1 Charter Sector

The charter sector is composed of business operators who are licensed by the State of Alaska to provide guided sport trips. These businesses book clients for halibut charter fishing trips and offer a variety of different recreational experiences. Charter businesses provide the necessary 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 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 also 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 used in the fleet to carry more than six clients. The 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 a half day free to take a charter trip. They would not be affected by an annual limit because they plan to take only one trip during the year. Clients at a lodge who are staying for a week would be more likely to be impacted by an annual limit, which they could fill in either two or four trips, depending on the bag limit.

There is not a single data source that provides information on halibut trip prices. Several charter operators have developed internet sites that list their rates and the types of trips they offer. Reviewing a sample of internet charter sites showed that the prices of halibut trips in 2007 varied depending on time of the year, the type of vessel used, and the length of the trip. In general, full-day trips originating from the Homer area cost between \$150 and \$250. Some trips were priced higher if the client wanted to book a vessel with four or fewer clients for private trips or more individualized attention. Discounted trips were offered by most of the charter operators for trips outside of the most popular fishing season (before early to mid June or after the early to middle of August). The dates discounted trips were offered varied by company. Rates quoted for Seward were similar to those out of Homer.

The GHL amendment analysis provided some basic information on the cost of a charter trip in Area 2C. Data from the GHL analysis indicated that the prices paid for a charter trip are higher in Area 2C than in Area 3A (NPFMC, 2001). Rates for trips from Area 2C ports varied more than in Area 3A ports because 2C trips are affected by cruise ship timelines (four-hour trips or six-hour trips), are combined with other activities⁴⁵ (e.g., salmon fishing), or are part of a lodge package that also includes accommodations. However, when a site reported the halibut charter rates alone, the price for a full-day charter ranged from \$250 to \$350 per person. These prices are higher than the typical rates reported in Area 3A ports.

It is not possible to provide rigorous estimates of the charter sector's revenue. Area-wide data are not available for either gross revenues or costs of operating the charter business. Both of these pieces of information are needed to estimate net revenues. The cost and time required to collect these data make producing these estimates outside the scope of this analysis.

The Council requested at their April 2008 meeting that staff provide a rough estimate of the gross revenue generated from the charter fees that operators charge their clients, understanding that a rigorous estimate could not be generated at this time. To provide the requested information several assumptions had to be made. The first assumption is the price that clients are paying for a charter trip. ADF&G has indicated that trip prices are not available from a single source. To provide an estimated average trip price, information from internet booking sites was used. The true average price for the areas may be higher or lower than those used. Earlier discussions in this document have pointed out that several different types of charter trips are offered. Each of those trips have different attributes and command a different price. The prices in Area 2C appear to be slightly higher. Half day trips are less expensive. Area 2C is assumed to have a higher full-day trip price, but is assumed to offer a higher percentage of half-day trips as a result of the influence of cruise ship passengers in that area. It is assumed that the average price of a trip is \$225 in both areas.

The average harvest per client was estimated using 2002 through 2006 ADF&G data on the number of clients and the total charter harvest by area. Those calculations resulted in an estimated average harvest per client of 24 lbs in Area 2C and 30 lbs in Area 3A. Annual variation in the size of halibut retained and the number of fish harvested per angler could result in future averages being different from these projections. Recent adoption of the 32" maximum size limit for one of the two halibut that may be retained in Area 2C could also affect future average harvest per client. The likely result would be to decrease the average size of retained halibut.

Table A- 42 shows estimated charter revenues derived from fishing Area 2C. The assumptions that went into making the estimates are shown below the table. The estimated Area 2C charter revenue ranged from \$7.4 million to \$17.8 million over the 2007 through 2011 time period, depending on the option selected.

⁴⁵ Combination trips for salmon are also common in many ports in IPHC Area 3A

Option 2(c) is projected to generate the most revenue. Option 1(c) is the most restrictive allocation, so it results in the smallest gross revenue. All of the other allocations fall within that range, and the fixed pound and mixed allocations would generally result in revenues exceeding \$10 million. After 2009 almost all of the percentage based allocations would result in the charter sector earning more than \$10 million in gross revenue, annually, over the time period considered.

Table A- 42 Estimates of potential Area 2C charter income (in million dollars) for the years 2007-2011 based on the various allocations

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	12.54	16.56	11.20	14.45	13.41	15.84	17.81	12.97	15.53	14.51
2008	9.72	12.83	8.68	11.20	13.41	15.84	17.81	11.56	13.82	13.24
2009	8.36	11.04	7.47	9.64	13.41	15.84	17.81	10.88	13.00	12.64
2010	8.30	10.96	7.41	9.57	13.41	15.84	17.81	10.85	12.96	12.61
2011	8.67	11.45	7.74	9.99	13.41	15.84	17.81	11.04	13.18	12.78

Assumptions: The average client would harvest 24 lbs of halibut per trip in 2C (the average harvest from 2002 through 2006 using ADF&G data). The average charter trip cost \$225. Charter clients took just enough trips to harvest their entire projected allocation. Revenues generated from lodging, food, and services that are charged in addition to the basic charter fee are not considered in this estimate, nor are consumer surpluses generated from the trip. All these should be considered when addressing net benefits to the Nation and are discussed in this section of the RIR.

In Area 3A the overall revenues are larger than Area 2C, but the revenue per pound of halibut is less. The revenue per pound of halibut is less because each angler is assumed to harvest more pounds of halibut in 3A and they are assumed to pay the same price for a trip.

Estimated annual gross revenue from charter fees ranged from \$26.3 million to \$38.1 million (Table A-43). Because the calculations are linear projections, the smallest allocations result in the smallest revenue. Allocation 1c yields the smallest projected revenue in most years. Option 1b yields the largest projected revenue in every year. The percentage based allocations varied by about \$3 and \$6 depending on the year selected.

Table A- 43 Estimates of potential Area 3A charter income (in million dollars) for the years 2007-2011 based on the various allocations.

Year	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	34.65	38.12	31.43	31.43	27.38	30.08	31.13	31.01	34.71	31.28
2008	29.01	31.91	26.31	26.31	27.38	30.08	31.13	28.19	31.51	28.72
2009	29.74	32.72	26.98	26.98	27.38	30.08	31.13	28.56	31.93	29.05
2010	31.80	34.98	28.85	28.85	27.38	30.08	31.13	29.59	33.10	29.99
2011	34.65	38.11	31.43	31.43	27.38	30.08	31.13	31.01	34.71	31.28

Assumptions: The average client would harvest 30 lbs of halibut per trip in 3A (the average harvest from 2002 through 2006 using ADF&G data). The average charter trip cost \$225. Charter clients took just enough trips to harvest their entire projected allocation. Revenues generated from lodging, food, and services that are charged in addition to the basic charter fee are not considered in this estimate, nor are consumer surpluses generated from the trip. All these should be considered when addressing net benefits to the Nation and are discussed in this section of the RIR.

Finally, it is important to note that it is inappropriate to compare projected charter 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 of the gross revenue) 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 political reasons to implement an option that does not generate the greatest economic benefits.

Defining the amount of halibut the charter sector may harvest, in Areas 2C and 3A, before additional management measures are implemented, in future years, has the potential to change how the charter fishery operates. Note that the current management options do not limit the amount of halibut the charter sector may harvest during a season. Instead, if it has been determined that the charter sector exceeded its allocation by a sufficient amount in the previous year(s), additional management measures would be imposed to limit future harvests, so that their harvest does not exceed their common pool allocation. Charter LEP holders may be given the opportunity to lease halibut from the commercial sector to provide greater flexibility for their clients to harvest halibut. Element 5 in this amendment package provides a more detailed discussion of leasing and its impacts.

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 proposed charter LEP is not expected to limit the harvest of halibut from charter vessels, in the near term. The charter LEP 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 charter LEP 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 charter LEP.

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, size limits, and seasonal closures are expected to reduce client demand by reducing the angler surplus derived from a trip. The commercial sector would only be 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 increase its allocation.

The Council is also considering allowing charter LEP holders to lease GAF from the commercial sector. It is not possible to predict the magnitude of halibut that would be transferred if leasing is allowed.

However, for transfers to occur the commercial harvester must agree to the transfer. For the transaction to occur 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 when the charter sector is allocated a fixed poundage. If the charter sector is allocated a percentage of the combined commercial and charter catch limit, 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. If the charter sector is allocated a fixed number of pounds, only the commercial sector's allocation would vary when the combined commercial and charter catch limit fluctuates.

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 increased and post harvest surplus would increase.

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 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. Charter LEP 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.

Modest increases in the stock abundance of halibut would result in more halibut being available to the commercial sector and would not affect the amount of halibut available to the charter sector under a fixed pound allocation. Because stock changes do not affect the amount of halibut available to the charter sector, it is not expected to impact the earnings of charter operators (Criddle 2006).

2.5.3.1.1 Charter Sector Growth

An issue that has been raised by members of the charter sector whose business is “fully-developed” is who is responsible for the growth in the charter sector’s harvest? Some of the longtime charter sector participants have indicated that their halibut harvests have been stable in recent years. They book a full charter schedule each year and carry roughly the same number of clients on an annual basis. Based on their current business model, they have stated they are not part of the problematic growth in charter harvests. Instead they often point to the new entrants into the charter sector that are still trying to develop their businesses. Those persons are working to achieve the goal of booking a full-season of clients. In doing so, they are increasing the number of clients carried each year and the number of halibut their clients harvest.

Newer entrants are expected to have a very different opinion of what is fair and equitable. They would want an opportunity to expand their operation without the additional costs of leasing commercial quota. A management system that assigns individuals access to a specific amount of fish, clients, or trips benefits the businesses that receive the largest share. Those that receive smaller shares are less well off.

2.5.3.2 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 the declining CEY. Changes in stock abundance and the implementation of the coastwide assessment model are the primary reasons for the substantial allocation decrease. Table A- 44 shows the projected Area 2C commercial allocation under the status quo management measures and projected combined commercial and charter catch limits using the slow up fast down approach. The 2007 allocation (under an areawide assessment) shows that the commercial sector would be issued 8.67 Mlb to 9.33 Mlb depending on the charter allocation selected. Recall that the from 2004-2006 the Area 2C commercial allocation was between 10.50 Mlb and 10.93 Mlb. So for 2007 the projected decline was about 1.5 Mlb. Starting in 2008, the coastwide assessment is used for the CEY projections. The use of the new model, changes in stock abundance, and the revised charter allocation results in the commercial sector being projected to receive an allocation of 5.77 Mlb to 6.78 Mlb This represents a decrease in its allocation to just over one-half to two-thirds of their 2004-2006 allocation levels. By 2011 the commercial allocation is projected to be between 4.97 Mlb and 6.07 Mlb. These allocation amounts are approximately one-half to three-fourths of the size of allocations given to the commercial sector since the beginning of the halibut IFQ program.

Because the harvests from the other IHPC Areas in Alaska are not as dramatically affected, the quantity of halibut on the market is not expected to be reduced to a level that would dramatically increase Area 2C ex-vessel prices. The large decrease in quantity sold by Area 2C fishermen and the modest expected change in ex-vessel prices would decrease the net revenue of commercial harvesters. Some QS holders

may be unable to remain in the fishery as a result of declines in net revenue. Operations that are unable to cover the costs of operation and the costs of capital (for QS and/or vessels and equipment) may be forced to leave the fishery. Ex-vessel prices, number of vessels reporting landings, and total catch are reported in Table A- 44 for Areas 2C and 3A. Statewide ex-vessel prices are also included in the table.

Table A- 44 Vessels, catch, and ex-vessel prices from the Area 2C and 3A halibut fishery, 1995–2007

Year	Area 2C			Area 3A			Statewide
	Vessels	Total Catch	Ex-vessel Price	Vessels	Total Catch	Ex-vessel Price	Ex-vessel Price
1995	3,077	7.79	\$2.04	2,971	17.98	\$1.99	\$1.97
1996	3,326	8.53	\$2.26	2,952	19.37	\$2.24	\$2.19
1997	3,617	9.64	\$2.24	3,274	24.28	\$2.16	\$2.13
1998	3,118	9.66	\$1.39	2,919	24.61	\$1.36	\$1.29
1999	3,451	9.90	\$1.99	3,074	24.31	\$2.09	\$2.00
2000	3,037	8.20	\$2.62	2,571	18.07	\$2.60	\$2.52
2001	2,738	8.17	\$2.11	2,582	21.07	\$2.03	\$1.99
2002	2,758	8.43	\$2.95	2,546	22.56	\$2.89	\$2.84
2003	2,755	8.24	\$2.95	2,551	22.28	\$2.89	\$2.84
2004	2,792	10.09	\$3.04	2,594	24.60	\$3.04	\$2.97
2005	2,956	10.50	\$3.08	2,650	25.05	\$3.07	\$3.00
2006	3,129	10.34	\$3.75	2,687	24.95	\$3.78	\$3.75
2007*	2,675	8.30	> \$4.10	2,725	25.96	> \$4.30	n/a

Source: NMFS IFQ allocation and landings reports 1995-2007.

* 2007 ex-vessel price estimates were derived from the Federal Register Vol. 72 No. 238, December 12, 2007.

Because the QS are expected to generate lower net revenues⁴⁶ over the next six years (based on IPHC CEY projections), the asset value of Area 2C QS is also expected to decline. Persons that are forced to sell their QS and those that willingly sell their QS would be expected to receive less for their QS. Persons that are unable to weather the financial downturn would be bought out by persons that are in a better financial position that feel stock abundance would increase over the long-term and constraints on charter harvests would help preserve their portion of the combined commercial and charter catch limit. As a result, Area 2C QS holdings would be further concentrated.

Information on historic IFQ and QS transfers are reported in Table A- 45. The data trend shows that prices have generally increased from 2000–2006. However, information is not available for Area 2C after the CEY has declined in 2007 and 2008.

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This assumes demand for Alaska commercial halibut does not change.

Table A- 45IFQ and QS transfer data for Areas 2C and 3A, 1995–2006

Area	Year	Mean Price \$/IFQ	Total IFQ Transferred Used for Pricing	Mean Price \$/QS	Total QS Transferred Used for Pricing	Number of Sales Used for Pricing
2C	1995	7.58	996,874	1.14	6,629,554	315
	1996	9.13	681,056	1.37	4,539,813	289
	1997	11.73	517,715	1.92	3,057,477	211
	1998	10.14	220,894	1.79	1,253,771	106
	1999	N/A	N/A	N/A	N/A	N/A
	2000	8.20	423,347	1.15	3,006,920	95
	2001	9.22	412,990	1.36	2,806,238	100
	2002	8.97	363,474	1.28	2,550,052	84
	2003	9.76	274,537	1.39	1,926,434	93
	2004	13.70	365,513	2.41	2,073,407	93
	2005	18.06	311,907	3.31	1,699,765	72
	2006	18.43	246,540	3.29	1,380,274	77
	3A	1995	7.37	1,782,912	0.79	16,658,196
1996		8.40	1,582,609	0.90	14,724,748	352
1997		9.78	1,276,525	1.32	9,443,198	294
1998		8.55	666,649	1.20	4,743,875	157
1999		N/A	N/A	N/A	N/A	N/A
2000		7.94	614,960	0.79	6,212,009	120
2001		8.63	771,815	1.02	6,519,428	145
2002		8.35	711,255	1.02	5,810,732	124
2003		9.81	565,653	1.20	4,629,364	126
2004		13.88	875,829	1.88	6,463,336	157
2005		18.07	385,893	2.49	2,803,054	96
2006		18.09	586,035	2.46	4,301,567	116

Source: NMFS RAM

The Area 2C commercial allocation is projected to always be less during the years considered in this amendment) under the fixed poundage allocations relative to the percentage based allocations (Table A-46). The reason the commercial allocation is always smaller under the fixed allocation is that the CEY is smaller those years relative to the base years used to determine the allocations.

Table A- 46 Projected Area 2C commercial allocations (Mlb) under each of the charter allocation options, 2007–2011

Year	Percentage Based Options				Fixed Pound Options			Pound & Percent Options		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	8.87	8.44	9.02	8.67	8.78	8.52	8.31	8.83	8.55	8.66
2008	6.87	6.54	6.99	6.72	6.48	6.22	6.01	6.68	6.44	6.50
2009	5.92	5.63	6.01	5.78	5.38	5.12	4.91	5.65	5.42	5.46
2010	5.87	5.59	5.97	5.74	5.33	5.07	4.86	5.60	5.38	5.41
2011	6.13	5.84	6.23	5.99	5.63	5.37	5.16	5.88	5.65	5.70

Note: Assumes an Area 2C combined commercial and charter catch limit of 10.21 Mlb in 2007, 7.91 Mlb in 2008, 6.81 Mlb in 2009, 6.76 Mlb in 2010, and 7.06 Mlb in 2011.

Table A- 47 shows the percentage of the combined commercial and charter catch limit that is projected to be allocated to the charter sector. Obviously the fixed percentage allocation is the same each year. However, when the fixed pound allocation is used, the percentages vary dramatically. In 2007, when the combined commercial and charter catch limit is assumed to be 10.21 Mlb. The charter sector’s percentage of that total ranges between 14.0 percent and 18.6 percent. When the combined commercial and charter catch limit decreases to 7.91 Mlb. in 2008, the percentage of the total allocated to the charter sector increases to 18.1 percent to 24.0 percent of the total. As the combined commercial and charter catch limit declines, the percentage of the total allocated to the charter sector declines. By 2010, the charter sector’s percentage of the 6.76 Mlb combined commercial and charter catch limit total is reduced to 21.2 percent to 28.1 percent of the total. Those percentages are considerably higher than the fixed percentage options being considered. The options that are based on 50 percent fixed pounds and 50 percent fixed percentages, yield results between the options strictly based on pounds or percentages. Those options provide a floor that the charter sector cannot fall below. As the combined commercial and charter catch limit approaches that limit, the percentage approaches those under the fixed pound allocations, When the combined commercial and charter catch limit increases, the percentages approach the percentage based allocation options.

Table A- 47 Percentage of Area 2C combined commercial and charter catch limit allocated to the charter sector

Year	Percentage Based Options				Fixed Pound Options			Pound & Percent Options		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	13.1%	17.3%	11.7%	15.1%	14.0%	16.6%	18.6%	13.6%	16.2%	15.2%
2008	13.1%	17.3%	11.7%	15.1%	18.1%	21.4%	24.0%	15.6%	18.6%	17.9%
2009	13.1%	17.3%	11.7%	15.1%	21.0%	24.8%	27.9%	17.1%	20.4%	19.8%
2010	13.1%	17.3%	11.7%	15.1%	21.2%	25.0%	28.1%	17.1%	20.5%	19.9%
2011	13.1%	17.3%	11.7%	15.1%	20.3%	23.9%	26.9%	16.7%	19.9%	19.3%

Note: Assumes an Area 2C combined commercial and charter catch limit of 10.21 Mlb in 2007, 7.91 Mlb in 2008, 6.81 Mlb in 2009, 6.76 Mlb in 2010, and 7.06 Mlb in 2011.

