

Public Review Draft
Environmental Assessment/Regulatory Impact Review/
Initial Regulatory Flexibility Analysis for a Regulatory Amendment to
Implement Guideline Harvest Level Measures in the Halibut Charter Fisheries in
IPHC Regulatory Areas 2C and 3A

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Abstract: This analysis examines proposed changes to the management of Pacific halibut guided sport (charter) fisheries in International Pacific Halibut Commission Regulatory Areas 2C and 3A in the Gulf of Alaska. The proposed actions in each area would reduce charter halibut harvests to their respective guideline harvest levels (GHLs). The Council is considering three alternatives for each area. If action is taken by the Council and subsequently approved by the Secretary of Commerce, the earliest any of the proposed alternatives would be effective is the 2007 charter fishing season.

For Area 2C (Southeast Alaska), alternatives include: (1) no action; (2) limit vessels to one trip per day, prohibit harvest by skipper and crew, and set an annual catch limit of six fish for individual clients; and (3) limit vessels to one trip per day, prohibit harvest by skipper and crew, and set an annual catch limit of five fish for individual clients. Alternative 2 would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 107.5 and 109.6 percent of the Area's GHL. Alternative 3 would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 101.3 and 102.7 percent of the Area's GHL. Neither would have reduced harvests to or below the GHL. For Area 3A (Southcentral Alaska), alternatives include: (1) no action; (2) limit vessels to one trip per day; and (3) limit vessels to one trip per day and prohibit harvest by skipper and crew. Alternative 2 would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 94.0 and 96.1 percent of the Area's GHL. Alternative 3 would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 83.5 and 88.4 percent of the Area's GHL. Either would have reduced harvests to or below the GHL.

The analysis includes a second method for determining the status of the GHL. The five-year average lessens the sensitivity to annual changes in average halibut weight (it reduces the overage in Area 2C and increases it in Area 3A), which may be preferred by managers since it addresses the timeliness of data and implementation. A final regulatory flexibility analysis focusing on the preferred alternative will be included in the final regulatory package submitted for Secretarial review.

Comments Due: The public may comment on the proposed action at any time prior to the selection of a preferred alternative by the Council during its April 5-1, 2006 meeting. A formal public comment period will be announced by the Secretary of Commerce upon publication of the proposed rule.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	vi
Expected Effect of Each Alternative in Area 2C	vii
Expected Effect of Each Alternative in Area 3A.....	x
Overall and Long-Term Efficacy of the Alternatives and Management Measures	xii
1.0 ENVIRONMENTAL ASSESSMENT	1
1.1 Purpose and Need for the Action	1
1.1.1 Introduction	1
1.1.2 Background and history of the charter halibut guideline harvest level	2
1.2 Problem Statement.....	5
1.3 Description of the Alternatives.....	6
1.3.1 Alternative 1. No action	7
1.3.2 Alternative 2. Implement management measures to reduce charter halibut harvests to the GHL.....	7
1.3.3 Alternative 3. Implement management measures to reduce charter halibut harvests to the GHL.....	7
1.4 Probable Environmental Impacts	7
1.4.1 Overview	7
1.4.2 Potential Impacts on Pacific Halibut Stocks.....	8
1.4.3 Impacts on Endangered or Threatened Species	15
1.4.4 Impacts on Seabirds	16
1.4.5 Impacts on Marine Mammals	17
1.4.6 Impacts on Biodiversity and the Ecosystem.....	17
1.4.7 Impacts on the Social and Economic Environment.....	18
1.4.8 Description of Fishery Participants.....	18
1.5 Cumulative Effects	19
2.0 REGULATORY IMPACT REVIEW	21
2.1 Introduction.....	21
2.2 Purpose of the Regulatory Impact Review	21
2.3 Description of the Fishery	22
2.4 Statement of the Problem	22
2.5 Baseline Analytical Data	22
2.5.1 Preliminary 2005 Estimates	26
2.6 Analysis.....	27
2.6.1 Individual Measure Analyses.....	27
2.6.2 Effect of Limit of One Trip per Vessel per Day.....	28
2.6.3 Effect of No Harvest by Crew Members	30
2.6.4 Effect of an Annual Limit (Area 2C Only).....	32
2.7 Economic and Socioeconomic Impacts of Alternatives	33
2.7.1 Expected effect of each alternative in Area 2C	34
2.7.2 Expected effect of each alternative in Area 3A.....	38
2.7.3 Economic effects on charter sector and communities	40
2.7.4 Recordkeeping and Enforcement.....	48
2.7.5 Effects on Net Benefits to the Nation	50
2.7.6 Summary and Conclusions.....	54
3.0 REGULATORY FLEXIBILITY ACT	57
3.1 Introduction.....	57
3.2 Reasons for Considering the Proposed Action	58
3.3 Objectives and Legal Basis of the Proposed Actions	58
3.4 Description and Number of Small Entities to which the Proposed actions will apply	58

3.4.1	Definition of a Small Entity	58
3.4.2	Description of Small Entities to Which the Proposed actions will apply	59
3.4.3	Estimate of the Number of Small Entities to Which the Proposed actions will apply	59
3.5	Description of the Projected Reporting, Record Keeping and Other Compliance Requirements of the Proposed actions	59
3.5.1	Description of Compliance Requirements of the Proposed Actions	59
3.5.2	Description of Compliance Costs Associated with the Proposed Actions	60
3.5.3	Estimate of the Regulatory Burden and Distributional Effects.....	60
3.5.4	Description of Potential Benefits of the Proposed Actions to Small Entities.....	61
3.6	Identification of Relevant Federal Rules that may Duplicate, Overlap or Conflict with the Proposed Actions	61
3.7	Conclusion	61
4.0	CONSISTENCY WITH OTHER APPLICABLE LAWS.....	61
4.1	Introduction.....	61
4.2	National Standards.....	62
4.3	Section 303(a) (9) – Fisheries Impact Statement.....	64
4.4	Section 303(b)(6) – Limited Entry Requirements	64
5.0	REFERENCES	65
6.0	LIST OF PREPARERS	66
7.0	INDIVIDUALS CONSULTED	66
	APPENDIX I. Proposal 400 – 5 AAC 75.003. Emergency Order Authority.....	67
	APPENDIX II. Development of the Council’s GHIL policy by year of Council action	68
	APPENDIX III. Management measure matrix adopted by the Council in 2000.....	71

LIST OF TABLES

Table 1. Charter halibut harvest, 2000-2004	vii
Table 2. Effect of alternatives of charter industry halibut harvest (2004) in Area 2C (Method 1).....	viii
Table 3. Effect of alternatives of charter industry halibut harvest (2004) in Area 2C (Method 2).....	x
Table 4. Effect of alternatives of charter halibut harvest in Area 3A (Method 1).....	xi
Table 5. Effect of alternatives of charter halibut harvest in Area 3A (Method 2).....	xii
Table 6. CEY projections for 2007-2011 for IPHC Pacific halibut regulatory areas.....	9
Table 7. Estimated rockfish and lingcod harvest (number of fish) by charter anglers by area and year. Information from the annual mail survey of licensed sport anglers	14
Table 8. Species listed as endangered and threatened under the ESA that may be present in the Federal waters off Alaska	16
Table 9. Number of businesses and vessels that submitted ADF&G Saltwater Charter Vessel Logbooks with bottomfish effort in 1998-2004.....	19
Table 10. Total number of sport fishing licenses sold by vendors within each IPHC Area (2C and 3A), 1993-2004, by residency	20
Table 11. Charter halibut harvest, 1995-2004	23
Table 12. Estimated total harvest, Areas 2C and 3A (numbers of fish).....	24
Table 13. Trips per day, active vessels, and more than one trip per day, 1998-2004.....	25
Table 14. Harvest level estimates per angler in Area 2C, 1996-2004.....	25
Table 15. Estimates of the proportion Pacific halibut harvest taken by household type (single angler versus multi-angler households) by chartered anglers in IPHC Area 2C (1996-2004) obtained from the annual mail survey of licensed sport anglers	26
Table 16. Estimated harvest by charter operators on multiple trips per day (number of fish).....	28
Table 17. Estimated 2004 adjustment factor.....	28
Table 18. Estimated harvest reductions associated with one trip per day – Area 2C.....	29
Table 19. Estimated harvest reductions associated with one trip per day – Area 3A.....	29
Table 20. Logbook Estimate of Vessel Trips, Clients, and Clients per Trip	29
Table 21. Crew harvest, 1999-2001	30
Table 22. Estimated reductions in harvest through elimination of crew harvest in Area 2C.....	31
Table 23. Estimated reductions in harvest through elimination of crew harvest in Area 3A.....	31
Table 24. Effect of an annual limit on charter halibut harvest in Area 2C	32
Table 25. Charter halibut harvest, 2000-2004	33
Table 26. Effect of alternatives of charter halibut harvest (2004) in Area 2C using 2004 average.....	34
Table 27. Hypothetical example of time lag.....	36
Table 28. Effect of alternatives of charter halibut harvest (2004) in Area 2C using five-year average.....	37
Table 29. Effect of alternatives of charter halibut harvest in Area 3A using 2004 average.....	38
Table 30. Effect of alternatives of charter halibut harvest in Area 3A using five-year average.....	39
Table 31. 2006 estimated lost ex-vessel value.....	40
Table 32. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch – Area 2C.....	42
Table 33. Area 2C vessels affected by the limiting vessels to one trip per day.....	42
Table 34. 2006 estimated lost ex-vessel value.....	45

Table 35. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch-Area 3A	46
Table 36. Area 3A vessels affected by the alternative.....	47
Table 37. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch – Area 3A	51
Table 38. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch-Area 3A	53
Table 39. Summary of expected effects of alternatives, Area 2C.....	56
Table 40. Summary of expected effects of alternatives, Area 3A.....	57

LIST OF FIGURES

Figure 1. IPHC regulatory areas for the commercial halibut fishery (Source: IPHC).....	1
Figure 2. IPHC stock assessment and catch limit setting process.....	8
Figure 3. Estimated biomass in the 2005 assessment in Areas 2C and 3A (Source: IPHC 2005)	9
Figure 4. Biomass projections for Areas 2C (left) and Area 3A (right) (Source: IPHC).....	10
Figure 5. Removals of Pacific halibut by sector in 2005 (Source: IPHC)	11
Figure 6. Charter fleet halibut harvests by area and year	23

ABBREVIATIONS

ADF&G	Alaska Department of Fish and Game
BOF	Alaska Board of Fisheries
CEY	Constant Exploitation Yield
E.O.	Presidential Executive Order
GHL	Guideline Harvest Level
IPHC	International Pacific Halibut Commission
IRFA	Initial Regulatory Flexibility Analysis
ISER	University of Alaska, Anchorage Institute for Social and Economic Research
lb	Pounds
M	Million
NPFMC	North Pacific Fishery Management Council
OMB	Office of Management and Budget
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SBA	U.S. Small Business Administration
SWHS	Statewide Harvest Survey

EXECUTIVE SUMMARY

In February 2000, the North Pacific Fishery Management Council (Council) adopted guideline harvest levels (GHL) for the charter halibut fishery in International Pacific Halibut Commission (IPHC) Regulatory Area 2C, Southeast Alaska (1,432,000 lb net weight), and Area 3A, Southcentral Alaska (3,650,000 lb). The GHLs were approved by the Secretary of Commerce and implemented by NOAA Fisheries in September 2003 (68 FR 47256). The 2000 preferred alternative also identified a suite of management measures that were to be triggered in the year following harvests in excess of the GHL(s). Legal review, however, identified concerns with the ability of NOAA Fisheries to “framework” those measures without additional public process. Therefore, proposed GHL management measures were not implemented in regulation. Instead, the Council may initiate a new analysis each time management action is deemed necessary to reduce or increase harvests.

At its October 2005 meeting, the Council reviewed final 2004 halibut charter harvest estimates reported by the Alaska Department of Fish and Game (ADF&G) Sport Fish Division on the status of the first year of fishing under the GHL. The point estimates of harvest exceeded the GHLs by 22 percent in Area 2C and less than 1 percent in Area 3A. In response to the new information, the Council initiated this analysis, which includes management alternatives to reduce halibut charter harvests to the GHLs in both areas.

For each area, the Council is considering three alternative actions.

For Area 2C:

- Alternative 1. No action
- Alternative 2. Limit vessels to one trip per day, *prohibit harvest by skipper and crew*¹, and set an annual catch limit of six fish for individual clients.
- Alternative 3. Limit vessels to one trip per day, *prohibit harvest by skipper and crew*¹, and set an annual catch limit of five fish for individual clients.

For Area 3A:

- Alternative 1. No action
- Alternative 2. Limit vessels to one trip per day.
- Alternative 3. Limit vessels to one trip per day and *prohibit harvest by skipper and crew*¹.

The purpose of the proposed action is to reduce charter halibut harvests in Areas 2C and 3A to the respective GHLs to conform to Council policy. In 2000, the Council adopted GHLs to address allocation issues between the charter sector and commercial users of the halibut resource. They are intended to stop the reallocation from commercial to charter sectors.

The sections below summarize the estimated effect of the alternatives. In February 2006, the Council requested that the analysis include two methods to determine the status of the GHLs, based on recommendations from its GHL Committee and Advisory Panel; the Scientific and Statistical committee did not comment on the second method. The two methods are:

1. Use ADF&G’s single year estimates of average per fish weight to calculate the estimated total harvest weight;
2. Use a five-year average of ADF&G’s estimates of average harvest weight per fish.

¹ The Alaska Board of Fisheries is scheduled to take action in March 2006 on ADF&G proposals to prohibit retention of all sport fish by skipper and crew and to limit the number of lines on a charter vessel to the number of clients onboard.

The SSC recommended that the first method be expanded to include 2002 and 2003. In its February 2006 minutes, the SSC stated, “Although the trend in charter fishing halibut trips is upward, a comparison of the 2004 findings for two additional years will prove useful when discussing the robustness of the 2004 findings.” One effect of using the five-year average is to lessen the sensitivity to annual changes in average halibut weight, which may be preferred by managers since it addresses the negative feedback loop described by the SSC below in the Executive Summary and in more detail in Section 2.7. For example, in Table 1 the 2004 average weight of 20.7 lb was 8.4 percent higher than the 2003 average weight of 19.1 lb in Area 2C. At the same time, total catch by number of halibut in 2004 was 14 percent higher and total catch by weight was 23.9 percent higher. Thus, the increase was driven partially by a sharp increase in average weight per fish that year. The effect of this method is to multiply the number of halibut harvested as reported by the ADF&G Statewide Harvest Survey (SWHS) by 19.5 lb instead of 20.7 lb in Area 2C and 19.3 lb instead of 18.6 lb in Area 3A. Therefore, the status of the GH L would result in a lower overage in Area 2C and a higher overage in Area 3A.

Table 1. Charter halibut harvest, 2000-2004

Year	IPHC Area 2C				IPHC Area 3A			
	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Change from Previous Year	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Change from Previous Year
2000	57,208	19.8	1.132	20.6%	159,609	19.7	3.140	24.0%
2001	66,435	18.1	1.202	6.2%	163,349	19.2	3.132	-0.3%
2002	64,614	19.7	1.275	6.1%	149,608	18.2	2.724	-13.0%
2003	73,784	19.1	1.412	10.7%	163,629	20.7	3.382	24.2%
2004	84,327	20.7	1.750	23.9%	197,208	18.6	3.668	8.5%
5-Year Average	69,274	19.5	1.350	N/A	166,681	19.3	3.211	N/A

Expected Effect of Each Alternative in Area 2C

GH L Calculated Using Direct Average Weight Estimates (Method 1)

Method 1 includes the Council’s recommendation to expand the analysis of 2004 data to include 2002 and 2003, as suggested by the SSC. Proposed management measures under Alternatives 2 and 3 would reduce charter industry halibut harvest. However, long-term growth trends likely have increased harvests to such a level that even Alternative 3 (the most restrictive alternative) is not guaranteed to have reduced harvests to the GH L level in 2004, if they were in effect then. In 2002 and 2003, the proposed alternatives would have reduced area charter halibut harvest to levels at or below the GH L (Table 2). However, it is most useful to focus on the results using 2004 data given long-term growth rates, and it is unlikely that future industry harvests would be below this level given an annualized growth rate of 5.5 percent over the last decade. Alternative 3 would have come close to reducing 2004 harvests to the GH L. Additionally, note the following:

- The effect of Alternative 1, the no action alternative, depends in part on pending action by the Alaska Board of Fisheries (BOF) in March 2006. The State already limits the number of lines fished by Area 2C charter operations equal to the number of clients. This limit, however, does not constrain skippers and crew when a client is not fishing during a trip. Originally, ADF&G submitted a proposal to prohibit retention of fish by skippers and crew in all waters managed by the State. ADF&G submitted a revised proposal at the February 2006 BOF meeting, which instead would provide the ADF&G Commissioner with emergency order authority to enact the proposed measures (Proposal 400, see Appendix I), rather than permanently in regulation by the BOF. If enacted under either approach, an indirect result under the no action alternative would have been reduced harvest between 3.3 and 4.5 percent. If these measures had been in place in 2004, the charter harvest would have been between

118.1 and 116.7 percent of the GHL. Given this new approach, it is less clear that proposed BOF action should be considered under the status quo, since what measures will be implemented by the Commissioner for 2006 will not be known at the time of final action by the Council in April 2006. Note that the Council may still choose to adopt a complementary Federal regulation regarding harvest retention by crew to ensure that the regulation stays in place for duration to be determined by the Council. On the other hand, the Council may choose to not adopt a complementary action to avoid the more time-consuming process of amending Federal regulations when it might choose to lift the prohibition.

It remains unclear what criteria will be used by the ADF&G to determine when and where action will be implemented since the State will not have either average weights or numbers of fish in-season. Halibut charter operators will again be required to report harvests in 2006, but the State has reported that these data should be verified by SWHS data (which for 2006 logbooks would not occur until Fall 2007). Further, Proposal 400 remains controversial since it would apply to all charter operations, and not just limited to halibut. Therefore, salmon charter operators would in a sense “pay” by reduced retention for any charter halibut GHL overages. *The simplest approach to evaluate the effects of Alternative 1 is for the Council to assume no action is taken by the State, since pending action was unknown when this document was released and may remain unknown at the time of Council final action.*

Table 2. Effect of alternatives of charter industry halibut harvest (2004) in Area 2C (Method 1)

Category	Management Measure/Effect (Reduction in %)	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Component	One Trip Per Day (2002)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2003)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2004)	N/A	0.3%	0.6%	0.3%	0.6%
	No Harvest by Skipper & Crew	N/A	3.3%	4.5%	3.4%	4.6%
	6 Fish Annual Limit (2002)	N/A	8.3%	8.3%	N/A	N/A
	6 Fish Annual Limit (2003)	N/A	7.5%	7.5%	N/A	N/A
	6 Fish Annual Limit (2004)	N/A	7.0%	7.0%	N/A	N/A
	5 Fish Annual Limit (2002)	N/A	N/A	N/A	13.7%	13.7%
	5 Fish Annual Limit (2003)	N/A	N/A	N/A	13.1%	13.1%
	5 Fish Annual Limit (2004)	N/A	N/A	N/A	12.2%	12.2%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	1.275	1.120	1.100	1.050	1.030
	Harvest as Percent of GHL	89.0%	78.2%	76.8%	73.3%	71.9%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	1.412	1.250	1.230	1.170	1.150
	Harvest as Percent of GHL	98.6%	87.3%	85.9%	81.7%	80.3%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	1.750	1.570	1.540	1.472	1.450
	Harvest as Percent of GHL	122.2%	109.6%	107.5%	102.8%	101.3%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

- Alternative 2 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of six fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 107.5 and 109.6 percent of the Area’s GHL. In 2002, this alternative would have reduced harvest to a range of 76.6 and 78.2 percent of the GHL from 89.0 percent, while in 2003 this alternative would have reduced harvest to a range of 85.9 and 87.3 percent of the GHL from 98.6 percent. While this alternative could slow growth in the long run, it is likely that charter industry harvest would remain above the GHL and continue its long-term growth trend. While this alternative would reduce harvest in the short-term, charter industry harvest would likely remain above the GHL as they were in 2004 and likely continue a long-term growth trend in harvest levels. Industry interviews indicated that the banning of multiple trips per day was unlikely to

significantly reduce harvest, but would economically affect operators who rely on that business model to stay in business. These same interviews indicated that the institution of a six fish annual bag limit would economically affect those charter operators who are currently providing experiences longer than three days in length through increased marketing costs and lower margins. In the long-term, the result of these effects could be a transfer of pressure from inside passage communities (e.g., Petersburg and Wrangell), which rely on halibut in the summer months to those facing the Gulf of Alaska (e.g., Sitka), which have greater access to a variety of species. This alternative could also lead to increased pressure on alternative species or increased time spent conducting non-fishing activities. The elimination of harvest by crew members was widely supported by charter operators during the interviews and is not expected to cause significant economic losses to the industry. Note that if the BOF approved ADF&G Proposal 400 and the Commissioner prohibit halibut retention by skipper and crew, then no additional harvest reduction is achieved by Council action to implement that component of Alternative 2—the end result is the same regardless of which political entity effects the harvest reduction. However, State action is unknown at the time of release of the analysis and may remain unknown at the time of Council final action.

- Alternative 3 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of five fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 101.3 and 102.7 percent of the area's GHL. In 2002 and 2003, the alternative would have reduced area harvest to a range of 71.9 and 73.3 percent and between 80.3 and 81.7 percent, respectively. While in 2004 these management measures would have reduced harvest to nearly the level of the current GHL, any growth in harvest would again lead to a larger difference between the GHL and harvest levels. While this alternative would reduce harvest to a level close to the GHL, it is likely that charter industry harvest would remain slightly above the GHL and continue a long-term growth trend in harvest levels. Alternative 3 would have all of the same economic effects as Alternative 2, but would also result in additional economic effects for charter operators and lodges that book anglers for stays longer than two days in duration because a 5-fish limit is the functional equivalent of a two-day limit of 4 fish since few anglers would pay the same amount for half the daily bag limit. In the long term, the result of these effects could be a transfer of pressure from inside passage communities (e.g., Petersburg and Wrangell) which have limited access to species other than halibut during July and early August to those facing the Gulf of Alaska (e.g., Sitka and Prince of Wales Islands) where anglers have the option of substituting other species for halibut.

GHL Calculated Using Five-Year Average Weight Estimates – Area 2C (Method 2)

Method 2 incorporates the recommendation of the Council to use a five-year average weight estimate and to examine three years of data instead of just 2004 (Table 3). The use of five-year average halibut weights changes the net results using 2004 data, but does not substantively change the results as reported using the average annual halibut weights for 2002 and 2003. For example, a one-year estimate of halibut harvest weight under Alternative 3 would have reduced charter harvests to a range of 71.9 and 81.7 percent of the area GHL in 2002 and 2003. Using five-year average weights under Alternative 3, the harvests would have been between 76.1 and 77.5 percent of the GHL in 2002 and 78.9 and 81.0 percent in 2003. Thus, the use of five-year average weights reduced the variability of the estimates by smoothing year-to-year variations in halibut weight. However, the use of five-year average weights does not change the practical results in 2002 and 2003, such that both alternatives would have resulted in harvest reductions and overall harvest levels below the GHL.

The effect of using the five-year average weight on 2004 data is substantially different. Because the 2004 estimate of average halibut harvest weight (20.7 lb) is higher than the five-year average weight (19.5 lb), the estimate of the 2004 charter halibut harvest drops 6.1 percent (i.e., from 1.750 M lb to 1.643 M lb). This also changes the 2004 charter harvest estimate as a percentage of GHL (i.e., from 122.2 percent to 114.7 percent). The net result of using the five-year average is that Alternative 2 would have reduced charter halibut harvest to a level very near, but slightly above, the GHL in 2004. Alternative 3 would have reduced charter halibut harvest to a range of 95.0 and 96.4 percent of the GHL; a level below the GHL. Thus, the net effect of the use

of five-year average weight estimates is two-fold in Area 2C: (1) it is less sensitive to annual changes in halibut weights; and (2) it changes the evaluation of the alternatives using 2004 data.

Table 3. Effect of alternatives of charter industry halibut harvest (2004) in Area 2C (Method 2)

Category	Management Measure/Effect (Reduction in %)	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Component	One Trip Per Day (2002)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2003)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2004)	N/A	0.3%	0.6%	0.3%	0.6%
	No Harvest by Skipper & Crew	N/A	3.3%	4.5%	3.4%	4.6%
	6 Fish Annual Limit (2002)	N/A	8.3%	8.3%	N/A	N/A
	6 Fish Annual Limit (2003)	N/A	7.5%	7.5%	N/A	N/A
	6 Fish Annual Limit (2004)	N/A	7.0%	7.0%	N/A	N/A
	5 Fish Annual Limit (2002)	N/A	N/A	N/A	13.7%	13.7%
	5 Fish Annual Limit (2003)	N/A	N/A	N/A	13.1%	13.1%
	5 Fish Annual Limit (2004)	N/A	N/A	N/A	12.2%	12.2%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	1.350	1.190	1.170	1.110	1.090
	Harvest as Percent of GHL	94.3%	83.1%	81.7%	77.5%	76.1%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	1.395	1.240	1.210	1.160	1.130
	Harvest as Percent of GHL	97.4%	86.6%	84.5%	81.0%	78.9%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	1.643	1.470	1.440	1.380	1.360
	Harvest as Percent of GHL	114.7%	102.7%	100.6%	96.4%	95.0%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

Expected Effect of Each Alternative in Area 3A

In 2004, the charter halibut harvest was reported to be 100.5 percent of the 3.65 M pound GHL. The proposed alternatives are likely to reduce Area 3A charter harvests below the GHL.² However, charter halibut harvests have a long-term, but highly variable growth pattern. Thus, Alternative 3 would likely provide the longest time period before charter halibut harvests approach the GHL in the future because it reduces overall harvest the most.

- Alternative 1, the no action alternative, would not reduce current harvest levels or change current charter halibut trends without independent action by the Alaska Board of Fisheries or ADF&G as described for Area 2C. If the State (either BOF or ADF&G) adopts the retention prohibition, then an indirect result of Alternative 1 would be a minimum reduction in harvest of between 7.7 and 10.5 percent. If such a prohibition had been made in 2004 the charter halibut harvest would have been under the GHL by approximately seven to ten percent. ADF&G can not estimate harvest reduction associated with a separate proposal to limit the number of lines to the number of clients onboard due to uncertainty of fishing behavior by anglers and crew. However, Alternative 1 would not reduce current harvest levels further and harvests would likely continue their current trends of long-term growth if ADF&G's proposals are not accepted by the BOF.

Note that both ADF&G staff and charter operators have stated that the 2005 harvest in Area 3A is likely to be under the GHL. Charter halibut operators indicated that the 2004 harvest was boosted by the diversion of tourism activities away from interior Alaska to Southcentral Alaska because of interior wildfires. Thus, it is likely that under the no action alternative, and without State action,

² Note that any of the component measures analyzed for this area would reduce harvest below the GHL.

harvest levels in Area 3A may slip below the GHL in 2005 and Council action may be delayed for a short period before growth in tourism and the charter fleet pushes harvest above the GHL, warranting the Council to initiate a new analysis of these same measures in the future if the Council makes no further changes to the management of the charter sector.

- Alternative 2 would limit vessels to one trip per day. This alternative would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 94.0 and 96.1 percent of the GHL. This alternative would have reduced harvests in 2002 to a range of 71.2 and 72.3 percent of the GHL from 74.6 percent, while it would have reduced harvest to a range of 87.9 and 89.4 percent of the GHL from 92.7 percent in 2003. Charter halibut operators reported that the effect of this measure could be very short-term as the response of operators using the multi-trip per day or overnight trip business models would likely increase the number of boats operated and work to ensure that boats now operated at voluntary less-than-capacity levels are operated at full capacity. Additionally, the effect of the alternative likely is overestimated even without the adaptations above, because of excess capacity in the Southcentral charter fleet, whereby a portion of displaced clients are likely to find seats with operators currently using the one-trip-per day business model. Charter halibut operators reported that the effect of this measure could be very short-term as the response of operators using the multi-trip per day or overnight trip business models would likely increase the number of boats operated and work to ensure that boats now operated at voluntary less-than-capacity levels are operated at full capacity.

