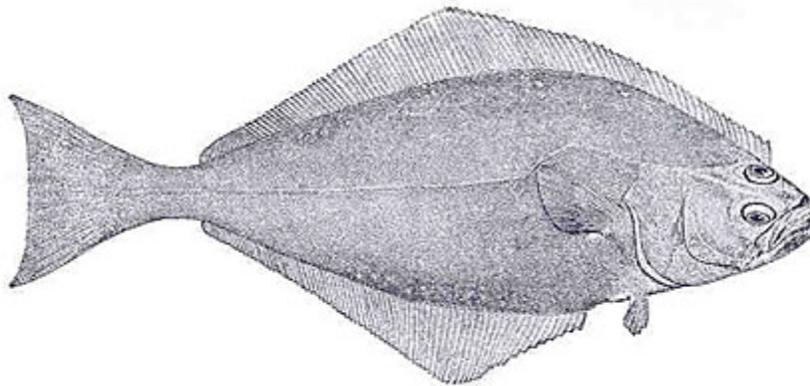


CATCH SHARING PLAN ALLOCATION REVIEW **for the Area 2C and 3A commercial** **and charter halibut fisheries**

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List of Acronyms and Abbreviations

ADF&G	Alaska Department of Fish and Game
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
Area 2C	Southeast Alaska (IPHC management area)
Area 3A	Central Gulf of Alaska (IPHC management area)
Area 3B	Western Gulf of Alaska (IPHC management area)
Area 4	Bering Sea and Aleutian Islands (IPHC management area)
BSAI	Bering Sea and Aleutian Islands
CATCH	Catch Accountability Through Compensated Halibut
CCL	Combined Catch Limit
CEY	Constant Exploitation Yield
CFEC	Commercial Fisheries Entry Commission (State of Alaska)
CFR	Code of Federal Regulations
CHLAP	Charter Halibut Limited Access Program
CHP	Charter Halibut Permit
Council	North Pacific Fishery Management Council
CQE	Community Quota Entity
CSP	Catch Sharing Plan (Pacific Halibut)
E.O.	Executive Order
EA	Environmental Assessment
F	Fishing intensity
FCEY	Fishery Constant Exploitation Yield
FMP	fishery management plan
FR	<i>Federal Register</i>
GAF	Guided Angler Fish
GHL	guideline harvest level
GOA	Gulf of Alaska
IFQ	Individual fishing quota

IPHC	International Pacific Halibut Commission
IRFA	Initial Regulatory Flexibility Analysis
LAPP	Limited access privilege program
lb	pounds
Mlb	Million pounds
MWR	U.S. Military Morale, Welfare, and Recreation Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
O26	Over 26 inches (fish length)
OFL	Overfishing limit
OMB	Office of Management and Budget
PA	Preferred alternative
PPA	Preliminary preferred alternative
PRA	Paperwork Reduction Act
PSEIS	Programmatic Supplemental Environmental Impact Statement
PWS	Prince William Sound
QS	Quota share
RAM	Restricted Access Management (Program)
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
RQE	Recreational Quota Entity
SBA	Small Business Act
Secretary	Secretary of Commerce
TAC	total allowable catch
TCEY	Total Constant Exploitation Yield
U26	Under 26 inches (fish length)
U.S.	United States
U.S.C.	United States Code
USCG	United States Coast Guard

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Executive Summary

In July 2016, NOAA Fisheries created an allocation policy directive to ensure fisheries allocations are periodically reviewed against their objectives and remain relevant to current conditions. This allocation review specifically focuses on Pacific halibut (*Hippoglossus stenolepsis*) allocated between the commercial and guided recreational (i.e., charter) sector Catch Sharing Plan (CSP) for International Pacific Halibut Commission (IPHC) Regulatory Area 2C and 3A.

This review is not intended to be an in-depth analysis on the impacts of the allocation; however, it should be sufficient to allow comparison of program goals and objectives and whether they are being met by the current allocation or if other relevant factors have changed enough to warrant an in-depth formal analysis of the allocation. This review and opportunity for public input informs whether or not a consideration of new allocation alternatives (formal analysis) is warranted.

The CSP

The CSP, implemented in 2014, defines an annual process for allocating halibut between the commercial and charter fisheries in Area 2C and 3A, specifies a public process for setting charter halibut annual management measures, and authorizes limited annual leases of commercial IFQ for use in the charter fishery as guided angler fish (GAF). The CSP replaced the previous charter halibut guideline harvest level (GHL) management system, which had been in effect from 2004-2013.

The CSP was developed in response to increasing harvests in the charter fisheries and decreasing catch limits in the commercial setline fisheries in Areas 2C and 3A. Under the GHL there was no management process that automatically responded to an overage, which occurred frequently, particularly in Area 2C. One of the primary concerns of this system was the delayed-feedback loop of management measures that were established in Federal regulation and the amount of time it took for an amendment of charter management measures to go through the rule-making process. The Council was concerned that with no binding limit on the annual harvest from the charter sector, an open-ended reallocation from the commercial IFQ sector to the charter industry occurs when charter harvest exceeds the GHL. Particularly given the drastic declines in catch limits in Area 2C and 3A leading up to the CSP, the commercial sector experienced dramatic economic losses in revenue and quota share (QS) value during this time. This open-ended reallocation from overages resulted in conflict and tension between sectors and coastal communities dependent on halibut (NPFMC/ NMFS 2013).

Allocations

The CSP establishes commercial IFQ and charter fishery allocations that vary proportionally with changing levels of annual halibut abundance and that are intended to balance the differing needs of the commercial IFQ and charter fisheries over a wide range of halibut abundance in Areas 2C and 3A (Figure 1 and Figure 2). Under the CSP, the IPHC identifies the combined (commercial IFQ and charter) catch limits (CCL) for Areas 2C and 3A pursuant to the CSP's allocation formulas. The CSP percentage allocation differs between Areas 2C and 3A and varies somewhat, depending upon the CCL. Overall, the charter fishery's relative share of the CCL is higher when the CCL is lower, but lower when the CCL is higher.