In IPHC Area 3A the projected allocations generally are at levels above those that have occurred since 1995. The projected 2008 commercial allocations ranged from about 27.15 Mlb to 28.44 Mlb depending on the charter allocation selected. Allocations at that level are at the high end of commercial allocations issued under the IFQ program. The commercial allocations during the years 2009–2011 are projected to increase above those amounts. By 2011 the commercial allocations could exceed 30 Mlb under the more restrictive charter allocations.

Because the commercial allocations are projected to be at or above historic levels in the near future, the QS values are not expected to decline as a result of the charter allocations being considered. If the trend of higher than historic commercial allocations occurs, the Area 3A QS values may increase.

Table A- 48 shows how the percentage based options benefits the charter sector when the combined commercial and charter catch limit decreases and benefits the commercial sector when it increases. In 2007, the commercial sector was projected to be allocated 27.92 Mlb under the assumptions used to create the percentage based allocation, Option 1b. Option 2c, the fixed pound charter allocation that year, is projected to allocate the commercial sector 28.85 Mlb. So the commercial sector would be allocated about 0.9 Mlb more under the fixed pounds allocation. In 2008, the combined commercial and charter catch limit is projected to decrease⁴⁷ to 27.62 Mlb. Because of the decrease in available halibut, the commercial sector would be allocated 23.37 Mlb under Option 1b and 23.47 Mlb under Option 2c. Since the fixed

⁴⁷ It is expected that the decrease is primarily due to changing from the area-wide to coast-wide calculation of the combined catch limit.

poundage charter allocation does not increase the allocation to the charter sector, the commercial sector would be allocated about 1.1 Mlb more under Option 2c compared to Option 1b. The combined commercial and charter catch limit is projected to increase from 2009–2011. By 2011 the commercial allocation under Option 1b is projected to be 27.92 Mlb. That year the commercial allocation is projected to be 28.85 Mlb under Option 2c. The increased catch limit results in the commercial allocation being about 1.0 Mlb more under the charter sector’s fixed poundage allocation. Also the mixed allocation that uses 50 percent of a fixed pound allocation and 50 percent of a percentage allocation tends to moderate the swings between the other options that are completely based on pounds or percentages. Those options would always fall between the other two types of allocation when the same years are used.

Table A- 48 Projected Area 3A commercial allocations (Mlb.) under each of the charter allocation options 2007–2011

Year	Percentage Based Options				Fixed Pound Options			Pound & Percent Options		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	28.35	27.92	28.81	28.81	29.35	28.99	28.85	28.85	28.37	28.83
2008	23.73	23.37	24.12	24.12	23.97	23.61	23.47	23.85	23.42	23.79
2009	24.33	23.97	24.73	24.73	24.68	24.32	24.18	24.51	24.07	24.45
2010	26.02	25.62	26.44	26.44	26.64	26.28	26.14	26.33	25.88	26.29
2011	28.34	27.92	28.81	28.81	29.35	28.99	28.85	28.85	28.37	28.83

Note: Assumes an Area 3A combined commercial and charter catch limit of 33.00 Mlb in 2007, 27.62 Mlb in 2008, 28.33 Mlb in 2009, 30.29 Mlb in 2010, and 33.00 Mlb in 2011.

Table A- 49 shows the percentage of the projected combined commercial and charter catch limit that would be allocated to the charter under each option being considered by the Council. Because the Area 3A CEYs for the years 2007–2011 are closer to their historic averages than in Area 2C, the percentages under the fixed pound and fixed percentage allocations are also more similar. Recall that in Area 2C the projected percentages under the fixed pound allocations were as high as 28 percent in 2010. In Area 3A the percentage allocated to the charter sector never exceeds 14 percent, between 2007 and 2011, when the charter sector is allocated a fixed number of pounds.

Table A- 49 Percentage of Area 3A combined commercial and charter catch limit allocated to the charter sector

Year	Percentage Based Options				Fixed Pound Options			Pound & Percent Options		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
2007	14.1%	15.4%	12.7%	12.7%	11.1%	12.2%	12.6%	12.6%	14.0%	12.6%
2008	14.1%	15.4%	12.7%	12.7%	13.2%	14.5%	15.0%	13.7%	15.2%	13.9%
2009	14.1%	15.4%	12.7%	12.7%	12.9%	14.2%	14.6%	13.5%	15.0%	13.7%
2010	14.1%	15.4%	12.7%	12.7%	12.1%	13.2%	13.7%	13.1%	14.6%	13.2%
2011	14.1%	15.4%	12.7%	12.7%	11.1%	12.2%	12.6%	12.6%	14.0%	12.6%

Note: Assumes an Area 3A combined commercial and charter catch limit of 33.00 Mlb in 2007, 27.62 Mlb in 2008, 28.33 Mlb in 2009, 30.29 Mlb in 2010, and 33.00 Mlb in 2011.

RAM data indicate that a total of 1,268 persons held QS in Area 3A at the beginning of 2006. The percentage reduction in IFQ pounds resulting from the QS they hold would impact them equally. For example, RAM data indicate that the pounds of IFQ allocated in 2006 was 24.95 Mlb. A 0.67 Mlb reduction would result in each person being allocated 2.7% fewer pounds of IFQ, all else being equal. Persons who hold more QS would lose more pounds than persons who hold less QS, but each person would lose the same percentage of IFQ. Persons who had been issued 7 pounds of IFQ would still be

issued 7 lb because their initial allocation was so small the percentage change and rounding do not affect the pounds issued⁴⁸. Persons who were issued 200,000 lb in 2006 would only be issued 194,600 lb of IFQ.

Increased demand for charter trips does not affect participants in the commercial fishery when the charter sector is constrained (Criddle 2006). The proposed harvest limits are assumed to constrain the amount of halibut the charter sector can harvest, so the commercial allocation would not be reduced by increased charter harvests. It is also important to note that unless there are stock conservation concerns, charter overages would have a minor impact future combined commercial and charter catch limits. However, the commercial sector would be directly impacted by a charter allocation that is larger than the charter sector needs to meet their current client demand. That scenario would allow the charter sector to increase their harvest, as client demand increases, until they reach 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 client demand.

If the amount of halibut projected to go unused at the beginning of the year is not reassigned to the commercial sector, any excess allocation to the charter sector would reduce the commercial allocation more than is necessary. The commercial sector would also be impacted if the charter sector was able to successfully lobby the Council to increase an allocation that becomes binding, and vice-versa.

Some halibut IFQ holders also participate in other commercial fisheries. The revenues generated and the costs incurred in those fisheries would impact the overall profitability of the firm that holds halibut IFQ. Data that are currently available does not allow the analysts to determine the extent of an IFQ holder's participation in other fisheries. It is not possible to link a QS holder with the licenses and permits they hold for other fisheries (i.e., Federal groundfish LLP, crab IFQ, or State permits for salmon and herring). It is also not possible to link vessel ownership with IFQ holders. Therefore, as a proxy, the harvest history of vessels, rather than persons, was used to compare activity in other fisheries. The harvest history of vessels used to land halibut in Areas 2C or 3A was derived from CFEC fish tickets. Those data were provided by NPFMC staff and included both pounds landed and ex-vessel value for species groups.

A summary of the annual ex-vessel value generated by vessels used to harvest Area 2C and 3A halibut, during the years 1995–2006, is presented in Table A- 50. The value of halibut harvested shows has increased over time, peaking in 2004 at just under \$158 million. Groundfish ex-vessel values have show some variation, with the smallest values harvested between 1998 and 2002. Every other year over \$80 million in groundfish was harvested. The ex-vessel value of salmon has declined from over \$62 million in 1995 to about \$39 million in 2006. Salmon revenues were weakest in 2002 and 2003, but have increase and been fairly steady from 2004 through 2006. The aggregation of all other species has been about \$10 million per year after 1998, except in 2005 when the revenue was only \$6 million.

In percentage terms, halibut revenues accounted for only 26 percent of the vessel's revenue in 1995. Their percentage from halibut revenue increased to 52% by 2004. Data were not available for 2005 or 2006.

⁴⁸ The example shows that 7 lb allocation multiplied by 0.973 (1-0.027) is equal to 6.81 lb. Rounding 6.81 lb to the nearest pound yields a 7 lb allocation.

Table A- 50 Nominal ex-vessel value of fish and shellfish harvested by vessels used to harvest halibut in Area 2C or 3A

Year	Vessels	Crab	Groundfish	Halibut	Salmon	Other	Total
		Ex-vessel Value (Millions of Dollars)					
1995	1,929	\$35.93	\$105.25	\$65.95	\$62.23	\$16.69	\$286.05
1996	1,821	\$21.41	\$93.87	\$79.60	\$45.23	\$21.72	\$261.84
1997	1,776	\$19.85	\$96.83	\$104.63	\$44.38	\$16.28	\$281.96
1998	1,487	\$20.63	\$64.80	\$65.76	\$38.63	\$8.13	\$197.94
1999	1,495	\$28.52	\$74.03	\$110.96	\$52.24	\$10.01	\$275.76
2000	1,440	\$12.96	\$88.34	\$123.82	\$34.96	\$9.50	\$269.58
2001	1,336	\$13.01	\$70.94	\$104.14	\$36.48	\$9.83	\$234.40
2002	1,270	\$16.12	\$67.95	\$117.89	\$22.28	\$11.80	\$236.04
2003	1,222	\$16.89	\$81.92	\$150.71	\$25.55	\$11.38	\$286.45
2004	1,190	\$15.54	\$83.10	\$157.91	\$37.22	\$10.12	\$303.90
2005	1,053	\$17.68	\$86.86	*	\$36.32	\$6.02	n/a
2006	1,112	\$15.06	\$92.73	*	\$38.86	\$10.66	n/a
		Percent of Total					
1995	1,929	12.6%	36.8%	23.1%	21.8%	5.8%	100.0%
1996	1,821	8.2%	35.8%	30.4%	17.3%	8.3%	100.0%
1997	1,776	7.0%	34.3%	37.1%	15.7%	5.8%	100.0%
1998	1,487	10.4%	32.7%	33.2%	19.5%	4.1%	100.0%
1999	1,495	10.3%	26.8%	40.2%	18.9%	3.6%	100.0%
2000	1,440	4.8%	32.8%	45.9%	13.0%	3.5%	100.0%
2001	1,336	5.5%	30.3%	44.4%	15.6%	4.2%	100.0%
2002	1,270	6.8%	28.8%	49.9%	9.4%	5.0%	100.0%
2003	1,222	5.9%	28.6%	52.6%	8.9%	4.0%	100.0%
2004	1,190	5.1%	27.3%	52.0%	12.2%	3.3%	100.0%
2005	1,053	n/a	n/a	n/a	n/a	n/a	n/a
2006	1,112	n/a	n/a	n/a	n/a	n/a	n/a

Source: CFEC Fishticket data provided by NPFMC staff

Note: Ex-vessel halibut values for 2005 and 2006 were not available from the NPFMC staff when the data were provided. When information was not available or could not be calculated the cell value is listed as n/a.

Table A- 50 also shows the total number of vessels used to harvest halibut. The number of vessels has decreased over time. The only years the number of vessels increased over the previous year were 1999 and 2006. Overall, the number of vessels used to harvest halibut decreased from 1,929 in 1995 to 1,112 in 2006. That change represents a 42 percent decline in the number of vessels used. During that same period the Area 2C commercial halibut harvest increased from 7.77 Milb to 10.47 Milb (34.7 percent). The Area 3A halibut harvests increased from 18.34 Milb to 25.38 Milb (38.4 percent). So, even with an increase in harvest, the number of vessels used to harvest the fish declined.

Figure 17 shows the increase in average halibut harvest⁴⁹ per vessel in Areas 2C and 3A. The trend lines indicate harvest per vessel is increasing in both areas, with a decrease in 2001. Area 3A shows the largest increase going from about 15,000 pounds per vessel in 1995 to about 40,000 pounds in 2006. Area 2C vessels averaged about 7,000 pounds in 1995 and increased to about 15,000 pounds in 2006.

That trend to harvest more halibut per vessel seems to indicate that participants in the IFQ fishery are attempting to reduce costs by more fully utilizing the active vessels in the fleet. Cost reductions were thought to be an important result of allowing individuals to harvest a set percentage of the available halibut. Estimates of the actual reduction in costs cannot be provided, but the cost-savings could help offset the forgone increase in ex-vessel revenue that has resulted from increased charter harvest.

⁴⁹ Data were provided by the RAM division of NMFS.

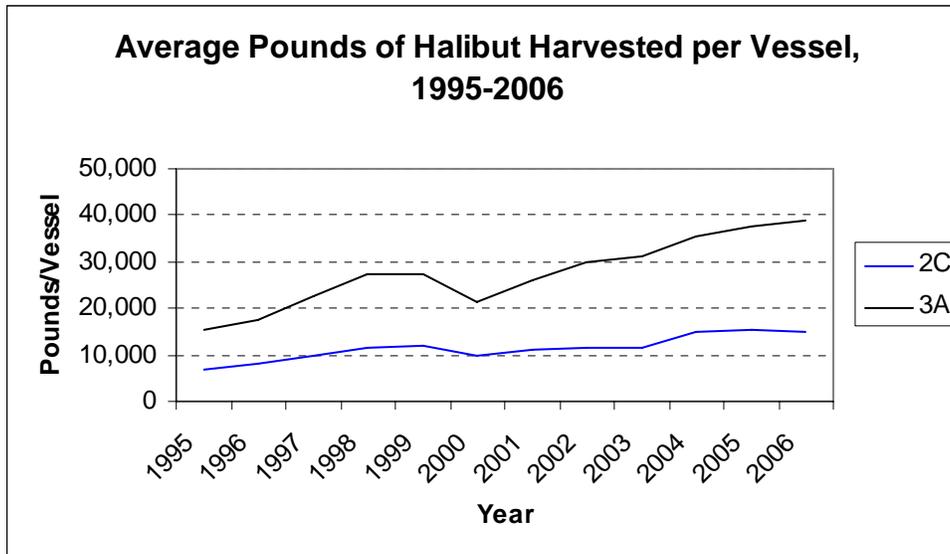


Figure 17 The average pounds of halibut harvested per vessel in the Area 2C and 3A IFQ fishery, 1995–2006

Leasing of GAF would allow commercial QS holders to sell halibut IFQ to the charter sector. They are only expected to sell IFQ to the charter sector if they receive sufficient compensation to offset the net revenue they would derive from harvesting the fish themselves. Because commercial harvesters generate different amounts of net revenue from its allocation, the commercial operations that generate the lowest marginal net revenue would be most likely to lease halibut. Charter operations that have the highest net revenue per fish are expected to be the most willing buyers, if their net revenue per fish is greater than or equal to the lease cost per fish.

Cost Recovery NMFS published regulations in the Federal Register (65 FR 14919) implementing the IFQ Cost Recovery Program for IFQ landings of halibut and sablefish. The regulations implemented on March 20, 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

It is important to note that this 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 exvessel 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 staff members calculate an overall enforcement and

management cost of the program, but they do not know what percentage of the costs are attributable to halibut and sablefish or the cost by area. For example, NMFS does not track the time spent answering questions about the program from people holding 2C QS versus people holding 3B QS. To track costs at that level is not realistic.

The halibut and sablefish cost recovery fee for 2007 was set at 1.2 percent of exvessel landings and reportedly yielded \$2.7 million to cover management and enforcement costs. Both changes in the exvessel price of halibut/sablefish and the amount of halibut/sablefish harvested can affect the revenue generated from the cost recovery fee. Halibut prices in 2008 are reported to be higher than 2007 prices. IPHC projections of the future coastwide exploitable biomass indicates it will increase over the next five-years (Hare 2008). If exvessel prices do not fall at a greater rate than harvests increase, cost recovery revenues should not decline over this period if the same fee is applied.

The management and enforcement costs of this program are currently unknown. However, NMFS has indicated, based on The Feasibility Study the one-time implementation cost may be as much as \$400,000 and annual equipment costs and updates could be as much as \$100,000. Those costs do not account for any increased enforcement needs or additional RAM staff.

Based on 2007 fee percentages and assuming that those rates generated \$2.7 million, each percentage of the cost recovery fee yielded \$2.25 million. Assuming the harvest and prices of halibut and sablefish remain relatively stable, a \$500,000 increase in costs would increase the cost recovery fee to about 1.5 percent on halibut and sablefish harvests from IFQ permits. Adding in additional costs for personnel and enforcement would increase the fee.

As discussed throughout this amendment, halibut IFQ permit holders⁵⁰ in IPHC Areas 2C and 3A are expected to benefit from this program because the charter sector harvests in their area will be limited. 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 Areas 2C and 3A by allowing them to increase revenue through leases or perhaps higher exvessel prices if fewer fish enter the commercial market.

The 413 QS holders that only fish halibut west of Area 3A and the 851 sablefish IFQ permit holders⁵¹ will realize higher 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 exvessel 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 exvessel prices, but revenue changes that result from changes in the quantity of halibut sold is unlikely to completely offset the costs. Some QS holders own both halibut and sablefish QS. Based on current QS holdings reported by RAM (as of July 2008), 625 persons own halibut and sablefish QS. These persons will likely derive some benefits from the program. However, the 226 sablefish QS holders that do not own any halibut QS are expected to pay a larger 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 program is implemented truly reflects the costs they impose on NMFS for the management and enforcement of the sablefish portion of the IFQ program.

2.5.3.3 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 (e.g., a one-fish bag limit in Area 2C). Charter LEP holders would change the number of trips they offer or take more clients per trip to meet client demand under the charter LEP until

⁵⁰ Based on RAM data for 2008 QS holders, it appears that 2,534 persons hold Area 2C or 3A halibut QS. Of those QS holders, 224 hold QS in both Area 2C and 3A.

⁵¹ Based on the current QS data provided by RAM at <http://www.fakr.noaa.gov/ram/ifqreports.htm#qspools>

the fleet is at full capacity. Because of the excess capacity that is expected to exist under the charter LEP, at least in the short term, charter clients are expected to pay prices for trips that would allow the charter LEP holders to earn normal profits (NPFMC 2006a). Charter LEP holders would not raise trip prices to earn economic rents, because of the competition that would exist for clients. In the event that the charter LEP ever does become a constraint on the number of 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. Charter LEP 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.⁵²

Because of the structure of the charter industry and the competition for charter clients, charter LEP holders are expected set trip prices at levels that eliminate excess profits, all else equal. Since charter LEP 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. 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. After 2007, we have assumed that a two-fish bag limit with one fish no greater than 32 inches would be in place in Area 2C. 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 chose 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 charter LEP is not a constraint to persons booking a trip. Competition for clients is expected to keep trip prices at a level that allows charter would allow LEP 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 charter LEP holders try to attract clients during the non-peak seasons. Discounted trips have historically been available before mid-June and after mid-August.

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

⁵² Assumes that the moratorium will not constrain the number of trip available. It also assumes that demand will be relatively static and the charter operators provide a relatively homogeneous product.

activities. The increase was reported to be largely driven by increases in cruise ship passengers. Over 48 percent of the 2007 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 to 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.

2.5.3.4 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.

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 vessel⁵³. 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 on the amount of Class A QS held (<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 \$.30 to \$.35 per pound to custom process halibut⁵⁴. 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 will derive from selling the fish.

⁵³ 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.

⁵⁴ Custom processing is when an entity is contracted to process halibut for another entity but does not take ownership of the fish.