Alternative 3 would limit vessels to one trip per day and eliminate harvest by crew members. It would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 83.5 and 88.4 percent of the GHL (Table 4). It would have reduced harvest to a range of 63.4 and 66.6 percent of the GHL from 74.6 percent in 2002, while it would have reduced harvest to a range of 78.2 and 82.3 percent of the GHL from 92.7 percent in 2003. As with Alternative 2, the reduction associated with restrictions on the number of trips per day is likely to be overestimated by this analysis and short-lived. The majority of the reduction comes from the elimination of crew harvests³. Charter halibut operators reported that the latter measure is likely to be the most effective,

Table 4. Effect of alternatives of charter halibut harvest in Area 3A (Method 1)

Category	Management Measure/Effect	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Components	One Trip Per Day (2002)	N/A	3.1%	4.5%	3.1%	4.5%
	One Trip Per Day (2003)	N/A	3.5%	5.1%	3.5%	5.1%
	One Trip Per Day (2004)	N/A	4.4%	6.4%	4.4%	6.4%
	No Harvest by Skipper & Crew	N/A	N/A	N/A	7.7%	10.5%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	2.720	2.640	2.600	2.430	2.310
	Harvest as Percent of GHL	74.6%	72.3%	71.2%	66.6%	63.4%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	3.380	3.260	3.210	3.010	2.860
	Harvest as Percent of GHL	92.7%	89.4%	87.9%	82.3%	78.2%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	3.670	3.510	3.430	3.230	3.050
	Harvest as Percent of GHL	100.5%	96.1%	94.0%	88.4%	83.5%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

³ When not outlining the full text of specific alternatives, this report uses the term “crew harvest” to denote harvest by skippers, deck hands, and others working on charter vessels. Additionally, this analysis defines a trip as actively being on the water and fishing with paying clients during a calendar day. For example, a vessel leaving Wednesday night and returning on Thursday morning and actively fishing with paying clients on both days is defined as having taken a trip on both Wednesday and Thursday. No further activity would be permitted on Thursday under the one trip per day limit.

have the greatest long-term effect, and have the least economic effect on charter operators. This may suggest that charter operators would prefer elimination of crew harvests as a preferred method to achieve the GHL. Some had recommended that the one-trip per day limit be removed from the alternative, as having too great a negative effect on certain operations when the necessary reduction could be achieved by the prohibition on retention. The effect of Alternative 3 is equivalent to Alternative 2 if the State implements a prohibition on retention of halibut by skippers and crew. However, possible action by the ADF&G Commissioner under Emergency Order Authority (under ADF&G Proposal 400) is speculative, as described above for Area 2C.

GHL Calculated Using Five-Year Average Weight Estimates – Area 3A

The use of five-year average halibut weights does not have a substantive effect on the results for Area 3A (Table 5). While using the five-year average weights raises the estimate of the GHL overage in 2004, the numerical estimates of the effect of the proposed alternatives indicate that any alternative is likely to reduce Area 3A charter harvests below the GHL. However, the use of these averages does not address the highly variable, but long-term, growth pattern in harvests and Alternative 3 would still likely provide the longest time period before harvests approach the GHL in the future.

Table 5. Effect of alternatives of charter halibut harvest in Area 3A (Method 2)

Category	Management Measure/Effect	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Components	One Trip Per Day (2002)	N/A	3.1%	4.5%	3.1%	4.5%
	One Trip Per Day (2003)	N/A	3.5%	5.1%	3.5%	5.1%
	One Trip Per Day (2004)	N/A	4.4%	6.4%	4.4%	6.4%
	No Harvest by Skipper & Crew	N/A	N/A	N/A	7.7%	10.5%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	2.906	2.820	2.770	2.590	2.470
	Harvest as Percent of GHL	79.6%	77.3%	75.9%	71.0%	67.7%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	3.175	3.060	3.010	2.820	2.680
	Harvest as Percent of GHL	87.0%	83.8%	82.5%	77.3%	73.4%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	3.802	3.640	3.560	3.340	3.160
	Harvest as Percent of GHL	104.2%	99.7%	97.5%	91.5%	86.6%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

Overall and Long-Term Efficacy of the Alternatives and Management Measures

The long-term efficacy of each alternative is likely to be limited because halibut charter operators and their clients will respond strategically to the proposed management measures. For example, the efficacy of limiting boats to one trip per day will likely be limited by the purchase of additional boats, the ability of a sizeable portion of displaced clients to find replacement seats on other boats, and the expansion of capacity on boats running overnight charters which are currently running below legal capacity. The efficacy of prohibiting retention by crew members will be limited by their shifting harvest to the recreational sector. While this shift will not count against the GHL it would be counted in the IPHC deductions of total sport catch from total CEY. The efficacy of annual limits is likely to be limited by the substitution of bare-boat charters and other self-guided activities because the costs of charter fishing could become less attractive under the annual limit. Again, the harvest resulting from this behavior would not count against the GHL, but would be counted in the IPHC's deductions for total sport catch from total CEY. Finally, it should be anticipated that a response to restrictive annual limits in Area 2C may be a shift in pressure to Area 3A where no limit is proposed. An increase in bareboat charters may also occur. These strategic responses will reduce the efficacy of the proposed alternatives and will reduce the potential opportunity costs to charter operators and clients.

In its February 2006 minutes, the SSC "*observes that the inexorable consequence of a GHL that is non-binding within a season, coupled with management instruments for limiting catches by the charter-based*

halibut sport fishery that are potentially ineffectual, is that the Council should anticipate an ongoing de facto reallocation of catches from the commercial fishery to the charter-based sport fishery for halibut. If the charter-based sport fishery were subject to binding limits under an IFQ program, the reallocation between commercial and charter-based fisheries would take place through voluntary transactions in a market. In the absence of tradable harvest shares, the Council will, consciously or unconsciously, serve as the arbitrator between the commercial and charter industries with actions taken to benefit one sector resulting in uncompensated costs to the other sector. Within such a political market, each sector is left with an individually rational but collectively irrational incentive to squander potential benefits of increased shares in an endeavor to influence the Council's active or passive decisions."

Proposed GHL measures may not be effective over the long term in stopping the reallocation from commercial to charter sectors. This will result in recurrent regulatory actions and allocation disputes between the sectors that will result in ongoing management costs to State and Federal agencies. It is not possible to document the costs of potential action(s). The SSC stated, ". . . the approach the Council has adopted to management (sic) of the charter-based sport fishery for halibut presents a clear example of the types of problems that can emerge when there are substantial temporal delays between prosecution of the fishery, generation of data on the magnitude of removals, and tweaking of management measures intended to influence the magnitude of future removals. This type of problem is commonly known as a delayed feedback loop. Delayed feedback loops exhibit cyclic overshoot and undershoot around the intended target, but control rules can be designed to dampen the oscillation if the system is stationary and deterministic. If the system includes a random element, or a trend or other nonstationarity, management actions will tend to exacerbate cyclic overshoot and undershoot. The upshot of this is that it is unlikely that catches in the charter-based halibut sport fishery can be constrained to intended targets when there is a 1-2 year delay between prosecution of the fishery and generation of data regarding the magnitude of removals and another 1-2 year delay between when the data are available and management measures are selected and implemented. One solution to the delayed feedback problem is to shorten the delays. In the case of management of the charter-based halibut sport fishery, this would involve development of indices of removals that can be used to estimate catches as the season progresses coupled with the adoption of management measures that could be automatically triggered if removals were projected to exceed the GHL. The SSC is pleased to learn that ADF&G will resume inclusion of halibut in the charter logbook program in 2006; the logbook data could serve as an instrument for more timely assessment of charter-based catches of halibut."

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1.0 ENVIRONMENTAL ASSESSMENT

1.1 Purpose and Need for the Action

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) addresses an amendment to the federal fishery regulations affecting the charter halibut fishery. NEPA, E.O. 12866, and the RFA 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 is addressed in Chapter 1. Chapter 2 describes the alternatives considered for analysis. Chapter 3 describes the affected environment. Chapter 4 discusses the biological and environmental impacts of the alternatives as required by NEPA, as well as impacts on endangered species and marine mammals. Chapter 5 contains a Regulatory Impact Review (RIR) as required under E.O. 12866. Chapter 6 contains the Initial Regulatory Flexibility Analysis (IRFA) as required under the RFA.

1.1.1 Introduction

This analysis assesses the potential impacts of implementing management measures to reduce harvests to the guideline harvest levels (GHLs) that were implemented in regulation for the halibut charter fisheries in IPHC Areas 2C (Southeast Alaska) and 3A (South-central Alaska) (Figure 1). The proposed action was initiated in October 2005, when the Council reviewed 2004 ADF&G data that indicated that the GHLs in both areas were exceeded.

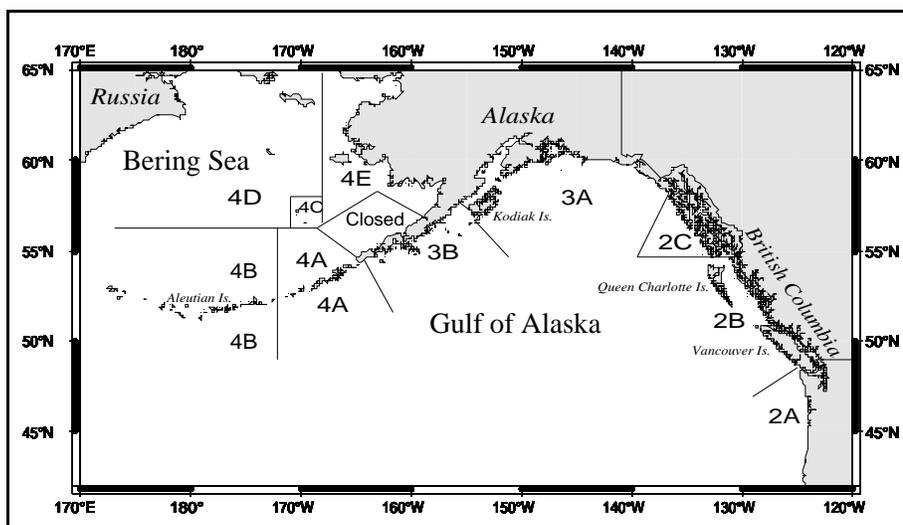


Figure 1. IPHC regulatory areas for the commercial halibut fishery (Source: IPHC)

Implementing management measures to reduce harvests below the GHL is the next management step as outlined in the Council's GHL policy.

This analysis specifically assesses the impacts of proposed management measures to reduce charter halibut harvests to below the respective GHLs. Relevant information from the 1997 and 2001 Council analyses (NPFMC 1997, 2003) were brought forward into this analysis as appropriate. Though the previous analyses are incorporated into this document by reference and are part of the administrative record for this action, only this current analysis, along with the proposed rule, will constitute the regulatory package submitted to the Secretary of Commerce for review after the Council identifies its preferred alternative. If approved, GHL management measures could be implemented in 2007 at the earliest.

Federal agencies share management of Pacific halibut *Hippoglossus stenolepis*. The domestic fishery is managed by the IPHC as provided by the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and the Bering Sea (Convention) and

the Northern Pacific Halibut Act of 1982 (Halibut Act). The Halibut Act authorizes the North Pacific Council to:

“...develop regulations governing the United States portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the United States, or both which are in addition to and not in conflict with regulations adopted by the Commission. Such regulations shall only be implemented with the approval of the Secretary, shall not discriminate between residents of different States, and shall be consistent with the limited entry criteria set forth in Section 303(b)(6) of the Magnuson Act. If it becomes necessary to allocate or assign halibut fishing privileges among various United States fishermen, such allocation shall be fair and equitable to all such fishermen, based upon the rights and obligation in existing Federal law, reasonably calculated to promote conservation, and carried in such manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges...”

In general, the language in the Magnuson-Stevens Fisheries Conservation and Management Act (MSA), the Halibut Act and the Convention has been interpreted to assign responsibility to the Council on halibut management issues concerning allocations and limited entry. Other applicable law, including Executive Orders 12866 and 12962, National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Marine Mammal Protection Act (MMPA), and the Regulatory Flexibility Act (RFA), all mandate that certain issues be examined before a final decision is made. These analytical requirements are addressed in this EA/RIR/IRFA.

Management authority to manage Halibut off Alaska resides with the IPHC, NOAA Fisheries Service, and the North Pacific Fishery Management Council. State authority to directly regulate the Halibut fishery in Convention waters is preempted by federal law. However, not every State law that has some indirect effect on the regulation of the Halibut fishery within Convention waters is preempted (e.g., regulations designed to affect all licensed guides and that are not particular to the halibut fishery).

1.1.2 Background and history of the charter halibut guideline harvest level

Background. Charter halibut harvests, along with other non-commercial harvests, are unrestricted because there is no specific allocation to (or limit on) the charter fishery. This results in a reallocation to the charter sector from the commercial sector. Therefore as the charter fishery expands, its harvests reduce the allocation to the commercial halibut fishery and, subsequently, the value of quota shares (QS) in the commercial halibut IFQ Program.

In 2004, the GHL established a pre-season estimate of acceptable annual harvests for the halibut fishery in Areas 2C and 3A. To accommodate limited growth of the charter fleet while approximating historical harvest levels, the GHL for each area was based on 125 percent of the average of 1995-99 charter harvest estimates, as reported by ADF&G Statewide Harvest Survey (SWHS). The GHLs were set at 1,432,000 lb net weight in Area 2C and 3,650,000 lb net weight in Area 3A.

While the commercial quotas fluctuate directly with stock abundance, the fixed GHLs are established annually in pounds. The GHLs are responsive to reductions in stock abundance. If either area's total Constant Exploitation Yield (CEY) is reduced by at least 15 percent below the average 1999-2000 total CEY, as determined by the IPHC, then the area GHL would be reduced. For example, if the total CEY in Area 2C were to fall between 15 and 24 percent below its 1999-2000 average, then that GHL would be reduced by 15 percent to 1,217,200 lb. If it fell between 25 and 34 percent, then it would be reduced by an

additional 10 percent to 1,095,480 lb. If the total CEY continued to decline by at least 10 percent, then it would be reduced by an additional 10 percent.

These “stair step” reductions were implemented because at the time of final action in 2000: (1) the status of the halibut stock was predicted to have been at its peak and declining; (2) the GHLS formula allowed for a 25 percent increase in past harvests; and (3) the charter sector requested a fixed allocation to provide better predictability for planning bookings for the next summer’s fishing season. The overall intent was to maintain a stable charter fishery season of historic length, using area- specific measures to control harvests to the GHLS. According to IPHC staff, the relative abundance between 2000 and 2005 is not estimated to have exceeded 15 percent (B. Leaman, pers. comm.); therefore, the GHLS have not been reduced.

History. The September 2003 final rule established a level for charter halibut harvests. If the GHL is exceeded, then NMFS will notify the Council within thirty days of receiving information that the GHL has been exceeded. Upon such notification, the Council may initiate analysis of possible harvest reduction measures and NMFS may initiate subsequent rulemaking to reduce charter harvests. While the Council’s 2003 preferred alternative included a suite of management measures tied to ranges of harvest reductions that were to be implemented when harvests exceeded the GHLS, the final rule did not implement the proposed management measures. The final rule did not prevent the Council from recommending management measures before the charter harvests exceeded a GHL, nor did it obligate the Council to take specific action if the GHL is exceeded. This GHL policy, as implemented, serves only to notify the Council that a specific level of charter harvests has been achieved.

The 2003 final rule resulted from ongoing efforts by the Council to address allocation concerns between the commercial IFQ halibut fishery and the charter fishery. The Council has discussed the expansion of the charter halibut fishery since 1993.

In September 1997, the Council adopted two management actions affecting the halibut charter fishery, culminating more than 4 years of discussion, debate, public testimony, and analysis. First, the Council adopted recording and reporting requirements for the halibut charter fishery. These requirements were effectively met when Alaska Department of Fish and Game (ADF&G) Sport Fish Division, instituted a Saltwater Charter Vessel logbook (Logbook) in 1998. It complemented additional sportfish data collected by the State of Alaska (State) through the Statewide Harvest Survey (Harvest Survey), conducted annually since 1977, and the on-site (creel and catch sampling) surveys conducted separately by ADF&G in Southeast and Southcentral Alaska.

The Council’s second management action recommended GHLS for the charter halibut fishery in Commission regulatory areas 2C and 3A. The GHLS were based on the charter sector receiving an allocation of 125 percent of its 1995 harvest. This amount was equivalent to 12.76 and 15.61 percent of the combined commercial/charter halibut quota in areas 2C and 3A, respectively.

The Council stated its intent that charter harvests in excess of the GHL would not lead to a mid-season closure of the fishery, but instead would trigger other management measures to take effect in years following attainment of the GHL. These measures would restrict the charter fishery and maintain harvests within the GHL allocation. The overall intent was to maintain a stable charter season of historic length, using area-specific harvest reduction measures. If end-of-season harvest data indicated that the charter sector likely would reach or exceed its area-specific GHL in the following season, NMFS would implement measures to slow down charter halibut harvest.

Given the one-year lag between the end of the fishing season and availability of that year’s harvest data, management measures in response to the charter fleet’s meeting or exceeding the GHL would take up to

two years to become effective. However, the Council did not recommend specific management measures to be implemented by NMFS if the GHL were reached.

In December 1997, the NMFS Alaska Regional Administrator informed the Council that publishing the GHL as a regulation without specific management measures would have no regulatory effect on the charter fleet. Further, because the Council had not recommended specific management measures by which to limit harvests if the GHL were reached, no formal approval decision by the Secretary would be required for the Council's proposed GHL policy. Hence, a GHL proposed rule would not be developed and forwarded for review by the Secretary.

After being notified that its 1997 GHL policy recommendation would not be submitted for Secretarial review, the Council initiated a public process to develop potential harvest restrictions to implement if the GHL were exceeded. The Council formed a GHL Committee to recommend alternative management measures for analysis that would constrain charter harvests below the GHL. In April 1999, the Council identified alternatives for analysis.

In February 2000, after 7 years of discussing the charter halibut fishery, the Council adopted a redefined charter GHL and a system of management measures for recommendation to the Secretary. The Council's recommendation would have established a suite of varying harvest restrictions that would be triggered depending on the degree to which the GHL was exceeded. Once the GHL is reached or exceeded, these measures would be implemented by notice published in the Federal Register. Essentially, the Council's recommendation included a "framework" of restrictions that were explicitly designed to be implemented without proceeding through public notice and comment before becoming effective.

NOAA General Counsel (NOAA GC) assessed the proposed rule after its publication, on January 28, 2002 (67 FR 3867), in light of recent case law and notified NMFS that it had concerns about the proposed regulatory framework mechanism. After discussions with NOAA GC, NMFS sent a letter to the Council on April 2, 2002, informing the Council that "[t]he current framework cannot be implemented as conceived by the Council because the Administrative Procedures Act (APA) requires that any regulatory action have prior notice and opportunity for public comment before becoming effective."

The notification process described in the proposed rule contemplated compliance with the APA in establishing the framework of harvest restrictions that would be scaled to match the extent to which the charter fishery exceeded the GHL. This framework of potential restrictions, one or more of which would be automatically triggered depending on the level of GHL overage, was designed by the Council to minimize the time between exceeding a GHL and the implementation of one or more restrictions. Public comment was specifically invited on the range of restrictions and the link between this range and the level that the charter fishery exceeded the GHL.

This process of implementing pre-conceived and non-discretionary restrictions by notice, pending GHL overage, however, would not have provided for additional public comment at the time of implementing a restriction. The NMFS letter to the Council indicated that this lack of additional public comment would not be consistent with the APA based on a review of the framework harvest restriction measures by NOAA GC.

The public comment requirement of the APA can be waived only for "good cause." The harvest reduction measures in the Council's 2001 preferred alternative likely could not be implemented under the "good cause" exemption of the APA. The APA provides for a "good cause" finding only when the agency finds that notice and opportunity for public comment would be impracticable, unnecessary, or contrary to the public interest (5 U.S.C. 553(b)(B)). These terms are narrowly defined. Because this "good cause" finding would need to be made at the time the harvest reduction measures are implemented, NMFS and NOAA

GC could not guarantee in advance that a “good cause” finding would exist in every instance the GHL was exceeded and harvest reduction measures triggered. Accordingly, NOAA GC indicated that a strong likelihood existed that proposed and final rulemaking would be required under APA procedures when implementing any of the proposed harvest reduction measures. This requirement would effectively undermine the goal of the framework measures to expedite implementation of harvest restriction measures on the charter fishery.

NMFS presented this letter to the Council at its April 2002 meeting, but no action was taken. NMFS sent a second letter to the Council on September 6, 2002, which further clarified factors affecting that may affect the approval of the GHL program and suggested alternative ways to meet the Council’s intent.

The September 6, 2002 letter noted that the proposed rule could be approved only if it were changed to explicitly provide for an opportunity for public comment before implementing any harvest reduction measures. This change would increase the amount of time between when the GHL is exceeded and implementing any harvest reduction measures, because the APA rulemaking process would require an analysis of alternatives to the proposed harvest reduction measures recommended by the Council under the requirements of the Regulatory Flexibility Act, the National Environmental Policy Act, Executive Order (E.O.) 12826 (which requires a Regulatory Impact Review), and other applicable laws.

This letter was discussed by the Council in October 2002. The Council encouraged NMFS to consult with NOAA GC to determine how best to implement the GHL. The Council indicated that its preferred course of action would be to implement the GHL policy as a rule and to develop possible harvest restriction measures as necessary at a later time through a separate analytical and rulemaking process. Under this scenario, the Council would undertake its usual process of forwarding recommendations to NMFS based on analysis of alternatives each time recreational guided harvests exceed the GHL.

NMFS and NOAA GC consulted and on December 2, 2002, NMFS informed the Council by letter that NMFS intended to proceed as recommended by the Council in October, with a final rule to implement the GHL policy without the associated harvest restriction measures. NMFS presented this letter to the Council at its December 2002 meeting. This letter noted that if the GHL were exceeded, subsequent harvest restrictions could be implemented as needed under normal APA rulemaking with the accompanying analyses. In other words, this final rule established the GHL policy and required NMFS to notify the Council when a GHL is exceeded which could serve as a trigger for subsequent rulemaking. Hence, the final rule (68 FR 47256) deviated from the proposed rule (67 FR 3867) by omitting all of the proposed restrictions. Appendix II reviews the development of the Council’s GHL policy in more detail.

1.2 Problem Statement

The Council has discussed the expansion of the halibut charter fleet since September 1993 when concerns initially were voiced over localized depletion of the halibut resource and the potential reallocation of halibut from the IFQ longline fishery to the charter fishery. A surge in charter effort in the early 1990s in some small communities (e.g., Sitka) fueled this concern. The Council then endorsed a two-prong approach to mitigate the perceived impacts of increased guided charter halibut fishing. The first was to establish GHLs for Areas 2C and 3A; the second was to establish a process for developing local area management plans for coastal communities. These approaches are consistent with the Problem Statement first developed in 1995 and revised in 2000 for overall charter halibut fishery management:

The recent expansion of the halibut charter industry may make achievement of Magnuson-Stevens Act National Standards more difficult. Of concern is the Council’s 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 notes the following areas of concern with respect to the recent growth of halibut charter operations:

1. Pressure by charter operations may be contributing to localized depletion in several areas.
2. The recent growth of charter operations may be contributing to overcrowding of productive grounds and declining harvests for historic sport and subsistence fishermen in some areas.
3. As there is currently no limit on the annual harvest of halibut by charter operations, an open-ended reallocation from the commercial fishery 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 fleet of this open-ended reallocation may be substantial and could be magnified by the IFQ program.
4. In some areas, community stability may be affected as traditional sport, subsistence, and commercial fishermen are displaced by charter operators. The uncertainty associated with the present situation and the conflicts that are occurring between the various user groups may also be impacting community stability.
5. Information is lacking on the socioeconomic composition of the current charter industry. Information is needed that tracks: (1) the effort and harvest of individual charter operations; and (2) changes in business patterns.
6. The need for reliable harvest data will increase as the magnitude of harvest expands in the charter sector.

Bifurcation of the general problem statement allows the Council to address the problems of local depletion and allocations separately. In February 2006, the Council adopted a problem statement specific to this proposed action to reduce charter halibut harvests to the GHL in Areas 2C and 3A.

PROBLEM STATEMENT FOR GHIL ANALYSIS

Adopted February 2006

Harvest by the guided sport halibut sector has exceeded the Guideline Harvest Level (GHL) recommended by the NPFMC and established by the Secretary of Commerce. The NPFMC adopted the GHL to address the open-ended reallocation of halibut from the commercial to the guided sport sector and to provide a measure of stability to the halibut industry and coastal communities while the NPFMC develops a long-term plan for the guided sport (GS) sector. Designing management measures to maintain stability and prevent the GS sector from exceeding the GHL during this interim period is the responsibility of the NPFMC.

1.3 Description of the Alternatives

In October 2005, the Council reviewed ADF&G Sport Fish Division data that indicated that the GHLS were exceeded in both Areas 2C and 3A in 2004. In conformance with its 2000 policy to implement a suite of management measures selected to attain a certain level of harvest reduction, the Council identified a range of alternatives for each area. The alternatives for each area are based on the 2000 suite of proposed management measures that were developed over the course of seven separate meetings of the GHL Committee, Advisory Panel, and Council (Appendix III). After reviewing the initial review of the draft analysis in February 2006, the Council clarified that individual components of each alternative could be selected as its preferred alternative.

The estimated effects of the proposed alternatives use ADF&G estimates of 2002-2004 harvest levels. The effect of the alternatives are not projected for 2005 and beyond for several reasons, including: (1) high year-to-year variability in charter halibut harvest levels, rate of change in harvest levels, and average fish size, which makes prediction difficult; (2) 2005 data were not available from ADF&G at the time of the analysis; and (3) 2002-2004 are useful conservative baseline years (e.g., if the alternatives would not

have reduced 2004 harvests to the GHL in a rising harvest environment then they are unlikely to reduce higher harvests in future years below the GHL).

1.3.1 Alternative 1. No action

Taking no action would not implement management measures to reduce charter halibut harvests to the GHLs, as outlined in the Council's 2000 GHL policy. The no action alternative includes pending action by the State of Alaska to limit charter halibut harvests below the GHLs. On December 29, 2005, the Alaska Board of Fisheries (Board) agreed to an agenda change request for its March 17–25, 2006 meeting in Anchorage to consider proposals submitted by ADF&G. The Board is expected to adopt the following action for all charter fisheries in Southeast and Southcentral Alaska to be implemented in 2006: (1) limit the number of lines to the number of customers onboard the charter vessel, and (2) prohibit retention of fish caught by skipper/crew when customers are onboard the charter vessel. Because the action will not occur until after release of this draft to the public, the status quo alternative will not include the proposed Board action. During final action in April 2006, the Council will be informed of the action taken by the Board in March 2006.

1.3.2 Alternative 2. Implement management measures to reduce charter halibut harvests to the GHL.

Area 2C: One trip per day, no harvest by skipper and crew, and annual limit of 6 fish.

Area 3A: One trip per day

Alternative 2 was selected for analysis because the proposed measures contained therein were based on measures that were estimated to achieve a certain level of harvest reductions in 2000, as outlined in Appendix III. Therefore, the proposed measures under Alternative 2 were associated with reducing harvest between 20 and 30 percent in Area 2C under the Council's 2000 preferred alternative; proposed measures for Area 3A were associated with reductions of less than 10 percent.

NOAA Enforcement staff defined a "trip" for charter halibut operators for this analysis. *A charter halibut fishing trip begins when a halibut is brought onboard a charter fishing vessel and ends when any halibut is offloaded from that vessel or when any person that was present on that vessel when the first halibut was brought onboard disembarks the vessel, which ever comes first.*

1.3.3 Alternative 3. Implement management measures to reduce charter halibut harvests to the GHL.

Area 2C: One trip per day, no harvest by skipper and crew, and annual limit of 5 fish.

Area 3A: One trip per day, no harvest by skipper and crew

Alternative 3 was selected for analysis because it was estimated to achieve the next tier of harvest reductions as outlined in Appendix III. Proposed measures for Area 2C under Alternative 3 corresponded to harvest reductions between 30 and 40 percent from the Council's 2000 preferred alternative; proposed measures corresponded to harvest reductions between 10 and 20 percent in Area 3A.

1.4 Probable Environmental Impacts

1.4.1 Overview

An environmental assessment (EA) is required by NEPA to determine whether the actions considered will result in significant impact on the human environment. If the action is determined not to be significant, the EA and resulting finding of no significant impact (FONSI) would be the final environmental

documents required by NEPA. An environmental impact statement (EIS) would be prepared for major Federal actions if the actions are determined to significantly affect the human environment.

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish stocks, which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure; (2) changes in the physical and biological structure of the marine environment as a result of fishing practices (e.g., effects of gear use and fish processing discards); and (3) Alaska Groundfish Fisheries (NMFS 2004).