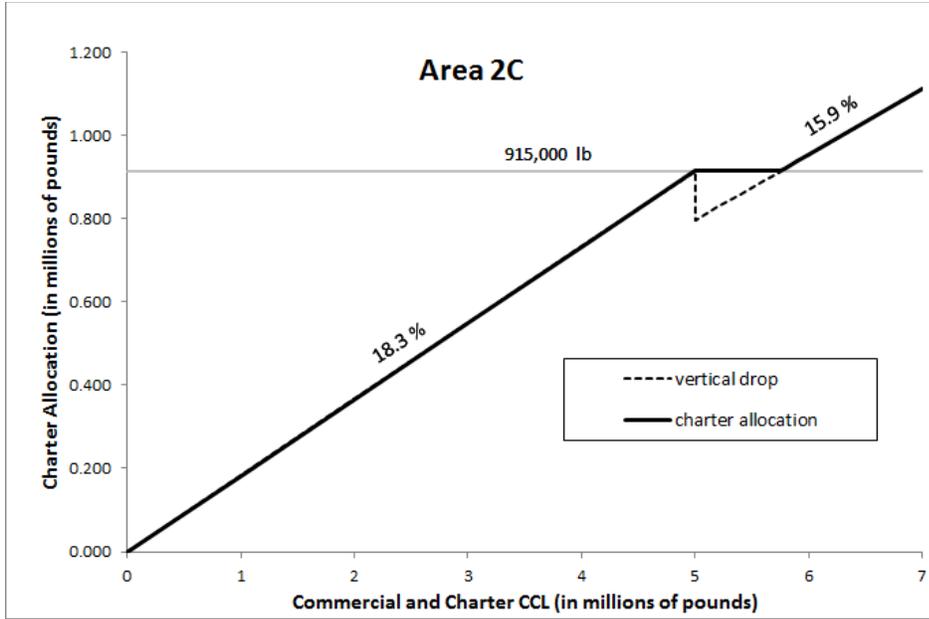


Figure 1 Area 2C charter allocations at varying levels of the annual Combined Catch Limit (CCL)

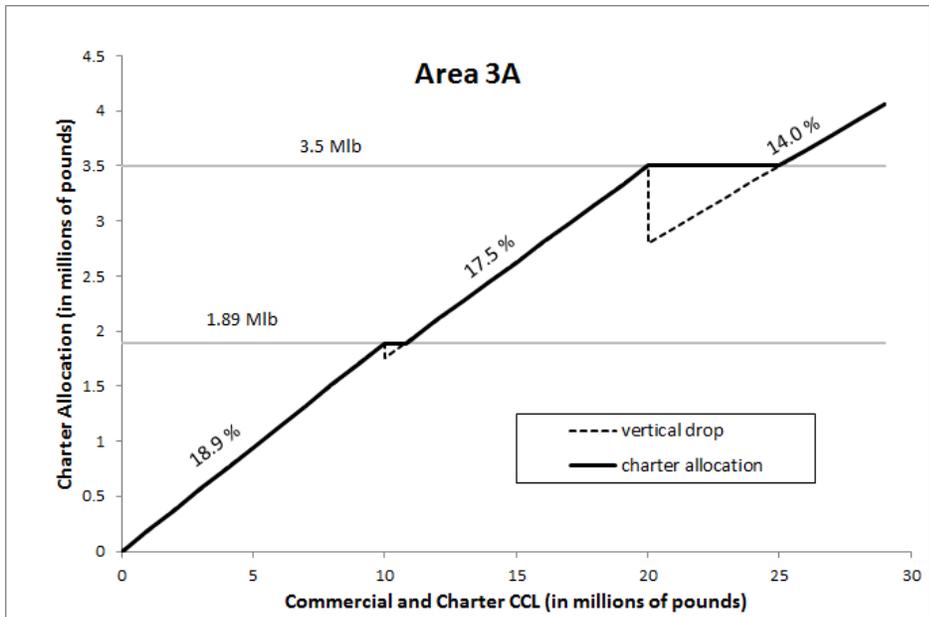


Figure 2 Area 3A charter allocations at varying levels of the annual Combined Catch Limit (CCL)

Table 1 and Table 2 show the history of the Area 2C and 3A allocation splits since the implementation of the CSP. For Area 2C, the CCL has consistently been under the 5 Mlb threshold, with the expectation of 2017. Thus, with the expectation of 2017 when the allocation was on “step 2”, the allocation has consistently been set at the first step of the allocation. The allocations set in Area 3A through the CSP have experienced more variability than Area 2C based on the CCL available and the additional steps within the allocation.

Table 1 Timeseries of allocation levels for Area 2C since the implementation of the CSP

2C	CCL	% Charter	% Commercial	Level of the allocation
2014	4,159,720	18.3%	81.7%	step 1
2015	4,650,000	18.3%	81.7%	step 1
2016	4,950,000	18.3%	81.7%	step 1
2017	5,250,000	17.4%	82.6%	step 2
2018*	4,450,000	18.2%	81.8%	step 1
2019	4,490,000	18.3%	81.7%	step 1
2020	4,260,000	18.3%	81.7%	step 1
2021	4,410,000	18.4%	81.6%	step 1

Source: IPHC regulations

* In 2018, the IPHC Commissioners failed to reach an agreement and de facto adopted catch limits from 2017; however, these numbers represent the more restrictive limits implemented by NMFS for Area 2C and 3A

Table 2 Timeseries of allocation levels for Area 2C since the implementation of the CSP

3A	CCL	% Charter	% Commercial	Level of the allocation
2014	9,429,730	18.9%	81.1%	step 1
2015	10,100,000	18.7%	81.3%	step 2
2016	9,600,000	18.9%	81.1%	step 1
2017	10,000,000	18.9%	81.1%	step 2
2018*	9,460,000	18.9%	81.1%	step 1
2019	10,260,000	18.4%	81.6%	step 2
2020	9,050,000	18.9%	81.1%	step 1
2021	11,140,000	17.5%	82.5%	step 3

Source: IPHC regulations

* In 2018, the IPHC Commissioners failed to reach an agreement and de facto adopted catch limits from 2017; however, these numbers represent the more restrictive limits implemented by NMFS for Area 2C and 3A

Charter and Commercial Halibut Use Relative to Allocations

This allocation review contains Sector Profiles (Section 6) which highlight a series of dashboard metrics for each of the commercial and charter halibut sectors. These dashboard metrics were designed in a similar fashion to those used in the BSAI Pacific cod Allocation Review (NPFMC 2019a), which was the first stand-alone allocation review and intended to serve as a structural model for allocation reviews in the North Pacific. The dashboard metrics included were identified to provide information about the ways in which the two fleets derive benefits from, and are dependent upon, Pacific halibut. While this information is certainly not all encompassing of the ways in which individuals and communities benefit from and are impacted by access to halibut in these sectors, these metrics were identified in the to provide accessible indicators with which to evaluate fishery trends. Specifically, these dashboards cover 1) allocation and removals of halibut, 2) participation metrics, 3) value metrics, 4) diversification metrics, 5) metrics related to ports, trips and deliveries, and 6) regional participation as represented by QS holder or charter halibut permit (CHP) holder regional groupings.

Timeseries of allocations and halibut use from the Sector Profiles are demonstrated in Figure 1 and Figure 2 below for both sectors and Areas. Part of the design of the CSP was to establish a program that includes separate accountability for discard mortality (formally termed wastage); therefore, projected discard mortality for each sector is taken into account in the sector's allocation. Consequently, in the years under the CSP in Figure 1 and Figure 2 (2014-2021) the allocations and estimated removals account for projected and estimated discard mortality associated with that sector. In the years prior to the CSP (2006-2013), the commercial halibut figures compare IFQ total allowable catch (TAC) and IFQ landings and the

charter sector figures compare the GHL to the charter yield. Sources and additional notes on these metrics are included in Section 5 of the review.