The commercial halibut fishery was allocated 6.2 M. Lb. of halibut in IPHC Area 2C and 24.2 M. Lb. in Area 3A, during 2008. Assuming all of the halibut were processed using custom processors at \$0.35 per pound, round weight, the income generated would be \$2.2 million in Area 2C and \$8.5 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 whole⁵⁵ halibut from the Pike Place Fish Market in Seattle was \$9.99 per pound⁵⁶ (\$17.99 per pound for fillets) on May 27, 2008. The ex-vessel price of halibut in May 2008 was about \$4.00 per pound⁵⁷ 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 and profits that persons beyond the first wholesaler incur or generate from halibut. 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 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 pound⁵⁸. 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 know 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

⁵⁵ Whole fish have been gutted and bled.

⁵⁶ Prices according to the Pike Place Market website. www.pikeplacefish.com/store_product_1084.html.

⁵⁷ The price per pound of halibut under 40 pounds was less than \$4.00 and the price of larger halibut was over \$4.00.

⁵⁸ <http://www.gortonsfreshseafood.com/Gourmet-Fresh-Fish/Halibut-Selects.aspx>

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 the 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 Mlbs of halibut were delivered to be processed⁵⁹ in 2C, the total revenue generated would be \$0.9 million. In area 3A, if 1.8 Mlbs of fillets were processed the processor gross revenue would be \$1.8 million. These estimates are probably too high because not all of the halibut harvested from charter vessels will be commercially processed.

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 Mlbs shipped. In Area 3A the cost would be about \$10.8 million.

The costs/revenues discussed in this section are provided to show examples of the fees charged by processors and 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.

2.5.3.5 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, if transfers occur. The leases would reduce the amount of halibut available to halibut consumers. Because of the direct

⁵⁹ This assumed that halibut were filleted before they were taken to the processor (about 50 percent of the whole weight), all halibut were commercial 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 be commercially processed.

relationship between consumer surplus and quantity supplied, benefits to consumers of commercial halibut would be reduced.

2.5.3.6 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 charter LEP 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 sector's 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 A- 51). 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 ADFG 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 are expected to be imposed on the Area 2C charter fleet starting in 2007 are expected to reduce client demand for trips (e.g., a one-fish bag limit). 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 good 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 charter LEP 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 A- 52 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. Getting these individuals to alter the timing of their trip to have access to halibut may be difficult. If they cannot attract clients earlier in the year, the early closures that result from the harvest caps could have a greater impact on their charter industry.

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.

Table A- 52Area 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					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
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	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

2.5.4 Element 2 – Annual Regulatory Cycle

The initial charter allocation would be a common harvest pool for all charter limited entry permit holders. It would not close the fishery when the charter allocation is exceeded. Instead, the allocation would be linked to an annual regulatory analysis of management measures (delayed feedback loop) that take into account the projected CEY for the following year and any overages by the charter industry in the past year(s). This system would work best if there is not a time lag between the overage year and the payback year. The Council will not revisit or readjust the sector split. An allocation overage would trigger the regulatory process automatically, in contrast with current GHL management. Any underages would accrue to the benefit of the halibut biomass and would not be reallocated or paid forward.

The second element of the Council's proposed alternative addresses its planned management response to an overage of the charter halibut sector allocation that would be decided under Element 1. The Council has proposed continuation of the current regulatory amendment process, but one with a tighter linkage between an overage and subsequent action(s) to prevent further overages, by reducing subsequent charter harvests. Nothing under Element 2 would be included in Federal regulations, but is intended to clarify the Council's intent for those elements that would be written into regulation.

Under Element 2, the Council also states its intent that the charter sector allocation would be allocated to the universe of charter LEP holders in each area and would be fixed at the level decided under Element 1⁶⁰. The Council stated its intent not to consider increasing the charter sector allocation when and if the allocation is determined to be binding to the charter sector⁶¹. The Council stated its intent that any overage would not close the fishery in-season; instead, it stated its intent to act as quickly as possible in recommending changes to Federal regulations that would result in charter halibut harvests equal to or less than the allocation during the next charter season, at the earliest. It acknowledges that it may select more restrictive measures to ensure that the allocation is not exceeded, because accurate projections of charter halibut harvests cannot be made because of the following unknowns: (1) number of future charter halibut anglers; (2) size (and weight) of halibut harvested; and (3) the allocation (if any part of the charter allocation floats in proportion to the annual IPHC action to set a combined commercial and charter quota. Underages would not be reallocated, but would revert to the biomass.

The Council also stated its intent to request that the IPHC implement the Council's catch sharing plan (CSP) between the commercial and charter halibut sectors each year. The IPHC already applies the CSPs for Area 2A and Area 4CDE each year.

Section 1.7 of the EA provides more detail on possible Council procedures for timing its actions with implementation of Federal regulations in the subsequent fishing year. These include A) Scheduling final action in December; with an option to forego SSC review of the RIR/IRFA; B) Preparing a supplemental analysis (only) prior to Council action; C) Selecting two preferred alternatives, with implementation of the alternative that conforms to IPHC action; D) selection of a fixed allocation in the preferred alternative, so as not to have Council action dependent on IPHC action; and E) Separate rulemaking for management measures would be recommended to facilitate implementation of IPHC annual management measures.

No regulations would be implemented for Element 2. *Depending on the Council's selection of a preferred alternative under Element 1, a trailing regulatory amendment may be needed to restrict charter halibut harvests to the (new) sector allocation. That amendment may be to relieve current restrictions if the new*

⁶⁰ Except as modified under Element 5, whereby individual charter LEP holders would acquire commercial IFQs to allow their clients to be exempt from restrictive measures implemented on charter halibut anglers who fish under the charter common pool allocation.

⁶¹ Some of the allocation options under Element 1 would be binding on the charter sector upon implementation. Opportunities to lease commercial IFQ under Element 5 would allow for increases in charter harvests by individual charter LEP holders, rather than the sector as a whole.

allocation(s) is higher than harvests when implemented or to enact restrictive measures if the new allocation(s) is lower than current harvests when implemented.

2.5.5 Element 3 – Management Tool Box

Element 3 establishes the management toolbox to be used by the Council if the charter industry exceeds its allocation. The Council would select the tool (or tools) that allow it to reduce charter harvest by an amount that is likely to allow the industry to “pay back” the halibut biomass that amount of the overage(s) in the preceding year(s). Element 3 establishes two tiers of measures that the Council can use to manage the charter common pool (Table A- 53). Tier 1 contains measures that allow the Council to manage the charter common pool for a season of historic length and a two-fish daily harvest limit. Tier 2 contains measures that could affect the season’s length or the daily catch limit. In addition, it includes the option of an annual limit.

Table A- 53 Measures by tier

Tier 1	Tier 2
One Trip per Vessel per Day	Annual Catch Limits
No Retention by Skipper and Crew	One Fish Bag Limit for all or a portion of the Season
Line Limits	Season Closure
Second Fish of a Minimum Size	
Second Fish at or below a Specific Length	

If the Council is to meet the regulatory cycle discussed in Element 2, it may choose to rely on estimates from past GHM analyses (NPFMC, 2007b and NPFMC, 2007c) to estimate the effect of each management measure on the charter industry’s harvest. Table A- 54 shows the estimated effect of each management measure by sub-option, as analyzed and reported by NPFMC (2007b) and NPFMC (2007c). Note that the analyses did not look at the same sub-options for each management area as the Council tailored the sub-options to fit each area’s individual management needs. The analysis notes the following about each management measure.

Table A- 54 Estimated effect of management measures

Tier	Management Measure	Sub-Option	Estimated Harvest Reduction (%)	
			Area 2C	Area 3A ⁶²
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 ⁶³	None	Not Analyzed	Not Analyzed
	Second Fish of a Minimum Size ⁶⁴	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 ⁶⁵	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 ⁶⁶	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 ⁶⁷	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%	

Source: NPFMC (2007b) and NPFMC (2007c).

2.5.5.1 Tier One Management Measures

2.5.5.1.1 One Trip per Vessel per Day

The recent GHL analyses estimated that limiting vessels to one trip per day would reduce harvest between 1.8 percent and 2.4 percent in Area 2C and between 5.5 percent and 6.3 percent in Area 3A (Table A- 55). However, the analyses noted that these numbers assume that none of the displaced passengers were able

⁶² Numbers for Area 3A reflect the analysis for NPFMC (2007c) updated with ADF&G's final 2006 harvest estimates.

⁶³ Neither NPFMC (2007b), nor NPFMC (2007c) analyzed line limits as an individual option.

⁶⁴ Upper estimates include an assumption of a 10% reduction in the demand for halibut charter trips.

⁶⁵ 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.

⁶⁶ Upper estimates include an assumption of a 30% 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.

⁶⁷ 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.

to reschedule their trip on other vessels during the season. Both of the GHL analyses and NPFMC (2007a) noted latent industry capacity that could allow a sizeable portion of displaced passengers to find replacement trips. Hence, the overall savings associated with this measure are likely to be smaller than the estimates provided above. Additionally, NPFMC (2007b), NPFMC (2007c), and NPFMC (2006) noted that the economic burden associated with this measure would be borne by providers whose business models focused on providing more than one trip per day. NPFMC (2007b) and public testimony at the Council's June 2007 meeting described how the economic effect of this measure in Area 2C would be borne largely by a number of lodge LEP holders and smaller LEP holders focusing on quick trips for cruise ship passengers. NPFMC (2007c) and NPFMC (2006) discussed how the economic burden of this measure in Area 3A would fall more heavily on the Central Cook Inlet area than on ports in other areas, as businesses in this region are more likely to take multiple trips in a single day.

Table A- 55 One trip per vessel per day

Management Measure	Sub-Option	Estimated Harvest Reduction (%)	
		Area 2C	Area 3A
One Trip per Vessel per Day	None	1.8%-2.4%	5.5-6.3%

2.5.5.1.2 No Retention by Skipper and Crew

The retention of halibut by skipper and crew while fishing on paid halibut charters has been banned by ADFG emergency order since 2006, in Area 2C, and since 2007, in Area 3A. The 2007 GHL analyses noted that the ban reduces harvest by approximately 4.3 percent to 4.7 percent in Area 2C and approximately 10.4 percent in Area 3A (Table A- 56). In June 2007, the Council selected a preferred alternative for managing Area 2C charter harvests that included a Federal ban on skipper and crew harvests. In October 2007, the Council chose to postpone further action on management regulations for Area 3A until 2008, but encouraged ADF&G to continue the ban on skipper and crew harvest that it established in January 2007. Hence, the use of a skipper and crew harvest ban as a halibut management measure is already in place in both IPHC areas. However, that ban is subject to the continuation of ADF&G emergency orders until NMFS publishes the final rule for the Area 2C regulatory package and the Council takes further action in Area 3A. With the ADF&G emergency orders in place, the establishment of Federal regulations would not further reduce harvest by skipper and crew. However, both 2007 GHL analyses noted that a Federal ban would allow skipper and crew to harvest other species, as 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 harvest with other species the Federal ban would allow them to mitigate the burdens associated with a ban on halibut harvest. As noted in NPFMC (2006), 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.

Table A- 56 No retention by skipper and crew

Management Measure	Sub-Option	Estimated Harvest Reduction (percent)	
		Area 2C	Area 3A
No Retention by Skipper and Crew	None	4.3%-4.7%	10.4%

2.5.5.1.3 Line Limits

Tier 1 includes limiting the number of lines a vessel may have in the water while fishing for halibut. This management measure has not been analyzed as a stand alone option in prior analyses. The skipper and crew portion regulation package for Area 2C and the skipper and crew management option for Area 3A (NPFMC 2007b) included line limits. The effect of reducing the number of lines is not known at this

time. Theoretically, if anglers did not need the full-trip length to catch their halibut, then a vessel could carry more passengers than the number of lines allowed in the water at any one time and we would not expect a great change in harvest. However, a more likely scenario is that a lower line limit would reduce harvest, as anglers likely need most of their water time for their catch to equal current catch per unit of effort (CPUE). Economic theory suggest that anglers would be less willing to pay for a trip where they are not guaranteed a fair or equitable chance to fish, or where they perceive a reduced opportunity to catch and retain halibut. Thus, it is logical to expect that a lower line limit would reduce harvest, but the amount of the reduction would depend on, amongst other factors, CPUEs at the time of the ban and whether anglers can find replacement seats on boats where the line limit may not affect their experience. For example, if the line limit were to move to four lines per vessel, the two anglers who may have travelled as the fifth and sixth anglers on a vessel may find another boat where they can travel as the third and fourth anglers. A reduction in line limits could result in lower gross revenue earning if anglers choose not to book in excess of the line limit. Additionally, if charter LEP holders are able to service the same number of active anglers through higher trip frequency they would likely see higher operating costs and lower net profits. At this point a lower limit has not been analyzed in detail.

2.5.5.1.4 Second Fish of a Minimum Size

The 2007 GHM analyses contained options that would have required the second fish in an angler’s bag to be either equal to a minimum of 45 inches or 50 inches (Table A- 57). These analyses estimated that a 45-inch minimum would have reduced harvest by 18.8 percent to 27.0 percent in Area 2C, and between 32.5 percent and 39.3 percent in Area 3A; a 50-inch minimum would have reduced harvest by 23.1 percent to 30.8 percent in Area 2C, and between 36.9 percent and 43.3 percent in Area 3A. The Council rejected these options in 2007 for both Area 2C and Area 3A in part because of the concern about measuring fish at sea, increased mortality, and the potential for the minimum size limits to become de facto one-fish bag limits in sub-areas where larger fish are scarce. As noted in NPFMC (2007b) and NPFMC (2007c) the economic effects of this management measure depend on how charter anglers perceive the measure affects their experience. If anglers perceive this measure as a de facto one fish bag limit and, as a result, book fewer trips, then charter LEP holders will generate lower revenue. This effect could spread to charter communities if the booking of fewer trips results in fewer visits to those communities, lower overall local expenditures by tourists and locals, and lower expenditures by charter LEP holders.

Table A- 57 Second fish of a minimum size

Management Measure	Sub-Option	Estimated Harvest Reduction (percent)	
		Area 2C	Area 3A
Second Fish of a Minimum Size	45"	18.8%-27.0%	32.5%-39.3%
	50"	23.1%-30.8%	36.9%-43.3%

2.5.5.1.5 Second Fish at or below a Length Limit

A size limit on the second fish in an angler’s daily bag limit is already part of the management package in place in Area 2C. In June 2007, NMFS enacted a rule requiring the second halibut in an angler’s daily bag limit to measure 32 inches or less in length. This management measure is also part of the regulatory package for Area 2C that is currently in the NMFS rulemaking process after being selected by the Council as its preferred alternative in June 2007. If the Council wished to lower harvest further in Area 2C using a length limit, it would need to lower the length limit below 32 inches. Analysts have not estimated the effect of lower length limits using ADF&G’s final harvest estimates for 2006. NPFMC (2007b) estimated that this option, as a stand alone measure, would reduce harvest by 19.7 percent to 26.1 percent.

NPFMC (2007c) contained three sub-options (i.e., 32 inches, 34 inches, or 36 inches in length) as part of the analyzed management options for Area 3A. The analysis estimated that these sub-options would have reduced harvest between 18.2 percent to 24.5 percent, 15.2 percent to 21.1 percent, and 12.1 percent to

18.3 percent, respectively (Table A- 58). The Council postponed action in Area 3A, until 2008, when more data on 2007 Area 3A harvest would become available. As noted for the minimum length management measure, the economic effects of this management measure depend on how charter anglers perceive the measure affects their experience. If anglers perceive this measure as a de facto one fish bag limit and, as a result, book fewer trips, then charter LEP holders will generate lower revenue. This effect could spread to charter communities if the booking of fewer trips results in fewer visits to those communities, lower overall local expenditures by tourists and locals, and lower expenditures by charter LEP holders.

Table A- 58 Second fish at or below a length limit

Management Measure	Sub-Option	Estimated Harvest Reduction (%)	
		Area 2C	Area 3A
Second Fish at or below a Length Limit	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%

2.5.5.2 Tier Two Management Measures

The Council’s October 2007 motion contains three Tier 2 management measures. These are: annual limits, a one fish bag limit for all or a portion of the season, and a partial or full season closure.

2.5.5.2.1 Annual Catch Limits

The Council considered annual limits in its 2007 decision-making process for enacting new management measures in both Area 2C and Area 3A. A four-fish annual limit is included in the Council’s preferred alternative that is currently in the NMFS rule-making process. NPFMC (2007b) estimated that a four, five, or six-fish annual limit would reduce harvest under 2006 conditions by approximately 16.4 percent, 9.3 percent, and 4.3 percent, respectively (Table A- 59). The Council considered the same four, five, or six-fish annual limit in Area 3A, but postponed action until 2008. NPFMC (2007c) estimated that these annual limits would reduce client harvest under 2006 conditions by approximately 6.5 percent, 4.1 percent, and 2.1 percent. Without a skipper and crew harvest ban, the measures reduce combined client and skipper/crew harvest by 15.3 percent, 12.9 percent, and 10.7 percent, respectively. The reason for this large difference is the fact that in Area 3A skipper and crew members represent the majority of harvest associated with individuals who more than a couple fish annually. If the a skipper and crew ban is in effect then the harvest savings associated with the management measure is between 2.1 percent and 6.5 percent of the pre-ban harvest because the skipper and crew ban has eliminated a portion of the savings that would results from the annual limit. If the skipper and crew ban is not in effect then the annual ban results in higher percentage savings from a higher pre-ban harvest because a portion of the halibut that would have been saved by a skipper and crew ban is now saved by the annual limit.

Table A- 59 Annual limits

Management Measure	Sub-Option	Estimated Harvest Reduction (%)	
		Area 2C	Area 3A
Annual Catch Limits	Four Fish	16.4%	6.5%
	Five Fish	9.3%	4.1%
	Six Fish	4.3%	2.1%

The effect of annual catch limits varies slightly from year to year. As noted in NPFMC (2007b) and NPFMC (2007c) the estimated savings associated with annual limits, based on analysis of 2006 data, are similar to the estimated saving that analysts estimated in prior analyses, such as NPFMC 2006, using data from 1996 to 2004. The difference between the prior analysis and the analyses conducted in 2007, is that

ADF&G's 2006 logbooks introduced the capability of tracking anglers by license number. The 2006 analysis had relied on estimates from the Statewide Harvest Survey (SWHS).

2.5.5.2.2 One Fish Bag Limit for All or a Portion of the Season

In 2007, the Council considered options for a one fish bag limit for the month of May, or June, or July, or August, or September, or for the entire season (see NPFMC [2007b] and NPFMC [2007c]). The estimated effect of a full-season bag limit reduction is 39.7 percent to 57.8 percent in Area 2C, and 47.1 percent to 62.9 percent in Area 3A (Table A- 60). The estimated effects of smaller bag limits in individual months are proportional to the amount of harvest occurring in that month. For example, July is the busiest month in both areas, and a smaller bag limit in that month would likely result in larger harvest savings than in any other single month. As noted in prior analyses, the actual harvest savings associated with single month reductions in bag limits would likely be smaller than estimated, because of anglers' ability to shift their trips to other months. The reduction in actual harvest savings relative to the estimate would depend on factors such as how much lead time anglers have before the bag limit reduction becomes effective and how flexible anglers can be with their fishing trips.