1.4.2 Potential Impacts on Pacific Halibut Stocks

Abundance. The IPHC sets catch limits in regulatory areas 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 for 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 will maintain local depletion. However, biomass estimates and local movement rates are not available to manage small areas.

As described by Clark and Hare (2005), exploitable biomass is estimated by fitting a detailed stock assessment model using all available data from the commercial fishery and scientific surveys in each area. Total constant exploitation yield or CEY is calculated by applying a fixed harvest rate (22.5 percent for these areas) to the exploitable biomass estimate. The

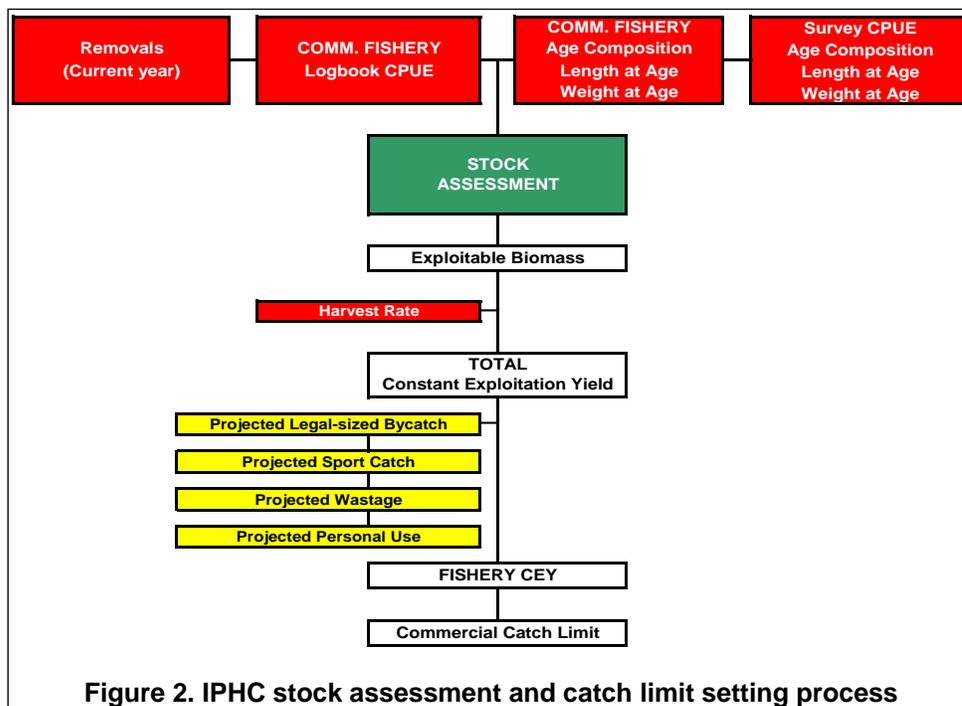


Figure 2. IPHC stock assessment and catch limit setting process

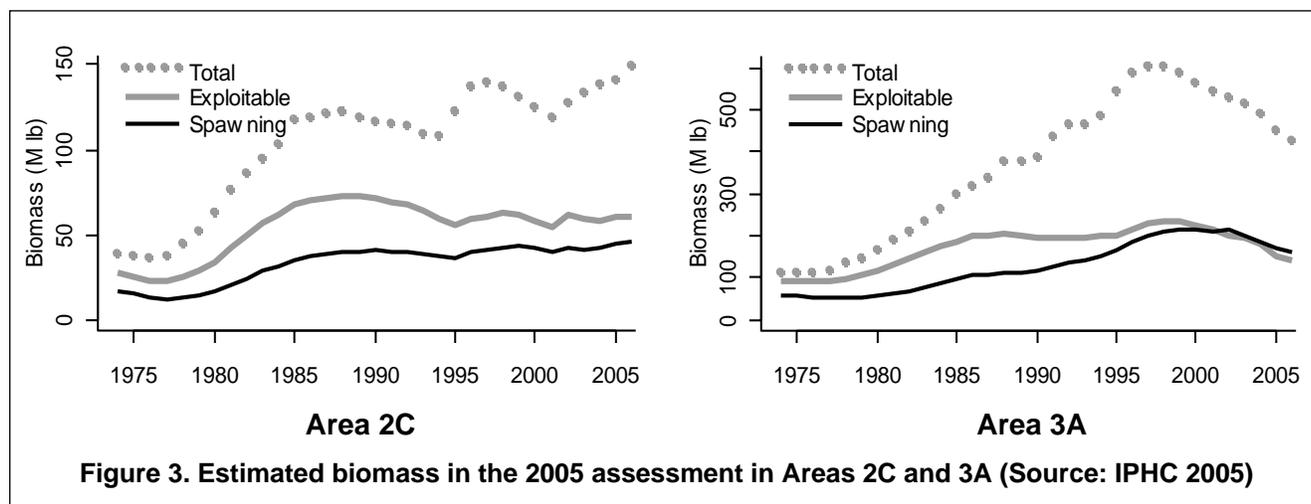
corresponding fishery CEY is calculated by subtracting an estimate of all unallocated removals [bycatch of legal-sized fish, wastage of legal sized fish in the halibut fishery, fish taken for personal use, and sport (guided and unguided) catch] from the total CEY (Figure 2).

The IPHC takes into account all removals of halibut from the North Pacific and Bering Sea within the EEZ of the U.S. and Canada. Fishing for halibut does occur off the coasts of Japan and Russia, but those removals are not included in the IPHC population assessment. The IPHC stock assessment is based on biological and fishery data obtained through port sampling, IPHC and NMFS surveys, and special

projects. Since the 1930s, biologists have collected lengths, otoliths for aging and catch per unit of effort data. More recently, IPHC surveys have also collected data on gender composition and maturity. Logbook information is supplied by the fishers either through interviews by IPHC staff in the landing ports or via mail post-season.

The commercial CEY is currently only set for commercial fisheries for setline or longline gear. *A separate discussion paper will be provided prior to final action on a proposed method that would create a separate accountability system for charter and commercial fisheries.*

The most recent halibut stock assessment was conducted by the IPHC in December 2005. The halibut resource is considered to be healthy, with total catch near record levels. The estimate of coastwide exploitable biomass from the 2005 assessment is 382 M net lb (IPHC 2005). The estimates of abundance are little changed in most areas. The 2006 Area 2C estimate is down by about 10 percent because of a lower commercial CPUE in 2005 and another low survey CPUE in 2005 following last year's 20 percent drop (Figure 3).



Hare and Clark (2005) reported five-year projections of CEYs, exploitable biomass and spawning biomass (Table 7 and Figure 4). The projections show yield increasing in Area 2C and decreasing in Area 3A over the next five years. For comparison, the 2005 and 2006 CEYs are also listed. The projections assume a constant harvest rate of 0.225 in Areas 2B, 2C, and 3A, 0.200 in Areas 3B and 4A, and 0.150 in 4B. Recruitment projections have little impact on yield projections over a five year time horizon.

Table 6. CEY projections for 2007-2011 for IPHC Pacific halibut regulatory areas

	2B	2C	3A	3B	4A	4B
Year	(0.225)	(0.225)	(0.225)	(0.200)	(0.200)	(0.150)
2005	13.1	14.9	32.9	11.2	4.0	2.0
2006	13.7	13.7	32.2	9.0	3.8	1.7
2007	14.4	14.3	30.4	10.7	3.8	1.2
2008	14.6	15.1	29.1	12.6	3.9	1.1
2009	14.7	15.7	28.2	14.3	3.9	1.0
2010	14.5	16.1	27.5	16.0	4.0	0.9
2011	14.2	16.2	26.7	17.2	4.1	0.9

Source: Hare and Clark 2005

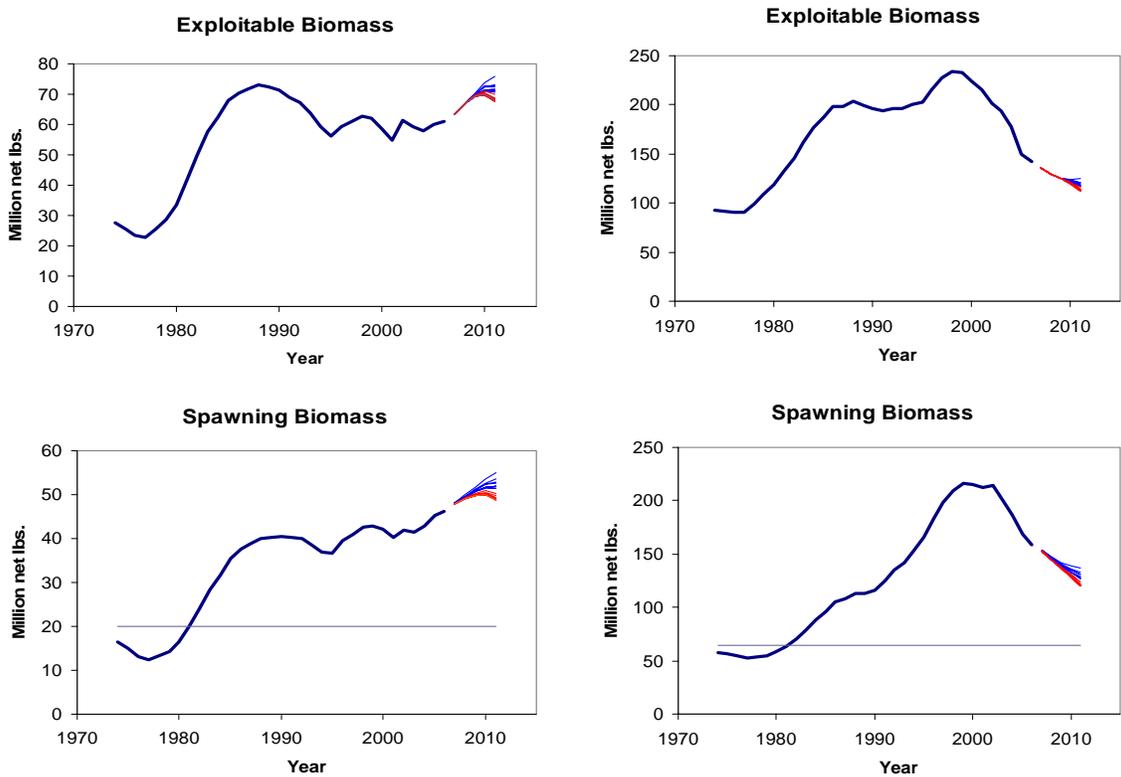
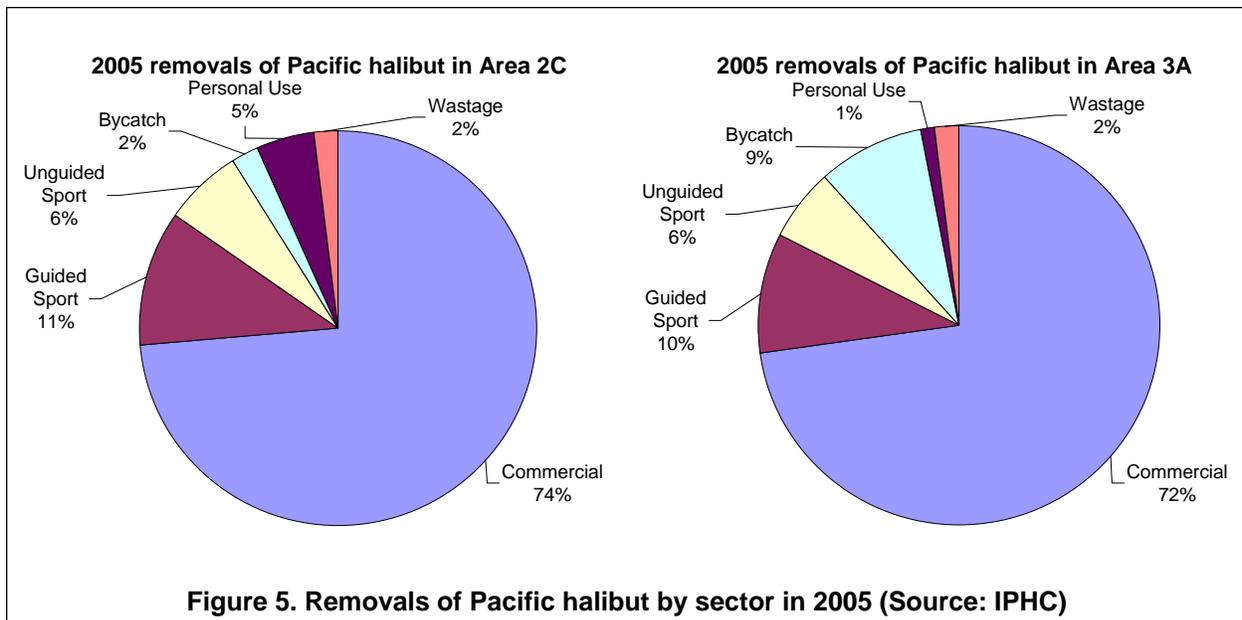


Figure 4. Biomass projections for Areas 2C (left) and Area 3A (right) (Source: IPHC)

The outlook for the stock biomass over the near future is for a decline from the record high levels of recent years until increased recruitment to the stock occurs. The IPHC commercial quota for 2005 in Alaska totaled 59.24 M lb. The IPHC adopted commercial quotas for 2006 totaling 55.26. The 2006 commercial quota in Area 2C was set at 10.63 M lb compared with 10.93 M lb in 2005. The 2006 commercial quota for Area 3A was set at 25.2 M lb, compared with 25.47 M lb in 2005.

Additional descriptive information on surveys, stock assessments, and research on Halibut considered by the Council during its deliberation can be found in detail in the 2005 Report of Assessment and Research Activities (IPHC 2005). Further details on the management, production history, and life history of Halibut are described in Section 3.7.2 of the SEIS (NMFS 1998a) and in this analysis.

Fisheries. Pacific halibut is fully utilized. Three major cultural use traditions occur in Alaska for halibut: commercial, sport, and subsistence. The 2005 removals of Pacific halibut in Areas 2C and 3A by sector are depicted in Figure 5. 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 to post facto 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”). NOAA Fisheries regulations now recognize and define a legal subsistence fishery for Halibut in Alaska (70 FR 16742, April 1, 2005). Subsistence removals totaled 1.2 M lb (net weight) in 2004 (Fall et al. 2005). Methods included public outreach, mailed household surveys, and community visits. Survey response rates were 70 percent for non-Tribal members and 53 percent for Tribal members, for an overall rate of 62 percent. Subsistence fishery regulations are found at 50 CFR 300.60–300.66.



As reported by Meyer (2005), participation in the marine sport fisheries of Southcentral Alaska has more than doubled in the last 15 years. More than half of all angler effort in marine waters statewide occurred in Southcentral Alaska. A major portion of the marine fishing effort is directed at Halibut and state-managed groundfishes, including rockfishes, lingcod, and sharks. Sport harvest of halibut exceeds that of all other 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. The Cook Inlet fishery, based primarily in Homer, Ninilchik, Seldovia, and Anchor Point has accounted for 67-82 percent of the Southcentral Alaska halibut harvest since 1990. Sport fishing for Halibut, *Hippoglossus stenolepis*, (herein referred to as halibut) in Southeast Alaska is an important recreational activity for resident and non-resident anglers alike. Sport harvests of halibut in the region rapidly increased in the late 1980s to mid-1990s as a result of continued increases in targeted effort (Tersteeg and Jaenicke 2005). Boat fishing effort is mostly concentrated around the major communities of 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).

As reported by the IPHC (2005), the Alaska sport harvest estimates are derived from a statewide postal survey in conjunction with creel surveys at points of landing. The estimates usually lag by one year and are estimated from a combination of linear projections of halibut harvested in the previous five years, current average weights, and current in-season data. Recent landings in the charter halibut fishery for Areas 2C and 3A are presented in Section 2.5 of this analysis. In summary, charter halibut harvests between 1995 and 2004 increased by more than 75 percent in Area 2C (from 986,000 to 1,750,000 lb) and nearly 30 percent in Area 3A (from 2,845,000 to 3,668,000 lb). Charter halibut harvests amounted to approximately 11 and 10 percent of total halibut removals in Areas 2C and 3A in 2005, compared with 7 and 9 percent in 1999.

IPHC sportfishing regulations for Halibut are found at 50 CFR 300.62. The 2006 annual management measures for Halibut fisheries were published at 71 FR 10850, Part 24. The GHL program was implemented in 2004, and regulations are published at 50 CFR 300.65. State of Alaska fishing seasons and reporting requirements are listed below.

- Most anglers 16-59 years old must have a current year's Alaska sport fishing license. There are two exceptions for Alaska residents:
 - Alaska resident anglers 60 and older must have a free ADF&G Permanent ID Card.
 - Alaska resident disabled veterans (50 percent or greater) must have a free ADF&G Disabled Veteran's Permanent ID Card.
- Resident and non-resident anglers younger than 16 do not need a sport fishing license.
- The open season for halibut is February 1-December 31.
- The bag limit is 2 fish daily and 4 in possession.
- There is no size limit.
- 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.
- Possession of sport-caught halibut:
 - a) No person may possess sport-caught halibut aboard a vessel when other fish or shellfish aboard the vessel are destined for sale, trade, or barter; and
 - b) until brought back to shore and offloaded, no person may fillet, mutilate, or otherwise disfigure a halibut in any manner that prevents the determination of the number of fish caught or possessed.

As described in a memo from ADF&G staff to IPHC staff, dated October 24, 2005,

“Sport fishery yield was calculated separately for the charter and non-charter fisheries as the product of the number of fish and average weight of harvested halibut. The number of fish harvested was estimated by the statewide harvest survey (SWHS). Average net weight was estimated from length measurements of halibut harvested at representative ports in Areas 2C and 3A. Ports sampled in Area 2C in 2004 included Ketchikan, Craig, Klawock, Petersburg, Wrangell, Juneau, Sitka, Gustavus, and Elfin Cove. Due to the close proximity of the ports of Craig and Klawock, Petersburg and Wrangell, and Gustavus and Elfin Cove, the length data collected from each of these three groupings of ports were combined to come up with mean weight for the SWHS areas of Prince-of-Wales Island, Petersburg/Wrangell, and Glacier Bay, respectively. Ports sampled in Area 3A in 2004 included Yakutat, Valdez, Whittier, Seward, Homer, Deep Creek, Anchor Point, and Kodiak. The estimate of charter average weight for Homer was stratified to account for differences in sizes of halibut cleaned at sea and cleaned onshore.”

The memo continues,

“Because SWHS estimates are not yet available for 2005, these preliminary estimates are based on projections of the numbers of fish harvested in each area. Methods of projection differed by regulatory area as explained below.

In Area 2C, the projected number of fish harvested by SWHS area was based on the recent five-year average of the ratio between the final SWHS estimate and the respective inseason creel survey estimates for Ketchikan, Craig, Juneau, and Sitka, while the projections for the Petersburg/Wrangell and Glacier Bay areas were based on the most recent three-year data due to a more limited database. The projected harvest for Haines/Skagway area was generated by applying the most recent five-year average of the Haines/Skagway proportion of the total Area 2C to the projected 2005 harvest for all Area 2C areas except Haines/Skagway. The respective charter/private proportions within each of the SWHS areas-based on the average proportion of the final 2003-2004 SWHS estimates-were applied to determine the number of fish harvested within each user group. Average weight estimates of halibut harvested by charter and private anglers for the current year were then applied to each of those projected harvests and summed to generate the overall Area 2C projection of harvested

biomass. In the past, Juneau average weights were applied to the harvest in Glacier Bay to act as a surrogate since no sampling occurred there. But because of the commencement of a catch sampling program in Gustavus and Elfin Cove in 2002, the Gustavus/Elfin Cove average weight is now being applied to Glacier Bay harvests. Juneau average weights were still used as the surrogate for Haines/Skagway harvests.

For most of Area 3A, the number of fish taken by each user group in each of six subareas was based on a linear projection of the most recent five harvest estimates from the SWHS. Estimates for eastern and western Prince William Sound, corresponding to mean weights from Valdez and Whittier, are only available since 2001. Therefore, the projections for these two areas are only based on the last four years.”

The original groundfish fishery management plans for the Bering Sea/Aleutian Islands and Gulf of Alaska designated Halibut as a prohibited species to any new commercial development due to its historical usage by the longline (or setline) fishery. The commercial 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 enables an eligible vessel to fish any time between March 5 and November 15 in 2006. Total setline CEY (at a harvest rate of 22.5 percent for Areas 2C and 3A) for Alaska waters is estimated to be high, at just under 74 M lb, which indicates the halibut resource is very robust (IPHC 2005). The commercial fishery was the predominant sector for removals, taking approximately 74 and 72 percent of total halibut removals in Areas 2C and 3A, respectively, compared with 81 and 77 percent in 1999.

Halibut begin recruiting to longline gear at approximately 60 cm in length, but the commercial minimum size limit is 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 to 121 kg. The average size in the commercial catch in 1996 was between 9 and 20 kg depending on the area caught, and the average age was 12 years old (Forsberg, J., Unpub [1997]).

Interception of juvenile halibut (~30 cm and greater) often occurs in trawl fisheries targeting other groundfish species (such as rock sole, pollock, yellowfin sole, and Pacific cod). Incidental catch of halibut also occurs in groundfish hook and line and pot fisheries. Regulations in both Canada and U.S. currently dictate that all halibut caught incidentally must be discarded regardless of whether the fish is living or dead. These fisheries take place throughout the range of halibut and throughout most of the year. 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 has remained under 0.5 M lb annually. Bycatch mortality accounts for the halibut that die from being caught in other fisheries. The 2005 bycatch mortality estimate of 12.1 M lb is the lowest since 1987 but similar to the estimates for the last several years (IPHC 2005).

Conclusions Proposed alternatives address resource allocation. They would affect harvest levels and fishing practices of individuals participating in the charter halibut fishery. Changes to fishing practices include a limit on the number of trips allowed per vessel per day, which individuals may retain halibut, and the amount of they may retain. They are intended to limit the amount of halibut removed by one of a number of fishing sectors whose removals are monitored and accounted for by the IPHC in setting annual limits of halibut removals.

Regardless of the percentage of the halibut biomass taken by a sector, no adverse impacts to the halibut resource or the benthic environment would be expected because the IPHC factors in all resource removals in the halibut stock assessment when setting annual catch limits. Therefore, the proposed actions would

not result in changes in the physical and biological structure of the marine environment as a result of fishing practices. They would not result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure. Proposed measures do not affect allowable fishing gear or locations of fishing effort. There are no significant impacts on the halibut stock expected from the proposed alternatives.

1.4.2.1 Potential Impacts on Groundfish Bycatch

“Bycatch” in the charter halibut fishery includes 12 species of rockfishes, Pacific cod, and ling cod. The primary groundfish bycatch taken in the halibut charter fishery include limited amounts of Pacific cod and rockfishes (primarily yelloweye and black), with lesser amounts of spiny dogfish, salmon shark, and sablefish. State-managed species such as king salmon and ling cod, along with rockfishes, are also taken. These species may be listed as having been caught on a halibut targeted trip, but they may become the target species during the trip because the halibut bag limits have been reached. Additionally, the target species may change because halibut fishing during the particular trip is poor and the operator wants to satisfy the client by landing any species (S. Meyer, pers. comm.). Therefore, ADF&G staff recommended that it is not possible to assign groundfish catches to the charter halibut fishery; however, Table 7 identifies rockfish and lingcod harvests associated with charter bottomfish effort for 1996-2004.

Table 7. Estimated rockfish and lingcod harvest (number of fish) by charter anglers by area and year. Information from the annual mail survey of licensed sport anglers (aka Statewide Harvest Survey).

Year	IPHC Area 2C		IPHC 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

Source: ADF&G, Statewide Harvest Survey data.

The issue of ‘bycatch’ is complex. Too often fish that are labeled bycatch are actually targeted, in both commercial and recreational fisheries. For example, in Southcentral Alaska, the sport fishery port samplers ask the anglers and charter skippers what species they were targeting. While they may answer ‘halibut’ (because that was their species of choice), they may have specifically targeted lingcod for a portion of their trip because halibut fishing was poor. Commercial fishermen often ‘top off’ with bycatch species for which the directed fishery is closed (A. Bingham, pers. commun.).

The IPHC has been observing declines in halibut recruitment and predicts a decrease in the exploitable biomass in the long term. The harvest of state-managed groundfish (and in some cases, salmon) 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 catch salmon when the salmon returns are strong. No in-depth analysis of these data has been done, and it may be impossible given the lack of information. It is likely that harvest of state-managed species will increase if the halibut stock declines in abundance, with or without the proposed alternatives.

In summary, the interaction of halibut catch and harvest of other species is poorly documented and not well understood. Any discussion will be highly speculative. This information is insufficient to predict direct effects of charter halibut harvest. Other species taken incidentally in sport charter halibut fisheries include sculpins, arrowtooth flounder and several other flatfishes, pollock, spiny dogfish, sleeper shark, salmon shark, and greenling. No harvest estimates are available for these species.

1.4.2.2 Potential Impacts on Habitat

No information is available on the impacts of the halibut fisheries on habitat. The proposed action would not increase the amount of harvest, the intensity of harvest, or the location of harvest, therefore, this action is presumed not to increase the impacts of the fisheries to EFH. Therefore, in the context of the fishery as a whole, this action will not adversely affect EFH for managed species. As a result of this determination, an EFH consultation is not required. There are no known significant impacts of the halibut charter fishery on marine habitat since there are no known significant changes in fishing practices as a result of the preferred alternative.

1.4.3 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 the NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by the 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 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, which 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) will 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 comprise a measurable portion of their diet. No interactions between the charter halibut fisheries and any listed species have been reported. Table 8 provides the species listed as endangered and threatened under the ESA.

Table 8. Species listed as endangered and threatened under the ESA that may be present in the Federal waters off Alaska

Common Name	Scientific Name	ESA Status
Northern Right Whale	<i>Balaena glacialis</i>	Endangered
Bowhead Whale ^{a/}	<i>Balaena mysticetus</i>	Endangered
Sei Whale	<i>Balaenoptera borealis</i>	Endangered
Blue Whale	<i>Balaenoptera musculus</i>	Endangered
Fin Whale	<i>Balaenoptera physalus</i>	Endangered
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered
Snake River Sockeye Salmon	<i>Onchorynchus nerka</i>	Endangered
Short-tailed Albatross	<i>Phoebastria albatrus</i>	Endangered
Steller Sea Lion	<i>Eumetopias jubatus</i>	Endangered and Threatened ^{b/}
Snake River Fall Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Snake River Spring/Summer Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Puget Sound Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Lower Columbia River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Willamette River Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Threatened
Upper Columbia River Spring Chinook Salmon	<i>Onchorynchus tshawytscha</i>	Endangered
Upper Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Endangered
Snake River Basin Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Lower Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Upper Willamette River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Middle Columbia River Steelhead	<i>Onchorynchus mykiss</i>	Threatened
Spectacled Eider	<i>Somateria fishcheri</i>	Threatened
Steller Eider	<i>Polysticta stelleri</i>	Threatened

^{a/} The bowhead whale is present in the Bering Sea area only.

^{b/} Steller sea lion are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.

Short-tailed albatross. In 1997, NMFS 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 NMFS must implement to minimize the impacts of any incidental take.

1.4.4 Impacts on Seabirds

Because halibut fisheries are Federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings⁴ that may occur are subject to ESA Section 7 consultation. NMFS initiates the consultation and the resulting biological opinions are issued to NMFS. 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

⁴ 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)).

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

None of the alternatives under consideration would affect the prosecution of the halibut fisheries in a way not previously considered in consultations. The 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.

1.4.5 Impacts on Marine Mammals

The charter halibut fishery in the EEZ of Alaska is classified as Category III fishery under the Marine Mammal Protection Act. A fishery that interacts only with non-strategic stocks and whose level of take has insignificant impact on the stocks is placed in Category III. No takes of marine mammals by the charter halibut fishery off Alaska have been reported. Marine mammals are not taken in halibut charter fisheries and therefore, none of the alternatives are expected to have a significant impact on marine mammals.

1.4.6 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 which seems rather dependent on pollock stocks as pollock comprised over half of adult halibut's diet composition measured in the early 1990s. Most mortality on halibut is from fishing because they have few natural predators, especially as adults.

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.

Proposed alternatives would have no significant impact on the environment. The main consequence of the proposed alternatives is to control halibut charter fisheries in IPHC Areas 2C and 3A. The economic effects of the proposed alternatives are detailed in Section 2.