One of the realized benefits of the IFQ Program management structure is greater precision and individual accountability in harvesting the full allocation designated to the commercial halibut sector. The figures showing allocation and use demonstrate the commercial IFQ fishery in Area 2C has consistently used between 94% (in 2020) and 100% (2010 and 2014) of its allocation. Area 3A typically uses 99% of its allocation but has ranged from 95% (2020) to 103% (2014). The slight overages in removals that appear for Area 3A in 2010, 2014, and 2015 are primarily a result of higher than projected discard mortality in that year. However, discard mortality estimates also include a small amount of mortality associated with the Area 2C Metlakatla fishery and FISS and research in both Areas.

Following a similar trend to the spawning stock biomass, the commercial halibut allocation for Area 2C declined until 2011, at which point allocations slightly increased until 2017 and then stabilized around 3.5 Mlb 2018-2021. In Area 3A, the commercial allocations continued to decline until 2014, at which point they have somewhat stabilized between 2015-2021, with an average of 7.75 Mlb allocation. Some of the stabilization in allocations are in part due to IPHC Commissioner decisions regarding coastwide and Area-specific TCEY (for example reference vs adopted TCEY in Area 3A as highlighted in the Report of the 96th Session of the IPHC Annual Meeting).

In order to understand the context of the allocation and use in the charter halibut sector, it is important to understand the management measures (e.g., bag limits, size restrictions day-of-the-week closures) that were in place at the time. These are included in Table 15 and Table 16 of the allocation review. The charter halibut sector went through a series of management changes prior to the implementation of the CSP and management measures have changed in both Areas each year since.

Until 2003, charter and unguided anglers were managed under the same two-halibut daily bag limit in all IPHC Regulatory Areas in Alaska. The GHL went into effect in 2004; however, charter yield from Area 2C exceeded the GHL each year between 2004 through 2010; in 2008 the sector harvested 114.7% over the Area 2C GHL. Area 3A exceed the GHL in 2004 through 2007 by an average of 2.9%. As the GHL alone did not appear to constrain harvest, NMFS and the IPHC implemented a variety of additional management measures in Areas 2C and 3A in an effort to constrain charter fishery harvests to the harvest limits established by the GHL. In 2011, the IPHC implemented a bag limit and size restriction of one fish \leq 37 inches with no harvesting by skippers or crew in Area 2C in response to the continuous overage in this sector. This resulted in a substantial decline in charter halibut effort, with the total harvest 32% of what it had been in the previous year and 56.3% under the GHL.

In 2012, the Council adopted a new approach which requires annual analysis and recommendation of management measure to the IPHC for implementation in the upcoming season. This is the process that was officially adopted into the CSP in order to provide a timely and responsive set of management measures that take into account the most recent harvest projection information available and can provide more efficient utilization of the charter sector's allocation.

Under the CSP the Area 2C charter sector has operated under a one fish daily bag limit, with a reverse slot limit (i.e., allowing either one fish under a certain size limit or a very large trophy fish). Since implementation, Area 2C has more efficiently used its allocation relative to pre-CSP, remaining within or near its allocation, with the expectation of the years of the COVID-19 pandemic. Excluding 2020 and 2021, Area 2C has been an average of 4.5% under its allocation since 2014, relative to an average of 22% over the allocation from 2006 through 2013 and much more variability in rates of use. However, the consistency in management measures is also based on the allocation established from the Fishery Constant Exploitation Yield (FCEY) set at the IPHC. A decline in the Area 2C FCEY could require

additional types of restriction (e.g., day-of-the-week closures and annual limits) that may have more of a drastic effect on both required management measures and the ability to predict Area 2C removals.

Area 3A has been on average 10.5% over its allocation during the CSP management (excluding 2020 and 2021), and over its allocation in most years of the CSP. Prior to the CSP (2006 through 2013), Area 3A removals were an average of 13.3% under its allocation. However, the Area 3A charter sector had operated under a 3.65 Mlb allocation up until 2011, three years later, in the first year of the CSP, the 3A catch limit was set to less than half of the amount (1.782 Mlb) due to declines in the FCEY. Pre-CSP Area 3A operated under restrictions similar to the unguided sector, essentially two-fish of any size. Since 2014, this sector has experienced increasingly restrictive management measures, (except for an additional Tuesday open in 2019 and the less restrictive measure under the COVID-19 pandemic). As described above, the suite of additional management measures imposed on Area 3A over of short period of years, increases the challenges of predicting harvest and average weight, particularly when tied to likely changes in angler behavior. However, unlike Area 2C, predictions of charter removals appeared to be gaining accuracy prior to the pandemic.

Predicting charter effort in 2020 and 2021 proved to be particularly difficult due to the onset of the COVID-19 pandemic and the uncertainty it represented in terms of tourism and travel. Despite management measures that were relaxed mid-season in 2020, both Areas harvested under their allocations. In 2021, projected removals included a “COVID buffer” to account for the expectation of a continuation of the impacts of the pandemic on angler effort. However, these buffers proved too large as realized removals were more similar to estimates without a COVID buffer in both Areas.

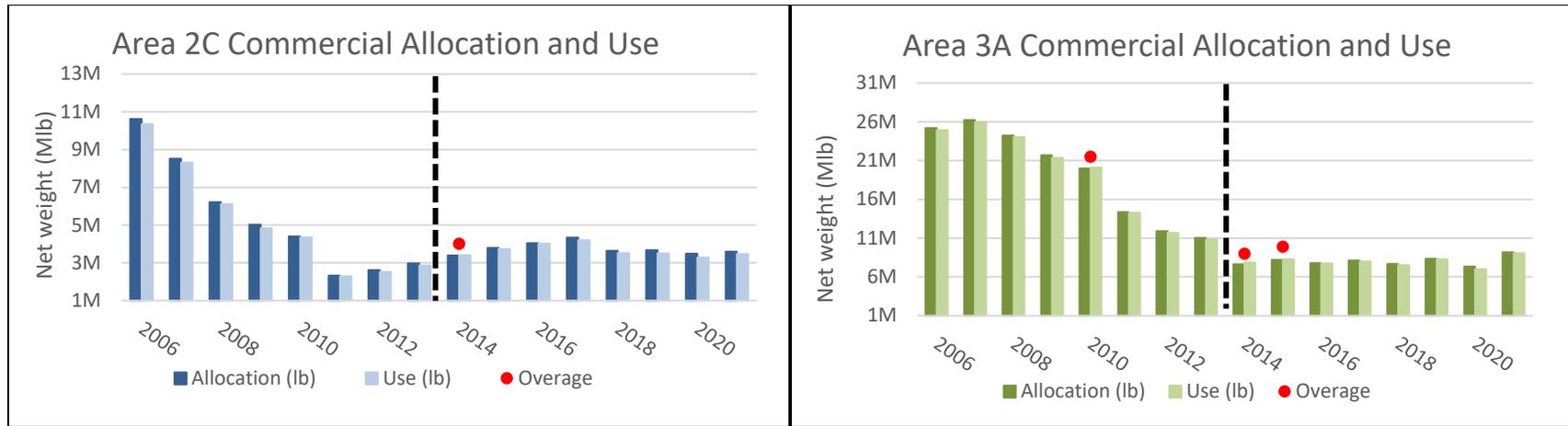


Figure 3 Area 2C and 3A commercial allocation and use: 2006-2013 shows IFQ TAC relative to IFQ landings, and 2014- 2021 shows the commercial CSP allocation (including projected release mortality) relative to total removals (including estimated release mortality)