Table A- 60 Estimated savings from a one-fish bag limit, 2006 conditions

Length of Closure	Area 2C	Area 3A
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%

Source: NPFMC (2007b) and NPFMC (2007c).

As noted in NPFMC (2007b) and NPFMC (2007c) The effect of the one-fish bag limit would depend primarily on how anglers react to the fact that the reduced bag limit changes some of the essential characteristics of the current product/experience being offered by charter LEP holders. A reduction in demand will mean lower revenues for charter LEP holders and potentially lower expenditures in communities. If clients could not, or chose not to, take a halibut trip and did not spend this money elsewhere in the local economy, then the option would result in local or regional economic losses related to client expenditures. However, if those clients spend the dollars they would have other spent on charter experiences on other experiences within the same community, then the change results in a redistribution of expenditures, rather than a reduction in community-specific expenditures. The economic effects of this option are also likely to depend on geographic and temporal factors. For example, anglers are more likely to reduce participation when substitute species are not available; this means that many Area 2C communities will experience the most reduction in participation between the end of June and the beginning of August, when king and coho salmon are not available. For example, inside passage communities are more likely to experience these effects than western coastal communities such as Sitka, which have greater multi-species availability. The analysis for NPFMC (2007b) and NPFMC (2007c) indicated that demand reductions between 0 and 30 percent would not be unexpected in both Areas from this type of management measure. Key informant interviews conducted during the April 2008 meetings indicated that some inside passage lodge operators were experiencing reduced bookings for July 2008 as anglers weighted to see if NMFS would publish a final rule instituting a one fish bag limit for halibut in Area 2C.

2.5.5.2.3 Season Closure

Prior analyses have not analyzed partial or full season closure options. However, ADF&G has provided these analyses with estimates of harvest by month. Table A- 61 shows the portion of 2006 harvest that occurred in each month between May and September 2006. These five months account for more than 99 percent of harvest in both IPHC areas. The distribution of harvest may be representative of the harvest

savings, if anglers have little time to adapt to a proposed closure. Closures would be less effective if anglers have forewarning of the closure and if they have time to fish after the closure in the same season that the closure occurred. For example, if anglers were informed in January of an August-September closure, we would expect that anglers with flexibility in their fishing dates would simply try to schedule dates in other months. Latent industry capacity would allow at least some to find replacement fishing trips. On the other hand, an announcement in mid-July of an August-September closure would leave anglers with little time to react to closure and a very small portion of the halibut season over which they could try to find replacement trips.

The economic effects of a partial or full season closure have not been quantified by prior analyses. An accurate quantitative estimate of the economics effects is not possible for several reasons including the lack of data on the size and expenditures associated with various market segments in each IPHC Area. For example, NPFMC (2007b) and NPFMC (2006) note that the Area 2C charter halibut market is largely made up of four general components: cruise vessel passengers, non-resident lodge guests, non-resident non-lodge guests, and resident anglers. While the data show that the Area 2C charter halibut fishery is a predominately a non-resident fishery there is no data on the size (i.e., the number of trips) on the non-resident market segments. Each of these segments is associated with different cost levels. Half-day trips, such as those taken by cruise passengers can cost as little as \$150 not including fishing licenses, meals, or other sundry items; the charter fee for a full-day trip generally ranges between \$225 and \$300. Assuming an average charter price for all trips of \$225 per client day results in charter fee expenditures of \$20.8 million in 2006 in Area 2C. These estimates do not include lodging, meals, license fees, sales taxes, souvenirs, or other items. A similar estimation process for Area 3A results in an estimate of charter fee expenditures of \$31.2 million in 2006. The effect of a partial or full-season closure will depend on how it affects clients' decisions to visit Alaska. Cruise passengers would likely find another on-shore excursion rather than cancel their trip to Alaska as fishing is likely to be an ancillary part of their experience. Lodge clients would either rebook their trip to a time of the year with an open season or cancel their trips all together. Local residents would have the greatest ability to adapt to proposed season closures as they have the greatest short-term flexibility in their fishing schedules. Resident anglers are a smaller portion of the fishery in Area 2C than they are in Area 3A so the analysis would expect greater harvest savings (as a percentage of potential harvest) from a partial-season closure in Area 2C. In addition to regional variation in effects, the effect of season closures will vary from community to community. Particularly hard hit will be those communities that focus on destination anglers and are not part of the regular tourist circuit.

Closure economic effects could be mitigated if charter LEP holders were able to rotate their craft into non-consumptive uses or encourage anglers to book trips targeting other species. This idea has frequently been mentioned by the commercial sector as an option for charter LEP holders to limit the losses associated with a season closure. However, many operators providing these services already exist and it is not clear what level of success they would have in transferring their skill sets to these businesses and at generating new customers. Certainly a certain percentage of angling clients for whom angling is the primary purpose of their trip would find other angling trips to take instead of coming to Alaska.

Table A- 612006 harvest by month

Length of Closure	Area 2C	Area 3A
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%

2.5.5.3 Limitations

The approach described in this element provides a rapid, “back of the envelope” method of estimating the effect of management measures to reduce charter industry halibut harvest. However, there are limitations to the approach that should be recognized, including the effect of changing average weights, the effect of changing harvest composition, and the difficulty of accounting for the interaction effects associated with utilizing several management measures at the same time.

A change in average harvest weights could increase or decrease the effectiveness of length-based management measures. For example, analyses in NPFMC 2007(b) and NPFMC 2007(c) calculated the estimated effect of a minimum size on a second fish. These analyses estimated this effect by looking at the difference between 2006 average weights and the estimated average weight of the average fish caught below the minimum length. These calculations provided an estimated percentage reduction in the overall harvest. In the future, if the overall average weight goes down and the estimated average weight of the average fish below the minimum size stays the same, then the effect of this type of management measure would be less than what was predicted in NPFMC 2007(b) and NPFMC 2007(c). The second column in Table A- 62 shows how a decline in average weight would affect the estimated savings from a 32-inch length limit based on 2006 Area 3A data. If average weight declined from 17.9 lb to 15.9 lb, the estimated savings associated with this management measure would drop from 24.3 percent to 21.5 percent. On the other hand, if anglers are successful in increasing the average size of the fish they retain, then length-based management measures would be more effective than predicted in NPFMC 2007(b) and NPFMC 2007(c). As Table A- 62 shows, the same measure would now reduce harvest by 26.7 percent instead of 24.3 percent. Hence, the estimated effect of each alternative listed above must be considered in the context of the descriptive statistics for that year’s harvest.

Table A- 62How changes in average weight can affect the accuracy of prior estimates

Category	32" Limit with 2006 3A Data	Average Weight Goes Down	Average Weight Goes Up
Number of Fish Caught	204,115	204,115	204,115
Percent Second Fish	47.1%	47.1%	47.1%
<i>Average Weight of All Fish</i>	<i>17.9</i>	<i>15.9</i>	<i>19.9</i>
Average Weight below Minimum Length	8.6	8.6	8.6
Weight Saved	9.3	7.3	11.3
Overall Weight Saved	891,106	698,943	1,083,269
Percentage of Harvest	24.3%	21.5%	26.7%

Source: NEI, 2007.

A change in harvest composition can also affect the accuracy of prior estimates. For example, NPFMC 2007(c) estimates that under 2006 conditions the institution of a 45-inch minimum size limit on the second fish in the angler’s daily bag limit would reduce harvest by 32.5 percent. In 2006, 31 percent of the harvest by weight came from at, or above, the 45-inch standard. If anglers are less successful at catching these larger fish, then the estimated effect of the management measure increases. For example, if the percent-of-harvest falls to 25 percent, the estimated harvest reduction associated with the management measure increases to 35.3 percent, because anglers are forced to replace smaller fish with relatively rarer larger fish. If large fish become a large portion of the harvest (indicating greater relative success in targeting them) then the efficacy of the management measure goes down. For example, if 45-inch or larger halibut represented 40 percent (by weight), then the estimated effect of the management measure falls to a 28.2 percent reduction in harvest.⁶⁸

⁶⁸

These examples assume all other 2006 conditions, including total harvest weight, stay constant.

The analyses for NPFMC (2006), NPFMC (2007b), and NPFMC (2007c) contained a number of combined alternatives. These analyses showed that the effect of combined alternatives is not strictly additive. For example, NPFMC (2007c) showed that the combined effect of a ban on skipper and crew harvest and an annual limit is less than the sum of the estimated effect of the individual management measures, because skipper and crew harvest the majority of fish caught by anglers who catch four or more fish per year. Both NPFMC (2007b) and NPFMC (2007c) showed that any management measure that affects average weight (e.g., a maximum size measure) would lower the efficacy of any management measure that does not affect average weight (e.g., an annual limit). If the Council needs to consider multiple measures from Tier 1 or Tier 2, it is important to remember that the cumulative affect of measures is not necessarily additive.

2.5.6 Element 4 – Timeline

The current timeline for the proposal is as described below.

Example Scenario 1: four-year feedback loop

Charter fishery ends 2007

October 2008: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2008: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2009: IPHC adopts combined catch limits for 2009.

February 2009: Council takes final action on management measures that would be implemented in year 2010.

Winter 2009: NMFS publishes the rule that would be in effect for 2010.

Example Scenario 2: three-year feedback loop

Charter fishery, with in-season monitoring, ends 2007

October 2007: Council receives ADF&G report on final charter halibut harvest estimates for 2007. If the ADF&G report indicates that an allocation overage occurred in 2007, the Council would initiate the analysis of management measures necessary to restrict charter halibut harvests to its allocations.

December 2007: Council reviews staff analysis (possibly in the form of a supplement) that updates the previous year's analysis with final 2007 harvest estimates.

January 2008: IPHC adopts combined catch limits for 2008.

February 2008: Council takes final action on management measures that would be implemented in year 2009

Winter 2008: NMFS publishes the rule that would be in effect for 2009

Element 4 outlines two scenarios for the timing of regulatory action, once an overage has been identified. Three to four years may elapse between the year in which an overage occurs (step 1), the year in which ADF&G data report that an overage has occurred (step 2), the year in which the Council selects a preferred alternative to address the overage (step 3), and the year in which new regulations become effective (step 4). A calendar year may not transpire for each of these events. This multi-year cycle has been described as a feedback loop. The primary difference between the two scenarios is when an estimate of charter harvests is available.

Two interagency staff meetings were held (October 29, 2007 and November 20, 2007) to review the proposed alternative. The purpose of those discussions was to provide guidance to the Council on implementation issues related to its proposed alternative. Each step would be examined below to address where any timelines may be abbreviated. Nothing under Element 4 would be included in Federal regulations, but is intended to clarify the intent for those elements that would be written into regulation.

The Council may identify a new scenario based on the following discussion, which could replace either or both scenarios listed above in the next draft of this analysis.

Step 1. There are no potential time savings in the year in which an overage occurs.

Step 2. Year delay between the year when an overage occurs and when final data identify the overage

Interagency staff identified that a year in the feedback loop could be eliminated by using halibut harvest tags⁶⁹ (or some other mechanism) as the measure of charter harvest rather than waiting for the subsequent October for the SWHS. Under a harvest tag program, the agencies would assume that the entire allocation was harvested and that no overage occurred. The assumption that the allocation was fully harvested is based on an assumption that secondary markets would develop to maximize their usage. An analogy for such a system is air travel, where more tickets than available seats are sold, assuming that not all passengers would use their tickets. In this analogy, ticket resellers (e.g., Craig's list, E-Bay) optimize the use of all tickets. Some charter sector opposition to this potential program related to the entity that would issue the harvest tags. These operators viewed the proposal more favorable if they controlled distribution of the tags to ensure that all their clients had the necessary tags to complete their booked trips. They were concerned about the ability for all anglers to match a tag to their bookings if dependent on the open market in which to acquire the tags.

Using SWHS (or logbook) data, charter harvests relative to the allocation can be confirmed one year later. Significant overages would not be expected to occur under a harvest tag program. An increase over estimated poundage could occur if the average size of halibut increased markedly during that season, but a conversion factor between fish and pounds would be fixed for the season.

Step 3. Year delay between notification of an overage and final action.

Staff identified a few scenarios in which the Council could shorten the time between being notified of an overage (October) and selecting a preferred alternative. Interagency staff emphasized timeliness *and* accuracy of data (faster is not better, if less accurate) as a critical feature of any management program. As noted above, shortening the time period in which charter halibut data can be finalized for use in management is the main mechanism was identified to shorten the delayed feedback between an overage and implementation of restrictive management measure(s).

Staff agreed that a new type of accounting system could be developed for monitoring commercial halibut IFQs that would be leased to charter halibut LEP holders to use in excess of the charter common pool allocation under the proposed alternative. Many implementation difficulties (e.g., underage accounting) would be eliminated by not allowing unused leased IFQs to the charter sector to revert to the commercial sector, but this was not deemed insurmountable, since the charter season ends 8-12 weeks before season end accounting is required in the commercial IFQ programs. This proposed (and as yet undeveloped) accounting system of leased IFQs should be timely and accurate. It would require distinguishing a charter halibut that was harvested using leased IFQs from those fished against the charter common pool allocation. After the Council selects its preferred alternative, NMFS would develop the necessary record keeping and enforcement requirements to implement the Council's preferred alternative.

Staff noted that an accounting system for tracking harvests under the proposed charter halibut common pool allocation in the interim solution (which could be in place for many years) may not be necessary but could provide an opportunity to develop a pilot program for a new accounting system that would be required for a share-based system. A consensus was not reached on the application of halibut harvest tags (which appears to be a superior approach to others considered) to manage the charter halibut common pool allocation under the interim solution program, but its pros and cons were reviewed briefly. During the October staff and committee meetings, a halibut harvest tag program was identified as addressing

⁶⁹ Preliminary design considerations for a harvest tag program and electronic reporting are provided in [insert URL here]

many of the administrative, record keeping, implementation, and enforcement issues raised by one or another element of the interim and permanent solutions. A key point to the use of halibut harvest tags is whether they are issued through charter LEP holders (which results in them taking on characteristics of a share-based fishery) or directly to the angler (as ADF&G sport licenses are issued).

Depending on whom the tags are issued to and how they are distributed would impact the charter operators and their clients. If a specific percentage of the available transferable tags were issued to the same charter operator for several years they would have a similar value to holding QS. The person holding the tag would have the opportunity to either make the tags available to their clients or lease/sell the tags if it will generate higher profits. Tags issued for only one year would have less value because it would introduce more uncertainty into the business plan, because business operators would not know from year-to-year if they would be allocated tags. If the tags were not transferable, they would have less value overall. The value of the tags would vary by company and would depend on the profit stream the individual charter operator derives from allowing a client to harvest an additional halibut. Charter operators have consistently argued that it is paramount to know what regulations they are operating under in a year. If they are uncertain they will have access to tags when they are booking clients, it increases the difficulty of booking clients for a specific type of trip.

Issuing tags to charter clients would change the dynamics of the programs. The first question that would need to be answered is how would the tags be issued and who could apply for them? Several other issues would also need to be addressed. For example, how many tags could a person apply to receive, would they be charged for the tag, who would issue the tag, what happens to unused tags, could they be sold? If the permits are transferable, the persons holding the tags could use them or sell them. The advent of the ticket exchange sites on the internet would provide an efficient system of buying and selling tags. Because the tags have value, issuing transferrable tags would increase the number of persons applying for them if they can be sold for more than they cost to acquire. If the tags are not transferable it would eliminate the resale market for tags, but would create problems determining how many tags should be issued and what happens to unused tags. Charter operators would want to ensure that enough tags would be issued to allow their allocation to be harvested, knowing that not all of the tags issued would be used. If too few tags are issued, the charter allocation would essentially be reduced.

The price of charter trips would also change depending on if the charter operators or their clients pay to acquire the tags. If the charter operators buy the tags, they will need to pass the higher cost of the trip on to their clients or reduce their revenue. If the charter clients acquire the tags, the trip prices should be determined as they are now, since the charter operators do not currently buy the halibut harvested by clients.

The Council has flexibility in how it chooses to schedule action on regulatory amendments for management of Pacific halibut fisheries. For most proposed actions, the Council elects to schedule a two-meeting cycle for initial and final action for analyses of plan and regulatory amendments. This two-meeting cycle is not required by the Magnuson-Stevens Act, the Secretary of Commerce, or NMFS. In response to a discussion of streamlining the Council's agendas, the Council Chair and Executive Director are currently consulting on the types of proposed actions that the Council may wish to schedule for initial and final action at the same meeting (assuming SSC concurrence that an analysis is ready for final action). Annual revisions to a halibut catch sharing plan, which modifies federal regulations in a step-wise, and previously analyzed procedure may be deemed a candidate for abbreviated review and action. The Council could decide to follow a new policy for actions to amend its Area 2C/3A CSP, as proposed by staff in the following examples.

- The Council could save one meeting cycle by tiering off the previous (final) GHM analysis for each area, foregoing initial review, and proceeding straight to final action (there is no Federal requirement for initial review; this is a Council policy that could be streamlined for annual CSP actions).

- The Council could schedule final action sooner under a poundage charter sector allocation compared with a floating allocation, because Council action would not be dependent on IPHC action to apply a Council CSP allocation split of a combined charter and commercial catch limit.
- Assuming notification by ADF&G Sport Fish Division of an overage in October, the Council could take final action in December (it may have to forego its 4-week advance release of the public review document and prior SSC review (or it could schedule SSC review at the same time as final action and assume that the analysis conforms with analytical methodology previously approved by the SSC⁷⁰)). It could adopt a preferred alternative under a fixed poundage allocation or could adopt a two-prong preferred alternative. A proposed rule would 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. Compressing the rulemaking timeline would allow the Council to respond at least one-year more quickly to over harvests or under harvests of the charter sector. The impacts of increasing or decreasing the charter allocation on Net Benefits are discussed in 2.5.3. Based on that discussion it is not possible to determine if Net Benefits are increased or decreased when more halibut is harvested by charter clients or the commercial sector.
- Since an EA/RIR/IRFA is required for Secretarial action (and, technically, not required for Council action), the Council could take action on only a supplemental analysis (to its previous year's EA/RIR/IRFA) similar to the supplemental analysis (2-3 pages provided to the Council in October 2007 on its previously released EA/RIR/IRFA for Area 2C GHJL measures [http://www.fakr.noaa.gov/npfmc/current_issues/halibut_issues/Area2CGHL_Sup1007.pdf]). A complete, revised EA/RIR/IRFA would be prepared by Council staff immediately after final action and submitted to the Secretary (timing of proposed rulemaking would occur depending on whether allocation was in pounds or percent (and, therefore, dependent on IPHC action)).

Step 4. There are no potential time savings in the NMFS regulatory timeline (6-9 months minimum). Some streamlining during regional review would occur as these analyses become annual updates of previously reviewed documents, as compared with wholly new analyses. No resolution to a bottleneck is foreseen, in which CSP analyses compete with other higher priority analyses for regional economic review. Depending on the initial allocation and amount of IFQ leasing that occurs in each of the regulatory areas, two CSP analyses could be submitted each year, or they could be combined into a single analysis and rulemaking. The overall costs associated with developing two CSP analyses and the associated rulemaking or a combined analysis is not known. However, developing a single analysis would likely be more cost efficient for NOAA, since it would reduce duplication of information that would be required in both analyses and it would ensure all the information is developed on the same timeline which may be advantageous to efficiently drafting the proposed and final rules.