Based on current information, it is reasonable to assume that the effect on the halibut resource of implementing management measures to reduce charter halibut harvests, while allowing all other fishery removals to increase while limited by the quota set by the IPHC, is negligible. The IPHC has determined that resource conservation is not a factor in such allocative decisions.

1.4.7 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 Section 2. Section 2 contains a Regulatory Impact Review (RIR), conducted to review the costs and benefits of the alternatives in accordance with the requirements of E.O. 12866. Section 3 contains an Initial Regulatory Flexibility Analysis, 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 Regulatory Flexibility Act.

Before 1973, all halibut fishing, including sport, was governed by commercial fishing regulations (IPHC 1998). Sport catches were usually incidental to saltwater sportfishing for salmon. As the sport catch increased, the IPHC clarified its authority to manage the sport halibut fishery and adopted regulations for the “sport” fishery in 1973, including an 8-month season with limitations on the individual’s daily catch and gear (Williams 1999). Since then, the popularity of bottomfish has surged and halibut sport fishing has supported a charter industry. Sport regulations have grown in complexity, with increased involvement by the State of Alaska, the Council, and NOAA Fisheries Service. Estimates of halibut sport biomass are obtained through ADF&G creel census, postal surveys (SWHS), and a mandatory charterboat logbook program (SCVL) which continued from 1998 through 2001.

Marine recreational fisheries are popular in Southcentral Alaska, supporting approximately 486,000 angler-days of effort for all finfish species (2000 estimate) (<http://www.sf.adfg.state.ak.us/region2/groundfish/gfhome.cfm>). An angler day equals one angler fishing for any part of a day. Effort has more than doubled in the last 20 years. A large portion of this recreational fishing effort is directed at Halibut.

1.4.8 Description of Fishery Participants

Charter halibut fishery participants for Areas 2C and 3A are presented in Section 2.5 of this analysis. In summary, the number of vessels active in the 2004 charter halibut fishery totaled 624 and 532 in Areas 2C and 3A, respectively (Table 9). Each vessel carries a skipper and some carry a mate; therefore an upper estimate of the number of crew is 1,248 and 1,064, respectively. The number of businesses active in the 2004 charter halibut fishery totaled 365 and 427. The number of clients in 2004 totaled 67,803 and 116,670, respectively.

Table 10 provides total number of sport fishing licenses sold by vendors within each IPHC Area (2C and 3A), 1993-2004. However, this data does not indicate the area in which fishing occurred, as indicated by internet sales.

Table 9. Number of businesses and vessels that submitted ADF&G Saltwater Charter Vessel Logbooks with bottomfish effort in 1998–2004

	1998	1999	2000	2001	2002	2003	2004
Area 2C Businesses	370	387	412	386	351	353	365
Area 2C Vessels	569	591	634	627	567	590	624
Area 3A Businesses	411	454	456	452	405	405	427
Area 3A Vessels	503	545	570	560	491	499	532

Note: Count of distinct CFEC numbers from the ADF&G Active Trips data for each year in which bottom fish effort was indicated for each respective area (2C or 3A) without regard to actual halibut landing.

1.5 Cumulative Effects

Effects of an action can be direct or indirect. According to the definition in the Council on Environmental Quality (CEQ) regulations (40CFR1500.1) 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, according to “The NEPA Book” (Bass et al. 2001, p. 55), “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.”

The alternatives under consideration in this EA/RIR/IRFA 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 harvest 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.

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 the Council preferred alternative will be delayed to a future action. The proposed alternatives will have no effect on any halibut fishery sector nor on the halibut resource. No reasonably foreseeable future actions would have impacts that would cause significant cumulative effects when combined with the effects from this action.

Possible future actions currently under consideration by the Council include a wide range of changes to the GHM policy, moratorium and or limited entry, or the development of a share-based allocation program to individual charter operators. A preferred alternative was identified in 2001, but is currently being reviewed by the Council and an industry stakeholder committee. The BOF and ADF&G are 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.

Table 10. Total number of sport fishing licenses sold by vendors within each IPHC Area (2C and 3A), 1993-2004, by residency. *Note that numbers of licenses sold by internet/mail are provided as well for reference purposes, as these license sales can NOT be assigned to a geographic location. Sales by vendors in other locations throughout the state (outside of IPHC areas 2C and 3A) are NOT included (except the internet/mail sales).*

Year	Sport fishing licenses sold by vendors in IPHC 2C				Sport fishing licenses sold by vendors in IPHC 3A				Internet/Mail Sales (all residency types) – unknown location
	Alaska Residents	Non-residents	Unknown Residency	Total	Alaska Residents	Non-residents	Unknown Residency	Total	
1993	27,478	50,932	2,101	80,511	38,075	51,561	2,838	92,474	984
1994	27,685	60,350	2,193	90,228	40,116	59,091	1,650	100,857	1,075
1995	26,982	63,881	77	90,940	39,382	63,834	58	103,274	1,151
1996	26,725	67,896	56	94,677	40,278	65,947	66	106,291	1,261
1997	26,724	71,515	26	98,265	38,799	67,552	34	106,385	1,518
1998	25,241	71,789	49	97,079	37,306	69,447	56	106,809	1,699
1999	24,517	76,228	56	100,801	37,025	75,159	31	112,215	2,092
2000	24,173	81,030	42	105,245	38,534	75,526	71	114,131	4,972
2001	23,743	79,503	95	103,341	39,192	76,996	48	116,236	7,712
2002	22,976	83,540	45	106,561	39,786	78,491	40	118,317	9,350
2003	23,169	82,533	125	105,827	39,828	76,220	63	116,111	11,233
2004	23,363	98,490	5	121,858	40,833	85,424	3	126,260	14,211

2.0 REGULATORY IMPACT REVIEW

2.1 Introduction

At its October 2005 meeting, the Council reviewed final 2004 halibut charter harvest estimates from ADF&G Sport Fish Division. The data indicated that the GHLS had been exceeded by 22 percent in Area 2C and <1 percent in Area 3A. In response to the new information, the Council initiated an analysis that includes proposed alternatives to reduce halibut charter harvests to the GHLS. Proposed measures derive from the a suite of management measurements developed in association with the Council's 2000 preferred alternative to implement the GHL, but which were never implemented due to legal concerns related to adequate notice to the public.

The Council in considering three alternatives for each IPHC regulatory area in which charter halibut harvest exceeds the GHL.

For Area 2C:

- Alternative 1. No action
- Alternative 2. Limit vessels to one trip per day, prohibit harvest by skipper and crew, and set an annual catch limit of six fish for individual clients.⁵
- Alternative 3. Limit vessels to one trip per day, prohibit harvest by skipper and crew, and set an annual catch limit of five fish for individual clients.

For Area 3A:

- Alternative 1. No action
- Alternative 2. Limit vessels to one trip per day.
- Alternative 3. Limit vessels to one trip per day and prohibit harvest by skipper and crew.

2.2 Purpose of the Regulatory Impact Review

The preparation of a Regulatory Impact Review (RIR) is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735: October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

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

E.O. 12866 requires that the Office of Management and Budget (OMB) review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one likely to:

⁵ When not outlining the full text of specific alternatives this report uses the term "crew harvest" to denote harvest by skippers, deck hands, and others working on charter vessels.

- Have an annual effect on the economy of \$100 M or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

The key elements of a RIR include:

- A description of the management objectives (Section 1.1);
- A description of the fishery (Section 2.3);
- A statement of the problem (Section 2.4);
- A description of each selected alternative, including the "no action" alternative (Section 2.7);
- An economic analysis of the expected effects of each selected alternative relative to the baseline (Section 2.7).

In addition, this document includes an analysis of the effect of each alternative management measure (Section 2.6), a Regulatory Flexibility Analysis (Section 3.0), and a discussion of other applicable laws (Section 4.0).

2.3 Description of the Fishery

The charter fleet is a fairly homogeneous group with similar operating characteristics and vessel sizes. The exceptions are a few larger, 'headboat' style vessels, and several vessels that are operated by lodges, which offer accommodations as well as an assortment of visitor activities. Nearly all of the vessels are 25 to 50 ft. in length and carry up to six paying fishermen each. Larger vessels can carry a dozen passengers or more (NPFMC 2005). A summary of fishery participants is provided in Section 1.4.8. Approximately 1,156 vessels operated by approximately 1,300 crew and carried 185,500 clients in Areas 2C and 3A in 2004. Additoinal information was presented in Section 1.4.

2.4 Statement of the Problem

The purpose of the proposed action is to reduce charter halibut harvests in Areas 2C and 3A to the GHGs (Figure 6) In 2000, the Council adopted GHGs for two areas to stop the open-ended reallocation between commercial sectors. The Council remains concerned allocation conflicts between sectors may resurface over time, and that overcapitalization in the charter sector may have a negative impact on both charter operators and anglers.

2.5 Baseline Analytical Data

ADF&G Logbook program and the Statewide Harvest Survey (SWHS) comprise the baseline data for this analysis. In addition, key informant interviews with a number of charter participants in IPHC Area 2C and IPHC Area 3A corroborate the data analysis.

The number and total weight of charter halibut increased in Area 2C and Area 3A between 1995 and 2004 (Table 11). This information was obtained from the SWHS and on-site catch or creel sampling programs. While the annual harvest and rate of change are highly variable, the Area 2C harvest was at 122.2 percent

of the 1.432 M pound GHL in 2004. In Area 3A, charter harvest was at 100.5 percent of the 3.65 M pound GHL in 2004.

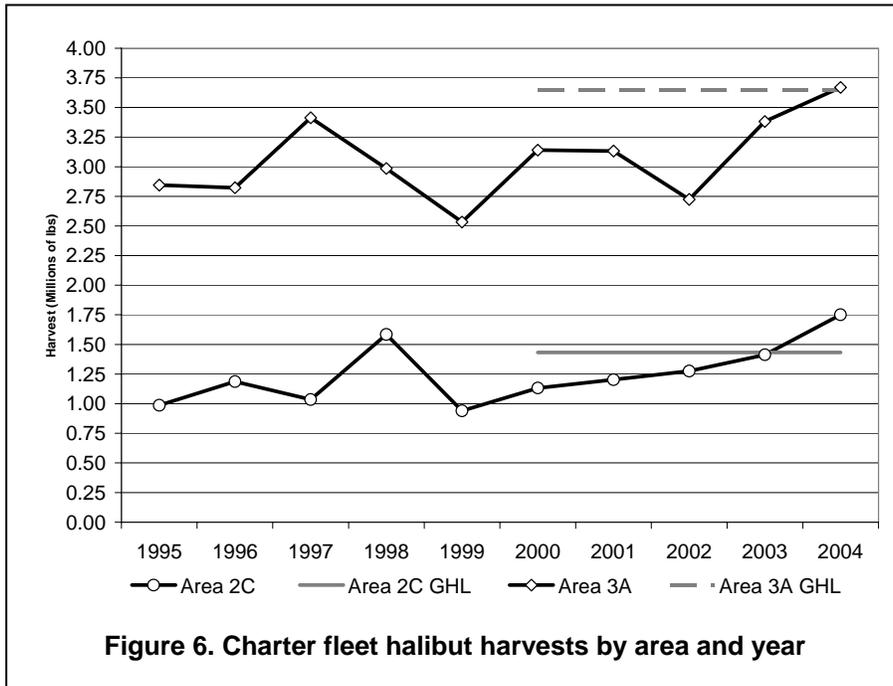


Figure 6. Charter fleet halibut harvests by area and year

Table 11. Charter halibut harvest, 1995-2004

Year	IPHC Area 2C				IPHC Area 3A			
	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Rate of Change from Previous Year ⁶	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Rate of Change from Previous Year
1995	49,615	19.9	0.986	N/A	137,843	20.6	2.845	N/A
1996	53,590	22.1	1.187	20.4%	142,957	19.7	2.822	-0.8%
1997	51,181	20.2	1.034	-12.9%	152,856	22.3	3.413	20.9%
1998	54,364	29.1	1.584	53.2%	143,368	20.8	2.985	-12.5%
1999	52,735	17.8	0.939	-40.7%	131,726	19.2	2.533	-15.1%
2000	57,208	19.8	1.132	20.6%	159,609	19.7	3.140	24.0%
2001	66,435	18.1	1.202	6.2%	163,349	19.2	3.132	-0.3%
2002	64,614	19.7	1.275	6.1%	149,608	18.2	2.724	-13.0%
2003	73,784	19.1	1.412	10.7%	163,629	20.7	3.382	24.2%
2004	84,327	20.7	1.750	23.9%	197,208	18.6	3.668	8.5%
5-Year Average	69,274	19.5	1.350	N/A	166,681	19.3	3.211	N/A

Source: ADF&G, Statewide Harvest Survey Data 1995-2004, 2005.

Logbook estimates of the number of halibut harvested (1998-2001) and effort by area (1998-2004), by clients, crew and in total are provided in Table 12. This table contains unadjusted data; note that the total number of client rods reported has been higher than the number of clients reported in recent years.

⁶ This column added by Northern Economics, Inc.

Discussions with ADF&G staff indicate that differential is the result of missing data with regards to the total number of clients on a vessel. Note, further, that that crew harvest were not required in 1998.

Table 12. Estimated total harvest, Areas 2C and 3A (numbers of fish)

Year	Total Number of Clients	Total Number of Client Rods Fished	Client Harvest	Crew Harvest	Total Harvest
Area 2C					
1998	55,922	53,660	64,357	No Data	No Data
1999	56,173	55,777	68,327	2,355	70,682
2000	72,803	71,388	91,772	4,156	95,928
2001	69,222	68,505	91,299	4,272	95,571
2002	52,809	55,252	No Data	No Data	No Data
2003	59,498	62,874	No Data	No Data	No Data
2004	67,803	71,226	No Data	No Data	No Data
Area 3A					
1998	94,611	90,869	159,064	No Data	No Data
1999	89,449	106,849	177,570	14,753	192,323
2000	132,604	133,019	226,414	23,392	249,806
2001	132,306	132,896	225,942	26,492	252,434
2002	91,092	107,363	No Data	No Data	No Data
2003	90,178	106,037	No Data	No Data	No Data
2004	116,670	132,542	No Data	No Data	No Data

Source: ADF&G Logbook Data, 2005.

ADF&G provided logbook estimates for number of total “active” vessels, total trips conducted by “active” vessels, number of bottomfish trips per season per “active” vessels (in total), along with a summary of the total number of additional trips within one day conducted by “active” vessels (Table 13).⁷ All statistics are for bottomfish-targeted trips only and if a charter operator reported more than one trip per day, both trips had to be targeted at bottomfishing in order for the second trip in a day to be used for the information summary below.⁸ The data show that a relatively small portion of trips are the second or more trips in a day for charter vessels and that the portion of trips qualifying as such is higher in Area 3A than in Area 2C. Additionally, while both the portion and number of trips qualifying as such has shown an increasing trend in Area 3A both the estimated portion and number of these trips has fallen in Area 2C.

ADF&G also provided SWHS estimates of the number of halibut harvested per year by charter anglers in Area 2C (1996-2004). Since that the SWHS is an annual mail survey of households and not individual anglers, the information provided below is only from responses to the survey from households with only *one* angler per household. ADF&G staff has determined that it would be inappropriate to transfer the results from one-angler households to multiple-angler households and that the harvest reduction associated with multi-angler households can’t be reliably estimated. However, single-angler households represent the majority of surveyed households in Area 2C. Thus, Table 15 lists only the estimated

⁷ An active vessel is defined as a vessel which recorded at least one trip per year with bottomfish harvesting effort.

⁸ In 1999 a supplemental log sheet was to be used by charter operators when reporting additional trips within a day. However, the rate of reporting second trips in a day was substantially below the rates observed for all other years (1998, 2000-2004) in which the second trip within the day was reported on the main log sheet for the day. Accordingly, information on multi-trips within a day is not reported for 1999.

reduction in harvest associated with single-angler household as a percent of the total harvest. The data represents the *minimum* estimate of harvest that would be reduced by the associated annual limits.⁹ Table 15 describes the proportion of harvest taken by the single-angler households in total.

Table 13. Trips per day, active vessels, and more than one trip per day, 1998-2004

Year	Area 2C			Area 3A		
	Number of "Active" Vessels	Bottomfish Effort Trips	Bottomfish Trips after the 1st Trip within a Day (% of total trips)	Number of "Active" Vessels	Bottomfish Effort Trips	Bottomfish Trips after the 1st Trip within a Day (% of total trips)
1998	569	15,541	308 (2.0%)	503	17,650	466 (2.6%)
1999	591	15,700	No Data	545	19,823	No Data
2000	634	20,241	390 (1.9%)	570	25,180	893 (3.5%)
2001	627	18,965	226 (1.2%)	560	23,818	834 (3.5%)
2002	567	15,085	182 (1.2%)	491	18,573	631 (3.4%)
2003	590	16,948	223 (1.3%)	499	18,592	700 (3.8%)
2004	624	19,111	178 (0.9%)	532	22,600	1,078 (4.8%)

Source: ADF&G Logbook Data, 2005.

For example, the data for 2004 show that a six-fish annual limit would have reduced harvest by approximately 7.0 percent, if only single-angler households are counted. The actual reduction would likely be higher because of the effect on multi-angler households. ADF&G staff has indicated the effect related to multi-angler households is likely to be a smaller portion of overall harvest than the effect from single-angler households because single-angler households represent the majority of surveyed households in Area 2C.

Table 14. Harvest level estimates per angler in Area 2C, 1996-2004

Year	Pacific Halibut Harvested per Angler per Year (n)	Estimates for One-angler Households			Weight Estimates As a % of All Households	
		Harvest due to n th fish in bag (%)	Anglers harvesting n or more fish (%)	Harvest Reduction by a n th fish limit (%)	Harvest due to n th fish in bag (%)	Harvest Reduction by a n th fish limit (%)
1996	5	8.8%	11.6%	19.0%	4.5%	9.9%
	6	6.9%	9.1%	12.1%	3.6%	6.3%
1997	5	8.5%	15.7%	19.0%	4.6%	10.3%
	6	7.3%	13.1%	11.7%	3.9%	6.4%
1998	5	9.1%	14.5%	16.5%	5.7%	10.4%
	6	7.8%	10.5%	8.7%	5.0%	5.5%
1999	5	7.7%	9.9%	15.1%	4.7%	9.4%
	6	6.5%	8.5%	8.7%	4.0%	5.4%
2000	5	8.2%	12.0%	17.1%	5.8%	12.1%
	6	7.7%	11.4%	9.4%	5.4%	6.7%
2001	5	9.3%	13.7%	17.2%	6.0%	11.1%
	6	7.9%	10.7%	9.3%	5.1%	6.0%
2002	5	9.0%	11.8%	20.3%	6.0%	13.7%
	6	8.1%	11.2%	12.3%	5.4%	8.3%
2003	5	10.1%	21.9%	19.8%	6.7%	13.1%
	6	8.5%	19.5%	11.3%	5.6%	7.5%
2004	5	9.8%	15.9%	18.5%	6.4%	12.2%
	6	7.9%	12.7%	10.6%	5.2%	7.0%

Source: ADF&G, Statewide Harvest Survey Data 1995-2004, 2005

⁹ While this estimate represents the minimum savings, ADF&G analysts believe the analysis captures the majority of the effect because a majority of sampled households are single-angler households.

Table 15. Estimates of the proportion Pacific halibut harvest taken by household type (single angler versus multi-angler households) by chartered anglers in IPHC Area 2C (1996-2004) obtained from the annual mail survey of licensed sport anglers (aka Statewide Harvest Survey or SWHS).

Year	IPHC Area 2C
	Proportion of Pacific halibut Harvest taken by chartered anglers within single-angler households (compared to all charter harvest)
1996	51.8%
1997	54.2%
1998	63.1%
1999	61.9%
2000	70.7%
2001	64.3%
2002	67.3%
2003	66.2%
2004	65.7%

2.5.1 Preliminary 2005 Estimates

As described in a memo from ADF&G Sport Fish Division staff to IPHC staff (dated November 16, 2005), ADF&G staff calculate yield for the charter fisheries as the product of the number and average weight of harvested halibut. The number of halibut harvested was estimated by the statewide harvest survey (SWHS). Average net weight was estimated from length measurements of halibut harvested at representative ports in Areas 2C and 3A.

The preliminary estimates of 2005 sport harvest in Area 2C was 2.937 M lb (Table 2). The charter portion of the harvest was estimated at 1.750 M lb (60 percent) in Area 2C. For Area 3A the preliminary estimate of 2005 harvest was 5.437 M lb, with about 3.414 M lb taken by charter anglers. Because SWHS estimates are not yet available for 2005, preliminary estimates are based on projections of the numbers of fish harvested in each area. Methods of projection differed by regulatory area as explained below. In Area 2C, the projected number of fish harvested by SWHS area was based on the recent five-year average of the ratio between the final SWHS estimate and the respective in-season creel survey estimates for Ketchikan, Craig, Juneau, and Sitka, while the projections for the Petersburg/Wrangell and Glacier Bay areas were based on the most recent three-year data due to a more limited database. The projected harvest for Haines/Skagway area was generated by applying the most recent five-year average of the Haines/Skagway proportion of the total Area 2C to the projected 2005 harvest for all Area 2C areas, except Haines/Skagway. The respective charter/private proportions within each of the SWHS areas-based on the average proportion of the final 2003-2004 SWHS estimates-were applied to determine the number of fish harvested within each user group. Average weight estimates of halibut harvested by charter anglers for the current year were then applied to the charter projected harvests to generate the Area 2C projection of charter harvested biomass. For most of Area 3A, the number of fish taken by each user group in each of six subareas was based on a linear projection of the most recent five harvest estimates from the SWHS. Estimates for eastern and western Prince William Sound, corresponding to mean weights from Valdez and Whittier, are only available since 2001. Therefore, the projections for these two areas are only based on the last four years.

Note that the two methods of estimating charter halibut harvest (described above) are not comparable. In October 2004, ADF&G Sport Fish Division staff provided preliminary (projected) estimates of the 2004 sport harvest for Areas 2C and 3A. In October 2005, staff provided final 2004 estimates of average weight and numbers of fish harvested from the SWHS and preliminary 2005 estimates based on a projection model. The final Area 2C sport harvest for 2004 was estimated at 2.937 M lb in 2005, which is

about 26 percent higher than the projection of 2.326 M lb staff provided in 2004. Charter harvest in this area was 1.750 M lb (60 percent of total) (as revised in a separate memo from ADF&G staff to IPHC staff dated November 16, 2005). The final Area 3A sport harvest for 2004 was estimated at 5.606 M lb, which is 18 percent higher than the projection of 4.743 M lb provided in 2004. Anglers on charter boats harvested 3.668 M lb (65 percent of total). For Area 3A, the projected estimate was higher than the final SWHS estimate 60 percent of the times in the last ten years, and lower 40 percent. In Area 2C, it was higher 20 percent, and lower 80 percent of the time. During the past five years preliminary and final numbers have regularly varied by as much as 15-20 percent, representing a difference of 200,000 to 300,000 lb. *Therefore, the 2005 estimates should not be used to determine the status of the GH L or the amount of charter halibut harvest reductions needed to get below the GH Ls.* The best scientific information available to evaluate the status of the GH L is the 2004 final SWHS data. Its use by the IPHC to estimate harvest removals is adequate, but it should be viewed as incomplete for evaluating the GH L. *The Council may wish to identify a policy that only final SWHS estimates be used to manage the charter halibut fishery, until such time that ADF&G logbook data is deemed adequate by the SSC for management purposes .*

2.6 Analysis

2.6.1 Individual Measure Analyses

This section contains a discussion of the individual measures of the proposed alternatives: (1) limiting charter operators to one trip per day; (2) eliminating harvests by skipper and crew while guiding charter clients; and (3) limiting charter clients to an annual limit of charter-caught halibut (for Area 2C only). The full analysis of the alternatives is provided in Section 2.7.

Analysis of the alternatives builds upon the data provided by ADF&G and described in Section 2.5. The ADF&G logbook harvest data required for estimating the effect of limiting vessels to no more than one trip per day is only available for 1998, 2000, and 2001, while the data required to estimate the effect of eliminating skipper and crew harvests is only available for 1999, 2000, and 2001.¹⁰ These time-series are not long enough to support projecting changes through time to 2004. Additionally, many of these data do not show a consistent increasing or decreasing pattern which makes projection even more difficult given the short time frames. Thus, lowest and highest estimates from the ADF&G time-series data were selected as lower and upper estimates. In the case of the elimination of multiple trips per day, this estimation is then adjusted by 2004 logbook data on the frequency of multiple trips per day. In the absence of longer-time series and clear patterns, this technique represents a pragmatic and best-available methodology for estimating the effect of the proposed alternatives.

In its February 2006 minutes, the SSC stated, “Although the trend in charter fishing halibut trips is upward, a comparison of the 2004 findings for two additional years will prove useful when discussing the robustness of the 2004 findings.” However, it may be most useful to focus on the results using 2004 data given long-term growth rates, and it is unlikely that future industry harvests would be below this level given an annualized growth rate of 5.5 percent over the last decade.

The data required for estimating the effect of annual limits on harvest volumes comes from ADF&G’s SWHS. In this case, ADF&G’s direct estimates of the potential effect of the management measure were used as if the management measure had been in place in 2004.

¹⁰ ADF&G logbook data did not record multiple trips per day in 1999 and did not record skipper and crew harvests in 1998.

2.6.2 Effect of Limit of One Trip per Vessel per Day

All proposed alternatives include a component to limit charter operators to one trip per day. This measure would reduce overall harvest by less than seven percent in Area 3A and less than one percent in Area 2C. Table 16 contains two estimates from ADF&G of the number of halibut that would not be harvested if charter operators had been limited to one trip per day in 1998, 2000, and 2001. The first estimate is the reduction in harvest (in number of fish) if charter operators could drop their least successful trip for each day they took a multi-day trip. The second estimate is the estimated reduction based on average harvest per trip for multi-trip per day trips. It includes only client harvest which means that it underestimates the effect of the management measure when crew might be harvesting halibut on the second trip of the day.

Table 16. Estimated harvest by charter operators on multiple trips per day (number of fish)

Year	Area 2C			Area 3A		
	Pacific Halibut Harvested by Charter Fleet	Reduction if Less Successful Trip Dropped	Reduction if Average Trip Dropped	Pacific Halibut Harvested by Charter Fleet	Reduction if Less Successful Trip Dropped	Reduction if Average Trip Dropped
1998	61,951	343 (0.6%)	664 (1.1%)	154,695	4,622 (3.0%)	5,335 (3.4%)
2000	94,730	708 (0.7%)	1,118 (1.2%)	248,411	7,608 (3.1%)	8,898 (3.6%)
2001	93,315	460 (0.5%)	684 (0.7%)	249,806	9,513 (3.8%)	10,909 (4.4%)

Source: ADF&G, Logbook Data (1998, 2000, 2001), 2005.

In Area 2C, limiting vessels to one trip per day would have reduced the number of halibut harvested by charter operators between 0.5 and 1.2 percent in 2004, depending on year and estimation technique. In Area 3A, it would have reduced harvests between 3.0 and 4.4 percent. These ranges were used as lower and upper estimates for the effect of the measure on overall halibut harvest in each area.

Data on how halibut harvest specific to these vessels may have changed between 1998, 2000, 2001 and 2002, 2003, and 2004 was not available. For example multiple trips per day became less frequent in Area 2C relative to the total number of trips between 2004 and the earlier years. The opposite was true in Area 3A (Table 17). For example, multiple trips in a single day represented 1.7 percent of total trips in 1998, 2000, and 2001 while the average was 0.9 percent in 2004, with a steady decline between 1998 and 2004 (Table 13). An adjustment factor for each area was calculated to accommodate the changing prevalence of these trips.

Table 17. Estimated 2004 adjustment factor

Time Period	Area 2C	Area 3A
	2nd Trip within a Day (% of total trips)	2nd Trip within a Day (% of total trips)
1998, 2000, 2001 Weighted Average	1.7%	3.3%
2004	0.9%	4.8%
Adjustment Factor	0.53	1.45

Source: ADF&G Logbook Data.

In Area 2C, limiting operators to one trip per day would have reduced harvest between 4,600 lb and 10,800 lb in 2002, between 5,500 lb and 13,000 lb in 2003, and between 4,700 and 11,200 lb in 2004 (Table 18). In Area 3A, limiting operators to one trip per day would have reduced harvest between 4,600 lb and 10,800 lb in 2002, between 5,500 lb and 13,000 lb in 2003, and between 4,700 and 11,200 lb in 2004 (Table 19).