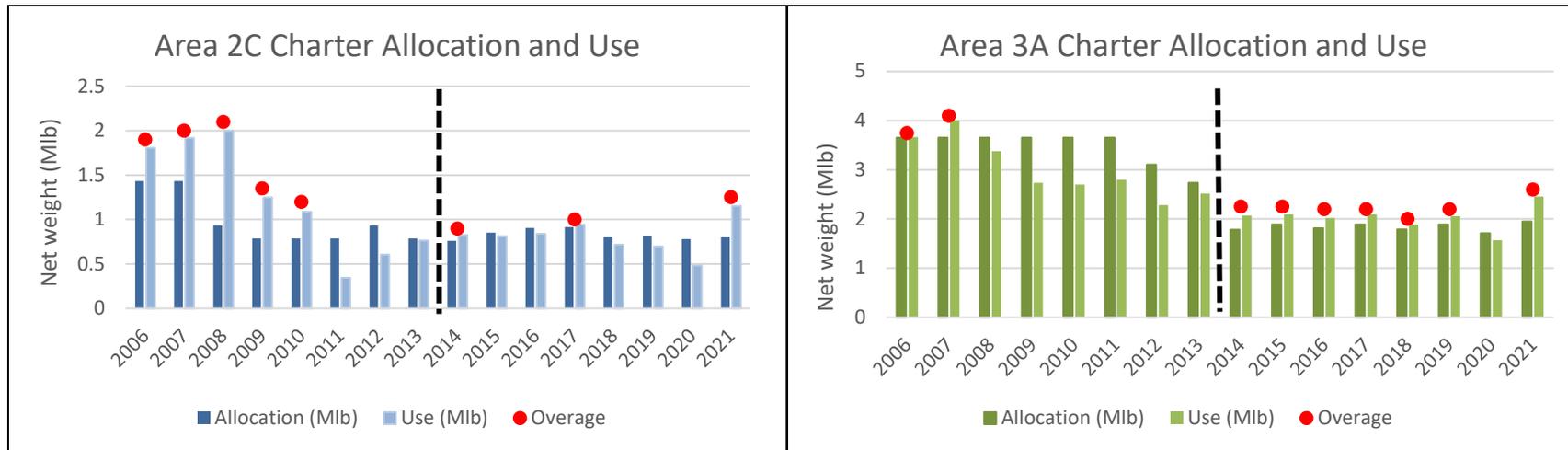


Figure 4 Area 2C and 3A charter allocation and use: 2006-2013 shows GHY relative to charter yield, and 2014- 2021 shows the charter CSP allocation (including projected release mortality) relative to total removals (including estimated release mortality)

Sources and notes are included cited in under the dashboard metrics, Section 6 of the analysis.

CSP Objectives

One of the basic charges of the review it to evaluate program objectives relative to the current fisheries and to determine whether the objectives are being met by the current allocation or if other relevant factors have changed enough to warrant an in-depth formal analysis of the allocation. Based on the Council’s defined Problem Statement and management objectives for the Catch Sharing Plan (which are included in Section 2 of the allocation review), four objectives were identified:

- (1) create a management regime that provides separate accountability for each sector;
- (2) management tools and season length should be established during the year prior to the year in which they would take effect, and that the tools selected, and season length should not change in season;
- (3) evaluate its success in achieving the sport charter sector allocation and specific needs for predictability, advance notice, and season length each year, and adjust its management tools as needed;
- (4) adjust management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages.

Analysts also note that these particular goals speak more to the overall program design itself rather than the specific allocation. Part of this allocation review process is for the Council and the public to consider whether the current program objectives remain relevant and are clear enough to convey the expectations for this allocation. If the Council feels additional objectives are appropriate it could choose to augment or modify the identified list.

Table 3 summarizes the objectives as evaluated in Section 7 of the review.

Table 3 List of CSP objectives and summary of discussion

Objective	Location of information in review	Summary
(1) create a management regime that provides separate accountability for each sector	Section 5.4 and Section 7	The process now incorporates the charter sector into the CCL and has been designed to take into account discard mortality for each sector separately.
(2) management tools and season length should be established during the year prior to the year in which they would take effect, and that the tools selected, and season length should not change in season	Section 5.2, Tables 14 and 15, and Section 7	Management measures are established at the start of the year for which the measures are intended, but prior to the season. The season lengths and management measures have not changed in season (expect for in response to the emergency request as a result of the pandemic).
(3) evaluate its success in achieving the sport charter sector allocation and specific needs for predictability, advance notice, and season length each year, and adjust its management tools as needed	Dashboard figures for the charter sector, Tables 14 and 15, Section 7	The program has provided a more predictable process with management measures that are implemented by the IPHC and do not change inseason. However, under the CSP management measures have changed every year for both Areas since implementation (relative to unchanging measures in Area 3A and less frequently changing measures in Area 2C under the GHL). The variation

		in levels of restrictions can be substantial depending on the IPHC Commissioner’s decisions for TCEY.
(4) adjust management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages	Dashboard figures for the charter sector, Tables 14 and 15, discussion in Section 6.2, and Section 7	Under the CSP, Area 2C has remained near or under its allocation in most years, with the exception of a preliminary estimated overage in 2021 of 42.5%. Area 3A has had overages in every year except for 2020. On average since CSP implementation, but excluding the pandemic years, Area 3A has been 10.5% over its allocation. Predicting harvest in Area 3A has proven to be more difficult given the combination of measures and the uncertainty in angler response to measures. It is a subjective to determine what level of underages or overages are “too much”. However, the CSP provides a response mechanism to be more or less conservative in measures the following year.
Additional factors that have changed	Section 7	Many factors have changed since the CSP was implemented and allocations between the charter and commercial halibut fisheries were set. The review highlights some examples, including aspects of the IPHC management and assessment process, recent Council actions, additional literature and increased knowledge about how the program has operated.

Council Action

There are a number of responses the Council may have relative to the receipt of the allocation review. If, after considering this Allocation Review, advisory bodies, and public testimony, the Council determines that its objectives for the CSP are being met and the program is functioning as intended, then the allocation review is complete and the 10-year trigger for reevaluation is reset. If the Council deems that its objectives are not being met, it could ask for further analysis considering different allocation percentages of halibut in the commercial and charter sectors. This would lead to more in-depth analysis on the implications of any proposed changes in allocation. The Council could also initiate discussion papers or analyses to consider modifying other aspects of the CSP Program. While the point of the review is to focus on the allocation, this is also an opportunity to consider the program more holistically if the Council should choose. This would require additional analysis to hone in on the impacts of the proposed change and allow for additional public comment. Any broader programmatic changes that are within the Council’s authority (for example, those involving other halibut user groups) could be considered after receiving the CSP Allocation Review as well. This would also require a separate analytical process.