2.5.7 Element 5 – Supplemental Individual use of GAF

Element 5 would allow limited entry permit (LEP) holders to lease commercial IFQ from individual commercial IFQ holders to provide guided anglers with additional harvesting opportunities in excess of the annual charter allocation. The LEP holder would ask NMFS to convert the leased IFQ into Guided

⁷⁰ It should be noted that ADF&G is currently studying the differences in harvest that results from using SWHS and logbooks. The study of 2006 logbook data indicated that the number of halibut harvested by charter clients was 23 percent higher in Area 2C and 30 percent higher in Area 3A when compared to the SWHS (ADF&G, 2008). The October timeline is based on when the previous year's SWHS data would be available. Using a consistent data source (SWHS) helps minimize the likelihood of errors in harvest estimates over time. However, because the SWHS is an estimate of the total harvest it may overestimate or underestimate actual harvest. If harvest is overestimated it will result more restrictive charter management measures than were needed. If harvests are underestimated the charter clients will be allowed to harvest more than their allocation. Over time, if the survey/data is not biased, some years the estimates would be too high and other years too low, and they would be closer to the average harvest over time.

Angler Fish (GAF). The LEP holder could then use the GAF to provide guided anglers with additional harvesting opportunities, with the provision that the individual guided angler’s harvesting opportunities never exceed the daily bag and size limits in place for unguided anglers. In a simple example, a LEP holder could lease 100 pounds of commercial IFQ. NMFS would then convert the IFQ into GAF using a predetermined average weight. If guided 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 LEP holder can use one GAF to allow one guided angler to harvest two fish of any size. That is, the GAF is used to allow a guided angler to harvest an additional fish. The GAF used by the guided angler is deducted from the LEP holder’s account of unused GAF. A deeper discussion about how the GAF creation and transfer system would work is included in Section 3.4.

The analysis notes that the Council is not bound to select each of the provision noted under Element 5. For example, if the Council does not act or selection Provision E then there is no reversion provision for unused GAF to be reconverted back to IFQ NMFS and RAM Program staff have indicated that they will interpret the IFQ-to-GAF leases as temporary, one-way transfers that will expire at the end of the calendar year.

The following sections discuss each provision under Element 5.

2.5.7.1 Provision A – Leasing Commercial IFQ to Guided Anger Fish

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

1. *A 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 1,500 pounds or 10 percent (whichever is greater) of their annual IFQ to LEP holders (including themselves) for use as GAF on LEPs⁷¹. A CQE may lease up to 100 percent of its annual IFQ for use as GAF on their own LEPs.*
3. *LEP holder per vessel may not lease more than 200-400 fish.*
Suboption: vessels with LEP w/endorsement for more than 6 clients may not lease more than 400-600 fish.

Provision A-1 would establish the ability of LEP holders to lease IFQ for conversion to GAF. ADFG estimated that there were a total of 369 qualifying entities in Area 2C and 466 qualifying entities in Area 3A, using 2004 and 2005 as qualifying years under the proposed charter halibut limited entry program (NPFMC 2007c). These entities operated 702 vessels and 624 vessels, respectively, during the qualifying years (Table A- 63). In addition, these entities operated an additional 36 vessels and 29 vessels, respectively, in 2006 (after the qualifying years).

Table A- 63LEP qualifying entities and vessels

Area	LEP Qualifying Entities	Vessels Operated in Qualifying Years
2A	369	702
3C	466	624

Source: Alaska Department of Fish and Game, 2008

Provision A-2 would set a cap on the amount of commercial halibut QS that may be leased as GAF from each QS holder. The proposed levels selected for analysis allow QS holders to lease 1,500 lb or 10 percent of holdings, whichever is greater. 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 percent of their holdings. The provision does not specify restrictions based on vessel class or block shares, so all QS are included in this analysis.

⁷¹ Staff interprets Council intent that these limits are for Area 2 C and Area 3A, separately and ***not*** for total halibut IFQ holdings across areas 2C, Areas 3A and B, and Areas 4A through E.

Table A- 64 shows the estimated amount of GAF that would be available based on 2006, 2007, and 2008 QS-to-IFQ conversion ratios and 2005 average weights. The most important insight from the table is that the amount of the GAF that is available will change depending on QS-to-IFQ conversion ratios (which are dependent on biomass and the IPHC decision-making process) and average weights. Higher average weights and higher QS-to-IFQ conversion ratios will lead to lower availability of GAF while lower average weights and lower QS-to-IFQ conversion ratios will lead to higher availability of GAF from a given pool of QS holders.

Table A- 64IFQ and GAF available for leasing under Provision A-2 (2006 conditions)

Area	IFQ Available for Lease (lb)	Approximate GAF Equivalent	Number of Holders Allowed to Lease More than 1,500 lb	Number of Holders Allowed to Lease 1,500 lb or Less
2006 Data				
2C	1,832,000	96,000	218	1,141
3A	3,306,000	186,000	465	1,328
2007 Data				
2C	1,491,000	78,000	96	1,263
3A	3,144,000	177,000	426	1,139
2008 Data				
2C	1,467,000	77,000	110	1249
3A	3,138,000	176,000	436	1,088

Source: NEI Estimates from <http://www.fakr.noaa.gov/ram/06ifqunitf.CSV>, 2007.

The amount and the price of the IFQ that commercial IFQ holders would make available for leasing to the charter sector are unknown. A possible indicator for lease prices may come from the market for leasing halibut IFQ for Class A vessels. In 2005, these leases averaged \$1.43 per pound of IFQ (RAM 2007⁷²). However, leasing between QS holders is relatively restricted within the halibut IFQ program and leasing represents a very small portion of the overall halibut QS market.⁷³ Thus, it's not clear that Class A lease prices represent a good indicator of potential lease prices, as most QS holders do not participate in, or have access to, that market. The eventual lease price would depend on factors such as the current ex-vessel price of halibut, the willingness of commercial QS holders to lease IFQ to charter LEP holders, the willingness of charter customers to accept price increases to pay for leased fish, and the willingness of charter LEP holders to lease IFQ from commercial QS holders.

Provision A-2 would allow a Community Quota Entity (CQE) to lease 100 percent of the IFQ generated from its QS. At its April 2008 meeting the Council clarified that its intent with this provision is to provide maximum flexibility to CQEs to support either commercial or charter business development depending on that community's individual needs. To date, only one (CQE) holds halibut QS, but the CQE holds Area 3B QS and is therefore not part of this action. Note, however, that other CQEs may purchase Area 2C and 3A halibut QS and would be subject to the same commercial use caps as any other QS holder. Associated IFQs would be leased to eligible fisherman that are residents of the community represented by the CQE. Under the proposed charter halibut LEP program, eligible CQEs may be issued permits upon or after implementation for use in the community represented by the CQE (i.e., the charter trip must originate or terminate in the CQE community). Under Provision A-2, a CQE may lease up to 100 percent of its annual IFQ for use as GAF on their own LEPs, which would then be subject to the aforementioned limitation.

A basic question arising from Provision A-2 is:

⁷² http://www.fakr.noaa.gov/ram/halibuttransfer95_06.pdf
⁷³ In 2006, 0.7% of the 3A QS was leased and 1.2% of 2C QS was leased.

Would Provision A-2 allow enough QS to become available to meet the projected demand for GAF if charter halibut demand rises to the maximum amount projected by the demand projections model and the charter sector faces a highly restrictive management measure (i.e., the one-fish bag limit)?

For Area 2C, the analysis concludes if long-term growth continued, Provision A-2 would eventually constrain charter sector growth in Area 2C, through a lack of QS to convert to GAF. The analysis compared the maximum estimated 2011 demand (i.e., the 95 percent upper confidence interval) for charter halibut, with the estimated allocation to the charter sector in 2011. In Area 2C the analysis' estimated 95 percent upper confidence interval on charter halibut demand in 2011, is 2.32 Mlb.⁷⁴ Estimates for the allocations under consideration in 2011, range from 830,000 lb to 1.9 Mlb; leaving a shortfall to be covered by GAF of between 420,000 lb and 1.49 Mlb. This shortfall is equal to between 21,000 GAF and 76,000 GAF. So, the analysis expects that the charter sector could demand between 21,000 and 76,000 GAF by 2011, depending on the allocation scenario. The estimated maximum amount of GAF available is between 50,000 and 100,000, depending on the QS-to-IFQ conversion ratio and average harvest weights exhibited between 1995 and 2006.⁷⁵ Thus, under some allocation scenarios (e.g., 1a, 1c, and 1d and potentially 1b and 3a) the sector's demand for GAF would be equal to, or greater than, the maximum amount of GAF available. If demand growth continued at a high rate past 2011, then the Area 2C charter sector could demand more GAF than the commercial sector would be allowed to lease.⁷⁶ This discussion ignores the price/cost effect of purchasing GAF. For example, as GAF demand increases, prices will rise, driving up cost of charter trips, potentially reducing demand and the need for GAF. It is unclear how sensitive anglers will be to paying for GAF. Additionally, it is unlikely that LEP holders will be able to lease every eligible IFQ from QS holders as some holders will prefer to fish their IFQ than lease it. The analysis is unable to quantify how much of the potential maximum available GAF will actually be functionally available through business-to-business contracts.

Table A- 65 Estimated maximum 2011 demand for GAF in area 2c by allocation scenario

Category	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
Estimated 2011 Allocation (Mlb)	<i>0.92</i>	<i>1.22</i>	<i>0.83</i>	<i>1.07</i>	<i>1.43</i>	<i>1.69</i>	<i>1.90</i>	<i>1.18</i>	<i>1.41</i>	<i>1.36</i>
Demand-Allocation Differential (Mlb)	1.40	1.10	1.49	1.25	0.89	0.63	0.42	1.14	0.91	0.96
GAF Required (2006 Average Weight)	70,000	55,000	75,000	63,000	45,000	32,000	21,000	57,000	46,000	48,000
GAF Required (2002-2006 Average Weight)	71,000	56,000	76,000	63,000	45,000	32,000	21,000	58,000	46,000	49,000

Source: NEI Estimates, 2008.

In Area 3A, the estimated maximum demand for GAF in 2011, is likely to be a relatively modest portion of the potential pool of leasable GAF. The analysis estimates that the 95 percent upper confidence interval for demand is 4.20 Mlb. The IPHC has estimated that five scenarios (i.e., 1c, 2a, 2b, 2c, and 3a) under consideration would provide less than 4.20 Mlb to the charter sector in 2011. The estimated demand for GAF ranges for those scenarios from 2,000 to 30,000, while the estimated maximum amount of GAF available ranges from 150,000 to 190,000 GAF, based on average weights between 1995 and 2006. Thus, similar to the results in 2007(c), the analysis concludes that the leasing limits for commercial QS holders could provide enough GAF to accommodate growth in Area 3A for the reasonably foreseeable future, as long as charter LEP holders and commercial QS holders can reach a mutually agreeable leasing arrangement.

⁷⁴ This number is an estimate of what demand might be under current trends and assuming no restrictions except the current ban on skipper and crew harvest.

⁷⁵ In 1998, average harvest weight rose to 29.1 lb, which would drop the maximum number of GAF available to 63,000.

⁷⁶ GAF availability may potentially be constrained before the maximum leasing allowance is reached, given that charter operators may not be able to convince commercial QS holders to lease 100 percent of the available QS.

Table A- 66 Estimated maximum 2011 demand for gaf in area 3a by allocation scenario

Category	Percentage Based Allocations				Fixed Pound Allocation			Mixed Allocation		
	1a	1b	1c	1d	2a	2b	2c	3a	3b	3c
Estimated 2011 Allocation (Mlb)	4.32	5.71	3.86	4.98	3.65	4.01	4.15	3.99	4.63	4.01
Demand-Allocation Differential (Mlb)	-0.12	-1.51	0.34	-0.78	0.55	0.19	0.05	0.21	-0.43	0.19
GAF Required (2006 Average Weight)	0	0	19,000	0	30,000	10,000	3,000	11,000	0	0
GAF Required (2002-2006 Average Weight)	0	0	18,000	0	29,000	10,000	2,000	11,000	0	0

Source: NEI Estimates, 2008.

Provision A-3 creates GAF leasing limits for LEP holders. Vessels could lease 200-GAF or 400-GAF. The provision contains a sub-option that would allow vessels with an endorsement for more than six passengers to lease 400-GAF or 600-GAF. Table A- 67 and Table A- 68 classify vessels owned by potential LEP holders by passenger endorsement and 2006 harvest levels (NPFMC 2007c). These tables show that:

- Vessels with endorsements for more than six passengers are more common in Area 3A than they are in Area 2C. These vessels represented 3.8 percent of the qualifying fleet in Area 2C and 21.1 percent of the qualifying fleet in Area 3A.
- Vessel harvesting fewer than 400 fish per year represented 68 percent of the fleet in Area 2C and 52.6 percent of the fleet in Area 3A. These harvest levels are more common in vessels that are endorsed for fewer passengers (i.e., 91.7 percent and 74.4 percent of the six-or-fewer passenger fleet in Area 2C and Area 3A, respectively.)

Table A- 67 Distribution of vessels by area and endorsement level (number)

2006 Halibut Harvest	Area 2C		Area 3A	
	Passenger Endorsement of 6 or Fewer	Passenger Endorsement More than 6	Passenger Endorsement of 6 or Fewer	Passenger Endorsement More than 6
No Data	4	0	2	0
No Harvest in 2006	177	4	143	14
Less than 200	284	13	150	19
200 to 399	154	6	71	15
400 to 599	53	3	47	14
600 to 799	3	0	36	16
800 to 999	0	0	21	10
1,000 to 1,199	0	1	10	8
1,200 to 1,399	0	0	10	9
1,400 to 1,599	0	0	2	4
1,600 to 1,799	0	0	0	7
1,800 to 1,999	0	0	0	6
2,000 to 5,000	0	0	0	7
5,000 to 10,000	0	0	0	3
Grand Total	675	27	492	132

Table A- 68 Distribution of vessels by area and endorsement level (percentage)

2006 Halibut Harvest	Area 2C		Area 3A	
	Passenger Endorsement of 6 or Fewer (%)	Passenger Endorsement More than 6 (%)	Passenger Endorsement of 6 or Fewer (%)	Passenger Endorsement More than 6 (%)
No Data	0.6	0.0	0.4	0.0
No Harvest in 2006	26.2	14.8	29.1	10.6
Less than 200	42.1	48.1	30.5	14.4
200 to 399	22.8	22.2	14.4	11.4
400 to 599	7.9	11.1	9.6	10.6
600 to 799	0.4	0.0	7.3	12.1
800 to 999	0.0	0.0	4.3	7.6
1,000 to 1,199	0.0	3.7	2.0	6.1
1,200 to 1,399	0.0	0.0	2.0	6.8
1,400 to 1,599	0.0	0.0	0.4	3.0
1,600 to 1,799	0.0	0.0	0.0	5.3
1,800 to 1,999	0.0	0.0	0.0	4.5
2,000 to 5,000	0.0	0.0	0.0	5.3
5,000 to 10,000	0.0	0.0	0.0	2.3
Average 2006 Harvest (No. Halibut)	138	197	257	882
Average GAF Needed to Cover 2 nd Fish Limitations	54	78	121	415

- Vessels with passenger endorsements for more than six passengers harvest approximately 42 percent more fish on average in Area 2C, and 243 percent more on average than smaller vessels in Area 3A. Vessels harvesting more than 1,000 fish per year occur primarily in Area 3A. No vessel with an endorsement of six passengers or fewer harvests more than 1,600 halibut per year.
- GAF would be used to provide charter anglers with harvest opportunities equivalent to those for non-charter anglers. Many of the management options considered in Element 3 affect the second fish in an angler’s daily bag limit through size restrictions or outright harvest bans. Thus, an LEP holder’s demand for GAF in part would be driven by the success their customers have at harvesting a second fish. On average, second fish were 39.7 percent of overall harvest in Area 2C and 47.1 percent of overall harvest in Area 3A in 2006. So, in order to ensure the same level of customer success in 2007, that a customer had in 2006, Area 2C LEP holders (on average) would have need to lease GAF equal to 39.7 percent of their 2006 harvest, in order to free their clients from length limitations. On average, this would have meant leasing between 54 and 78 GAF depending on the client endorsement level. In Area 3A, smaller vessels would need on average 121 GAF to mitigate second fish management measures, while larger endorsement vessels would need 415 GAF on average. Thus, the larger GAF-leasing levels (400-GAF or 600-GAF) would work better for larger vessels in Area 3A.

Based on 2006 data, the 200-GAF leasing allowance would provide harvest opportunities equivalent to 2006 conditions to vessels harvesting 500 halibut or fewer in Area 2C, or 425 halibut or fewer in Area 3A. The 400-GAF leasing allowance per vessel would allow vessels that had harvested 1,000 halibut or fewer (Area 2C), or 850 halibut or fewer (Area 3A) to offer historic harvest opportunities. The 600-GAF level, which is only being considered for vessels with passenger endorsements higher than six anglers, would allow vessels that had harvested 1,500 halibut or fewer (Area 2C) or 1,275 halibut or fewer (Area 3A) to offer historic harvest opportunities (see Table A- 69).

The data show that different leasing allowances would be needed in Areas 2C and 3A to maintain the same level of access to historic harvest opportunities. In Area 2C, only one vessel harvested more than 1,000 fish in 2006, and this vessel harvested 1,028 halibut. Thus, the 400-GAF leasing limit would provide a near-universal guarantee of historical (2006) harvesting opportunities in Area 2C, with the exception of this one vessel. However, in Area 3A, there are vessels in both endorsement levels that would be unable to provide their historical harvest opportunities at the either 400-GAF or 600-GAF leasing limits. Approximately 7.5 percent of the fleet in the smaller endorsement level and 38.6 percent of the fleet in the larger endorsement level would be unable to provide their historical opportunities at the 400-GAF limit (Table A- 70). At the 600-GAF limit, 26.5 percent of the vessels in the larger endorsement class would be unable to offer their historic opportunities. While Area 3A does not exhibit the same GHL overage as found in Area 2C, and there are currently no differences in the harvest regulations for guided and unguided anglers, the Council may wish to consider higher GAF-leasing limits in Area 3A to provide equivalent preservation of historic fishing opportunities.

Table A- 69 Harvest levels under which proposed GAF leasing amounts would no longer be adequate to cover historical usage

Leasing Allowance	Equivalent 2006 Harvest Level			
	Area 2C		Area 3A	
	Passenger Endorsement of 6 or Fewer	Passenger Endorsement More than 6	Passenger Endorsement of 6 or Fewer	Passenger Endorsement More than 6
200-GAF	500	500	425	425
400-GAF	1000	1000	850	850
600-GAF	N/A	1500	N/A	1275

Table A- 70 Portion of fleet likely to be unable to provide historical opportunities/experience

Leasing Allowance	Equivalent 2006 Harvest Level			
	Area 2C		Area 3A	
	Passenger Endorsement of 6 or Fewer (%)	Passenger Endorsement More than 6 (%)	Passenger Endorsement of 6 or Fewer (%)	Passenger Endorsement More than 6 (%)
200-GAF	3.4	11.1	20.7	44.2
400-GAF	0.0	3.7	7.5	38.6
600-GAF	N/A	0.0	N/A	26.5

2.5.7.2 Provision B – Landing and Use Restrictions

LEP holders harvesting GAF while participating in the guided sport 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 LEP holders would be exempted under Provision B. These provisions are generally described in <http://www.fakr.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 LEP holders in place of the commercial landing and use provisions listed above.