Table 18. Estimated harvest reductions associated with one trip per day – Area 2C

Year	Actual Percent of GHL	Lower Harvest Estimates			Upper Harvest Estimates		
		Harvest Reduction (lb)	Harvest with Limit (lb)	As a percentage of the GHL after Limit	Harvest Reduction (lb)	Harvest with Limit (lb)	As a percentage of the GHL after Limit
2002	89.0	4,600	1,270,000	88.7%	10,800	1,264,000	88.3%
2003	98.6	5,500	1,406,000	98.2%	13,000	1,399,000	97.7%
2004	122.2	4,700	1,745,000	121.9%	11,200	1,739,000	121.4%

Source: Northern Economics, Inc. estimates based ADF&G Logbook Data, 2005

Table 19. Estimated harvest reductions associated with one trip per day – Area 3A

Year	Actual Percent of GHL	Lower Harvest Estimates			Upper Harvest Estimates		
		Harvest Reduction (lb)	Harvest with Limit (lb)	As a percentage of the GHL after Limit	Harvest Reduction (lb)	Harvest with Limit (lb)	As a percentage of the GHL after Limit
2002	74.6	84,300	2,636,000	72.2%	124,000	2,596,000	71.1%
2003	92.6	117,000	3,263,000	89.4%	172,000	3,208,000	87.9%
2004	100.5	161,000	3,507,000	96.1%	235,000	3,433,000	94.0%

Source: Northern Economics, Inc. estimates based ADF&G Logbook Data.

Key informant interviews with Area 2C and 3A operators concurred that this measure would reduce halibut harvests by very small amounts—in the low single digit percentage range. However, they also indicated that the change might not reduce harvest at all. The predicted reduction associated with the measure assumed that the displaced clients could not find replacement charters to take them fishing. However, interviews indicated that many clients would likely find open seats on other boats within the fleet. They indicated that while there might be shortages in a specific time and place (e.g., Deep Creek in July) many clients would be able to find replacement trips. If clients are able to find replacement bookings, then the effect of the measure is likely to be overstated by the data analysis.¹¹ Data from ADF&G indicate that the number of clients per trip has declined slightly in Area 2C over time, while the number of clients per trip in Area 3A is variable and does not show a long-term trend (Table 20).

Table 20. Logbook estimate of vessel trips, clients, and clients per trip

Year	Area 2C			Area 3A		
	Vessel Trips	Clients	Clients per Trip	Vessel Trips	Clients	Clients per Trip
1998	15,541	55,922	3.6	17,650	94,611	5.4
1999	15,700	56,173	3.6	19,823	89,449	4.5
2000	20,241	72,803	3.6	25,180	132,604	5.3
2001	18,965	69,222	3.6	23,818	132,306	5.6
2002	15,085	52,809	3.5	18,573	91,092	4.9
2003	16,948	59,498	3.5	18,592	90,178	4.9
2004	19,111	67,803	3.5	22,600	116,670	5.2

Source: Northern Economics, Inc. estimates based Alaska Department of Fish & Game Logbook Data, 2005

¹¹ These operators also indicated that in the long-run, such a change would not have an appreciable affect on overall halibut harvests because multiple-trip per day operators could buy another vessel.

This management measure would also likely result in overnight charter operators converting to the traditional one-trip per day business model.¹² These operators usually run larger vessels capable of holding more passengers, and interviewees told us these operators usually limit the number of passengers on overnight trips to a level below their legal operating capacity. If these operators were forced to switch to one trip per day, they would be forced to run their boats at or near their full legal capacity. This change would reduce the efficacy of the management measure and could actually result in more halibut being harvested over the long-run depending on the excess capacity of these boats. The overnight-return fleet is centered in Homer, AK.¹³

Key informant interviews indicate that the efficacy of this measure is likely to be substantially reduced by strategic behaviors such as adding additional boats or increasing the number of passengers. It is likely that these behaviors will emerge quickly, perhaps in as little as one season, and that the efficacy of this measure would decrease rapidly over time. Additionally, a portion of displaced passengers are likely to find space on other vessels within the same halibut season. Thus, it is conceivable that this measure may result in little or no harvest reduction over time.

2.6.3 Effect of No Harvest by Crew Members

According to ADF&G logbook data from 1999 through 2001, harvests by crew members accounted for between 3.3 and 4.5 percent of the annual halibut harvest in Area 2C. In Area 3A, crew members harvest between 7.7 and 10.5 percent of the annual halibut harvest (Table 21).

Table 21. Crew harvest, 1999-2001

Year	Client Harvest (Number of Fish)	Crew Harvest (Number of Fish)	Total Harvest (Number of Fish)	Percent of Total Harvest
Area 2C				
1999	68,327	2,355	70,682	3.3
2000	91,772	4,156	95,928	4.3
2001	91,299	4,272	95,571	4.5
Area 3A				
1999	177,570	14,753	192,323	7.7
2000	226,414	23,392	249,806	9.4
2001	225,942	26,492	252,434	10.5

Source: Northern Economics, Inc. estimates based ADF&G Logbook Data, 2005.

Data from 1999 through 2001 show an increasing trend in crew harvest as portion of total harvest. It is unknown if this trend continued over the long-term or indicates a short-term pattern in crew usage, thus attempts to project crew portions were not undertaken because of the limited data. Because of these uncertainties, the 1999 estimate of crew's portion of halibut were used as a lower bound for estimating the effect of banning crew harvest on overall halibut harvests. The estimate generated from the 2001 data is used as an upper-bound estimate.

Table 22 shows the expected reductions in overall harvest associated with a ban on crew harvest in Area 2C if the ban had been in place between 2002 and 2004. The data show that in 2002 and 2003, if crew

¹² These operators leave in the evening and return the next morning to provide their clientele with a "double-limit." These boats then sail again twelve hours later after the morning return. Thus, they are essentially running two trips per day and would have to change their business model under the proposed actions.

¹³ Data from ADF&G do not include estimates of trips made by these operators as logbook data does not distinguish these trips from those run by traditional leave and return in the same calendar day operators.

harvest had been between the lower and upper-bound estimates—a range of 3.3 to 4.5 percent—a ban would have been sufficient to keep Area 2C charter harvests under the GHL. However, in 2004, overall halibut harvest increased by nearly 24 percent to 1.75 M lb; an amount 318,000 lb greater than the established GHL. Banning crew harvests would have reduced overall harvest between 58,000 and 78,000 lb in 2004. Thus, banning of crew harvest alone would not have reduced harvest below the GHL in 2004 in Area 2C, leaving the overage between 16.7 and 18.1 percent.

Table 22. Estimated reductions in harvest through elimination of crew harvest in Area 2C

Year	ADF&G Harvest Estimate		Lower Bound Harvest Estimate			Upper Bound Harvest Estimate		
	Percentage of GHL	M lb	Estimated Crew Harvest (M lb)	Harvest After Ban (M lb)	Percent of GHL after Ban	Estimated Crew Harvest (M lb)	Harvest After Ban (M lb)	Percent of GHL after Ban
2002	89.0	1.275	0.042	1.23	86.1	0.057	1.22	85.1
2003	98.6	1.412	0.047	1.36	95.3	0.063	1.35	94.2
2004	122.2	1.750	0.058	1.69	118.1	0.078	1.67	116.7

Source: Northern Economics, Inc. estimates based Alaska Department of Fish & Game Logbook Data, 2005.

Charter halibut harvest in Area 3A was below the GHL in 2002 and 2003 and less than 1 percent above the GHL in 2004 (Table 23). ADF&G logbook data indicate that crew accounted for 7.7 percent of harvest in 1999 and 10.5 percent of harvests in 2001, and these numbers represent the lower and upper-bound (

Table 21). If crew harvest had been between the lower and upper-bound estimates, the ban would have been sufficient to keep Area 3A charter harvests under the GHL in 2002, 2003, and 2004. In 2004, such a ban would have reduced harvest to a range of 89.9 and 92.8 percent of the GHL.

Table 23. Estimated reductions in harvest through elimination of crew harvest in Area 3A

Year	ADF&G Harvest Estimate		Lower Bound Harvest Estimate			Upper Bound Harvest Estimate		
	Percentage of GHL	M lb	Estimated Crew Harvest (M lb)	Harvest After Ban (M lb)	Percent of GHL after Ban	Estimated Crew Harvest (M lb)	Harvest After Ban (M lb)	Percent of GHL after Ban
2002	74.6	2.724	0.209	2.52	68.9	0.286	2.44	66.8
2003	92.6	3.382	0.259	3.12	85.5	0.355	3.03	82.9
2004	100.5	3.668	0.281	3.39	92.8	0.385	3.28	89.9

Source: Northern Economics, Inc. estimates based ADF&G Logbook Data, 2005.

Interviews with charter operators indicated that the elimination of crew harvest would be the most effective and palatable of the measures offered in the proposed alternatives. However, skipper and crew harvest plays a different role in each area. For example, most independent charter operators reported that they rarely harvest fish for their own use in Area 2C and that the line limit effectively limits their opportunities to harvest additional crew fish. Large lodge operators indicate that their crew members may catch and keep fish over the season because of the lodge’s storage capacity. Thus, the effect of eliminating crew harvests would be smaller in areas that do not have a large number of charter operators and would be greater in areas where lodge operators represent a larger portion of boats on the water.

Crew harvests play a much different role in Area 3A. For example, operators in Cook Inlet communities (e.g., Deep Creek and Ninilchik) and Homer reported that some crew harvest halibut regularly for both personal use and to gift to both successful and unsuccessful clients. In fact, operators reported that

resident clients regularly expect to receive a share of crew harvest to boost their own take on a given trip. While some operators avoid crew harvest altogether to avoid this expectation, others divide crew harvest amongst paying customers to increase customer satisfaction and loyalty.¹⁴ This practice is reported as more prevalent in Cook Inlet than in Prince William Sound.

Operators in both areas reported that the portion of crew harvest that is used to feed their families would most likely shift from harvesting during charter trips to harvest during recreational trips. Thus, some harvest will shift from the GHL managed charter industry to the non-guided sector.

2.6.4 Effect of an Annual Limit (Area 2C Only)

The proposed measures include an annual limit on the number of halibut an individual could harvest while on charter trips in Area 2C. Table 24 shows the estimated harvest reduction associated with this measure. A six-fish annual limit would have reduced harvest by charter clients by nearly 7.0 percent in 2004, while a five-fish limit would have reduced harvest by roughly 12.2 percent. These measures would have reduced the overall charter fleet harvest in Area 2C from 122.2 percent of the GHL to a range of 107.3 and 113.7 percent of the GHL.

Table 24. Effect of an annual limit on charter halibut harvest in Area 2C

Year	Actual Harvest as Percentage of GHL	Six-fish Limit Harvest Estimates				Five-fish Limit Harvest Estimates			
		Harvest Reduction Portion	Est. Reduction (M lb)	Harvest (M lb)	Total percentage GHL after Limit	Harvest Reduction Portion	Est. Reduction (M lb)	Harvest (M lb)	As percentage of the 2000 GHL after Limit
2002	88.9	8.3	0.10	1.17	81.7	13.7	0.17	1.10	76.9
2003	98.4	7.5	0.10	1.31	91.2	13.1	0.19	1.23	85.7
2004	122.2	6.9	0.10	1.63	113.7	12.3	0.21	1.54	107.3

Source: Northern Economics, Inc. estimates based Alaska Department of Fish & Game Logbook Data, 2005.

An annual limit is unlikely to affect the clientele of most charter operators. During key informant interviews, operators of day-trip business indicated that an annual limit would only affect a small portion of their clients and would be unlikely to affect any of the clients who come from cruise boats. On the other hand, a limit is most likely to restrict harvest by the clientele of lodge operators and those charter boat operators that offer multi-day packages. Many of the operators provide clientele with a choice of trip length. It would limit the amount of halibut that those clients who wish to stay longer than three days at a lodge could harvest. For example, a visitor who currently stays with a lodge for four days could now leave with as many as eight fish. A six-fish limit would reduce the visitor's take by 25 percent, while a five-fish limit would reduce the visitor's take by 37.5 percent. A visitor at a lodge for three days would see no reduction under the six-fish limit, but would see an 18.3 percent reduction under a five-fish annual limit. Operators reported that a five-fish limit might as well be a four-fish limit with regards to the clients' willingness to pay for an additional fishing trip because clients aren't willing to catch just a half-day limit for the same fee. The measure could encourage the introduction of more bareboat rentals where clients rent boats without the benefit of a guiding skipper or crew. This change would result in costs for current lodge operators, but benefits for current bareboat companies.

¹⁴ Interviewees stressed that any transfer of crew catch to customers is gifted freely from crew to customer and is not sold, traded, or bartered.

The public has indicated that restrictions on anglers could negatively impact public safety by reducing the number of charter operations and forcing more individuals to bareboat rentals. USCG staff reported to the Council that the Coast Guard is not convinced that an increase in the use of bareboat charters would occur and does not see an overarching safety concern with proposed action.

2.7 Economic and Socioeconomic Impacts of Alternatives¹⁵

In its February 2006 minutes, the Scientific and Statistical Committee noted that the discussion of the potential impact and efficacy of the alternatives should reflect an anticipation that halibut sportfishing charter operators will respond strategically to the proposed measures, such that: (1) some anglers will substitute bare-boat charters and other self-guided activities for charter halibut trips if such trips become less attractive due to restrictive annual limits; (2) charter service providers, and some anglers, would shift their effort to alternative fisheries or alternative recreation services and activities; and (3) some anglers faced with restrictive bag limits in Area 2C may shift their effort to Area 3A. These strategic responses will reduce the efficacy of the proposed alternatives and will reduce the potential opportunity costs to the halibut charter sector and its customers of the proposed alternatives. Therefore, it should be expected that harvest reductions associated with proposed measures would be dissipated as angler behavior responds to those restrictions.

Additionally, as requested by the Council at its February 2006 meeting, an option of using either of two methods to determine the status of charter halibut harvests relative to the GHGs was included, as follows:

- To use ADF&G's single year estimates of average per fish weight to calculate the estimated total harvest weight;
- To use a five-year average of ADF&G's estimates of average harvest weight per fish.

One effect of the five-year average approach is decreased responsiveness to annual changes in average halibut weight. For example, the 2004 average weight of 20.7 lb was 8.4 percent higher than the 2003 average weight of 19.1 lb in Area 2C. At the same time, total catch by number of halibut in 2004 was 14 percent higher and total catch by weight was 23.9 percent higher (Table 25). Thus, the increase was driven partially by a sharp increase in average weight per fish in 2004.

Table 25. Charter halibut harvest, 2000-2004

Year	IPHC Area 2C				IPHC Area 3A			
	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Change from Previous Year	Charter-Harvested Halibut	Average Net Weight (lb) per Halibut	Total Charter Halibut Harvest (M lb)	Change from Previous Year
2000	57,208	19.8	1.132	20.6%	159,609	19.7	3.140	24.0%
2001	66,435	18.1	1.202	6.2%	163,349	19.2	3.132	-0.3%
2002	64,614	19.7	1.275	6.1%	149,608	18.2	2.724	-13.0%
2003	73,784	19.1	1.412	10.7%	163,629	20.7	3.382	24.2%
2004	84,327	20.7	1.750	23.9%	197,208	18.6	3.668	8.5%
5-Year Average	69,274	19.5	1.350	N/A	166,681	19.3	3.211	N/A

¹⁵ This section combines individual measures into the alternatives.

2.7.1 Expected effect of each alternative in Area 2C

2.7.1.1 GHL calculated using direct average weight estimates

While the proposed measures would result in reduced charter halibut harvest, long-term growth trends have likely increased total harvest to such a level that the strictest alternative (e.g., Alternative 3) is not guaranteed to reduce harvests to the GHL in the near term.

Table 26 shows the estimated effect of the alternatives if they had been in place in 2002, 2003, and 2004. In both 2002 and 2003, the proposed alternatives would have reduced area charter halibut harvest to levels at or below the GHL. However, given long-term growth rates it is most useful to focus on the results using 2004 and it is unlikely that future harvests would be below this level given an annualized growth rate of 5.5 percent over the last decade. This analysis shows that Alternative 3 would have come close to reducing 2004 harvests to near the GHL. Additionally, note the following:

- The effect of Alternative 1, the no action alternative, depends in part on action to be considered by the Alaska Board of Fisheries in March 2006. On December 28, 2005, ADF&G submitted proposals to the BOF, which would have restricted charter sportfish harvests by preventing crew members from retaining *any species of fish statewide* while clients are onboard and limiting the number of lines in the water *for any species of fish statewide* at any given time to the number of paying clients on board. The State already limits the number of lines fished by Area 2C charter operations equal to the number of clients. This limit, however, does not constrain skippers and crew when a client is not fishing during a trip.

In February 2006, ADFG submitted Proposal 400 that replaced the above proposals. Instead, the proposal would delegate such management decisions to the ADF&G Commissioner (Proposal 400, see Appendix I), rather than permanently implement them in regulation by the BOF. If enacted under either approach, an indirect result under the no action alternative would have been reduced harvest between 3.3 and 4.5 percent. If these measures had been in place in 2004, the charter harvest would have been between 118.1 and 116.7 percent of the GHL.

Table 26. Effect of alternatives of charter halibut harvest (2004) in Area 2C using 2004 average

Category	Management Measure/Effect (Reduction in %)	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Component	One Trip Per Day (2002)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2003)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2004)	N/A	0.3%	0.6%	0.3%	0.6%
	No Harvest by Skipper & Crew	N/A	3.3%	4.5%	3.4%	4.6%
	6 Fish Annual Limit (2002)	N/A	8.3%	8.3%	N/A	N/A
	6 Fish Annual Limit (2003)	N/A	7.5%	7.5%	N/A	N/A
	6 Fish Annual Limit (2004)	N/A	7.0%	7.0%	N/A	N/A
	5 Fish Annual Limit (2002)	N/A	N/A	N/A	13.7%	13.7%
	5 Fish Annual Limit (2003)	N/A	N/A	N/A	13.1%	13.1%
	5 Fish Annual Limit (2004)	N/A	N/A	N/A	12.2%	12.2%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	1.275	1.120	1.100	1.050	1.030
	Harvest as Percent of GHL	89.0%	78.2%	76.8%	73.3%	71.9%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	1.412	1.250	1.230	1.170	1.150
	Harvest as Percent of GHL	98.6%	87.3%	85.9%	81.7%	80.3%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	1.750	1.570	1.540	1.472	1.450
	Harvest as Percent of GHL	122.2%	109.6%	107.5%	102.8%	101.3%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

Given the circumstances surrounding Proposal 400, it is less clear that the proposed two-step State action for both areas should be considered under the status quo, since measures that may be implemented by the Commissioner for 2006 will not be known at the time of final action by the Council in April 2006. It remains unclear what criteria will be used by the ADF&G Commissioner to determine when and where action will be implemented since the State will not have in-season estimates of either average weights or numbers of fish to ensure the GHL is not exceeded. While, charter operators will again be required to report halibut harvests in 2006, the State has previously reported that these data should be verified by SWHS data before being used to manage the fisheries (which for 2006 logbooks would not occur until Fall 2007). Further, Proposal 400 remains controversial since it would apply to all charter operations, and not just limited to halibut. Therefore, salmon charter operators would in a sense “pay” by reduced retention for any charter halibut GHL overages. *The simplest approach to evaluate the effects of Alternative 1 is for the Council to assume no action is taken by the State, since pending action was unknown when this document was released and may remain unknown at the time of Council final action.*

If the BOF adopts the revised proposal submitted by ADF&G, then an indirect result of taking no action for Area 2C would be a reduction in harvest of between 3.3 and 4.5 percent *if* ADF&G Commissioner enacts an emergency order to prohibit the retention of crew-caught sportfish. If the measures had been in place in 2004 the charter harvest would have been between 166.7 and 118.1 percent of the GHL. However, Alternative 1 would not reduce current harvest levels itself and halibut harvests would likely continue their current trends of long-term growth if ADF&G’s proposals are not accepted by the Board of Fisheries.

Note that with or without State action (either by the BOF or ADF&G Commissioner), the Council may still choose to adopt the prohibition on crew retention of halibut in Federal regulation to ensure that is implemented for duration to be determined appropriate by the Council. On the other hand, the Council may choose to not adopt these measures to avoid the more time-consuming process of amending Federal regulations when it might choose to lift the prohibition, and defer such management to the State.

- Alternative 2 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of six fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 107.5 and 109.6 percent of the Area’s GHL. In 2002, this alternative would have reduced harvest to a range of 76.6 and 78.2 percent of the GHL from 89.0 percent, while in 2003 this alternative would have reduced harvest to a range of 85.9 and 87.3 percent of the GHL from 98.6 percent. While this alternative could slow growth in the long run, it is likely that charter harvest would remain above the GHL and continue its long-term growth trend. While this alternative would reduce harvest in the short-term, charter harvest would likely remain above the GHL as they were in 2004 and likely continue a long-term growth trend in harvest levels. Industry interviews indicated that the banning of multiple trips per day was unlikely to significantly reduce harvest, but would economically affect operators who rely on that business model to stay in business. These same interviews indicated that the institution of a six fish annual limit would economically affect those charter operators who are currently providing experiences longer than three days in length through increased marketing costs and lower margins. In the long-term, the result of these effects could be a transfer of pressure from inside passage communities (e.g., Petersburg and Wrangell), which rely on halibut in the summer months to those facing the Gulf of Alaska (e.g., Sitka), which have greater access to a variety of species. The alternative could also lead to increased pressure on other sport fish species or non-fishing activities. The elimination of harvest by crew members was widely supported by charter

operators during the interviews and is not expected to cause significant economic losses to the industry.

- Alternative 3 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of five fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 101.3 and 102.7 percent of the Area’s GHL. In 2002 and 2003, it would have reduced harvests to a range of 71.9 and 73.3 percent and between 80.3 and 81.7 percent respectively. While in 2004 these measures would have reduced harvest to nearly the level of the current GHL, any growth in harvest would again lead to a larger difference between the GHL and harvest levels. While this alternative would reduce harvest to a level close to the GHL, it is likely that charter harvest would remain slightly above the GHL and continue a long-term growth trend in harvest levels. Alternative 3 would have all of the same economic effects as Alternative 2, but would also result in additional economic effects for charter operators and lodges that book anglers for stays longer than two days in duration. In the long term, the result of these effects could be a transfer of pressure from inside passage communities (e.g., Petersburg and Wrangell) which have limited access to species other than halibut during July and early August to those facing the Gulf of Alaska (e.g., Sitka and Prince of Wales Islands) where anglers have the option of substituting other species for halibut.

2.7.1.2 GHL calculated using five-year average weight estimates-Area 2C

A method to smooth average weight fluctuations was endorsed by the GHL Committee in February 2006, to enhance management goals because these annual fluctuations may result in the Council initiating an analysis next year to remove restrictions that may be adopted in April as a result of a known decrease in average weight of halibut in 2005. A hypothetical example illustrated at right depicts the complications inherent in the time lag between the year of the GHL overage and implementation of measures (Table 27).

Table 27. Hypothetical example of time lag	
Year 1	Charter harvest exceeds GHL
Year 2	1. ADFG reports that charter harvest in Year1 exceeds GHL 2. Council initiates analysis to add restrictive measures 3. Charter harvest is under the GHL in Year 2
Year 3	1. ADFG reports that charter harvest in Year 2 is under the GHL 2. Council adopts restrictive measures based on Year 1 3. Council initiates analysis to remove restrictive measures based on Year 2
Year 4	1. ADF&G reports on status of GHL 2. NMFS implements Year1 restrictive measures 3. Council takes final action to remove measures

In its February 2006 minutes, the SSC noted that “*the approach the Council has adopted to management (sic) of the charter-based sport fishery for halibut presents a clear example of the types of problems that can emerge when there are substantial temporal delays between prosecution of the fishery, generation of data on the magnitude of removals, and tweaking of management measures intended to influence the magnitude of future removals. This type of problem is commonly known as a delayed feedback loop. Delayed feedback loops exhibit cyclic overshoot and undershoot around the intended target, but control rules can be designed to dampen the oscillation if the system is stationary and deterministic. If the system includes a random element, or a trend or other nonstationarity, management actions will tend to exacerbate cyclic overshoot and undershoot. The upshot of this is that it is unlikely that catches in the charter-based halibut sport fishery can be constrained to intended targets when there is a 1-2 year delay between prosecution of the fishery and generation of data regarding the magnitude of removals and another 1-2 year delay between when the data are available and management measures are selected and implemented. One solution to the delayed feedback problem is to shorten the delays. In the case of management of the charter-based halibut sport fishery, this would involve development of indices of*

removals that can be used to estimate catches as the season progresses coupled with the adoption of management measures that could be automatically triggered if removals were projected to exceed the GHL. The SSC is pleased to learn that ADF&G will resume inclusion of halibut in the charter logbook program in 2006; the logbook data could serve as an instrument for more timely assessment of charter-based catches of halibut.”

The use of five-year average halibut weights changes the net results of the 2004 data, but provides relatively the same result as that found for 2002 and 2003 data (Table 28). For example, using a one-year estimate of halibut harvest weight resulted in reduced charter harvests to a range of 71.9 and 81.7 percent of the area GHL in 2002 and 2003 under Alternative 3. Under a five-year average weights, then the estimated effect changes to a range of 76.1 and 77.5 percent of the GHL in 2002 and 78.9 and 81.0 percent in 2003. Thus, the use of five-year average weights reduced the variability of the estimates by smoothing year-to-year variations in halibut weight. However, in the case of 2002 and 2003, the use of five-year average weights does not change the practical results of the analysis, such that the alternatives would have resulted in harvest reductions and overall harvest levels below the GHL in these years.

The effect of using the five-year weighted average of weights for 2004 is substantially different. Because the 2004 estimated of average halibut harvest weight (20.7 lb) is higher than the five-year average weight (19.5 lb) the estimate of the 2004 harvest falls 6.1 percent from 1.750 M lb to 1.643 M lb. This reduced estimate also changes the estimate of the 2004 harvest as a percentage of GHL from 122.2 percent to 114.7 percent. The net result of this change is that Alternative 2 would have reduced halibut harvest to a level very near, but slightly above, the GHL in 2004. Alternative 3 would have reduced halibut harvest to a range of 95.0 and 96.4 percent of the GHL; a level below the GHL. Thus, the net effect of the use of five-year average weight estimates is two-fold in Area 2C in that lessens the sensitivity to annual changes in halibut weights and it changes the evaluation of the alternatives with respect to 2004 data.

Table 28. Effect of alternatives of charter halibut harvest (2004) in Area 2C using five-year average

Category	Management Measure/Effect	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Component	One Trip Per Day (2002)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2003)	N/A	0.4%	0.9%	0.4%	0.9%
	One Trip Per Day (2004)	N/A	0.3%	0.6%	0.3%	0.6%
	No Harvest by Skipper & Crew ()	N/A	3.3%	4.5%	3.4%	4.6%
	6 Fish Annual Limit (2002)	N/A	8.3%	8.3%	N/A	N/A
	6 Fish Annual Limit (2003)	N/A	7.5%	7.5%	N/A	N/A
	6 Fish Annual Limit (2004)	N/A	7.0%	7.0%	N/A	N/A
	5 Fish Annual Limit (2002)	N/A	N/A	N/A	13.7%	13.7%
	5 Fish Annual Limit (2003)	N/A	N/A	N/A	13.1%	13.1%
	5 Fish Annual Limit (2004)	N/A	N/A	N/A	12.2%	12.2%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	1.350	1.190	1.170	1.110	1.090
	Harvest as Percent of GHL	94.3%	83.1%	81.7%	77.5%	76.1%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	1.395	1.240	1.210	1.160	1.130
	Harvest as Percent of GHL	97.4%	86.6%	84.5%	81.0%	78.9%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	1.643	1.470	1.440	1.380	1.360
	Harvest as Percent of GHL	114.7%	102.7%	100.6%	96.4%	95.0%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

2.7.2 Expected effect of each alternative in Area 3A

In 2004, the charter halibut harvest was 100.5 percent of the 3.65 M pound GHL. Both Alternatives 2 and 3 are likely to reduce Area 3A charter harvests below the GHL (Table 29).¹⁶ However, as shown in Figure 6 and Table 11, the sector has a long-term, but highly variable growth pattern in harvests. Thus, Alternative 3 would likely provide the longest time period before harvests approach the GHL in the future because it has the most restrictive measures.