1. Allocation Review Background and Purpose

In July 2016, NOAA Fisheries created an allocation policy directive (Policy Directive 01-119; further revised on 2/17; NMFS 2017a) to provide a mechanism to ensure fisheries allocations are periodically reviewed against their objectives and remain relevant to current conditions. This allocation review specifically focuses on Pacific halibut (*Hippoglossus stenolepis*) allocated between the commercial and guided recreational (charter) sector Catch Sharing Plan for International Pacific Halibut Commission (IPHC) Regulatory Area 2C and 3A.

There are three steps in the allocation review process, further summarized and illustrated in the Policy Directive 01-119. In addition, the Procedural Directives 01-119-01 provides guidance on setting the triggers and Procedural Directives 01-119-02 provides relevant factors for allocation decisions (NMFS 2016). The three steps include:

Step 1 - A trigger is met. The three main categories of triggers are public input-based, time-based, and indicator based. Under public input triggers, the Council would still be making a decision on whether to proceed to Step 2. Under an indicator-based trigger (if indicators are sufficiently specific), or a time-based trigger, Step 2 would be a pre-ordained conclusion.

Step 2 - Fisheries Allocation Review - At this stage, the Council should complete a review of the fisheries allocation in question. This review is not intended to be an in-depth analysis; however, it should be sufficient to allow comparison of program goals and objectives and whether they are being met by the current allocation or if other relevant factors (ecological, economic, social, catch, status, etc.) have changed enough to warrant an in-depth formal analysis of the allocation. This review and opportunity for public input informs whether or not a consideration of new allocation alternatives (formal analysis) is warranted.

Step 3 - Evaluation of alternatives/options for an FMP/regulatory amendment. This occurs if the Council determines such an analysis is warranted, based on the Step 2 review. This would follow the typical Council process for FMP/regulatory amendments, wherein the Council would ultimately make a decision to potentially alter an existing allocation (or remain with status quo).

The Policy Directive 01-119 establishes the roles and responsibilities for NOAA Fisheries and the eight regional fishery management councils in reviewing allocations. The Councils are responsible for determining what triggers are applicable for each of their fishery management plans (FMPs) that contain a fisheries allocation. In June 2017, the North Pacific Council received a discussion paper (NPFMC 2017b) describing the allocation review policy and triggers as well of a list of allocations identified by NMFS Alaska Regional Office and NMFS Headquarters staff that would be subject to the review requirements under the Policy Directive's revised definition. At this meeting, the Council adopted the suggested list of 10 fishery allocations for review, including the Area 2C and 3A Catch Sharing Plan (NPFMC 2017a). Although the Allocation Policy technically applies to FMPs that contain allocations and there is no halibut FMP, the Catch Sharing Plan represents a Council decision to distribute specific quantities to discrete user groups and therefore the Council chose to include this program in its list of allocations for review.

The North Pacific Council determined the primary trigger for allocation reviews for Limited Access Privilege Programs would be time-based and concurrent with required program reviews (five years after implementation and subsequent reviews at least every seven years after). For the few allocations in the North Pacific defined outside of a LAPPs and scheduled for review, (i.e., the CSP, as well as the GOA and BSAI Pacific cod sector allocations), the Council adopted a 10-year time frame as the primary trigger criteria for review although, as a secondary trigger, the public can request an allocation review prior to the established 10-year frequency. The CSP was implemented January 2014; therefore, a review should be

initiated by 2024. Given the busy schedule for upcoming LAPP reviews this review was scheduled on an earlier timeframe.

In October 2021, the Council adopted the proposed workplan for this allocation review (NPFMC 2021a). In addition to the Policy and Procedural Directives, the scope of the CSP review takes into consideration: 1) other examples and previous SSC guidance (to guide the structure of the review and use of dashboard metrics); 2) the goals of the CSP (to evaluate and guide content); 3) the Halibut Act and other applicable law (to incorporate where relevant); and 4) public comment submitted in response to the workplan.

The purpose of this allocation review is to assist the Council in determining whether or not the development and evaluation of Catch Sharing Plan allocation alternatives or any other regulatory actions are warranted.

2. Goals of the CSP

The final analysis for the Area 2C and Area 3A halibut CSP (NPFMC/NMFS 2013) identified the need to develop the CSP for the Area 2C and 3A charter and commercial halibut sectors to address conservation and allocation concerns that existed in both areas. These concerns resulted from increased harvests in the charter halibut fishery and decreased catch limits in the commercial setline fisheries.

Although the CSP program details changed from the time it was first proposed in 2007 until it was adopted in October 2012, the management objectives persisted. As stated at final action, the objectives were as follows:

In establishing this catch sharing plan for the commercial and sport charter halibut sectors, the Council intends to create a management regime that provides separate accountability for each sector. The management of the commercial sector remains unchanged under the plan, and new management measures are provided for the sport charter sector. These new measures for the sport charter sector are designed to address the specific need of the sport charter sector for advance notice and predictability with respect to the management tools and length of season that will be used to achieve the allocation allotted to that sector under the plan. In order to achieve the allocation, it is the Council's intent that management tools and season length would be established during the year prior to the year in which they would take effect, and that the tools selected and season length would not be changed in season.

The Council will evaluate its success in achieving the sport charter sector allocation, and specific needs for predictability, advance notice, and season length each year, and will adjust its management tools as needed. In designing this regime for the sport charter sector the Council recognizes that providing advance notice and predictability may result in a charter harvest that does not precisely meet the sector allocation for that particular year. Therefore, the Council intends to adjust its management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages, so long as such overages or underages do not exceed [0, 5, or 10 percent¹] of the charter sector allocations. In meeting its conservation mandate while accommodating the charter industry's need for predictability and stability, the Council will necessarily err on the side of conservation in the selection of management tools and season length, with the result that the sport charter sector may not be able to harvest its entire allocation.

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

The absence of a hard allocation between the longline and the charter halibut sectors has resulted in conflicts between sectors and tensions in coastal communities dependent on the halibut resource. Unless a mechanism for transfer between sectors is established,² the existing

¹ The Council did not include a specific overage/ underage policy in its preferred alternative in Oct 2012.

² When the Council first adopted this Problem Statement in June 2007, it was considering a program that included a hard cap allocation with the potential for inseason charter management when the cap was met (i.e., the charter fishery could close down mid-season). At the time, the alternatives included a compensated reallocation alternative after the allocation was set, as a way to provide an option to keep the season open. The compensated reallocation component was conceived as either: 1) individual management; 2) Federal Common pool; 3) State Common pool; or, a 4) Regional non-profit association common pool. At the Oct 2007 Council meeting, management objectives pivoted to a strategy that called for charter management measures to be reviewed annually, with the goal of ensuring a season of historic length. This strategy also continued a consideration of an option for individual charter moratorium license holders (CHP holders) to lease commercial IFQ as Guided Angler Fish, as an individual mechanism to provide additional opportunities for clients (NPFMC 2007).