2.5.7.3 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 halibut landed in each region's charter halibut fishery (2C or 3A) during the previous year as determined by ADFG. The long-term plan may require further conversion to some other form (e.g., angler days).

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 ADFG. The long-term plan may require further conversion based on some other criteria (e.g., angler days).

Provision C would govern how NFMS RAM Program would convert IFQ to GAF. For example, if the average weight of a halibut in Area 3A in 2006 was 20.0 lb then a LEP holder would have to lease 20.0 lb of IFQ for each GAF they wanted to harvest in the 2007 season. The same average weight should be used to convert unused GAF back to IFQ at the end of the season. For a full description of this conversion see Section 3.4.

Currently ADF&G does not obtain a final estimate of the average weight for the previous year until final harvest estimates are provided from the Statewide Harvest Survey (SWHS) in September. Therefore, the final estimates of average weight from the previous year are not available for IFQ conversion until the end of the season. For example, the final estimate of average weight for 2007 would not be available until September 2008. Alternately, NMFS could make the conversion using the preliminary estimate of average weight for the previous year. Preliminary estimates are based on average weights for each SWHS area, weighted by harvest projections for each area, whereas the final estimates are weighted by final harvest estimates for each area. Occasionally other errors in the weight data are corrected between the preliminary and final stage. 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 there is a change in the average weight from year to year, it would become apparent 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 would likely cancel out only for charter LEP 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 is 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.

Perhaps a more important consideration is whether the average weight of the sport charter harvest (common pool) 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 2007 regulations for Area 2C, the GAF could have been used to exempt harvests from the 32 inch maximum size limit on the second fish in an angler's daily bag limit. In cases where the angler and the LEP 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 common pool fish. For example, if the charter fishery is restricted by a one-fish bag 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.

Given the uncertainty regarding differences in the size of GAF and common pool fish, it would be prudent to obtain size data from both groups of fish, especially in the early years of the program.

2.5.7.4 Provision D – Subleasing of Guided Anger Fish

Subleasing of GAF would be prohibited.

Provision D is designed to limit the incentives for LEP 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 can be reasonably expected to be used. One drawback of this provision is that it could prevent a LEP holder from leasing to another LEP holder, if the first lease holder was unable to fish the GAF (e.g., unavoidable circumstances, including long term illness, injury, boat loss). However, LEP holders may be quick to recognize this limitation and adapt their lease agreements to include a reversion clause, in the case that the LEP holder is unable to fish the GAF. Such reversion clauses would be a private contractual decision between the parties.

2.5.7.5 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.

The first component would allow dual-holders of both IQS 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.

The second component would allow 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 LEP 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 LEP holder has used only 150 GAF. The unused 50 GAF **automatically** reverts back to IFQ in the account of the QS holder (who is not necessarily the leasor).

Under Component (2), the Council's motion establishes two non-mutually exclusive options for reverting 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 Program staff. These options address RAM Program Staff 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 3.4. 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. 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.

If the Council does not act or selection Provision E then there is no reversion provision and the lease agreements will become a temporary, one-way transfer that will expire at the end of the calendar year.

2.5.7.6 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 LEP holders to use GAF to provide guided 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 guided angler's daily bag by NMFS in June 2007, guided and unguided anglers were subject to the same set of harvest regulations in both IPHC areas. This provision would allow charter LEP holders who use GAFs to return to parity in daily bag limits in Area 2C. GAF would not be expected to be used in Area 3A, until such time that the regulations are more restrictive on guided anglers than on non-guided anglers.⁷⁷

2.5.7.6.1 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 operators landing GAF on private property (e.g., lodges) and motherships would be required to 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. 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

⁷⁷ The allocations under consideration are not a hard-cap within any specific season so GAF would not come into play if the charter sector "exhausted" the common pool in any given season and other restrictive management measures were not already in place.

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.

2.5.7.7 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 LEP and commercial IFQ from fishing for commercial and charter halibut 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. Approximately 2 percent of halibut IFQ holders would likely qualify for an LEP and approximately 8 percent to 10 percent of preliminary LEP qualifiers held commercial QS in 2006.

3 INITIAL REGULATORY FLEXIBILITY ANALYSIS

To ensure a broad consideration of impacts and alternatives, this draft IRFA has been prepared pursuant to 5 USC 603, without first making the threshold determination of whether or not the proposed actions would have a significant adverse economic impact on a substantial number of small entities. In determining the scope, or 'universe', of the entities to be considered in an IRFA, NMFS generally includes only those entities, both large and small, 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, or portion thereof, of the directly regulated group(s) (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis.

The RFA, first enacted in 1980, was designed to place the burden on the government to review all proposed 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 non-profit 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 (negative) 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.

The Council considered implementing an allocation of a combined commercial and charter catch limit. In addition to the allocation the Council also considered allowing licensed members of the charter sector to lease IFQ from the commercial fleet. The Regulatory Flexibility Act (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, guided 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 would be the halibut charter businesses and the commercial QS holders in IPHC Areas 2C and 3A.

Until the Council makes a final decision, a definitive assessment of the proposed management alternative(s) cannot be conducted. In order to allow the agency to make a certification decision, or to satisfy the requirements of an Initial Regulatory Flexibility Analysis (IRFA) of the preferred alternative, this section addresses the requirements for an IRFA, which is specified to contain the following:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that would be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
 - 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.

3.1 A description of the reasons this action is being considered

The Pacific halibut resource is fully utilized by commercial and sport fishermen in IPHC Areas 2C and 3A (see Section 0 of this amendment for a more complete discussion of the reasons this action is being considered). The Council has adopted a GHL for guided sport fishermen and a charter LEP on new businesses entering the halibut charter business. However, those actions have not resolved allocation issues between the guided sport 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 commercial and charter allocations from a combined commercial and charter catch limit.

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. These concerns have created tension within communities that are dependent on the halibut resource. It is hoped that stabilizing the relative harvests of the two sectors would ease those tensions.

The allocation alternatives, based on historic charter harvests, would define the amount of halibut allocated to a common pool that would be accessible to all charter LEP 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, the charter LEP holders could purchase GAF for their clients to use to harvest halibut under the same rules that govern the unguided halibut angler, exempting them from the guided angler regulations.

3.2 Objective statement of proposed action and its legal basis

The objective of the proposed action is to design a program that resolves conflicts between the commercial and guided sport sectors of the halibut fishery in IPHC Areas 2C and 3A (see Section 0 for a list of the Council's management objectives for this action). During the early 1990s, the guided sport fleet experienced substantial growth. Projections made in the mid-1990s, indicated that, if left unchecked, the charter fleet could grow to a level equal to or greater than the commercial fleet in Areas 2C and 3A by year 2008. Those growth rates have not been realized, but there has been a growth trend in charter harvests over the past 12 years.

The Council stated the objective of this amendment is to establish a catch sharing plan for the commercial and charter sectors. The charter sector's allocation would be managed to ensure that, on average, they stay within the allocation. 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 would be done to ensure that they are given advance notice and predictability with respect to management tools and season length. To achieve these goals, management measures would be adjusted during the soonest year after the overage as possible. The Council also stated their intent to review whether the charter sector is staying within its allocation, and that they would tend to err on the side of more restrictive management measures. The halibut IFQ program constrains commercial harvests. The IFQ program could be modified to allow the charter sector to lease commercial IFQ. Leasing IFQ would allow the charter sector grow over the long term, but only when they compensate the commercial sector for the additional halibut.

The Halibut Act, along with the Magnuson-Stevens 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.

3.3 A description 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.

Small businesses. Section 601(3) of the RFA defines a ‘small business’ as having the same meaning as ‘small business concern’ which is defined under Section 3 of the Small Business Act. ‘Small business’ or ‘small business concern’ includes any firm that is independently owned and operated and not dominate in its field of operation. The SBA has further defined a “small business concern” as one “organized for profit, with a place of business located in the 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 \$6.5 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 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.

3.3.1 Charter Fishery

Halibut charter businesses regulated under this action are almost all expected to be small entities, based upon SBA criteria that their annual gross revenue does not exceed \$6.5 million. 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, 2006 ADF&G data show that there were 696 vessels operating as charters. Because revenue figures from individual charter “operators” are not available, the analysis attempts to provide an estimate. Key informant interviews indicate single trip prices average between \$150 and \$350 per day depending on the length of the trip. Hence, a single vessel could generate \$180,000 in a single season, if it operated one trip per day, at full capacity. Two trips per day for every day of the season would generate \$360,000 in gross revenue. ADF&G data indicate that the average vessel took just under 35 trips in 2006, with an average client load of 3.86 passengers. Thus, the average vessel likely generated approximately \$34,000 in gross revenue. While it is not uncommon in this sector for a single entity to own and operate multiple charter vessels, the analysis concludes that all operators are likely to be small businesses, based upon the \$6.5 million SBA threshold for RFA. The largest companies involved in the fishery are 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 \$6.5 million per year, but it is also possible that all of the entities involved in charter halibut harvest grossed less than that amount. This analysis is unable to verify these estimates.

In Area 3A, ADF&G data showed that there were 625 vessels recording charter trips for halibut in 2006 for which, exact 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. The charter season lasts for a approximately of 120 days between early May and mid-September and vessels are generally carry up to six paying passengers per trip. Key informant interviews indicate single trip prices average between \$150 and \$350 per day. Hence, a single vessel operator could generate \$180,000 in a single season if he took one trip per day at maximum capacity. Two trips per day (or carrying 12 passengers for one trip per day) at maximum capacity and sailing everyday of the season would generate \$360,000 in revenue. ADF&G data indicate that the average vessel took just under 37.5 trips in 2006 with an average client load of 5.9 passengers. Thus, the average vessel likely generated approximately \$55,000 in revenue. More than 118 vessels operating at maximum capacity would be needed to generate more than \$6.5 million in revenue. 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.

The four owners with the largest catch histories harvested over 4,000 halibut, on average, in Area 2C and just under 3,800 halibut in Area 3A during 1999 (NPFMC 2005). At an estimated 20 pounds per fish, this equates to 80,000 pounds of halibut for those four Area 2C owners on average, and 76,000 pounds for the four Area 3A vessel owners on average. The largest of these companies, which are lodges, as stated earlier, may not be considered a small entity under SBA standards, but that cannot be confirmed. All of the other 800-plus charter operations would likely be considered small entities, based upon SBA criteria, since they would be expected to have gross revenues of less than \$6.5 million on an annual basis.

3.3.2 Commercial fishery

Businesses operating in the commercial halibut and fixed gear sablefish fisheries would be directly regulated by this action. By the Council requesting the IPHC to implement a combined commercial and charter catch limit it creates a single pool of fish from which the two sectors 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. Finally, all halibut and sablefish QS holders in Alaska would be directly regulated because they would be required to pay the cost recovery fee⁷⁸ to help pay for the costs of the management of the IFQ program.

All QS halibut QS holders are likely to be small businesses, for the purpose of this analysis. At the end of 2007 there were 3,076 “persons” that held Alaska halibut QS (RAM, 2008). Just over 71 percent of the persons that held QS were defined as Alaska residents. Almost all of the QS holders would be considered small entities for the purpose of this analysis.

The IFQ program limits the amount of annual IFQ that a vessel may be used to harvest, and the maximum number of QS units a person may use. A vessel may be used to land up to 1 percent of all halibut IFQ issued in Area 2C. In Area 3A the cap is 0.5 percent of the IFQ issued. NMFS annually publishes the number of QS units that a person may use. NMFS annually publishes “standard prices” for halibut that are estimates of the ex-vessel prices received fishermen for their harvests. NMFS uses these prices for calculating permit holder cost recovery fee. In 2006, the average price per pound in Area 2C and 3A was \$3.72 lb and \$3.70 lb, respectively (RAM data). The prices ranged from \$3.42 lb in February, to \$4.18 lb in September, October, and November (headed and gutted weight) (50 FR 78383). These harvest limits and prices imply maximum ex-vessel revenues of about \$952,000, for the 2006 halibut fishery in a vessel that owned the maximum amount of QS units, divided in a revenue-maximizing way, between Area 2C and 3A. Average vessel revenue, if all of the halibut had been sold at the 2006 maximum average price, would have been roughly \$64,000 per vessel in Area 2C, and \$150,000 in Area 3A. Ex-vessel prices in 2007 are expected to be over \$4.10 lb in Area 3A and over \$4.30 lb in Area 2C, based on data reported in Federal Register Vol. 72, No. 238 Wednesday, December 12, 2007. The higher ex-vessel prices are offset by reductions in pounds of halibut available to harvest in Area 2C. Total halibut catch was reduced from 10.34 Milb to 8.30 Milb from 2006 to 2007. This represents a decline to about 80 percent of 2006 harvest levels. Ex-vessel prices would have needed to increase by about 25 percent from 2006 to 2007 to offset the decline in harvest. Given the actual increase in ex-vessel price and decrease in harvest, the overall gross revenue per vessel is not expected to change dramatically. Because of the moderate change in revenue that is expected, almost all of the businesses are defined as small entities.

A total of 851 persons held sablefish QS according to a July listing of QS holders on the NMFS website (RAM data). Each of those persons that also hold an IFQ permit and had sablefish landings would be required to pay the cost recovery fee, a portion of that fee would be collected to pay management and enforcement costs associated with this program. According to the 2007 annual cost recovery fee report (<http://www.fakr.noaa.gov/ram/ifqfees2006summary.pdf>), a total of 91 persons had only sablefish landings (no halibut landings). These persons would realize an increase in their cost recovery fee as a result of this program and would not benefit from stabilized halibut harvests or higher exvessel halibut prices. They do benefit from the overall IFQ program and it is not known what percentages of the management and enforcement costs are generated by the sablefish fishery.

The structure of the cost recovery fee program does not differentiate the costs associated with halibut IFQ and Sablefish IFQ management and enforcement. Even though sablefish IFQ permit holders do not directly benefit from this amendment, they do benefit from the overall IFQ program. It is assumed that

⁷⁸ In 1996, the Magnuson-Stevens Act was amended to require the SOC to collect a fee to recover the actual costs directly related to the management and enforcement of an IFQ program. In 2007, the halibut IFQ holders were assessed a fee of 1.2 percent of the ex-vessel value of halibut and IFQ sablefish they harvested as the cost recovery fee.

the benefits the sablefish IFQ permit holders generate from the IFQ program more than offset the cost recovery even when it reaches the 3 percent maximum.

It is assumed that all of the sablefish IFQ holders would be considered small entities. In 2007, the average exvessel price of sablefish ranged from \$2.53 to \$2.95 per pound, depending on the month of landing (FR Notice, December 12, 2007. p 70570). The use cap and vessel caps are set at 1 percent of the QS pool. If the total amount of sablefish available was 30 MIb in a year a person would be capped at approximately 300,000 lbs. Therefore, persons are projected to generate less than \$1 million per year from sablefish in exvessel revenue.

While some of the operations considered here participate in other revenue generating activities (e.g., other fisheries), the halibut fisheries likely represent the largest single source of annual gross receipts for many of these operations. Based upon available data, and more general information concerning the probable economic activity of vessels in this IFQ fishery, no vessel subject to these restrictions could have been used to land more than \$4.0 million in combined gross receipts in 2006. Therefore, all halibut vessels have been assumed to be “small entities,” for purposes of the IRFAs. This simplifying assumption likely overestimates the true number of small entities, since it does not take account of vessel affiliations, owing to an absence of reliable data on the existence and nature of these relationships.

3.4 Recordkeeping requirements

Recordkeeping and reporting requirements are still being developed and would be discussed in a later draft. However, it is anticipated that the common pool allocation could be managed using a logbook type reporting requirement. Data to estimate annual removals do not necessarily need to be collected and entered in the management database daily. The GAF allocation would need to be managed in real time using an IFQ style electronic reporting system. As close to real time data as possible are needed to allow managers to know at a given time how many GAF a person holds and how many they have used. The costs to the charter LEP holders are not expected to increase dramatically under the common pool structure. The GAF may increase costs, but the program is voluntary and charter LEP holders can weigh their own costs and benefits of participating in the program.

3.5 Identification of relevant federal rules that may duplicate, overlap or conflict with the proposed actions

The Council and NMFS would need to eliminate the GHF if the common pool allocation is implemented. The GAF program would require NMFS to amend the IFQ program to allow commercial IFQ holders in IPHC Areas 2C and 3A to lease halibut IFQ to charter LEP holders.

3.6 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

[To be completed after the Council selects their preferred alternative]

4 REFERENCES

- Bass, Ronald E., Albert I. Herson, and Kenneth M. Bogdan. 2001. *The NEPA Book. A Step-by-step guide on how to comply with the National Environmental Policy Act.* Solano Press. Books. Point Arena, California.
- Clark, W.G. and S. R. Hare. 2006. *Assessment of the Pacific Halibut Stock at the End of 2006.* International Pacific Halibut Commission. Seattle, WA. 32pp.
- Clark, W.G. and S. R. Hare. 2008. *Summary of the 2007 Pacific Halibut stock assessment.* International Pacific Halibut Commission. Seattle, WA. 14pp.
- Criddle, K. R, M. Herrmann, S. T. Lee, and C. Hamel. 2003. *Participation Decisions, Angler Welfare, and the Regional Economic Impact of Sportfishing.* *Marine Resource Economics, Volume 18.* pp.291-312
- Criddle, K. R. 2004. *Economic Principles of Sustainable Multi-use Fisheries Management, with a Case History Economic Model for Pacific Halibut.* Pages 143-171 in DD MacMonald and EE Knudson (editors), *sustainable Management of North American Fisheries,* American Fisheries Society. Bethesda, MD.
- Criddle, K. R. 2004. *Property Rights and the Management of Multiple Use Fisheries.* Pages 85-110 in D.R. Leal (editor), *Evolving Property Rights in Marine Fisheries.* Rowman and Littlefield Publishers, Lanham, MD.
- Criddle, K. R. 2006. *Optimal Management of Multiple Use Fisheries.* Working paper.
- Criddle, K. R. 2006. *Property Rights and the Management of Multiple Use Fisheries.* Working paper.
- Dinneford, E., K. Iverson, B. Muse, and K. Schelle. 1999. *Changes Under Alaska's Halibut IFQ Program, 1995 to 1998.* Available from: CFEC, 8800 Glacier Highway, Suite 109, Juneau, Alaska 99801. http://www.cfec.state.ak.us/research/H98_TS/h_title.htm.
- Edwards, S. F., 1990. *An Economics Guide to Allocation of Fish Stocks between Commercial and Recreational Fisheries.* NOAA Technical Report NMFS 94.
- Fall A.J., D. Koster, and M. Turek. 2007. *Subsistence Harvests of Pacific Halibut in Alaska, 2006.* Alaska Department of Fish and Game Division of Subsistence. Technical Paper No. 333. 168 p.
- Forsberg, Joan. 1997. Unpublished manuscript by IPHC biologist.
- Hare, S. R and W. G. Clark. 2008. *IPHC. The IPHC Harvest Policy: past, present and future considerations.* www.iphc.washington.edu/halcom/pubs/annmeet/2008/slides/hareharvestpolicy2008.pdf.
- Herrmann, M. 1999. *Relationship Between Ex-vessel Revenue and Halibut Quota: Some Observations.* Manuscript prepared for the North Pacific Fishery Management Council, 605 West Fourth Avenue, Suite 306, Anchorage, Alaska. November 9, 1999. 35pp.
- Herrmann, M., S.T. Lee, C. Hamel, K. Criddle, H. Geier, J. Greenberg, C. Lewis. 1999. *An Economic Assessment of the Marine Sport Fisheries in Lower Cook Inlet.* Proceedings of the seventh Minerals Management Service information transfer meeting. OCS Study MMS 99-022, January 1999.
- International Pacific Halibut Commission (IPHC). 2005. *Annual Report 2005.* International Pacific Halibut Commission, PO Box 95009, Seattle, WA 98145-2009. 80 p.
- _____. 2008. *Report of Assessment and Research Activities 2007.* International Pacific Halibut Commission, PO Box 95009, Seattle, WA 98145-2009. 570 p.
- _____. 2008. *CEY Projections for Areas 2C and 3A, 2008-2013.* IPHC Staff Presentation. February 2008.
- Jaenicke, 2005.