Table 29. Effect of alternatives of charter halibut harvest in Area 3A using 2004 average

Category	Management Measure/Effect	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Components	One Trip Per Day (2002)	N/A	3.1%	4.5%	3.1%	4.5%
	One Trip Per Day (2003)	N/A	3.5%	5.1%	3.5%	5.1%
	One Trip Per Day (2004)	N/A	4.4%	6.4%	4.4%	6.4%
	No Harvest by Skipper & Crew ()	N/A	N/A	N/A	7.7%	10.5%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	2.720	2.640	2.600	2.430	2.310
	Harvest as Percent of GHL	74.6%	72.3%	71.2%	66.6%	63.4%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	3.380	3.260	3.210	3.010	2.860
	Harvest as Percent of GHL	92.7%	89.4%	87.9%	82.3%	78.2%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	3.670	3.510	3.430	3.230	3.050
	Harvest as Percent of GHL	100.5%	96.1%	94.0%	88.4%	83.5%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data.

Additionally, note the following:

- Alternative 1, the no action alternative, would not reduce current harvest levels or change current trends without independent action by the BOF on ADF&G's proposals. If the State implements the ban on crew retention of halibut, then an indirect result of Alternative 1 for Area 3A would be a minimum reduction in harvest of between 7.7 and 10.5 percent. If such a reduction had been made in 2004 the charter halibut harvest would have been under the GHL by approximately seven to ten percent. Note that both ADF&G staff and charter operators have said that the 2005 harvest in Area 3A is likely to be under the GHL. Charter operators indicated that the 2004 harvest was boosted by the diversion of tourism activities away from interior Alaska to Southcentral Alaska because of interior wildfires. Thus, it is likely that under the no-action alternative, and without Board of Fish approvals of ADF&G proposals, that harvest levels in Area 3A would slip below the GHL for a short period before growth in tourism and the charter fleet pushed harvest above the GHL. See discussion above under effects of alternatives for Area 2C on issues surrounding proposed State action.
- Alternative 2 would limit vessels to one trip per day. This alternative would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 94.0 and 96.1 percent of the Area's GHL. In 2002, it would have reduced harvest to a range of 71.2 and 72.3 percent of the GHL from 74.6 percent. In 2003, it would have reduced harvest to a range of 87.9 and 89.4 percent of the GHL from 92.7 percent. As noted above, charter operators indicated in key informant interviews that its effect could be very short-term as operators using the multi-trip per day or overnight trip business models would respond by increasing the number of boats operated and the number of clients per boat, which are now sometimes voluntarily operated at less-than-capacity.

¹⁶ Note that any of the component measures analyzed for this area would reduce harvest below the GHL.

Additionally, the effect of the alternative likely is overestimated even without the adaptations above, because excess capacity currently exists in the Southcentral charter fleet. This excess capacity means that a portion of displaced clients are likely to find seats with operators currently using the one-trip-per day business model.

- Alternative 3 would limit vessels to one trip per day and eliminate harvest by crew members. This alternative would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 83.5 and 88.4 percent of the Area's GHL. In 2002, it would have reduced harvest to a range of 63.4 and 66.6 percent of the GHL from 74.6 percent. In 2003, it would have reduced harvest to a range of 78.2 and 82.3 percent of the GHL from 92.7 percent. As with Alternative 2, the portion of the reduction associated with restrictions on the number of trips per day is likely to be overestimated and short-lived. The majority of the reduction associated with this alternative comes from the elimination of crew harvests. Charter operators reported that this component is likely to be the most effective, have the greatest long-term effect, and have least economic effect on charter operators. This suggests that the industry would choose Alternative 3 from amongst the listed alternatives, but would prefer that the one-trip per day limit be removed from the alternative, as the goal of the measure can be achieved without it. As with Alternative 2, the portion of the reduction associated with restrictions on the number of trips per day is likely to be overestimated by this analysis and short-lived. The majority of the reduction associated with this alternative comes from the elimination of crew harvests.

2.7.2.1 GHL calculated using five-year average weight estimates-Area 3A

The use of five-year average halibut weights does not have a substantive effect on the results for Area 3A (Table 30). While the use of the five-year averages weights raise the estimate of the GHL overage in 2004 the numerical estimates of the effect of the proposed alternatives indicate that any the alternatives are likely to reduce Area 3A charter harvests below the GHL (this is primarily due to the level of harvest reduction needed is less than 1 percent). However, the use of these averages does not address the highly variable, but long-term, growth pattern in harvests and Alternative 3 would still likely provide the longest time period before harvests approach the GHL in the future.

Table 30. Effect of alternatives of charter halibut harvest in Area 3A using five-year average

Category	Management Measure/Effect	Alt. 1	Alt. 2		Alt. 3	
			Lower-Bound	Upper Bound	Lower-Bound	Upper Bound
Management Components	One Trip Per Day (2002)	N/A	3.1%	4.5%	3.1%	4.5%
	One Trip Per Day (2003)	N/A	3.5%	5.1%	3.5%	5.1%
	One Trip Per Day (2004)	N/A	4.4%	6.4%	4.4%	6.4%
	No Harvest by Skipper & Crew ()	N/A	N/A	N/A	7.7%	10.5%
Effect in 2002	Estimated Harvest with Restrictions (M lb)	2.906	2.820	2.770	2.590	2.470
	Harvest as Percent of GHL	79.6%	77.3%	75.9%	71.0%	67.7%
Effect in 2003	Estimated Harvest with Restrictions (M lb)	3.175	3.060	3.010	2.820	2.680
	Harvest as Percent of GHL	87.0%	83.8%	82.5%	77.3%	73.4%
Effect in 2004	Estimated Harvest with Restrictions (M lb)	3.802	3.640	3.560	3.340	3.160
	Harvest as Percent of GHL	104.2%	99.7%	97.5%	91.5%	86.6%

Source: Northern Economics, Inc. estimates based ADF&G Logbook and Statewide Harvest Survey Data

2.7.3 Economic effects on charter sector and communities

This section describes the results of key informant interviews, discusses those results in relation to available data from ADF&G and peer-reviewed economic research. This information is viewed as a complementary to the numerical analyses conducted above, and in many ways confirms the results of that analysis.

2.7.3.1 Effect of Area 2C Alternatives

2.7.3.1.1 Alternative 1 – No Action

Taking no action would likely result in continuation of a pattern of long-term growth in the charter halibut harvest. Discussions with interviewees indicated a long-term growth pattern in the number of charter participants and many interviewees feared that a lack of action now could result in more stringent economic measures in the future. If the BOF approves ADF&G's proposal to institute line limits and ban harvest by crew member the need for more stringent measures in the short-term is likely to remain unchanged in Area 2C because those measures are insufficient to reduce harvest to the GHL.

The no action alternative would also result in short- and long-term commercial losses. The analysis estimates 2006 losses based on IPHC stock assessment projections and estimates of total CEY upon which the commercial CEY is based. The commercial CEY is calculated by deducting estimated legal-sized bycatch, subsistence catch, commercial wastage, and sport catch from the total CEY estimated by IPHC staff. The sport catch category includes both unguided and charter catch based on ADF&G projections of the previous year's sport harvest (Clark 2005). For example, for the IPHC's 2006 calculations use ADF&G's estimates of Area 2C 2005 sport harvest. ADF&G estimated the 2005 unguided sport fishery harvest at 0.905 M lb and the guided harvest at 1.639 M lb. The charter estimate of 1.639 M lb is 0.207 M lb higher than the GHL of 1.432 M lb and this amount is directly deducted from the total CEY. Thus, if the estimated guided harvest equaled the GHL then the commercial CEY would have been 0.207 M lb higher than the current 10.330 M lb (Table 31).¹⁷ In 2004 Area 2C commercial harvests averaged approximately \$3.09 per pound in ex-vessel value based on data published by NMFS (<http://www.fakr.noaa.gov/notice/70fr74208.pdf>). If the analysis assumes the same average price per pound in 2006 then the 0.207 deduction from the commercial CEY related to the GHL overage would be worth approximately \$0.648 M. This amount is equal to approximately 2.0 percent of total 2005 ex-vessel value for Area 2C.

Table 31. 2006 estimated lost ex-vessel value

Category	Area 2C
Total CEY	13.730
Legal-sized Bycatch	0.140
Subsistence catch	0.680
Unguided Sport Catch	0.905
Guided Sport Catch	1.639
Commercial wastage	0.040
Commercial CEY (remainder)	10.330
GHL	1.432
Guided Harvest Over GHL	0.207
Average Ex-Vessel Price (2004)	\$3.09
Lost Ex-Vessel Value	\$0.640

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and ADF&G estimates of guided and unguided sport catch.

Note: All non-dollar figures are in millions of pounds.

¹⁷ The Commercial CEY and Commercial TACs differ in that the IPHC commissioners can make small adjustments in the CEY estimates to arrive at the TACs (Clark 2006).

At the February 2006 meeting the SSC requested comparative static estimates of commercial losses based on five and ten-year projections of charter-based sport fishing catches and 2004 ex-vessel prices. The SSC noted that *“while this type of comparative static analysis ignores variations in halibut biomass, ex-vessel and wholesale prices, and demand for charter-based sportfishing, it can provide a useful basis for characterizing the effects of the no action alternative. Although there are many factors that affect the demand for charter-based halibut sportfishing trips, the 20-year average annual rate of increase in halibut sportfishing catches (about 6.2% in 2C and about 5.5% in 3A) could be used as a reasonable projection of the future rate of increase in charter-based sportfishing catches of halibut under the no-action alternative. Five- and ten-year projections of growth in charter-based sportfishing catches of halibut could be combined with information about 2004 ex-vessel and wholesale prices to generate comparative static estimates of losses to the commercial fishermen and consumers under the no-action alternative.”*

The requested analysis proved more difficult than expected given that the estimates of losses must also include estimates of biological productivity. The analysis contacted IPHC about the best way to model long-term losses and harvests. Each year the IPHC conducts a complicated stock assessment to predict CEY. This assessment includes estimates of total biomass and the long-term effect of commercial and sport overages and underages. Given the complexity of the model IPHC suggested that the best way to estimate long-term effects would be to hold current estimates of total CEY, legal-sized bycatch, subsistence catch, unguided sport catch, and commercial wastage constant while allowing charter catch to increase along long-term growth estimates. While this methodology is not as accurate as full-blown population modeling it provides a reasonable estimate of losses which could result under the no-action alternative. Using these guidelines the model makes the following simplifying assumptions:

- 2005 estimates of total CEY, legal-sized bycatch, subsistence catch, unguided sport catch, and commercial wastage remain constant across time between 2005 and 2015.
- Ex-vessel prices remain constant in real terms at \$3.13 per pound in Area 2C (\$US 2004).
- Guided charter harvests grow from 2005 ADF&G estimates at their long-term growth rate calculated from 1995-2004 data. Under this assumption Area 2C exhibits a yearly growth rate of 5.9 percent while Area 3A exhibits a yearly growth rate of 2.55 percent.¹⁸

Using these assumptions the model predicts the Area 2C GHV overage could grow from 0.207 M lb in 2006 (roughly 1.5 percent of total CEY) to 1.314 M lb in 2015 (roughly 9.6 percent of total CEY). Related losses in ex-vessel value would increase from \$0.640 M per year to approximately \$4.06 M per year (Table 32). The analysis notes that losses in ex-vessel value directly affect crew and communities dependent on the commercial fleet and ex-vessel harvest values. Additionally, the state would see loss fisheries business tax equal to three percent of lost ex-vessel value. These losses could total \$0.120 M by 2015.

¹⁸ This analysis notes that it does not account for the fact that the commercial analysis has consistently unharvested the commercial TAC since 1995 because these figures do not feed directly into the commercial CEY calculations provided by the IPHC.

Table 32. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch – Area 2C

Year	Total CEY	Legal-sized Bycatch	Subsistence catch	Estimated Unguided Sport Catch	Estimated Guided Sport catch	Commercial wastage	Commercial CEY	GHL Overage	Ex-Vessel Losses
2006	13.73	0.14	0.68	0.905	1.639	0.04	10.326	0.207	\$0.640
2007	13.73	0.14	0.68	0.905	1.736	0.04	10.229	0.304	\$0.939
2008	13.73	0.14	0.68	0.905	1.838	0.04	10.127	0.406	\$1.256
2009	13.73	0.14	0.68	0.905	1.947	0.04	10.018	0.515	\$1.591
2010	13.73	0.14	0.68	0.905	2.061	0.04	9.904	0.629	\$1.946
2011	13.73	0.14	0.68	0.905	2.183	0.04	9.782	0.751	\$2.322
2012	13.73	0.14	0.68	0.905	2.312	0.04	9.653	0.880	\$2.720
2013	13.73	0.14	0.68	0.905	2.448	0.04	9.517	1.016	\$3.142
2014	13.73	0.14	0.68	0.905	2.593	0.04	9.372	1.161	\$3.588
2015	13.73	0.14	0.68	0.905	2.746	0.04	9.219	1.314	\$4.061

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and 2005 ADF&G estimates of guided and unguided sport catch.

Note: All non-dollar figures are in millions of pounds.

2.7.3.1.2 Alternative 2 – One trip per day, no harvest by skipper and crew, and annual limit of six fish

A likely economic effect associated with a limit of charter vessels to one trip per day would be that a number of boats would be forced to change their business model. While the number of businesses that rely on this business model is unknown, Table 33 lists the number of vessels that made more than one trip in a day during the 1998 through 2004. Between 11.3 and 16.4 percent of the fleet participated in multiple trips per day at least once during each of those years. But since only 0.9 percent of the trips entered in 2004 logbooks qualify as second trips, the number of operators who depend on this business model is likely to be relatively small. Nonetheless, these operators would face a significant economic disruption if required to change their business model. Discussions with charter operators indicate that while multiple-trip per day operators are not as common in Area 2C as they in Area 3A, this measure is likely to affect a small number of operators in major cruise ship ports such as Ketchikan, Juneau, and Sitka. Operators repeated that because of the limited range and duration of these trips (i.e., most trips are less than 4 hours), they did not generate the catch per unit of effort that other operators generate. Thus, this measure would have a substantial negative effect on these operators while having a negligible effect on harvest.¹⁹

Table 33. Area 2C vessels affected by the limiting vessels to one trip per day

Year	Number of "active" vessels	Trips After the 1 st Trip Within a Day		Vessels Making Multiple Trips per Day at Least Once	
		Number	Percent of All Trips	Number	Percent
1998	569	308	2.0	86	15.1
1999	591	No Data Available	No Data Available	No Data Available	No Data Available
2000	634	390	1.9	104	16.4
2001	627	226	1.2	71	11.3
2002	567	182	1.2	79	13.9
2003	590	223	1.3	90	15.3
2004	624	178	0.9	73	11.7

Source: ADF&G Logbook Data (1998-2004).

¹⁹ The catch per unit effort argument could potentially be verified through ADF&G data, but sub-area data for the analysis were not available for this draft.

As noted in Section 2.6, limiting charter fleet vessels to one trip per day would reduce harvest by between 0.3 and 0.6 percent. However, interviews with charter operators indicated that the long-term effect of the alternative is likely to be far less than estimated due to changes in operator and angler.

Another potential effect of this component is the possibility that some clients who would have chosen to go halibut fishing might chose to pursue another activity in the area or could chose not to take their trip to Alaska at all. A 2001 publication by Herrmann et al. based on a 1998 postal survey of Kenai saltwater anglers noted that charter clients spent between \$167.47 and \$294.21 daily depending on whether they were local or from out-of-state. If clients could not, or chose not, to take a halibut trip and didn't spend this money elsewhere in the local economy, then the measure would result in economic losses related to client expenditures. However, the number of anglers cannot be quantified, who would be unable to find a replacement charter trip, would chose not to take halibut trip altogether, or would spend their money in another sector of the economy. As shown in Table 33, the second trip of the day in Area 2C is less than 1 percent of the total number of trips in the area. Thus, the overall effects would be small relative to the total expenditures related to halibut charters, but localized losses could be felt by individual businesses.

The second measure of the alternative bans crew harvest. Harvest of halibut by crew members occurs at a lower rate in Area 2C than it does in Area 3A, perhaps because of existing line limits. Key informant interviews with charter operators indicated that the elimination of harvest by crew members was likely to have little economic impact on their business. In fact, many the interviews indicated that the elimination of the crew harvest was the most acceptable measure presented to them. The economic impact of this measure is most likely to fall on crew members themselves, if they are unable to acquire halibut for personal use through other low-cost means. Crew harvests were estimated between 58,000 and 78,000 lb of halibut (net weight) which is equivalent to approximately 31,000 to 42,000 lb of fillet (Crapo 1988). Halibut that is not replaced through low-cost means would have to be replaced at retail prices or by substituting other protein sources, leading to higher costs for crew members. For, example if halibut costs an average of \$10 per pound at the retail counter then it would cost crew between \$310,000 and \$420,000 to replace the lost halibut on a pound for pound basis at the retail counter. At least one interviewee told us that crew at lodges considered the halibut to be part of their wages. If true, it means that the elimination of crew harvest could lead to higher labor costs for operators if crew members demand to be compensated for the reduction in wages. However, many operators told us that if crew harvest were eliminated, crew would conduct personal recreational trips on days when they did not have paying clients or in the shoulder season so that skippers, deck hands, and family members could continue to acquire halibut for personal use and offsetting the potential costs of the measure.

This third measure limits clients to six fish annually. This annual limit is likely to economically affect a significant number of charter operators and could affect local economies. Key informant interviews revealed that lodge operators and charter boat operators offering packages of four or more consecutive fishing days are the most likely to be affected by this measure of the alternative, because the limit makes longer experiences less desirable to potential clients. A six-fish annual limit is unlikely to affect the experience of anglers on a three-day experience or shorter, because six fish equals three daily bag limits for halibut. Businesses likely to be affected by this change told us they expect higher marketing costs, higher operating costs, and lower margins associated with a change. Several interviewees also indicated that pressure could increase on other species as operators work to retain clients interested in longer trips. These economic effects are likely to be experienced throughout Area 2C as many individual charter boat operators offer these trips. Charter boat operators catering to the portion of the public that takes few trips a season are less likely to be affected then the aforementioned groups.

Sitka and Prince of Wales Islands, which are home to several large lodges, could feel the effects of this measure more acutely than other communities. As noted above, saltwater anglers spend significant amount of money each day (between \$167.47 and \$294.21 per day on the Kenai Peninsula in 1997). If

anglers chose not to travel to Area 2C for these experiences then local economies and companies will suffer. Criddle et al., 2003 estimated that a 30 percent reduction in expected halibut catch per day would result in a 25.1 percent reduction in angler participation in Kenai area fisheries. However, an annual limit does not necessarily reduce catch per day if catch and release fishing is allowed. Discussions with NOAA-Fisheries economists indicated a lack of elasticity estimates that would allow the estimation of how annual limits might affect demand for longer charter experiences. NOAA-Fisheries economists indicated that such work was in progress, but are unavailable at this time (Lee, 2005; Lew, 2005). However, less formal estimates indicate that anglers will respond to lower limits by seeking other angling or recreational opportunities. For example, a 2005 study of charter clients in Sitka, Alaska found that 70 percent of charter clients indicated that a change in bag (not annual) limits would negatively affect the future probability of a return trip to Sitka depending on the size of the change and the species of fish involved (McDowell 2005). While a change in annual limits may not affect the daily bag limit for most anglers, the study does show that anglers are sensitive to such changes. The economic effects of such changes are likely to be local because while anglers would experience a loss in welfare surpluses associated with catch reductions they might also choose to redirect their angling dollars to other locations resulting in no changes in net benefits on a national level.

2.7.3.1.3 Alternative 3 – One trip per day, no harvest by skipper and crew, and annual limit of five fish

The effect of the restriction in trips per day and elimination of skipper and crew harvests are the same as those described for Alternative 2 in Area 2C except the institution of a five-fish annual limit would exacerbate the effects described above associated with a six-fish annual limit. A five-fish annual limit would mean that anglers who would normally book three or more days of halibut fishing in a year would have an annual limit equivalent to less than the bag limit for three days of fishing for halibut. The reduction would likely make trips of 3 days in length or longer more difficult for operators to book. The reduction would have a greater impact over the long-term on operators in inside passage communities such as Petersburg and Wrangell, which rely on halibut during the month of July when other species are scarce than on charter operators with access to outside waters, such as those based on the western side of Sitka and Prince of Wales Islands, have the option of pursuing other species to make up for reduced annual limit. This change makes the trips offered by outside operators more desirable than those offered by operators from inside communities. In the long run, operators in inside waters would be reduced to offering single or two-day packages during July, while fishing pressure and effort from clients desiring longer experiences would shift from those communities to outside communities. Thus, the alternative could result in additional negative effects for inside communities, with a somewhat mitigating economic effect for outside communities, and increased pressure on alternative species in outside areas. Again, anglers would experience a loss in welfare surpluses associated with catch reductions.

2.7.3.2 Effect of Area 3A Alternatives

2.7.3.2.1 Alternative 1 – No Action

As with the no action alternative for Area 2C, the effect of the no action alternative for Area 3A would likely be continuation of a pattern of long-term growth in the Area's halibut harvest. Although in recent years growth in Area 2C has been slower and more variable than growth in Area 2C (Table 11), the long-term trend for Area 3A would eventually lead to larger differences between harvest levels and the GHL under the no action alternative. Discussions with interviewees indicated a long-term growth pattern in the number of participants in the charter sector and many interviewees feared that a lack of action now could result in more stringent and painful economic measures in the future. If the Board of Fish approves ADF&G's proposal to institute line limits and ban harvest by crew member the need for more stringent measures in the short term would be reduced in Area 3A because the elimination of crew harvest could reduce overall harvest levels to the GHL in the short term.

As in Area 2C, the no action alternative will likely result in short and long-term commercial losses. The analysis estimates 2006 Area 3A losses based on IPHC stock assessment projections and estimates of total CEY upon which the commercial CEY is based. The commercial CEY is calculated by deducting estimated legal-sized bycatch, subsistence catch, commercial wastage, and sport catch from the total CEY estimated by IPHC staff. The sport catch category includes both unguided and charter catch based on ADF&G projections of the previous year's (2005) catch (Clark 2005). For the 2006 calculations, ADF&G estimated 2005 sport catch at 3.414 M pound charter harvest in Area 3A for 2006 (Table 34). This represents an approximately 0.25 M pound reduction from 2004 harvest levels and is below the area GHL. Hence, there are no expected losses for 2006 based on these estimates. The reduction from 2004 to 2005 was expected because fires in Interior Alaska artificially increased tourist visitation to Area 3A ports in 2004 which contributed to a boost in the area's halibut harvest.

Table 34. 2006 estimated lost ex-vessel value

Category	Area 3A
Total CEY	32.180
Legal-sized Bycatch	1.320
Subsistence catch	0.400
Unguided Sport Catch	2.023
Guided Sport Catch	3.414
Commercial wastage	0.080
Commercial CEY (remainder)	24.940
GHL	3.65
Guided Harvest Over GHL	-0.236
Average Ex-Vessel Price (2004)	\$3.06
Lost Ex-Vessel Value	\$0.000

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and ADF&G estimates of guided and unguided sport catch.

Note: All non-dollar figures are in Ms of pounds.

As noted in the discussion for non action alternative in Area 2C at the February 2006 meeting the SSC requested comparative static estimates of commercial losses based on five and ten-year projections of charter-based sport fishing catches and 2004 ex-vessel prices. This analysis proved more difficult than expected given that the estimates of losses must also include estimates of biological productivity. The analysis contacted IPHC about the best way to model long-term losses and harvests. Each year the IPHC conducts a complicated stock assessment to predict CEY. This assessment includes estimates of total biomass and the long-term effect of commercial and sport overages and underages. Given the complexity of the model IPHC suggested that the best way to estimate long-term effects would be to hold current estimates of total CEY, legal-sized bycatch, subsistence catch, unguided sport catch, and commercial wastage constant while allowing charter catch to increase along long-term growth estimates. While this methodology is not as accurate as full-blown population modeling it provides a reasonable estimate of losses which could result under the no-action alternative. Using these guidelines the model makes the following simplifying assumptions:

- 2005 estimates of total CEY, legal-sized bycatch, subsistence catch, unguided sport catch, and commercial wastage remain constant across time between 2005 and 2015.
- Ex-vessel prices remain constant in real terms at \$3.06 per pound in Area 3A (\$US 2004).

- Guided charter harvests grow from 2005 ADF&G estimates at their long-term growth rate calculated from 1995-2004 data. Under this assumption Area 3A exhibits a yearly growth rate of 2.55 percent.²⁰

The situation in Area 3A is less severe for several reasons including the fact that estimated 2006 harvest levels provided to the IPHC were under the GHL and the long-term growth rate is much lower than in Area 2C. Using the model's assumptions Area 3A GHL overage could grow from no overage in 2006 to 1.314 M lb in 2015 (roughly 1.9 percent of total CEY). Related losses in ex-vessel value would increase from \$0.0 M per year to approximately \$1.93 M per year (Table 35). The analysis notes that losses in ex-vessel value directly affect crew and communities dependent on the commercial fleet. Additionally, the state would see loss fisheries business tax equal to three percent of lost ex-vessel value. These losses could total \$0.058 M by 2015.

Table 35. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch-Area 3A

Year	Total CEY	Legal-sized Bycatch	Subsistence catch	Unguided Sport Catch	Guided Sport catch	Commercial wastage	Commercial CEY	GHL Overage	Ex-Vessel Losses
2006	32.18	1.32	0.4	2.023	3.414	0.08	24.943	0.000	\$0.000
2007	32.18	1.32	0.4	2.023	3.501	0.08	24.856	0.000	\$0.000
2008	32.18	1.32	0.4	2.023	3.590	0.08	24.767	0.000	\$0.000
2009	32.18	1.32	0.4	2.023	3.682	0.08	24.675	0.032	\$0.098
2010	32.18	1.32	0.4	2.023	3.776	0.08	24.581	0.126	\$0.385
2011	32.18	1.32	0.4	2.023	3.872	0.08	24.485	0.222	\$0.679
2012	32.18	1.32	0.4	2.023	3.971	0.08	24.386	0.321	\$0.981
2013	32.18	1.32	0.4	2.023	4.072	0.08	24.285	0.422	\$1.290
2014	32.18	1.32	0.4	2.023	4.176	0.08	24.181	0.526	\$1.608
2015	32.18	1.32	0.4	2.023	4.282	0.08	24.075	0.632	\$1.934

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and 2005 ADF&G estimates of guided and unguided sport catch.

Note: All non-dollar figures are in millions of pounds.

2.7.3.2.2 Alternative 2 – One trip per day

An economic effect associated with this alternative is that a number of boats would be required to change their business model to conform to the allowance of only one trip per day. While the number of businesses that rely on this business model is unknown, Table 36 shows the number of vessels that made more than one trip in a day during the 1998 through 2004 seasons. Between 19.3 and 25.4 percent of the fleet participated in multiple trips per day at least once during each of those years. Thus, a number of the fleet participates in this way at some point during each halibut season, but given that an estimated 4.8 percent of the 2004 trips entered in logbooks qualify as trips after a first trip in a day, the number of operators who depend on this business model is likely to be a relatively small portion of the total sector. However, these operators would face a disruption of their business model. As noted in Sections 2.6.2 and Section 2.6, limiting charter fleet vessels to one trip per day would reduce harvest by between 4.4 and 6.4 percent, but interviews with charter operators indicated that the long-term effect of the alternative is likely to be far less than estimated above.

²⁰ This analysis notes that it does not account for the fact that the commercial analysis has consistently unharvested the commercial TAC since 1995 because these figures do not feed directly into the commercial CEY calculations provided by the IPHC.

Another potential effect of this component is the possibility that some clients who would have chosen to go halibut fishing might chose to pursue another activity in the area or could chose not to take their trip to Alaska at all. A 2001 publication by Herrmann et al. based on a 1998 postal survey of Kenai saltwater anglers noted that charter spent between \$167.47 and \$294.21 daily depending on whether they were local or from out-of-state. In total these anglers (who fished for both halibut and salmon) contributed \$24.9, \$22.3, and \$23.5 M to the Kenai economy in 1997, 1998, and 1999 respectively. Contributions to the entirety of the Area 3A economy were undoubtedly higher. 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 measure would result in economic losses related to client expenditures. Key informant interviews indicated that many anglers would be able to find replacement trips, but some would be unable to take the trip they want when and where they want to take it. However, the analyses are currently unable to quantify how many anglers would be unable to find a replacement charter trip or would chose not to take halibut trip altogether. As shown in Table 36, the number of trips after the first trip of day in Area 3A is approximately 4.8 percent of the total number of trips in the area. Thus, overall effects would be small relative to the total expenditures related to halibut charters, but localized losses could be felt by individual businesses and communities.