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

Based on this defined Problem Statement and management objectives, the following objectives were identified:

- (5) create a management regime that provides separate accountability for each sector;
- (6) management tools and season length should be established during the year prior to the year in which they would take effect, and that the tools selected, and season length should not change in season;
- (7) evaluate its success in achieving the sport charter sector allocation and specific needs for predictability, advance notice, and season length each year, and adjust its management tools as needed;
- (8) adjust management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages.

This review provides an initial evaluation of the success of achieving these objectives in Section 7.

3. Goals of the Northern Pacific Halibut Act

The Northern Pacific Halibut Act of 1982 (Halibut Act) dictates the legal authority for managing halibut and highlights particular requirements for allocations.

The IPHC and NMFS manage fishing for Pacific halibut through regulations established under authority of the Halibut Act. The IPHC adopts regulations governing the Pacific halibut fishery under the Convention between the United States and Canada for the Preservation of the Halibut Fishery of the North Pacific Ocean and Bering Sea (Convention), signed at Ottawa, Ontario, on March 2, 1953, as amended by a Protocol Amending the Convention (signed at Washington, DC, on March 29, 1979). For the United States, regulations developed by the IPHC are subject to acceptance by the Secretary of State with concurrence from the Secretary of Commerce. After acceptance by the Secretary of State and the Secretary of Commerce, NMFS publishes the IPHC regulations in the Federal Register as annual management measures pursuant to 50 CFR 300.62. IPHC and NMFS regulations authorize the harvest of halibut in commercial, personal use, sport and subsistence fisheries by hook-and-line gear and pot gear.

The Halibut Act, at Sections 773c(a) and (b), provides the Secretary of Commerce with general responsibility to carry out the Convention and the Halibut Act. In adopting regulations that may be necessary to carry out the purposes and objectives of the Convention and the Halibut Act, the Secretary of Commerce is directed to consult with the Secretary of the department in which the U.S. Coast Guard is operating, which is currently the Department of Homeland Security.

The Halibut Act at Section 773c(c), also provides the Council with authority to develop regulations, including some direction on establishing allocations:

(c) Regional Fishery Management Council involvement

The Regional Fishery Management Council having authority for the geographic area concerned may 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 International Pacific Halibut Commission (IPHC). 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 1853(b)(6) of this title. 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 obligations in existing Federal law, reasonably calculated to promote conservation, and carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of the halibut fishing privileges.

While the Magnuson-Stevens Act and the National Standards do not define the legal authority for the management of halibut, they may provide a suitable rationale for allocation decisions. For instance, Appendix 1 of the Allocation Procedural Directive 01-119-02 lists out existing National Policy such as National Standards 1,4,5,8, and 9, which are particularly relevant to allocations as well as other NOAA guidance documents.

4. Pacific Halibut Stock and Management

4.1 Pacific Halibut Stock

4.1.1 Life History and Distribution

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

The depth range for halibut is up to 250 fathoms (457 m) for most of the year and up to 500 fathoms (914 m) during the winter spawning months. During the winter (November through March), the eggs are released, move up in the water column, and are caught by ocean currents. Female halibut release a few thousand eggs to several million eggs, depending on the size of the fish. Eggs are fertilized externally by the males. Prevailing currents carry the eggs north and west. By the age of 6 months, young halibut settle to the bottom in shallow nearshore areas such as bays and inlets. Research has shown that the halibut then begin what can be called a journey back. This movement runs counter to the currents that carried them away from the spawning grounds and has been documented at over 1,000 miles for some fish. Most male halibut are sexually mature by about 8 years of age, while half of the females are mature by about age 12. Females at this age are generally large enough to meet the minimum size limit for the commercial fishery of 32 inches.

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

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

4.1.2 Stock Assessment and Stock Status

The stock assessment for Pacific halibut is conducted annually by Secretariat at the IPHC and provides a summary of recently collected data, and model estimates of stock size and trend. Halibut is modelled as a single stock extending from northern California to the Aleutian Islands and Bering Sea, including all inside waters of the Strait of Georgia and Puget Sound, but excludes known extremities in the western Bering Sea within the Russian Exclusive Economic Zone (see Figure 5).

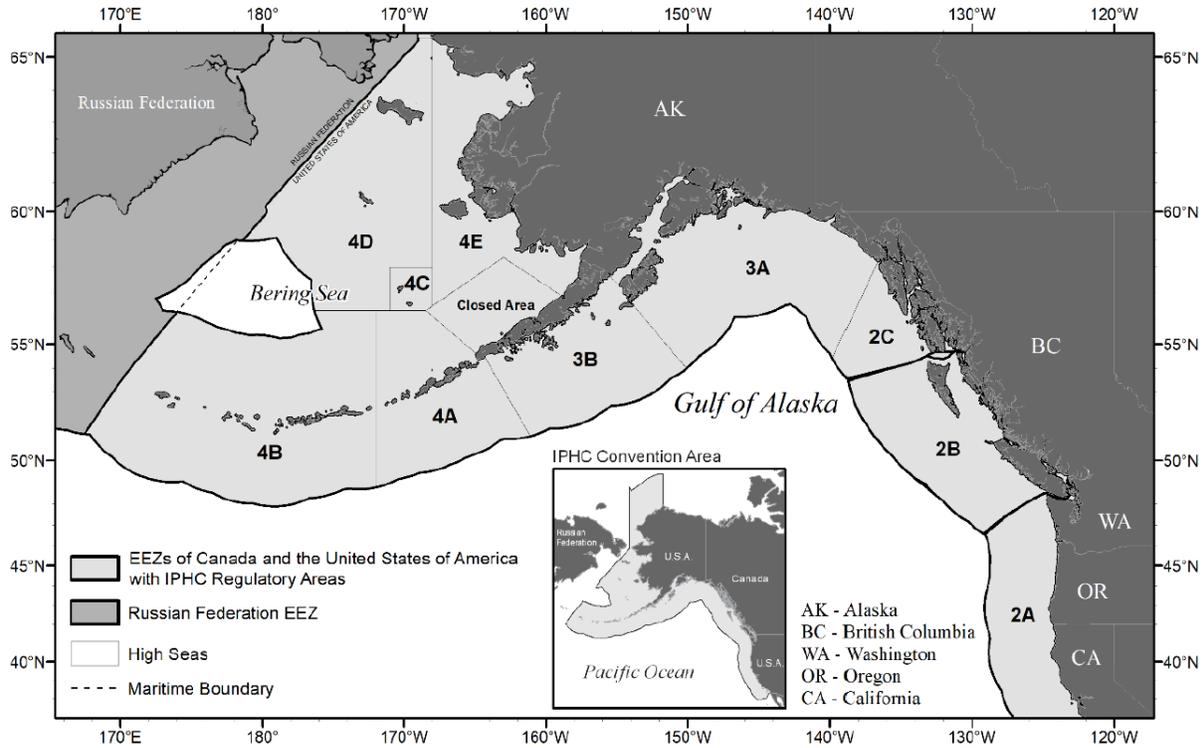


Figure 5 Pacific Halibut Stock Assessment Range and IPHC Regulatory Areas
 Source: Stewart et al. 2021