- Johnston, R. J., J. G. Sutinen. Appropriate and Inappropriate Economic Analysis for Allocation Decisions 1999. Report to the Halibut Coalition, Juneau, Alaska. October.
- Macinko, S and D.W. Bromly. 2002. Who Owns Americas' Fish? pp. 48.
- McCaughran, D. A. . and S. H. Hoag. 1992. The 1979 Protocol to the Convention and Related Legislation. IPHC Tech. rep. No. 26. 32 pp. IPHC, POB 95009, Seattle, WA 98145-20009.
- McDowell Group Inc., 2007. Alaska Visitor Statistics Program V Interim Visitors Volume Report. Prepared for State of Alaska, Department of Commerce, Community and Economic Development, Office of Economic Development. December 2007.
- Meyer, S. 2005
- Meyer, S. 2007. Choice of a Hook and Release Mortality Rate for the Area 2C Charter Fishery, 2006. Alaska Department of Fish and Game Discussion Paper.
- Morgan, G.R. 1995. Optimal Fisheries Quota Allocation Under a Transferable Quota (TQ) Management System. *Marine Policy* 19 (1995): 379-390.
- National Marine Fisheries Service (NMFS). 1998. Supplemental Environmental Impact Statement (SEIS) for Groundfish Total Allowable Catch Specifications and Prohibited Species Catch Limits Under the Authority of the Fishery Management Plans for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area and Groundfish of the Gulf of Alaska. Juneau, Alaska. December.
- _____. 2001. Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement. Juneau, Alaska. November.
- _____. 2004. Programmatic Supplemental Environmental Impact Statement for the Alaska Groundfish Fisheries Implemented Under the Authority of the Fishery Management Plans for the Groundfish Fishery of the Gulf of Alaska and the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (PSEIS). Juneau, Alaska. June.
- _____. 2005. "Monthly Halibut IFQ Landings by Year in Pounds and Percent of Annual IFQ TAC." Juneau, Alaska. December.
- _____. 2005b. Final Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska (EFH EIS). Juneau, Alaska. April.
- _____. 2007. Alaska Groundfish Harvest Specifications Final Environmental Impact Statement. Juneau, Alaska. January.
- North Pacific Fishery Management Council (Council). 1997. Draft Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for Proposed Regulatory Amendments to Implement Management Options for Guided Sport Fishery for Halibut off Alaska. North Pacific Fishery Management Council. Anchorage.
- North Pacific Fishery Management Council (NPFMC). 1997b. Draft Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for Proposed Regulatory Amendments to Implement Management Alternatives for Charter Fishery for Halibut off Alaska. NPFMC. Anchorage.
- _____. 2001. Secretarial Review Draft. Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for a Regulatory Amendment to Implement Management Measures Under a Guideline Harvest Level and/or Moratorium for Pacific Halibut in Areas 2C and 3A. Anchorage, Alaska.
- _____. 2001. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Implement Management Measures Under a Guideline Harvest Level and/or Moratorium for the Charter Fishery for Pacific Halibut in Areas 2C and 3A. NPFMC. Anchorage.

- _____. 2003. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Implement Management Measures Under a Guideline Harvest Level and/or Moratorium for the Charter Fishery for Pacific Halibut in Areas 2C and 3A. North Pacific Fishery Management Council. Anchorage.
- _____. 2003b. Environmental Assessment and Regulatory Impact Review for a Regulatory Amendment to Define a Halibut Subsistence Fishery Category in Convention Waters. Anchorage, Alaska. January.
- _____. 2005. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Incorporate the Charter Sector into the Individual Fishing Quota Program for Pacific Halibut in International Pacific Halibut Regulatory Areas Areas 2C and 3A. NPFMC. Anchorage.
- _____. 2006. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Implement Management Measures Under a Guideline Harvest Level and/or Moratorium for the Charter Fishery for Pacific Halibut in Areas 2C and 3A. NPFMC. Anchorage.
- _____. 2006b. 2006 North Pacific Groundfish Stock Assessment and Fishery Evaluation Reports for 2007. Anchorage, Alaska. November. <http://www.afsc.noaa.gov/refm/stocks/assessments.htm> .
- _____. 2006c. Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Implement Management Measures Under a Guideline Harvest Level Measures for the Charter Fishery for Pacific Halibut in Areas 2C and 3A. North Pacific Fishery Management Council. Anchorage.
- _____. 2007. Draft Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis for a Regulatory Amendments to Implement Management Measures Under a Guideline Harvest Level and/or Moratorium for the Charter Fishery for Pacific Halibut in Area 2C. Anchorage.
- Shirley, S, E. Dinneford, A. Tingley, K. Iverson, and K. Schelle 1999. Gulf of Alaska Coastal Community Reports. Holdings of Limited Entry Permits, Sablefish Quota Shares, and Halibut Quota Shares through 1998 and Data on Fishery Gross Earnings. Available from: CFEC, 8800 Glacier Highway, Suite 109, Juneau, Alaska 99801.
<http://www.cfec.state.ak.us/research/coast99/rptgrp99.htm>
- Tersteeg, . Jaenicke (2005)
- Wilen, J. E., and G.M. Brown. 2000. Implications of Various Transfer and Cap Policies in the Halibut Charter Fishery. Report to Alaska Fishery Science Center, National Marine Fisheries Service, NOAA. Seattle, WA.
- Williams, G. 1999. Appendix A. Pacific halibut stock assessment and evaluation. In: Stock Assessment and Fishery Evaluation Report for the Gulf of Alaska Groundfish Total Allowable Catch Specifications. Avail. From NPFMC, 605 W. 4th Ave., Suite 306, Anchorage, AK 99501.
- Wostmann & Associates. 2003a. Halibut Guided Charter Data Collection Study of Guided Charter Industry Perspectives on Data Collection Methods. 40 p. Avail. From NMFS Sustainable Fisheries, Juneau, Alaska.
- _____. 2003b. Halibut Guided Charter Data Collection Conceptual Design. 51 p. Avail. From NMFS Sustainable Fisheries, Juneau, Alaska.
- _____. 2005. Interactive Voice Response System for Halibut Guided Charter Data Collection Feasibility Study. 39 p. Avail. From NMFS Sustainable Fisheries, Juneau, Alaska.
- U.S. Fish and Wildlife Service (USFWS). 1998. Endangered Species Act Formal Section 7 Consultation for Pacific Halibut Fisheries in Waters Off Alaska. Anchorage, Alaska.

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Appendix A: ARIMA Estimates of Future Charter Harvest

Projections of Future Charter Harvest

This analysis includes projections of charter harvest from 2007 through 2011 through the use of an autoregressive integrated moving average (ARIMA) model. As noted in the SSC’s minutes from April 3, 2008 “past catches do not determine future catches, but past catches are a reasonable process for projecting future catches, so long as the latent processes [e.g., angler preferences, catch rates, etc.] are unchanged.”

Data

The Alaska Department of Fish and Game (ADF&G) provided mean estimates of charter halibut harvest and associated standard errors by year for each IPHC Area between 1996 and 2006 (see Tables A1 and A2). **Error! Reference source not found.**

Table A1 Area 2C harvest data

Year	Mean Harvest Estimate	Standard Error	L95%CI	U95%CI
1996	1.187	0.069	1.051	1.322
1997	1.034	0.061	0.914	1.153
1998	1.584	0.220	1.153	2.015
1999	0.939	0.053	0.835	1.043
2000	1.130	0.065	1.001	1.258
2001	1.202	0.063	1.079	1.326
2002	1.275	0.068	1.143	1.408
2003	1.412	0.067	1.281	1.543
2004	1.750	0.086	1.582	1.918
2005	1.952	0.095	1.767	2.138
2006	1.804	0.089	1.628	1.979

Source: Alaska Department of Fish and Game, 2007.

Table A2 Area 3A harvest data

Year	Mean Harvest Estimate	Standard Error	L95%CI	U95%CI
1996	2.822	0.089	2.648	2.995
1997	3.413	0.108	3.201	3.625
1998	2.985	0.109	2.771	3.199
1999	2.533	0.082	2.373	2.693
2000	3.140	0.099	2.945	3.335
2001	3.132	0.098	2.940	3.325
2002	2.724	0.110	2.509	2.938
2003	3.382	0.103	3.180	3.584
2004	3.668	0.099	3.474	3.863
2005	3.689	0.111	3.471	3.906
2006	3.664	0.108	3.451	3.876

Source: Alaska Department of Fish and Game, 2007.

ADF&G generates these estimates on an annual basis from the Statewide Harvest Survey (SWHS). The SWHS data is the only stable and continuous time series available for projecting charter halibut harvest. The other primary source of data on charter halibut harvest and effort, ADF&G’s logbook program, is a discontinuous time series. This program collected data on halibut harvest and effort from 1998 to 2001 and in 2006. Additionally, ADF&G staff testified before the SSC at the April 2008 meeting that the 2006

logbook program is substantively different from the program the Department administered between 1998 and 2001. The lack of consistent time series from the logbooks means that the ARIMA model cannot be applied to the logbook data at this time. Additionally, as the logbook is the primary source of data on effort (e.g., client days, number of active vessels, trips by active vessels, rods fished, client hours fished), it is impossible to build a deterministic model with explanatory variables rather than the model which projects harvest based on the momentum and pattern of underlying latent processes.

Analytical Methods-ARIMA Models

The ARIMA (p,d,q) models allow the analysis to account for autocorrelated (p), stationarity (d), and moving average (q) processes in the data. In layman's terms:

- The autocorrelated process is the effect that an angler's decision to go charter fishing may have on another angler's decision to go charter fishing in subsequent years. For example, an angler has a good charter experience and influences family, friends, or neighbors to go charter fishing in subsequent years.
- Stationarity is whether there is some underlying process driving changes in charter harvest from year to year. For example, many have argued that the low cost of entry into the charter fleet has, over time, resulted in more vessels entering the fleet, lower prices, and greater availability of seats on charter vessels. This trend has been particularly evident in Area 2C as the number of vessels and seats available has grown in recent years (see NPFMC 2007b). The analysis conducted a series of tests for the presence of a unit root process including the Phillips-Perron, Dickey-Fuller, and the KPSS tests and uses differencing to account for non-stationary nature of the data.⁷⁹
- The moving average process may be described as the momentum built up in the system where an action in one year affects the next year. For example, an angler has a good charter experience and makes that charter experience an annual event. These events lead to a virtuous cycle of underlying support for the charter experience.

Both the ARIMA model for Area 2C and 3A take the functional form of (2,1,1). The models have two lags of autocorrelations, are differenced 1 time, and have 1 lag associated with the moving average term. The analysis selected this combination of lags and differencing by selecting the combination that provided the best log likelihood score. In addition to accounting for the items discussed above, the ARIMA model also includes a weighting system based on the standard error and coefficient of variation for individual observations. The weights result in the model placing greater emphasis on observations where the coefficient of variation is smaller (i.e., where ADF&G's estimate of harvest falls into a range with less difference between the mean estimate of harvest and the 95 percent confidence intervals).

Figures A1 and A2 show the ARIMA model results for the Area 2C and Area 3A models. In both models the constant and the variable for "year" are statistically significant at the 1 percent level. The variables for the autoregressive lags and the moving average lags are statistically insignificant in the Area 2C model. In the Area 3A model the autoregressive lags are statistically significant at the 5 percent (lag 1) and 1 percent level (lag 2) while the moving average lag is statistically insignificant.

⁷⁹ For Area 2C, each test either rejected the hypothesis of stationary process or accepted the null hypothesis of a non-stationary process at the 5 percent critical value. For Area 3A, the KPSS failed to reject the null hypothesis of a stationary process at 5 percent critical value, but rejected the null hypothesis at the 10 percent critical value. The Phillips-Perron and Dickey-Fuller tests failed to reject the null hypothesis of a non-stationary process at the 5 percent critical value. Consequently, the analysis uses a differencing component to account for the non-stationary process.

Harvest Estimates

The analysis uses the model generated by the ARIMA analysis to project charter harvest forward in time. As previously noted, past catches do not determine future catches, but past catches are a reasonable process for projecting future catches, so long as the latent processes [e.g., angler preferences, catch rates, etc.] are unchanged. These initial projections do not account for management measures that took effect in 2007 and those that may take effect in 2008.

There are important differences between the data provided by ADF&G and the estimates derived from these models. Specifically:

- ADF&G estimates sector harvest and their confidence intervals represent a range where ADF&G is 95 percent confident that actual or “true” harvest as measured by the SWHS lies within the confidence interval. Each year ADF&G publishes a mean estimate of harvest which becomes the official harvest estimate for Council purposes.
- This analysis estimates mean harvest and the confidence intervals represent a range where the model is 95 percent confident that ADF&G’s estimate of the mean of the harvest will lie within the confidence interval.

Consequently, in this analysis the boundary of the upper 95 percent confidence interval is not an estimate of the upper limit of harvest; it is an estimate of the upper limit of ADF&G’s mean estimate of harvest. This point is subtle, but very important when interpreting the results of the analysis. The difference between the two estimation procedures can best be seen in the figures at the end of this appendix.

Harvest Estimates for Area 2C

For Area 2C, the analysis projects unadjusted harvest and associated 95 percent confidence intervals between 2007 and 2011.⁸⁰ The unadjusted harvest total would be expected to increase from 1.888 Mlb to 2.196 Mlb, or 16.3 percent, between 2007 and 2011 without any management changes (see Table A3). The 95 percent confidence interval for harvest mean in 2007 is 1.808 to 1.968 Mlb while the 95 percent confidence interval for 2011 is 2.074 and 2.318.

For Area 2C, the analysis adjusts the estimates of future harvest by the estimated effect of the management measures NMFS enacted in 2007 (i.e., the 32” maximum length on the second fish) and continues this management measure through 2011.⁸¹ NPFMC (2007) provides a range of estimates of the effectiveness of each management measure in reducing harvest (see Table A4). For example, the 32” maximum length rule is estimated to reduce harvest to between 73.9 percent and 80.3 percent of the pre-management level depending on high-grading and other factors. It is not clear whether the actual effectiveness of each management measure will be closer to the “less effective” estimate or the “more effective” estimate. Consequently, the analysis also provides an average adjustment which reflects the fact that in all likelihood there will be some anglers who high-grade under the size limit or some level of demand reduction associated with the one-fish bag limit. It is the estimates which use “average effectiveness” which are passed through to the main analysis. The analysis does not make any adjustment in the efficacy of the measures over time. For example, it may take a portion of anglers a season to realize that they do not want to pay for charter trips under a one-fish bag limit or, vice-versa, several seasons to

⁸⁰ In its October 2007 minutes the SSC requested the analysis project harvest no more than 5 years from the last observation available in the time series.

⁸¹ NMFS may choose to develop a new final rule enacting a one-fish bag limit starting in 2009. This measure was supposed to be enacted in 2008, but was blocked through a temporary injunction issued by the Federal Courts. Both management measures include a ban on skipper and crew harvest.

realize that a one-fish bag limit doesn't necessarily limit their experience. The analysis does not have any data on the temporal nature of these reactions with which to adjust the analysis.⁸²

Table A3 Mean Area 2C harvest estimates unadjusted for 2007 or 2008 management measures

Year	ADF&G's Mean Harvest Estimate	Model Estimate of Mean Harvest (Unadjusted for Management Measures)	Standard Error (Mlb)	Lower 95% Confidence Interval for the Harvest Mean (Mlb)	Upper 95% Confidence Interval for the Harvest Mean (Mlb)
1996	1.187	0.968	0.037	0.896	1.040
1997	1.034	1.057	0.032	0.994	1.120
1998	1.584	1.163	0.028	1.109	1.217
1999	0.939	1.212	0.024	1.164	1.259
2000	1.130	1.358	0.022	1.315	1.401
2001	1.202	1.290	0.021	1.249	1.331
2002	1.275	1.470	0.022	1.427	1.512
2003	1.412	1.496	0.024	1.450	1.543
2004	1.750	1.609	0.027	1.556	1.662
2005	1.952	1.694	0.031	1.633	1.755
2006	1.804	1.821	0.036	1.751	1.891
2007		1.888	0.041	1.808	1.968
2008		1.940	0.046	1.850	2.030
2009		2.037	0.051	1.936	2.137
2010		2.106	0.057	1.995	2.217
2011		2.196	0.062	2.074	2.318

Source: NEI Estimates, 2008.

Table A4 Post-management action harvest as a percentage of pre-management action harvest by management measure

	2007 Implementation of the 1 Fish under 32" Rule by NMFS ⁸³	2008 Implementation of a 1 Fish Bag Limit ⁸⁴
Effectiveness		
Less Effective	80.3%	60.3%
Most Effective	73.9%	42.2%
Average	77.1%	51.3%

Source: NPFMC, 2007.

Table A5 shows the ARIMA estimates of Area 2C harvest adjusted for the implementation of maximum size limit in 2007 and continuing through 2011. After these adjustments, the mean harvest estimate for 2007 is expected to be between 1.376 Mlb and 1.536 Mlb with an average estimate of 1.456 Mlb. The estimate of mean harvest for 2011 is for harvest to be between 1.623 and 1.763 Mlb with an average estimate of 1.693 Mlb.

⁸² Anecdotal evidence collected during the April 2008 meeting indicated that some Area 2C lodge owners were experiencing a 10-20 percent decline in 2008 bookings in comparison to 2007 bookings at the same time. Owners reported that bookings for July 2008 were particularly affected because halibut is the primary species available at that time, which is between king salmon season and silver salmon season.

⁸³ "More effective" assumes that anglers do not high grade their harvest and catch the average fish under 32" at the same ratio as before the measure. "Less effective" assumes anglers are able to high-grade by one size class equal to two inches in length above the average size under 32".

⁸⁴ "More effective" includes a 30 percent reduction in demand by all anglers for trips. "Less effective" include no reduction in demand by anglers for trips.