Table 36. Area 3A vessels affected by the alternative

Year	Number of "active" vessels	Trips After the 1 st Trip Within a Day		Vessels Making Multiple Trips per Day at Least Once	
		Number	Percent of All Trips	Number	Percent
1998	503	466	2.6%	100	19.9%
1999	545	No Data Available	No Data Available	No Data Available	No Data Available
2000	570	893	3.5%	145	25.4%
2001	560	834	3.5%	115	20.5%
2002	491	631	3.4%	95	19.3%
2003	499	700	3.8%	118	23.6%
2004	532	1,078	4.8%	115	21.6%

Source: ADF&G Logbook Data (1998-2004).

The disruption of business models and changes in angler expenditures are unlikely to be felt evenly across communities within Area 3A, as the charter sector in some communities depends far more on the more multiple-trip per day business model than in other communities. For example, operators located in Prince William Sound communities (Valdez, Cordova, and Whittier) and Seward rely almost more on the single-trip per day model because of the distance from these communities to the primary fishing grounds located near Hinchinbrook and Montague Islands.²¹ Thus, the alternative may have little economic effect (and generate little harvest reductions) on these communities. On the other hand, a higher percentage of charter operators in Deep Creek and Ninilchik rely on multiple trips per day as their primary business model. These operators are located much closer to halibut fishing grounds in Cook Inlet, and are able to make shorter trips to fishing grounds. These operators and their communities would face the greatest economic effects from this alternative. Homer is the home of the overnight fleet in Area 3A, but not the home port for many multiple-trips per day charters. The economic effect in this community would likely be between the effect in PWS and interior Cook Inlet communities.

As discussed in Section 2.7.1.1.2, anglers would experience a loss in welfare surpluses associated with catch reductions.

²¹ The Prince Williams Sound communities are also home to several business operating multi-night tours, but these tours do not always concentrate on fishing.

2.7.3.2.3 Alternative 3 – One trip per day and no harvest by skipper and crew

Alternative 3 for Area 3A would have all of the effects noted in the discussion of Alternative 2 for Area 3A plus the additional effects described below. Again, anglers would experience a loss in welfare surpluses associated with catch reductions.

Key informant interviews with charter operators indicated that the elimination of harvest by crew members was likely to have little or no economic impact on their business. As in the interview conducted with Area 2C operators, many of the Area 3A operators indicated that the elimination of the crew harvest was the most acceptable measure for bringing the harvest under the GHL for Area 3A. The economic impact of this measure is most likely to fall on crew members themselves if they are unable to acquire halibut for personal use through other low-cost means. Crew harvest were estimated between 281,000 and 385,000 lb of halibut (net weight), which is equivalent to approximately 152,000 to 208,000 lb of fillet (Crapo 1988). Halibut that is not replaced through low-cost means would have to be replaced at retail prices or by substituting other protein sources, leading to higher costs for crew members. For example, if halibut costs an average of \$10 per pound at the retail counter then it would cost crew between \$1.52 and \$2.08 M to replace the lost halibut on a pound for pound basis at the retail counter. Halibut that is not replaced through low-cost means would have to be replaced at retail prices or by substituting other protein sources. This event would lead to higher costs for crew members. However, many operators told us that if crew harvest were eliminated, crew would conduct recreational trips on days when they did not have paying clients or in the shoulder season so that skippers, deck hands, and family members could acquire halibut for personal use.

2.7.4 Recordkeeping and Enforcement

ADF&G has identified plans for improved halibut recordkeeping requirements to commence in 2006. These include renewed requirements for reporting halibut harvested by charter angler on weekly logbooks. The logbook would primarily serve to assist enforcement personnel during a contact in the field to ensure that someone has not exceeded their annual limit on the particular trip that was being checked at the time. Follow up investigations could be done to check for an individual's cumulative totals over the course of the year, but that would require retrieving information from the logbook data base to ensure that an individual has not exceeded their annual limit in a fishing year.

The Alaska Department of Fish and Game is going to reinstate the reporting of Pacific halibut harvest in the Saltwater Charter Logbook program for 2006. The following conceptual ideas are currently being considered as implementation strategies to address the need for accurate reporting of the harvest of Pacific halibut by saltwater charters:

- Reporting of kept and released for Pacific halibut will be at the level of the individual chartered client (angler).
- Unique identification information for each client will be required and will be reported with the associated kept and released information for each fish species. One of the following identifiers will be used to identify each client and their trip characteristics: (1) ADF&G Sport Fishing License number; (2) Permanent Identification Card number; (3) Disabled Veterans License number; or (4) name for underage anglers (or possibly identified by accompanying adult's license number). Collecting this information will enable cross-verification (charter operator versus client) of logbook information (see next bullet).
- Off-site (cross-) verification will involve follow-up mail surveys of chartered anglers, using the identifying information provided in the logbook reports, combined with the ADF&G license databases.

- Mandatory recording of all information for each chartered trip before clients and harvest are offloaded at the end of the trip.
- Reporting (i.e., turning in charter logbook sheets) will occur on a weekly basis. Weekly reporting will enable timely feedback to charter operators regarding possible reporting errors and omissions, so for example incomplete and missing data in logbooks (e.g., statistical areas missing digits, port of landing missing, no effort information recorded, etc.) can then be addressed in a timely and accurate manner.
- Dock-side creel surveys will provide verification of the number of clients and numbers of Pacific halibut kept will occur for a random subsample of locations and charter trips for a yet-to-be determined portion of saltwater charter trips in Southeast and Southcentral Alaska. Verification will involve direct counting of clients upon offloading, and direct observation and counting of harvested halibut.
- Stricter penalties for logbook violations were implemented in 2004 when the legislature passed guide licensing and reporting provisions.

As noted above these ideas are conceptual in nature, and specific implementation details are under development and subject to change.

Requirements that would differentiate charter fishing catch limits from sport fishing catch limits for an individual angler would assist in enforcing annual charter limits. This may require the State of Alaska to modify the sport fishing license for the charter halibut fishery. The State could produce and sell halibut fishing stamps, similar to the State's current requirement for purchasing and having a king salmon stamp, for the backside of a sport fishing license. A person that wants to go on a halibut charter would have to purchase a book of serialized stamps (which contains one stamp per halibut for the annual limit – i.e., 5 or 6 stamps). Each time that angler retains a halibut while on a charter trip, they affix a stamp to the back of their fishing license and sign it. A person is only eligible to purchase one book of stamps per year. Another option would be for the State to provide a place on the back of the current sport fishing license for charter halibut anglers to write in the date, charter operator, place and number of halibut retained, etc. Either one of these methods, coupled with an effective logbook program would assist enforcement of annual limits and trip limits. Of course, a person retaining halibut on a vessel other than a charter (either personal, private or bareboat) would not have to comply with any modified sport fishing license requirements such as affixing a stamp, or recording their catch on their license, so there should be no confusion between charter fishing and non-charter fishing. These methods would also assist enforcement if captains and crew are not going to be allowed to retain halibut because each halibut onboard a charter boat would be associated with an individual by name and license number in the logbook and by the stamp or license provision that the individual possesses.

Enforcement is a key measure of any fishery harvest management program. In 2003, NMFS, USCG, ADPS, and ADF&G all reported that they do not have enforcement programs specifically directed at the recreational charter fishery (NPFMC 2003). This document reported:

...enforcement occurs on an opportunistic basis. All agencies agreed at that time some level of additional enforcement would be needed under a GHL system, depending upon the allocation and implementation scheme adopted. Also, the decision to allocate additional enforcement to this program would properly entail an evaluation of the public interest in doing so, versus doing less enforcement somewhere else. Staff discussed GHL enforcement issues, especially the implications of activating the various measures like line, bag, and trip limits. Although a state enforcement officer was not present, the other agencies essentially reported that additional enforcement resources would not be forthcoming to support this program.

Having said that, there are characteristics of the recreational charter fishery that suggest a different and lesser level of enforcement may be needed to ensure an adequate level of compliance with the program. Several characteristics of the fishery differentiate it from other fisheries and work to the advantage of regulators:

a. The recreational charter fishery operates in the public eye. Requiring operators to prominently post GHL control measures like bag limits and line limits onboard charter would help promote compliance. The State could further support this by requiring those businesses selling sportfishing licenses to do the same.

b. The recreational charter fishery is highly competitive. While there are some operations in isolated locations, many boats tie up and operate in close proximity to other charter. It is reasonable to expect that those operators who are following the rules would be quick to notice another operator who wasn't following the rules.²²

c. Charter operators are required to have a current Coast Guard license to operate. One of the conditions of the license requires the operator to comply with all Federal regulations. Charter operators potentially risk losing their Coast Guard license if they violate Federal fisheries regulations. It is reasonable to conclude that because of the nature of the Coast Guard license, inferring a trust and responsibility to the licensee, as well as the double jeopardy implications, charter operators would likely have a higher rate of compliance with GHL measures than might otherwise be expected.

Additionally, note that ADF&G currently regulates the recreational harvest of king salmon, rainbow trout, salmon sharks, and other species in certain areas by requiring anglers to record harvests of these species on the back of their fishing licenses immediately upon harvest. This system or a system involving charter stamps could be used to regulate annual harvest limits in Area 2C.

These four factors, along with the current system of opportunistic enforcement, may provide a level of compliance sufficient to ensure the GHL measures have the desired effect in controlling the fishery.

Industry experts advised that some hurdles with enforcement of proposed measures could be expected. For example, a ban on crew harvest would require frequent enforcement checks to deter illicit harvest of halibut. Interviewees also saw potential hurdles with limiting charter operators to one trip per day, indicating the regulations would have to be specific about vessels and captains being banned from making more than one trip per day. Without such specificity, charter operators could enter into sub-lease agreements with each other to boost the number of trips they could make in a day.

2.7.5 Effects on Net Benefits to the Nation

The net benefits to the Nation arising out of the alternatives can accrue from several sources. First, the alternatives should initially reverse and then slow the open-ended reallocation between commercial and charter sectors. This reversal should instill commercial quota holders with greater confidence in the value of their quotas which will in turn support the market for quota shares and encourage appropriate investment and capitalization in the commercial sector. Further, the reallocation of halibut harvest amounts back to the commercial sector may affect the benefits realized by U.S. consumers through changes in product availability and price. This section summarizes the different effects of the alternatives to allow comparison and conclusions concerning the overall effects of the alternatives on net benefits to the Nation.

²² Charter operators cannot offer a “trip with higher bag or rod limits,” as suggested in this excerpt. Those limits are set in regulation and operators would not advertise illegal activity.

2.7.5.1 Area 2C

2.7.5.1.1 Alternative 1 – No Action/Status Quo

If the current management of charter halibut harvests in Area 2C continues, and the Alaska Board of Fisheries does not take independent action to restrict crew harvests, the net benefits to the Nation are likely to follow their current trend. The open-ended reallocation to the charter sector from the commercial sector will continue and likely grow as charter sector harvest has grown in recent years. This reallocation will increase uncertainty for commercial quota holders and could affect benefits realized by U.S. consumers through changes in product availability and price.

In response to this request, the overage estimates derived for the ex-vessel revenue loss analysis were combined with a consumer surplus and total revenue model from Herrmann and Criddle (2006) to generate estimates of total consumer losses associated with GHL overages (Table 37).²³ This model estimates that Area 2C GHL overages would result in a \$0.042 M loss beginning in 2007 and increasing to \$0.919 M by 2014.

Table 37. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch – Area 3A

Year	Area 2C			
	Estimated Charter Harvest	Estimated GHL Overage	Estimated Commercial Underage	Lost Consumer Surplus
2005	1.639	0.318	0.36	\$0.000
2006	1.736	0.207	0.36	\$0.000
2007	1.838	0.304	0.36	-\$0.042
2008	1.947	0.406	0.36	-\$0.147
2009	2.061	0.515	0.36	-\$0.259
2010	2.183	0.629	0.36	-\$0.376
2011	2.312	0.751	0.36	-\$0.501
2012	2.448	0.880	0.36	-\$0.632
2013	2.593	1.016	0.36	-\$0.772
2014	32.18	1.161	0.36	-\$0.919

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and 2005 ADF&G estimates of guided and unguided sport catch.

Note: All non-dollar figures are in millions of pounds.

To maintain balance in the analysis of this alternative, the SSC recommended that “there should be a discussion of changes in angler surplus that could be anticipated from the projected increase in charter-based sportfishing for halibut.”²⁴ Because the number of halibut sportfishing charter service providers is large and barriers to entry are low, halibut sportfishing charter service providers can be assumed to

²³ Unlike the ex-vessel revenue analysis the consumer surplus model requires estimates of commercial underages in the future. The analysis assumes that future commercial underages would be equivalent to the average of the commercial underages from 2001 through 2005. This amounts to an underage of 0.36 million pounds in Area 2C and \$0.42 million pounds per year in Area 3A. Note that consumer surplus losses do not begin until the GHL overage is nearly larger than the commercial underage. Also, please note that the model results only approximate what the actual effects would be if ex-vessel and wholesale market conditions hold similar to conditions that were present in 2002.

²⁴ These estimates could be ballparked using models reported in: 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* 18:291-312.

behave as “perfect competitors.” Consequently, the principal source of net national benefits from the charter halibut fishery is angler surplus—the difference between the benefits that anglers derive from sportfishing for halibut onboard charter boats and the costs that they incur. While the magnitude of changes in regional economic benefits will vary, it is unlikely that the changes in regional expenditures will result in changes in net national benefits. Moreover, increases in regional expenditures associated with increases in charter-based sportfishing are likely to be offset by decreases in regional expenditures associated with commercial fishing. This evaluation of the no-action alternative should also recognize that the commercial fishery has consistently underharvested the commercial TAC, thus it would be reasonable to deduct the average commercial catch underage from the projected charter-based sportfishing overage in the determination of potential losses to the commercial fishery.”

While the no-action alternative would result in eventual consumer surplus losses it would also result in regional increases in sport angler welfare surpluses resulting from the projected increase in charter-based sport fishing for halibut. Because the number of halibut sport fishing charter service providers is large and barriers to entry are low, halibut sport fishing charter service providers can be assumed to behave as “perfect competitors” which generate very little or no net economic rents. Consequently, the principal source of net national benefits from the charter halibut fishery is angler surplus—the difference between the benefits that anglers derive from sport fishing for halibut onboard charter boats and the costs that they incur. While the magnitude of changes in regional economic benefits will vary, it is unlikely that the changes in regional expenditures will result in changes in net national benefits. Anglers which are unable to find the angling experience they want in Alaska may be able to find it somewhere else. Moreover, increases in regional expenditures associated with increases in charter-based sport fishing are likely to be offset by decreases in regional expenditures associated with commercial fishing.

2.7.5.1.2 Alternative 2 – One Trip per Day, No Harvest by Skipper and Crew, and Annual Limit of Six Fish

Alternative 2 should reverse the open-ended reallocation between commercial and charter sectors and could instill commercial quota holders with greater confidence in the value of their quotas which will in turn support the market for quota shares. A greater confidence in the value of quotas will also encourage appropriate investment and capitalization in the commercial sector. Further, the reallocation of halibut harvest amounts back to the commercial sector may affect the consumer surplus benefits realized by U.S. consumers (Section 2.7.5.1.1). However, the alternative could result in long-term increased costs incurred by charter operators dependent on a multiple-trip per day business model, crew members dependent on halibut harvests for personal use, and operators dependent on clients interested in fishing experiences lasting longer than three days or those dependent on repeat customers who take more than three trips per year. Theoretically, if operators could adapt their operations to service the same number of clients on less fish then efficiency is gained resulting in net national benefits. However, as discussed in Section 2.7.3.1.2 a reduction in annual limits is likely to result in fewer return clients. Thus, it isn't clear from the available research that the industry can service the same number of clients on fewer fish.

2.7.5.1.3 Alternative 3 – One Trip per Day, No Harvest by Skipper and Crew, and Annual Limit of Six Fish

Alternative 3 in Area 2C provides for greater reductions in halibut harvest than Alternative 2 and comes closer to reducing guide sport sector halibut harvest to at or below the area GH. This change should result in greater gross benefits. However, increased benefits would come at greater long-term costs to operators dependent on clients interested in fishing experiences lasting three days or longer or those dependent on repeat customers who take than three or more trips per year.

2.7.5.2 Area 3A

2.7.5.2.1 Alternative 1 – No Action/Status Quo

If the current management of charter halibut harvests in Area 3A continues and the Alaska Board of Fisheries does not take independent action to restrict crew harvests and institute line limits the net benefits to the Nation are likely to follow their current trend. The open-ended reallocation to the charter sector from the commercial sector will continue and likely grow as charter sector harvest has grown in recent years. This reallocation will increase uncertainty for commercial quota holders and could affect benefits realized by U.S. consumers through changes in product availability and price.

As noted in the discussion of net national benefits for the no action alternative in Area 2C, at the February 2006 meetings the SSC requested that the discussion of the no-action alternative be expanded to include estimates of consumer losses due to reductions in the commercial TAC if charter-based sport fishing overages continued. Using the methodology described above, consumer surplus losses would not begin until 2012 in Area 3A when they would equal approximately \$0.005 M (Table 38).²⁵ By 2014, this loss would increase to \$0.209 M.

Table 38. Long-term commercial losses in ex-vessel value based on estimated commercial CEY reductions and guided sport catch-Area 3A

Year	Area 2C				Area 3A			
	Estimated Charter Harvest	Estimated GHL Overage	Estimated Commercial Underage	Lost Consumer Surplus	Estimated Charter Harvest	Estimated GHL Overage	Estimated Commercial Underage	Lost Consumer Surplus
2005	1.639	0.318	0.36	\$0.000	3.414	0.000	0.42	\$0.000
2006	1.736	0.207	0.36	\$0.000	3.501	0.000	0.42	\$0.000
2007	1.838	0.304	0.36	-\$0.042	3.590	0.000	0.42	\$0.000
2008	1.947	0.406	0.36	-\$0.147	3.682	0.032	0.42	\$0.000
2009	2.061	0.515	0.36	-\$0.259	3.776	0.126	0.42	\$0.000
2010	2.183	0.629	0.36	-\$0.376	3.872	0.222	0.42	\$0.000
2011	2.312	0.751	0.36	-\$0.501	3.971	0.321	0.42	\$0.000
2012	2.448	0.880	0.36	-\$0.632	4.072	0.422	0.42	-\$0.005
2013	2.593	1.016	0.36	-\$0.772	4.176	0.526	0.42	-\$0.106
2014	32.18	1.161	0.36	-\$0.919	4.282	0.632	0.42	-\$0.209

Source: Northern Economics Estimates based on IPHC 2005 Stock Assessment Estimates and 2005 ADF&G estimates of guided and unguided sport catch.

While the no-action alternative would result in eventual consumer surplus losses it would also result in regional increases in sport angler welfare surpluses resulting from the projected increase in charter-based sport fishing for halibut. Because the number of halibut sport fishing charter service providers is large and barriers to entry are low, halibut sport fishing charter service providers can be assumed to behave as “perfect competitors” which generate very little or no net economic rents. Consequently, the principal source of net national benefits from the charter halibut fishery is angler surplus—the difference between the benefits that anglers derive from sport fishing for halibut onboard charter boats and the costs that they incur. While the magnitude of changes in regional economic benefits will vary, it is unlikely that the changes in regional expenditures will result in changes in net national benefits. Anglers which are unable to find the angling experience they want in Alaska may be able to find it somewhere else. Moreover,

²⁵ As with the analysis above the estimate are most representative when market conditions exist which as similar to those which existed in 2002.

increases in regional expenditures associated with increases in charter-based sport fishing are likely to be offset by decreases in regional expenditures associated with commercial fishing.

2.7.5.2.2 Alternative 2 – One trip per day

Alternative 2 should reverse the open-ended reallocation between commercial and charter sectors by reducing charter sector harvest to below the GHL for Area 3A. These changes could instill commercial quota holders with greater confidence in the value of their quotas which will in term support the market for quota shares and encourage appropriate investment and capitalization in the commercial sector because of improved information flow. Further, the reallocation of halibut harvest amounts back to the commercial sector may affect the benefits realized by U.S. consumers through changes in product availability and price. However, the alternative could result in increased costs incurred by charter operators dependent on a multiple-trip per day business models.

2.7.5.2.3 Alternative 3 – One Trip per Day and No Harvest by Skipper and Crew

Alternative 3 will reduce charter sector harvest to a range of 11.6 and 16.5 percentage points below the Area GHL. This amount is greater than the 3.9 to 6.0 percentage point reduction associated with Alternative 2. Thus, Alternative 3 will result in greater benefits according to the nation through increased confidence in the value of commercial quota shares and support of the quota share market. Further, the greater reallocation of halibut harvest amounts back to the commercial sector may affect the benefits realized by U.S. consumers through changes in product availability and price in a greater way than Alternative 2. However, the alternative could result in increased costs incurred by charter operators dependent on a multiple-trip per day business models and crew members dependent on halibut harvests for personal use.

2.7.6 Summary and Conclusions

2.7.6.1 Area 2C Conclusions

The expected effects of the alternatives for Area 2C are discussed in Table 39. The effect of Alternative 1, the no action alternative, depends in part on the action of the Alaska Board of Fisheries in March 2006. If the Alaska Board of Fisheries accepts the proposals submitted by ADF&G then an indirect result of Alternative 1 for Area 2C would be a reduction in harvest of at least 3.3 to 4.5 percent. Alternative 1 would not reduce current harvest levels itself and halibut harvests would likely continue their current trends of long-term growth if ADF&G's proposals are not accepted by the BOF.

Alternative 2 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of six fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 107.5 and 109.6 percent of the Area's GHL. While this alternative could slow growth in the long run, it is likely that charter harvest would remain above the GHL and continue its long-term growth trend. Industry interviews indicated that the banning of multiple trips per day was unlikely to significantly reduce harvest economically affecting operators who rely on that business model to stay in business. These same operators indicated that institution of an annual limit would economically affect charter operators providing experiences long than three days in length through increases marketing costs and lower margins. The elimination of harvest by crew members was widely supported by charter operators during the interviews and is not expected to cause significant economic losses to the industry.

Alternative 3 would limit vessels to one trip per day, eliminate harvest by crew members, and place an annual limit of five fish on charter clients. This alternative would have reduced harvest in 2004 from 122.2 percent of the GHL to a range of 101.3 and 102.7 percent of the Area's GHL. While these measures

would reduce harvest to nearly the level of the current GHL, any growth in harvest would again lead to a larger difference between the GHL and harvest levels. While this harvest would reduce harvest in the short-term even more than Alternative 2, it is likely that charter harvest would remain above the GHL and continue a long-term growth trend in harvest levels. Alternative 3 would have of the same economic effects as Alternative 2, but would also result in additional economic effects for charter operators and lodges that book anglers for stays longer than 2 days in duration. In the long-term, the result of these effects could be a transfer of pressure from inside passage communities to those facing the Gulf of Alaska and increases pressure on alternative species.

2.7.6.2 Area 3A Conclusions

The expected effects of the alternatives for Area 3A are discussed in Table 40. Alternative 1, the no action alternative, would not reduce current harvest levels or change current trends without independent action by the Alaska Board of Fisheries on ADF&G's proposals. If the Board accepts these proposals, then an indirect result of Alternative 1 for Area 3A would be a minimum reduction in harvest of between 7.7 and 10.5 percent. Note that both ADF&G staff and charter operators have said that the 2005 harvest in Area 3A is likely to be under the GHL. Charter operators indicated that the 2004 harvest was boosted by the diversion of tourism activities away from interior Alaska to Southcentral Alaska because of interior wildfires. Thus, it is likely that under the no-action alternative, and without Board of Fish approvals of ADF&G proposals, that harvest levels in Area 3A would slip below the GHL for a short period before growth in tourism and the charter fleet pushed harvest above the GHL.

Alternative 2 would limit vessels to one trip per day. This alternative would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 94.0 and 96.1 percent of the Area's GHL. As noted above, charter operators indicated in key informant interviews that the effect of this measure could be very short-term as the response of operators using the multi-trip per day or overnight trip business models would likely increase the number of boats operated and work to ensure that boats now operated at voluntary less-than-capacity levels are operated at full capacity. Additionally, the effect of the alternative is likely overestimated even without the adaptations above, because excess capacity currently exists in the Southcentral charter fleet. This excess capacity means that a portion of displaced clients are likely to find seats with operators currently using the one-trip-per day business model.

Alternative 3 would limit vessels to one trip per day and eliminate harvest by crew members. This alternative would have reduced harvest in 2004 from 100.5 percent of the GHL to a range of 83.5 and 88.4 percent of the Area's GHL. As with Alternative 2, the portion of the reduction associated with restrictions on the number of trips per day is likely to be overestimated by this analysis and short-lived. The majority of the reduction associated with this alternative comes from the elimination of crew harvests. Charter operators reported that this proposed measure is likely to be the most effective, have the greatest long-term effect, and have least economic effect on charter operators. This appears to imply that the industry would choose Alternative 3 from amongst the listed Alternatives, but would prefer that the one-trip per day limit be removed from the Alternative, as the goal of the measure can be achieved without that measure.

Table 39. Summary of expected effects of alternatives, Area 2C

Alternative	Who May Be Affected	Change in Charter Harvest	Economic Costs	Action Objectives
Alternative 1	Status Quo/Baseline	Baseline	Baseline	Baseline
Alternative 2	<p>Approximately 620 charter vessels fished for halibut in 2004. Together these vessels carried 67,800 clients who harvested 84,200 halibut weighing 1.75 M lb.</p>	<p>This alternative would have reduced charter halibut harvest in 2004 by between 180,000 and 210,000 lb and reduced total harvest to a range of 107.5 and 109.6 percent of the GHL from the current 2004 level of 122.2 percent of the GHL.</p>	<p>Costs associated with this alternative could include: the potential for lower angler demand and expenditures, higher marketing costs for operators, higher costs for crew dependent on halibut harvest for personal consumption, and the disruption of the multiple trips per day business model.</p> <p>Costs associated with this alternative could include: the potential for lower angler demand and expenditures, higher marketing costs for operators, higher costs for crew dependent on halibut harvest for personal consumption, and the disruption of the multiple trips per day business model.</p>	<p>Lowers current harvest levels to a level closer to the current GHL, but provides less expected reductions than Alternative 3.</p>
Alternative 3	<p>Approximately 620 charter vessels fished for halibut in 2004. Together these vessels carried 67,800 clients who harvested 84,200 halibut weighing 1.75 M lb.</p>	<p>This alternative would have reduced charter halibut harvest in 2004 by between 280,000 and 300,000 lb and reduced total harvest to a range of 101.3 and 102.7 percent of the GHL from the current 2004 level of 122.2 percent of the GHL.</p>	<p>Costs associated with this alternative could include: the potential for lower angler demand and expenditures, higher marketing costs for operators, higher costs for crew dependent on halibut harvest for personal consumption, and the disruption of the multiple trips per day business model. The likelihood of incurring costs related to the annual limit measure is higher than the likelihood for Alternative 2.</p>	<p>May best meet the objectives of the Council by lowering current harvest levels to a level closer to the GHL.</p>

Table 40. Summary of expected effects of alternatives, Area 3A

Alternative	Who May Be Affected	Change in Charter Harvest	Economic Costs	Action Objectives
Alternative 1	Status Quo/Baseline	Baseline	Baseline	Baseline
Alternative 2	Approximately 530 charter vessels fished for halibut in 2004. Together these vessels carried 116,600 clients who harvested 197,200 halibut weighing 1.75 M lb.	This alternative would have reduced charter halibut harvest in 2004 by between 160,000 and 235,000 lb and reduced total harvest to a range of 94.0 and 96.1 percent of the GHL from the current 2004 level of 100.5 percent of the GHL.	Costs associated with this alternative could include: the potential for lower angler demand and expenditures and the disruption of the multiple trips per day business model.	Lowers current harvest levels to a level below to the current GHL, but provides less expected reductions than Alternative 3.
Alternative 3	Approximately 530 charter vessels fished for halibut in 2004. Together these vessels carried 116,600 clients who harvested 197,200 halibut weighing 1.75 M lb.	This alternative would have reduced charter halibut harvest in 2004 by between 442,000 and 620,000 lb and reduced total harvest to a range of 83.5 and 88.4 percent of the GHL from the current 2004 level of 100.5 percent of the GHL.	Costs associated with this alternative could include: the potential for lower angler demand and expenditures, higher costs for crew dependent on halibut harvest for personal consumption, and the disruption of the multiple trips per day business model.	May best meet the objectives of the Council by lowering current harvest levels to a level closer the GHL.

3.0 REGULATORY FLEXIBILITY ACT

3.1 Introduction

When an agency proposes regulations, the Regulatory Flexibility Act (RFA) (5 U.S.C. § 601-612) requires the agency to prepare and make available for public comment an initial regulatory flexibility analysis (IRFA) that describes the impact of the proposed actions on small businesses, nonprofit enterprises, local governments, and other small entities. The IRFA is to aid the agency in considering all reasonable regulatory alternatives that would minimize the economic impact on the small entities to which the proposed actions applies.