Data for the stock assessment includes both fishery statistics (commercial landings and discards, recreational fisheries, subsistence, and discard mortality in non-target fisheries) and information made available through the IPHC’s annual fishery independent setline survey (FISS) survey. The FISS is the most important and comprehensive data input to the annual Pacific halibut stock assessment. The primary objective of the IPHC setline survey is to sample Pacific halibut for stock assessment and stock distribution estimation. Other objectives include tagging of halibut, collection of environmental data, collecting data from other species, and recording observations of seabirds. Data for stock assessment use are compiled by IPHC Regulatory Area, and then aggregated to four Biological Regions: Region 2 (Areas 2A, 2B, and 2C), Region 3 (Areas 3A, 3B), Region 4 (4A, 4CDE) and Region 4B and then coastwide.

As the Pacific halibut directed and non-directed fisheries have evolved, the methods to assess the stock and manage the fishery have also evolved over many decades. The stock assessment began with simple catch-per-unit-effort models, moved to yield-per-recruit models in the 1970s, surplus production models in the early 1980s, catch-at-age models in the 1980s and 1990s, and more recently integrated age-structured models. Currently, the stock assessment for Pacific halibut uses four equally-weighted, integrated age-structured models in an ensemble to account for parameter and structural uncertainty (Stewart et al. 2021). The advice from the stock assessment ensemble is presented to the Commission as a risk-based decision table with different catch levels as columns and various performance metrics as rows.

As with all stock assessment models, the IPHC stock assessment ensemble is a simplification of reality that attempts to capture the trends in the stock, supply useful management advice, and characterize an appropriate level of uncertainty. The ensemble is composed of coastwide models, which means that the annual estimated biomass is a single value for the entire coast (U.S. and Canada) and migration between areas is not modeled. Natural mortality is estimated in some models and fixed for one sex in others. Each of the models use annual empirical weight-at-age observations to convert numbers-at-age to biomass.

This allows the model to account for the observed large changes in historical weight-at-age. Ensemble modeling provides a more robust assessment approach that acknowledges structural uncertainty and that, along with other recent improvements, has effectively stabilized management decision tables relative to catch recommendations and potential impacts on spawning biomass (in probabilistic terms).

Trends in the Pacific halibut spawning biomass can be seen in the ensemble model in Figure 6. These models indicate that the Pacific halibut stock declined continuously from the late 1990s to around 2012 (Stewart et al. 2021). That trend is estimated to have been largely a result of decreasing size-at-age, as well as somewhat weaker recruitment strengths than those observed during the 1980s. The spawning biomass is estimated to have increased gradually to 2016, and then decreased to an estimated 191 million pounds (~86,600 t) at the beginning of 2022, with an approximate 95% credible interval ranging from 129 to 277 million pounds (~58,700-125,400 t; Stewart et al. 2021). Figure 6 also demonstrates a three-year stock projection assuming a level of mortality projected from the IPHC current interim Spawning Potential Ratio (SPR)-based harvest policy of $F_{SPR=43\%}$ (the level of fishing that would reduce the lifetime spawning output per recruit to 43% of the unfished level). Projections indicate that mortality consistent with the interim management procedure reference fishing intensity ($F_{43\%}$) is likely to result in further declining biomass levels in the near future.

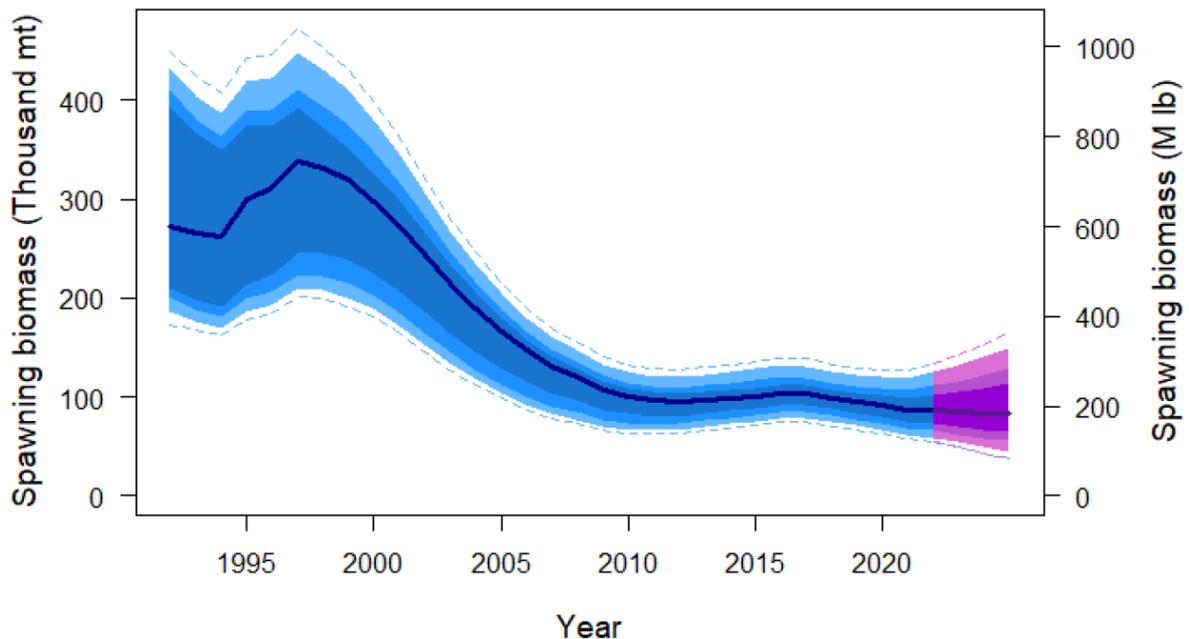


Figure 6 Stock three-year projections using the integrated results from the stock assessment ensemble and the Total Constant Exploitation Yield (TCEY) projected at the reference level (41.2 Mlb TCEY)
 Source: Reproduced from presentation of Agenda item 5.4 IPHC-2021-IM097-10 Rev_1

The Halibut Act does not define “overfishing” or require that an overfishing limit be defined. However, a 30:20 control rule has been identified, with SB 30% as a threshold, and SB 20% as a limit for biological concern (see Figure 7). This would be analogous to an Acceptable Biological Catch in the context of groundfish fisheries off Alaska. At the beginning of 2022 female spawning biomass was estimated to be 191 million pounds (86,600 t), which corresponds to a 45% chance of being below the IPHC trigger reference point of SB30%, and less than a 1% chance of being below the IPHC limit reference point of SB20%. The stock is estimated to have declined by 17% since 2016 but is currently at 33% of the unfished state. Therefore, the stock is considered to be ‘not overfished’ (Stewart et al. 2021).