Table A5 Unadjusted and adjusted estimates⁸⁵ of mean harvest in Area 2C with confidence intervals (MIb)

Year	Unadjusted Estimates			If 2007 and 2008 Regulations are Less Effective at Lowering Harvest			Average of Less and More Effective			If 2007 and 2008 Regulations are More Effective at Lowering Harvest		
	Est. Mean	L95% CI	U95% CI	Est. Mean	L95% CI	U95% CI	Est. Mean	L95% CI	U95% CI	Est. Mean	L95% CI	U95% CI
2007	1.888	1.808	1.968	1.516	1.436	1.596	1.456	1.376	1.536	1.396	1.316	1.476
2008	1.940	1.850	2.030	1.558	1.468	1.648	1.496	1.406	1.586	1.434	1.344	1.524
2009	2.037	1.936	2.137	1.635	1.535	1.736	1.570	1.470	1.671	1.505	1.405	1.606
2010	2.106	1.995	2.217	1.691	1.580	1.802	1.624	1.513	1.735	1.557	1.446	1.668
2011	2.196	2.074	2.318	1.763	1.641	1.885	1.693	1.571	1.815	1.623	1.501	1.746

Source: NEI Estimates, 2008

Figure A3 compares historic ADF&G data on Area 2C harvests with unadjusted and adjusted estimates of future harvest based on the status quo. The figure uses the “average effectiveness” data highlighted in Table A5.

CAVEATS: The accuracy of the adjusted harvest projections in both Areas are subject to certain caveats. In Area 2C if the estimated effect of length restrictions instituted in 2007 by NMFS if eroded by increasing harvest effort or increasing average weights then overall actual harvest will more closely match the unadjusted harvest projection, which will exceed the GHL in Area 2C.

⁸⁵ Includes the 32” maximum length limit on the second fish in an angler’s daily bag limit in 2007 and assumes the institution of a one fish bag limit in 2008 through 2011.

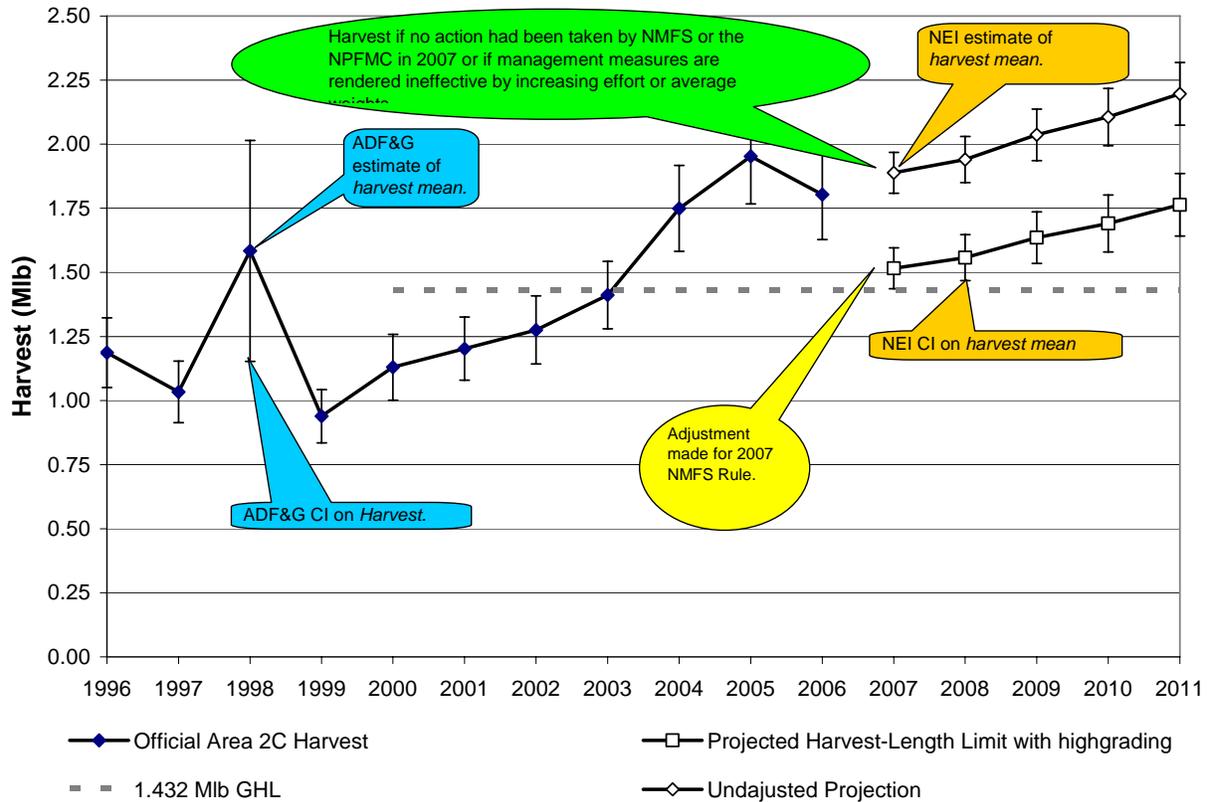


Figure A3 Historic Area 2C harvests compared with model estimates of the mean of future harvests adjusted for status quo management measures

Source: NEI Estimates, 2008.

This analysis recognizes that the assumed status quo of a length limit on the second fish extending through 2011 may change if NMFS publishes a final rule establishing a one fish bag limit in 2009. Figure A4 compares historic ADF&G data on Area 2C harvests with unadjusted and adjusted estimates of future harvest adjusted for the institution of a one fish bag limit in 2009. The figure assumes the “average efficacy” which is the mid-point between the no-demand reduction and 30 percent reduction in demand for trips.

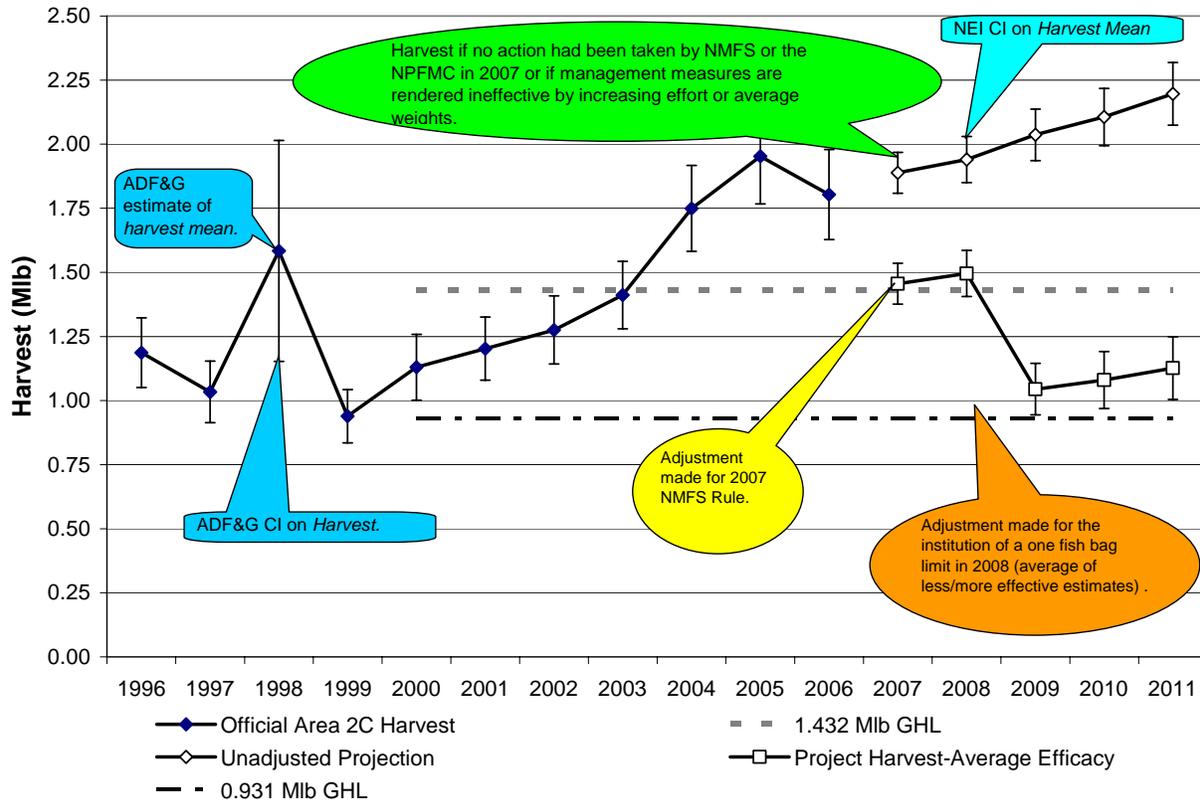


Figure A4 Historic Area 2C harvests compared with model estimates of the mean of future harvests adjusted for a 1-fish bag limit in 2009

Source: NEI Estimates, 2008.

Harvest Estimates for Area 3A

For Area 2C the analysis projects unadjusted harvest and associated 95 percent confidence intervals between 2007 and 2011. The unadjusted harvest total would be expected to increase from 3.518 Milb to 3.973 Milb, or 12.9 percent, between 2007 and 2011 without any management changes (see Table A3). The 95 percent confidence interval for harvest mean in 2007 is 3.369 to 3.666 Milb while the 95 percent confidence interval for 2011 is 3.751 and 4.196.

Table A6 Mean Area 3A harvest estimates unadjusted for management measures

Year	ADF&G's Mean Harvest Estimate (Mlb)	Model Estimate (Mlb) of Mean Harvest (Unadjusted for Management Measures)	Standard Error (Mlb)	Lower 95 Percent Confidence Interval (Mlb)	Upper 95 Percent Confidence Interval (Mlb)
1996	2.822	2.771	0.042	2.688	2.853
1997	3.413	2.856	0.034	2.789	2.923
1998	2.985	2.976	0.028	2.921	3.031
1999	2.533	2.745	0.024	2.698	2.792
2000	3.140	3.096	0.024	3.050	3.143
2001	3.132	3.414	0.027	3.361	3.467
2002	2.724	3.022	0.033	2.957	3.087
2003	3.382	3.310	0.041	3.230	3.389
2004	3.668	3.710	0.049	3.614	3.806
2005	3.689	3.351	0.058	3.239	3.464
2006	3.664	3.698	0.067	3.567	3.828
2007		3.518	0.076	3.369	3.666
2008		3.764	0.085	3.597	3.930
2009		3.886	0.094	3.701	4.071
2010		3.877	0.104	3.673	4.080
2011		3.973	0.113	3.751	4.196

Source: NEI Estimates, 2008.

The analysis adjusts the Area 3A estimates of 2007-2011 harvest by the estimated effect of the skipper and crew ban on harvest which ADF&G enacted in 2007. The October 2007 *Draft EA/RIR/IRFA for a Regulatory Amendment to Implement Management Measures for the Charter Fishery for Pacific Halibut in Area 3A* noted that a skipper and crew ban on harvest could reduce harvest by approximately 10.4 percent if skipper and crew have been reporting their harvest as charter under the SWHS. As a result, the analysis shifts the ARIMA (2,1,1) model estimates downward by 10.4 percent for each estimate between 2007 and 2011 as the harvest data from 1996 to 2006 do not include a skipper and crew ban. The adjusted harvest estimates are for harvest to grow from 3.152 Mlb in 2007 to 3.560 Mlb in 2011. If skipper and crew have not been reporting their harvest under the charter category in the SWHS then projected harvest will most likely mirror the original ARIMA (2,1,1) projection without any adjustments.

Table A7 Unadjusted and adjusted estimates⁸⁶ of mean harvest in Area 3A with confidence intervals (Mlb)

Year	Unadjusted for Post-2006 Management Measures			Adjusted for Post-2006 Management Measures ⁸⁷		
	Model Estimate of Mean Harvest	L95%CI	U95%CI	Model Estimate of Mean Harvest	L95%CI	U95%CI
2007	3.518	3.369	3.666	3.152	3.003	3.300
2008	3.764	3.597	3.930	3.372	3.206	3.539
2009	3.886	3.701	4.071	3.482	3.297	3.667
2010	3.877	3.673	4.080	3.473	3.270	3.677
2011	3.973	3.751	4.196	3.560	3.338	3.782

Source: NEI Estimates, 2008.

⁸⁶ Includes the 32" maximum length limit on the second fish in an angler's daily bag limit in 2007 and assumes the institution of a one fish bag limit in 2008 through 2011.

⁸⁷ Post-2006 management measures are assumed to include a state ban on the harvest of halibut by skipper and crew while on trips with paying clients.

Figure A5 shows predicted mean charter harvests and the shift associated with the ban on skipper and crew harvest as compared to the 3.65 Mlb GHL for Area 3A. The model predicts that with the ban on skipper and crew harvest, the mean estimated charter harvest is likely to stay under the Area GHL.

CAVEATS: The accuracy of the adjusted harvest projections in both Areas are subject to certain caveats. Charter harvest in Area 3A depends on whether or not skipper and crew have been reporting their halibut harvest as charter harvest. If they have been reporting it (as assumed in this analysis) then harvest is expected to be generally near or below the GHL. If skippers and crew have not been reporting their harvests while under charter in the SHWS, then no reduction in harvest from the skipper and crew ban on retaining halibut is expected. Under those circumstances actual harvest in Area 3A will more closely match the unadjusted harvest projection, which will exceed the GHL.

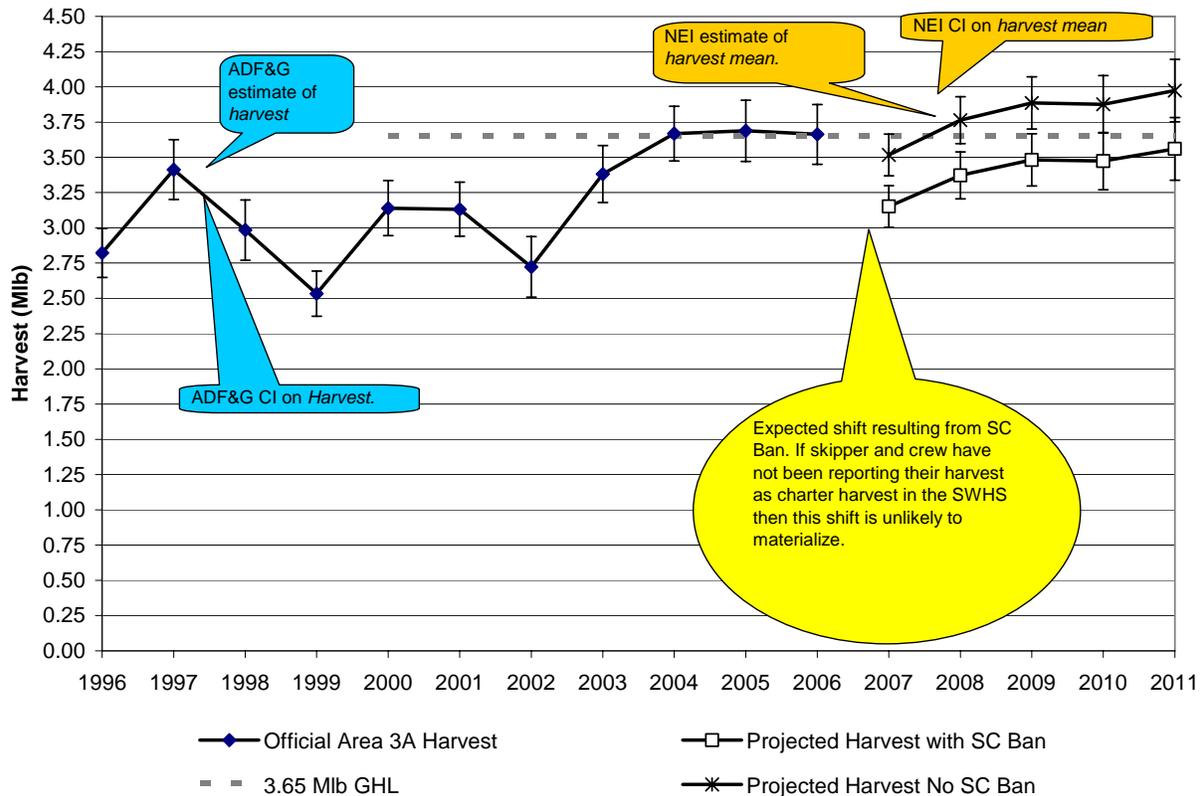


Figure A5 Past Area 3A harvests compared with model estimates of the mean of future harvests adjusted for actual 2007 management measures and expected 2008 management measures

Source: NEI Estimates, 2008.

Appendix B: Draft 200x Pacific Halibut Catch Sharing Plan for Area 2C & Area 3A

1. Framework

This Plan constitutes a framework that shall be applied to the annual combined charter and commercial fishery catch limit for Area 2C and Area 3A, respectively, which is approved by the International Pacific Halibut Commission (IPHC) at its Annual Meeting. The framework shall be implemented in both IPHC regulations and domestic regulations (implemented by NMFS) as published in the *Federal Register*.

2. Allocations

This Plan allocates [insert preferred alternative for Element 1 here] of the Area 2C combined fishery catch limit to the commercial longline fishery and [insert preferred alternative for Element 1 here] of the Area 2C combined fishery catch limit to the charter (guided sport) fishery, and [insert preferred alternative for Element 1 here] of the Area 3A combined fishery catch limit to the commercial longline fishery and [insert preferred alternative for Element 1 here] of the Area 3A combined fishery catch limit to the charter fishery. These allocations may be changed only by action of the Council and subsequent federal rulemaking.

3. Guided angler fish

This Plan allows the voluntary leasing of commercial halibut Individual Fishing Quotas (IFQs) by charter halibut limited entry permit holders for use by anglers as Guided Angler Fish (GAF) in Area 2C and Area 3A. These GAFs would be used to allow charter anglers to harvest halibut equal to fishing regulations for unguided anglers. [insert preferred alternative for Element 5 here]

4. Procedures for responding to overages of charter allocations

a) Annual regulatory cycle

[insert preferred alternative for Element 2 here]

b) Management toolbox

Tier 1 measures will be utilized by the Council to manage the common pool component of the charter sector for a season of historic length and a two-fish daily harvest limit. Tier 2 measures will be utilized if Tier 1 measures are inadequate to constrain harvest by the common pool fishery to its allocation. Due to the delay in implementation, management measures will, in general, be more restrictive to ensure that the charter sector allocation is not exceeded. In providing predictability and stability for the charter sector, it is likely that some charter halibut allocation will be unharvested.

Tier 1	Tier 2
One Trip per Vessel per Day	Annual Catch Limits
No Retention by Skipper and Crew	One Fish Bag Limit for all or a portion of the Season
Line Limits	Closure for all or a portion of the Season
Second Fish of a Minimum Size	
Second Fish at or below a Specific Length	

c) Timeline

The Council has identified the following timeline for action to implement changes to Federal regulations to constrain the charter sector to its allocation **[insert preferred alternative for Element 4 here]**.

5. Procedures for Implementation

The charter allocation and commercial allocation in Areas 2C and 3A that are identified in this Plan and approved by the Commission will be adopted in the IPHC regulations. As needed, the Council and NMFS will develop regulations designed to govern the charter fisheries.