The level of detail and sophistication of the analysis should reflect the significance of the impact on small entities. Under 5 U.S.C., Section 603(b) of the RFA, each IRFA is required to address:

- 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 actions;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed actions will apply;

- A description of the projected reporting, record keeping and other compliance requirements of the proposed actions, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed actions;
- A description of any significant alternatives to the proposed actions that accomplish the stated objectives of applicable statutes and that minimize any significant economic impact of the proposed actions on small entities.

3.2 Reasons for Considering the Proposed Action

As described more fully in Section 1.4 of the RIR, in 2000, the Council proposed to establish GHGs for the charter halibut fishery in IPHC Area 2C and Area 3A. At its October 2005 meeting, the Council reviewed final 2004 halibut charter harvest estimates from the ADF&G Sport Fish Division. The data indicated that the GHGs had been exceeded by 22 percent in Area 2C and less than 1 percent in Area 3A. In response to the new information, the Council initiated an analysis that includes a proposed action to reduce halibut charter harvests to the GHGs.

3.3 Objectives and Legal Basis of the Proposed Actions

As described more fully in Section 1.2 of the RIR, the purpose and overall intent of the proposed action is to reduce charter halibut harvests in IPHC Areas 2C and Area 3A to the area GHGs.

The Northern Pacific Halibut Act of 1982 (16 U.S.C. 773-773k; Pub. L. 97-176, as amended) authorizes the Secretary of Commerce to enforce the terms of the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea. The Secretary promulgates regulations pursuant to this goal in 50 C.F.R. Part 301. The Regional Fishery Management Council responsible for the geographic area concerned (i.e., the Pacific or North Pacific Council) may also develop and implement, with the approval of the Secretary, regulations as deemed necessary to fulfill the purpose of the Convention and this Act. However, the implementation of these regulations is subject to approval by the Secretary of Commerce.

3.4 Description and Number of Small Entities to which the Proposed actions will apply

3.4.1 Definition of a Small Entity

Three types of small entities are defined in the RFA:

Small Business. Section 601(3) of the RFA defines a small business as having the same meaning as small business concern under Section 3 of the Small Business Act. This includes any firm that is independently owned and operated and is not dominant in its field of operation. 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 M. The SBA definition of a small business applies to a firm's parent company and all affiliates as a single entity.

Small organizations. The RFA defines “small organizations” as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

3.4.2 Description of Small Entities to Which the Proposed actions will apply

Federal courts and Congress have indicated that a RFA analysis should be limited to small entities subject to the regulation.²⁶ As such, small entities to which the rule will not apply are not considered in this analysis.

The proposed alternatives would apply to businesses providing services in the guided Halibut sport fishery in IPHC Regulatory Areas 2C (Southeast Alaska) and 3A (Southcentral Alaska). There do not appear to be any entities that are directly regulated by the proposed action that would qualify as either “small nonprofit” entities, nor “small government jurisdictions.”

3.4.3 Estimate of the Number of Small Entities to Which the Proposed actions will apply

Prior analyses, such as the 2003 GHM analysis and the 1997 GHM analysis (conducted by University of Alaska, Anchorage Institute for Social and Economic Research [ISER] and Council staff) indicated that there are more than 800-plus active charter operations and that historical data (ADF&G logbooks and survey data) indicate a substantial amount of entry and exit from the fishery. These analyses concluded at the time that all of the 800-plus charters are likely small entities based upon SBA criteria, since they were expected to have average annual gross revenues of less than the then annual limit of \$5 M. The largest of these companies involved in the fishery, which are lodges or resorts that offer accommodations as well as an assortment of visitor activities, may be large entities under the SBA size standard. Key informant interviews conducted for this analysis indicated that the absolute largest of these companies may gross more than \$6.5 M per year, but that it was 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.

The estimation of the number of small entities is likely over inclusive because of the limited information on vessel ownership and operator revenues. However, it is highly likely that nearly all entities qualify as small businesses.

3.5 Description of the Projected Reporting, Record Keeping and Other Compliance Requirements of the Proposed actions

3.5.1 Description of Compliance Requirements of the Proposed Actions

As currently envisioned, the proposed actions would not require any new or revised “reporting” or “record keeping” within the meaning of the Paperwork Reduction Act. The proposed actions contain compliance requirements not subject to the Paperwork Reduction Act. Specifically, the proposed action imposes harvest restriction measures:

- The trip limit would allow charter operators to make only one trip per day for each vessel.
- The prohibition on harvest by skipper and crew would reduce the average harvest per trip.

²⁶ *Mid-Tex Elec. Coop v. FERC*, 773 F.2d 327 (D.C. Cir. 1985); *Cement Kiln Recycling Coalition et. al. v. EPA*, 255 F.3d 855 (2001).

- The annual limit on angler harvest would limit the number of fish an angler would be allowed to harvest for the season.

3.5.2 Description of Compliance Costs Associated with the Proposed Actions

The differing measures of the alternatives have different compliance costs as explained in Section 2.7. For example, some charter operators take two or more trips in any given day and would be affected by the one trip per day trip limit. This limit would reduce the revenues of those operators by allowing them to make only one trip per day unless operators were able to charge more than twice the price of the original trip. However, it is estimated that a relatively small percentage of charter operators make more than one daily trip per vessel.

The ban on harvest by skipper and crew is could result in increased operation costs if crew view halibut harvests as part of their wages. Additionally, crew that must replace halibut harvested while on a charter trip may be forced to purchase replacement food at retail outlets.

Some charter operators have clients who make multiple trips during a year; the annual limit on angler harvest could reduce these operators' revenues by reducing their client's demand for charter trips. ADF&G data indicate that in 2004, 13 percent of one-angler households from the SWHS harvested more than six fish while 16 percent harvested more than five fish. Demand from this segment is more likely to be affected by the proposed regulations if these clients do not transfer their demand for halibut to other species requiring charter access (thus continuing to take the same number of charter trips per year). Charter operators who depend more on multi-day trips or repeat trips by clients within a given year will see greater negative effects than operators with a more diverse clientele or those who focus only on providing a single-day experience. This effect is expected only in Area 2C.

Commercial Fisheries Statement. The effects of the analyzed alternatives on the commercial fishery would be positive given that the alternatives would help reduce charter harvest of halibut to levels closer to, or below, the Area GHLS. However, the long-term efficacy of the current alternatives may be limited given that the alternatives do not address the long-term growth of the charter through increasing client demand and the entry of new vessels into the fleet. Thus, while the alternatives' expected effects on commercial fleet are positive, the duration of these effects is currently unknown. Alternative 3 for both Area 2C and Alternative 3A for Area 3A will provide the largest and most durable positive effects for the commercial fleet because they generate the greatest reductions in charter fleet harvest. In Area 2C, Alternative 3 would reduce charter fleet harvest to near the GHL, while Alternative 3 for Area 3A would reduce charter fleet harvest to a range of 11.6 and 16.5 percentage points below the GHL.

Recreational Fisheries Statement. The proposed alternatives could increase demand for halibut from the non-guided sport fishery sector in several ways. Elimination of crew harvests would likely result in some transfer of demand by crew to recreational opportunities. Key informant interviews repeatedly indicated operators and crew would harvest halibut on family recreational trips or on non-working days using charter equipment. The institution of annual limits could encourage anglers who would otherwise have spent more than three or four days fishing for halibut on charter vessels to harvest more halibut through non-guided means.

3.5.3 Estimate of the Regulatory Burden and Distributional Effects

Compliance costs may affect the economic viability of small entities or their ability to provide services. The severity of the economic impact depends on the magnitude of the compliance costs associated with the rule and the economic and financial characteristics of the affected firms and industries. Firms that are

relatively profitable would be better able to absorb new compliance costs without experiencing financial distress. Information on revenue, profit or other measures of economic sustainability is unavailable for the small entities to which the proposed actions would apply. However, the estimated regulatory burden is estimated to be highest for the smallest firms and those involved in multiple trips per days. Operators who also depend on clients taking three or more trips per year would also be affected. These operators would either face reduced profits or losses if they are unable to raise charter prices to include the new costs.

3.5.4 Description of Potential Benefits of the Proposed Actions to Small Entities

The proposed alternatives would not directly benefit small entities. Indirectly, the proposed alternatives could protect small entities from further and more onerous regulations.

3.6 Identification of Relevant Federal Rules that may Duplicate, Overlap or Conflict with the Proposed Actions

NOAA Fisheries is unaware of any duplicative, overlapping, or conflicting federal rules.

3.7 Conclusion

Nearly all of the firms affected by the proposed actions would qualify as small business entities. The compliance costs of the proposed actions will vary widely depending on the size of the firm, the firm's business model, and current business practices. For example, a firm in Area 3A which follows the one trip per day business model while currently banning the harvest of halibut by crew members would not face any compliance cost from the proposed actions. On the other hand, a firm in Area 2C offering multiple trips per day, engaging in crew harvest on a regular basis, and specializing in repeat customers would face the maximum compliance costs associated with the proposed actions. While the majority of firms are likely follow the single trip per day model, most firms are likely to experience some form of compliance costs associated with the proposed actions. A small portion of firms are likely to endure substantial compliance costs, and these firms are likely to be concentrated in specific communities that specialize in multiple trips per day (e.g., Deep Creek, Ninilchik) or where operators specialize in longer-stay experiences. The overall effect of these costs will depend upon the size of the firm and extent of the compliance costs.

4.0 CONSISTENCY WITH OTHER APPLICABLE LAWS

4.1 Introduction

This section discusses the consistency of the proposed actions with the North Pacific Halibut Act of 1982, Magnuson-Stevens Act, and the Regulatory Flexibility Act.

The Act governs the promulgation of regulations for managing the halibut fisheries in both State and Federal waters. The language in the Act regarding the authorities of the Secretary of Commerce and the Regional Fishery Management Council is excerpted below.

“The Regional Fishery Management Council having authority for the geographic area concerned may develop regulations governing the U.S. portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the U.S., or both, which are in addition to, and not in conflict with regulations adopted by the Commission. Such regulations shall only be implanted with the approval of the Secretary, shall not discriminate between residents of different States, and shall be consistent with the limited entry criteria set forth in Section

303(b)(6) of the Magnuson Act. If it becomes necessary to allocate or assign halibut fishing privileges among various U.S. fishermen, such allocation shall be fair and equitable to all such fishermen, based upon the rights and obligations in existing Federal law, reasonably calculated to promote conservation, and carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges...”

From the language in the Act, it is clear that while jurisdictional authority for the limited access and other allocation measures resides within the provisions of the Halibut Act, consideration of those types of measures is subject to many of the same criteria described under the Magnuson-Stevens Act. In particular, the 303(b) (6) provisions of the Magnuson-Stevens Act and the language from National Standard 4 are directly referenced. Therefore, the following sections are included to discuss the consistency of the proposed alternatives relative to certain provisions of the Magnuson-Stevens Act and other applicable laws, without regard for whether such treatment is formally required.

4.2 National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Act (Act), and a brief discussion of the consistency of the proposed alternatives with those standards, where applicable.

National Standard 1—*Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the U.S. fishing industry.*

Alternative 1 allows charter boats to harvest an unlimited amount of halibut. Consequently, commercial harvest would have to be reduced to limit the potential for overfishing. The proposed alternatives would result in the charter harvests more closely tracking the GHL. To the extent that the GHGs are met, the possibility of overfishing is lessened. In 2004, proposed alternatives would have reduced harvest between 0.3 and 1.5 percent of the CEY for Area 3A while Area 2C Alternative would have reduced harvest by between 0.9 and 1.6 percent of the CEY for Area 2C.

Under all alternatives, the GHG functions as a target cap but not as a strict allocation (rather, proposed measures would be triggered under Alternatives 2 and 3 to keep the charter fleet to the GHG). It is not known whether the existing distribution of halibut catch among the sectors is at an optimal level, or whether the alternatives under consideration would result in the optimal yield from the fishery.

National Standard 2—*Conservation and management measures shall be based upon the best scientific information available.*

While management information on the charter industry is less definitive than for most commercial fisheries, this document uses the best available scientific information from the Alaska Department of Fish and Game and the IPHC. Because harvest levels by the charter fleet are a function of client demand, rather than biomass or quota levels, definitive estimates of future harvest under status quo are not possible.

National Standard 3—*To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

The halibut stock is considered by the IPHC to be a single stock in the North Pacific, though with significant migratory patterns and shifts in distributions, both within and across years. However, it is managed by more discrete regulatory areas (e.g., Areas 2C and 3A) as described in the analysis.

National Standard 4– (a) *Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be:*(1) *Fair and equitable to all such fishermen;* (2) *Reasonably calculated to promote conservation;* 3) *Carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.* (b) *Discrimination among residents of different states. An FMP may not differentiate among U.S. citizens, nationals, resident aliens, or corporations on the basis of their state of residence. An FMP may not incorporate or rely on a state statute or regulation that discriminates against residents of another state. Conservation and management measures that have different effects on persons in various geographic locations are permissible if they satisfy the other guidelines under Standard 4.*

None of the proposed alternatives would differentially affect residents by state directly. The only aspect of the proposed alternatives which could differentially affect residents by state would be selection of measures that curtails the charter fishing season. This would be an indirect effect in that non-resident anglers could be disproportionately affected if charters are unavailable in the latter part of the season. Resident anglers would also be precluded from a charter trip later in the season, but they would have a much higher likelihood of making other arrangements for halibut fishing or taking their trip earlier in the season.

National Standard 5–*Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.*

While economic allocation between the commercial and charter fisheries is a potential consequence of the proposed alternatives, various other considerations are identified in the 2000 Problem Statement and are being considered in by the Council for long term management of the fishery and will be addressed in future analyses already initiated by the Council, including a moratorium on entry into the charter fleet, a share-based allocation program for the charter fleet, and revisions to the nature of the GHL and implementing measures.

National Standard 6–*Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

The proposed alternatives are structured to, among other objectives, accomplish what is implied by National Standard 6. Under status quo, increases in charter halibut harvests are at the expense of the commercial fleet, because projected catch by the charter fleet is deducted prior to setting the commercial quotas.

National Standard 7–*Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

Eliminating crew harvest, allowing only one trip per day, or a cap on the annual catch by charter clients, or any combination of those would increase costs of management relative to the status quo. However, the measures are non-duplicative and additional costs are likely to be small.

National Standard 8–*Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the important of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

Proposed alternatives are specifically intended to, among other things, address community stability. For example, one of the primary management problems identified with the status quo is the reallocation from commercial to charter fishing, and the attendant potential impacts to coastal communities that rely on the commercial halibut fishery. This is complicated by the fact that the charter fleet, in most cases, is based in those same communities, and stability for the community as a whole is based on trade-offs between those two sectors within the community. Measures to limit the charter catch within the GHL have the potential to enhance overall community stability by defining the expectations of all users of the halibut resource. Overall economic activity within communities may be more of a trade-off between sectors within the community, though one sector may contribute more economic activity per fish than the other.

National Standard 9—*Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

This standard is not applicable to the proposed alternatives.

National Standard 10—*Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

Coast Guard staff reported that it does not see an overarching safety concern with the proposed alternatives.

4.3 Section 303(a) (9) – Fisheries Impact Statement

The Magnuson-Stevens Act requires that any management measures submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. Without regard to whether this statement is formally required under the proposed action, the following information is provided. The impacts of the proposed alternatives have been discussed in previous sections of this document. The alternatives would not curtail the charter fishing season, but could influence client demand for trips and require certain businesses to change their business model. In addition, certain alternatives could shift demand from halibut to other species and change the spatial nature of demand over time. The effects of changing business models and the spatial shift of demand are likely to affect not only businesses but communities as well. Participants in other fisheries (e.g., salmon, rockfish, and lingcod) could find themselves facing additional competition from displaced halibut anglers. Not imposing measures to limit charter catches to their GHL could reduce the amount of halibut available to the commercial fisheries, particularly if the charter fishery continues to expand and/or the halibut quota decreases.

4.4 Section 303(b)(6) – Limited Entry Requirements

Under Section 202(b)(6) of the Magnuson-Stevens Act, the council and Secretary of Commerce are required to take into account the following factors when developing a limited access system: (a) present participation in the fisheries, (b) historical fishing practices in, and dependence on, the fisheries, (c) the economics of the fisheries, (d) the capability of fishing vessels used in the fisheries to engage in other fisheries, (e) cultural and social framework of the fisheries, and (f) any other relevant considerations. This document does not discuss limited entry alternatives and therefore this section is not applicable.

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APPENDIX I.

Proposal 400 – 5 AAC 75.003. Emergency Order Authority

Add regulations to reduce the harvest of fish by charter operators and crew members as follows:

5 AAC 75.003 is amended by adding a new paragraph (4) to read:

5 AAC 75.003. Emergency Order Authority.

(4) The Alaska Board of Fisheries recognizes that harvest regulations may need to be modified to attain guideline harvest levels or allocations within the salt water guided fisheries in various areas of the state. If the commissioner determines that the regulations must be modified to attain the salt water guided fishery guideline harvest level or allocation, the commissioner may establish, by emergency order,

(A) that operators and crew members working on a charter vessel in marine waters may not retain fish while clients are on board the vessel; and/or

(B) the maximum number of fishing lines that may be fished from a vessel engaged in sport fishing charter activities in marine waters is equal to the number of paying clients on board the vessel.

PROBLEM: In February 2000 the North Pacific Fisheries Management Council (Council) approved guideline harvest level management measures for the harvest of halibut by the sport charter fisheries in International Pacific Halibut Commission areas 2C (Southeast Alaska) and 3A (Gulf of Alaska). In October 2005 Department of Fish and Game (department) staff notified the Council that the charter halibut GHL for area 2C had been exceeded by 22 percent in 2004. The GHL for area 3A was also exceeded, but by slightly less than 1 percent in 2004.

During the December 2005 Council meeting Commissioner McKie Campbell told other Council members that he would request the Board of Fisheries to consider proposals at their March 2006 statewide meeting to reduce the halibut harvest within the charter sectors of 2C and 3A. If adopted, these restrictions could go into effect during the 2006 fishing season to slow down the charter harvest until any restrictions adopted by the Council became effective.

The Commissioner has since decided that it would be more effective to implement these restrictions by emergency order rather than by permanent regulations adopted by the Board of Fisheries. He is requesting the Board to delegate their authority to the department to implement these restrictions in specific areas and during specific times as needed.

The specific regulatory language needed to accomplish these harvest reductions is presented above.

PROPOSED BY: Department of Fish and Game

APPENDIX II.

Development of the Council's GHL policy by year of Council action

1993. The Council began considering management alternatives for the halibut sport fisheries in September in response to a proposal from the Alaska Longline Fishermen's Association (ALFA) in Sitka. The proposal cited the "rapid, uncontrolled growth of the guided halibut charter industry" off Alaska. Because the harvest limits for the commercial longline fishery are set after deducting the estimated harvests by sport fishing (and all other harvests), ALFA was concerned that further growth would result in a reallocation of halibut from the traditional directed longline fishery. They were particularly concerned because the resource is fully utilized and CEYs were projected to decline (ALFA proposal, May 1993).

Based on Council discussion, public testimony, and evidence citing projected continued growth of the charter industry, the Council determined that some type of management program for the halibut charter fishery, including potential limited entry, warranted further consideration. The Council also approved a control date of September 23, 1993 as a potential cutoff date in the event of a moratorium on further entry into the fishery (this control date was never published in the *Federal Register*).

The Council established a Halibut Charter Working Group (Work Group) comprised of staff, three commercial fishery representatives, one non-charter fish representative, and six charter vessel representatives to identify and examine potential management alternatives for the sport fisheries. The Work Group was requested to further develop suitable elements and options for a regional or statewide moratorium on new entry of halibut charter vessels. Although the Working Group did not agree on appropriate management alternatives, it did collect extensive information on the fishery for Council consideration relative to various alternative management measures.

1995. The Council had deferred further action because of other priorities but in January, the Council again reviewed the Work Group findings, took public testimony, and discussed further development of management alternatives. The Council formulated a problem statement and specific management alternatives. Formal analysis, however, was delayed by other tasking priorities for staff and the lack of funding for outside research contracts to acquire the necessary analytical expertise on the sport fisheries. At the end of 1995 and beginning of 1996, Council funding was delayed due to Congressional budget debate. Funding became available in mid-1996.

1996. In June, the Council again discussed the halibut charter issue, and narrowed the alternatives for analysis. The Council decided to focus management alternatives only on the charter fishery (the fastest growing segment based on IPHC and ADF&G reports), thus removing non-charter halibut sport fishery from further consideration. The Council also deleted the alternative for a separate IFQ system for the charter fishery, but retained an option to allow the charter sector to purchase or lease existing commercial IFQs, in the event a cap closed the fishery early. Finally, the Council deleted an absolute poundage cap on the charter fleet, but retained an option for a floating cap expressed as a percentage of the overall available quota. After a research solicitation process, and after reviewing several proposals, a contract was awarded in September to the University of Alaska Institute for Social and Economic Research (ISER).

1997. During initial review in April, the Council added contemporary control date options of April 15, 1997, and the date of final action in September 1997. In September, the Council took final action on the following two management actions affecting the halibut charter fishery, culminating more than four years of discussion, debate, public testimony, and analysis.

Recordkeeping and reporting requirements. The Council approved recording and reporting requirements for the halibut charter fishery. To comply with this requirement, the Alaska Department of Fish and Game (ADF&G) Sport Fish Division, under the authority of the Alaska Board of Fisheries (BOF), implemented a Saltwater Sportfishing Charter Vessel Logbook (SCVL) in 1998. Information collected under this program includes: number of fish landed and/or released, date of landing, location of fishing, hours fished, number of clients, residence information, number of lines fished, ownership of the vessel, and the identity of the operator. This logbook information is essential for an analysis of charter moratorium alternatives. It complements additional sportfish data collected by the State of Alaska through the Statewide Harvest Survey (SWHS), conducted annually since 1977, and the on-site (creel and catch sampling) surveys conducted separately by ADF&G in both Southeast and Southcentral Alaska.

Guideline Harvest Levels in IPHC Areas 2C and 3A. The Council adopted GHLS for the halibut charter fishery, but only for IPHC Regulatory Areas 2C and 3A. They were based on the charter sector receiving 125 percent of their 1995 harvest (12.35 percent of the combined commercial/charter halibut quota in Area 2C, and 15.57 percent in Area 3A). The Council stated its intent that the GHLS would not close the fishery, but instead would trigger other management measures in years following attainment of the GHLS. The overall intent was to maintain a stable charter season of historic length, using statewide and zone specific measures. If end-of-season harvest data indicated that the charter sector likely would reach or exceed its area-specific GHLS in the following season, NMFS would implement the pre-approved measures to slow down charter halibut harvest. Given the one-year lag between the end of the fishing season and availability of that year's catch data, it was anticipated that it would take up to two years for management measures to be implemented.

Also in September, the Council adopted a framework for developing local area management plans (LAMPs) using the joint Council/Alaska Board of Fisheries protocol. LAMPs would be submitted through the BOF proposal cycle, and portions of the plans pertaining to halibut would ultimately require Council approval and NMFS implementation. One LAMP, for Sitka Sound, has been implemented (final rule published on October 29, 1999).

In December, the NMFS Alaska Regional Administrator (RA) informed the Council that the GHLS would not be published as a regulation. Further, since the Council had not recommended specific management measures to be implemented by NMFS if the GHLS were reached, no formal decision by the Secretary was required for the GHLS. Therefore, the analysis never was forwarded for Secretarial review. The Council's intent, however, partially was met by publishing the GHLS as a notice in the *Federal Register* on March 10, 1998. It did not constrain the charter fishery, but did formally announce the Council's intent to establish measures to maintain charter harvest at or below the GHLS using 1995 as the baseline year. Following a recommendation in April 1998 to set a revised control date for possible limited entry into the halibut charter fishery, NMFS published a new control date of June 24, 1998, in the *Federal Register*.

1998. After being notified that the 1997 Council analysis would not be submitted for Secretarial review, the Council initiated a public process to identify GHLS management measures. The Council formed a GHLS Committee comprised of one Council member representing the charter industry, one BOF member representing the charter industry, two charter industry representatives from Area 2C, two charter industry representatives from Area 3A, one unguided sport representative from Area 3A, and two subsistence/personal use representatives from Area 2C. The Committee's task was to recommend management measures for analysis that would constrain charter harvests under the GHLS. It convened in February and April and January 1999. The two subsistence/personal use committee members voluntarily stepped down from the Committee after the first meeting due to travel costs. The Council discussed and approved with modifications the recommendations of the committee and Advisory Panel for analysis in 1998 and again in early 1999.

1999. In April, the Council identified for analysis: (1) a suite of GHL management measure alternatives; (2) alternatives that would change the GHL as approved in 1997; and (3) area-wide and LAMP moratorium options under all alternatives. Recognizing that (1) reliable in-season catch monitoring is not available for the halibut charter fishery; (2) in-season adjustments cannot be made to the commercial longline individual fishing quotas (IFQs); and (3) the Council's stated intent to not shorten the current charter fishing season resulted in the Council designing the implementing management measures to be triggered in subsequent fishing years.

During initial review in December, the Council added: (1) a change in possession limits to the management measures that it would consider to limit charter halibut harvests under the GHL; (2) an option to apply the GHL as a percentage of the CEY by area after non-charter and personal use deductions are made, but prior to deductions for commercial bycatch and wastage; (3) an option to manage the GHL as a 3-year rolling average. Lastly, the Council deleted an option to close the charter fishery in-season if the GHL was reached or exceeded. The Council further adopted the restructured alternatives as proposed by staff.

2000. During final action in February, the Council modified Alternative 2 and selected the new alternative as its preferred alternative. The Council's preferred alternative is listed below. The analysis originally was submitted for NMFS review on July 13, 2000. In December, ADF&G staff reported that the SWHS survey estimates of charter harvest were corrected for 1996-98. The Council accepted the corrected estimates and the analysis submitted to the Secretary was revised.

2001. Subsequent drafts were resubmitted to NMFS on February 14 and September 26 in response to NMFS requests for revisions.

2002. The final draft was submitted on March 28. On September 6, the RA notified the Council that its preferred alternative could not be submitted for Secretarial review because the frameworked management measures to reduce halibut charter harvests under the GHL likely would require additional public comment under the APA rulemaking process. NMFS identified a preferred alternative to implement a GHL that would set a ceiling level of 1,432,000 lb net weight in Area 2C and 3,650,000 lb net weight in Area 3A, and would require a letter of notification from NMFS to the Council when a GHL is reached or when abundance declined such that the GHL would be reduced.

2003. NMFS issued a final rule to implement a GHL in the two areas (68 FR 47256, August 8, 2003). The GHL established an amount of halibut that may be harvested annually in the charter fishery. This action was necessary to allow NMFS to manage more comprehensively the Pacific halibut stocks in waters off Alaska. It was intended to further the management and conservation goals of the Halibut Act.

2004. Charter halibut harvests were determined to have exceeded the GHLs in both Area 2C and 3A in the first year of the GHL Program.

2005. Upon receiving a report from ADF&G that the GHLs were exceeded in 2004, the Council initiated this analysis in October 2005 to identify management measures to lower the charter halibut harvests in the two areas. The Council noticed the industry that any charter operators entering the fishery after December 9, 2005 would not guaranteed inclusion in any future limited entry system

2006. NOAA Fisheries Service published December 9, 2005 control date in the *Federal Register*. The Council formed a Charter GHL Stakeholder Committee to develop two alternatives for long-term management of the charter halibut sector. Council scheduled final action in April 2006 to recommend management measures to lower charter halibut harvests.

APPENDIX III.
Management measure matrix adopted by the Council in 2000

Area 2C Management Tools	
<u>Required Reduction</u>	<u>Management Tool</u>
<10%	Trip Limit
10% - 15%	Trip Limit No Harvest by Skipper + Crew
15% - 20%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 7 Fish
20% - 30%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 6 Fish
30% - 40%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 5 Fish
40% - 50%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 4 Fish
>50%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 4 Fish One Fish Bag Limit in August

Area 3A Management Tools	
<u>Required Reduction</u>	<u>Management Tool</u>
<10%	Trip Limit
10% - 20%	Trip Limit No Harvest by Skipper + Crew
20% - 30%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 7 Fish
30% - 40%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 6 Fish
40% - 50%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 5 Fish
>50%	Trip Limit No Harvest by Skipper + Crew Annual Limit of 4 Fish One Fish Bag Limit in August