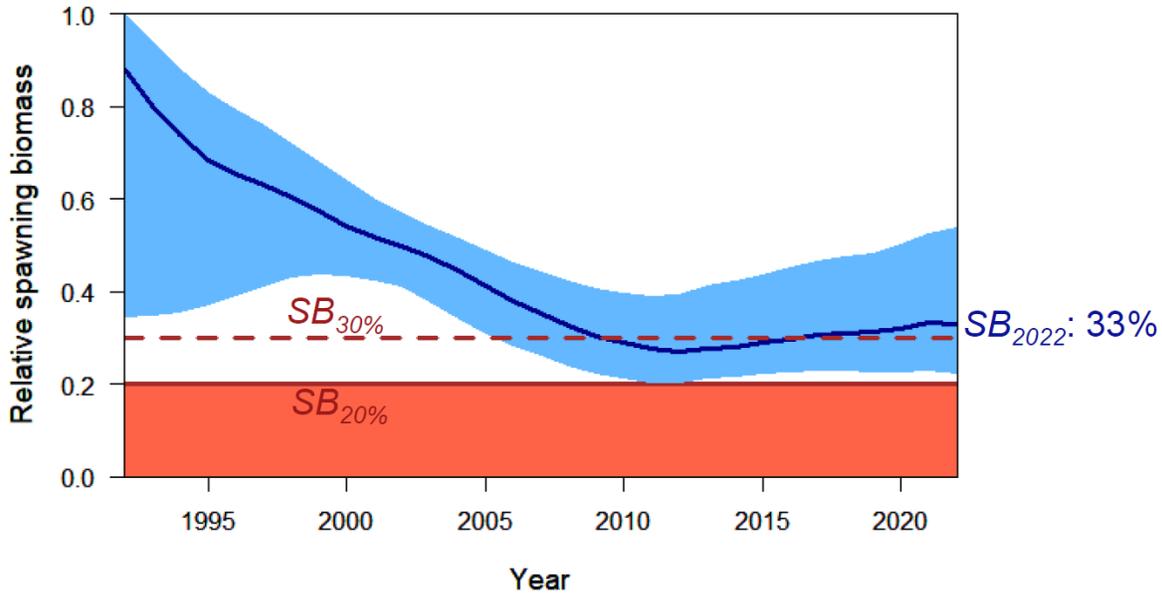


Figure 7 Relative spawning biomass

Source: Reproduced from presentation of Agenda item 5.4 IPHC-2021-IM097-10 Rev_1

Additional highlights of the most recent stock assessment (Stewart et al. 2021) include:

- The FISS observed the 2012 cohort (9 years old) at the largest proportion in the total catch of any age class for the first time. Observation of these fish both above and below the commercial fishery minimum size limit indicates their increasing importance to the stock and to future fisheries.
- The current trend in population distribution (measured via the modelled FISS catch in weight of all Pacific halibut) appears to be shifting back toward Biological Region 3 (generally, IPHC Areas 3A and 3B) after more than a decade of decline.

4.2 Pacific Halibut Management

4.2.1 Halibut Management Authority

As described in Section 3, the IPHC and NMFS manage fishing for Pacific halibut through regulations established under authority of the Halibut Act. In addition to the stock assessments, the IPHC establishes fishery mortality limit recommendations by setting the coastwide and Area-specific Total Constant Exploitation Yield (TCEY), which corresponds to the total mortalities, from all sources, of Pacific halibut greater than 26 inches (66 cm) in length. These mortality limits are then forwarded to the respective governments for implementation.

Section 5(c) of the Halibut Act also provides the regional Councils with authority to develop regulations that are in addition to, and not in conflict with, approved IPHC regulations. The Council has exercised this authority in the development of subsistence halibut fishery management measures, codified at §300.65, the limited access program for charter operators in the charter halibut fishery, codified at §300.67, and the catch sharing plans (including for Area 2C and 3A, as well as the separate catch sharing plan for Area 4) and domestic management measures in waters in and off Alaska, codified at §§300.61, 300.65, 300.66, and 300.67. The Council also developed the Individual Fishing Quota (IFQ) Program for the commercial halibut and sablefish fisheries, codified at §679, under the authority of section 5 of the

Halibut Act (16 U.S.C. 773c(c)) and Section 303(b) of the Magnuson-Stevens Act (16 U.S.C. 1801 *et seq.*).

In addition, the North Pacific groundfish fisheries which take halibut incidentally as bycatch, are managed under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801-1884), and through the associated (GOA or BSAI) Fishery Management Plan. The IPHC refers to halibut “bycatch” to describe the mortality of all sizes of halibut caught in the commercial groundfish fisheries, typically caught in hook-and-line sablefish and Pacific cod; trawl Pacific cod, pollock, flatfish, and rockfish, and pot Pacific cod, and with minor amounts in commercial shrimp trawl and crab pot fisheries. In the groundfish fisheries, halibut is a prohibited species, and bycatch mortality of halibut is referred to as halibut prohibited species catch (PSC).

The Alaska Department of Fish and Game (ADF&G) also serves in a cooperative management role with NMFS for setting and implementing annual charter halibut management measures. The CSP determined that the ADF&G saltwater logbooks would be used as the primary data source for estimating charter halibut harvest. ADF&G staff have typically run an annual analysis estimating the charter halibut removals for the previous year and projecting removals under various management measure scenarios to aid the identification of measures that are expected to keep the sector under its allocation (see Section 5.1 for a more detailed description of the charter halibut annual management process).

4.2.2 Halibut Fishery Catch Limits

Halibut fishery catch limits are the result of a multi-step process by the IPHC, with allocative input from U.S. and Canadian fishery management organizations, with the objective of determining how much can be harvested by halibut fisheries, given the IPHC’s goals for stock conservation.

In 2017, the previous IPHC harvest policy paradigm was replaced with an interim SPR-based harvest strategy policy (Figure 8) while a management strategy evaluation (MSE)³ process is underway. The IPHC’s current interim management procedure for Pacific halibut is based on two harvest targets: the scale of coastwide mortality (“Scale” in Figure 8) and the distribution of harvest rates among IPHC Regulatory Areas (“TCEY Distribution” in Figure 8). The IPHC Commissioners will then set area catch limits (“Decision” in Figure 8) which may differ from the distribution identified in the interim harvest strategy.

³ The IPHC formula for determining TCEY and allocating catch limits among regulatory areas has shifted over the past two years and is expected to shift again, as Commissioners evaluate the results of the IPHC’s management strategy evaluation. The management strategy evaluation evaluated 11 potential management strategies for allocating catch limits among areas and were presented to the Commission at the January 2021 Annual Meeting (Hicks et al. 2021). These results will inform the Commission as they make decisions in the coming years to update the harvest policy in terms of both the scale of the coastwide TCEY and the methods for distributing TCEY among areas.

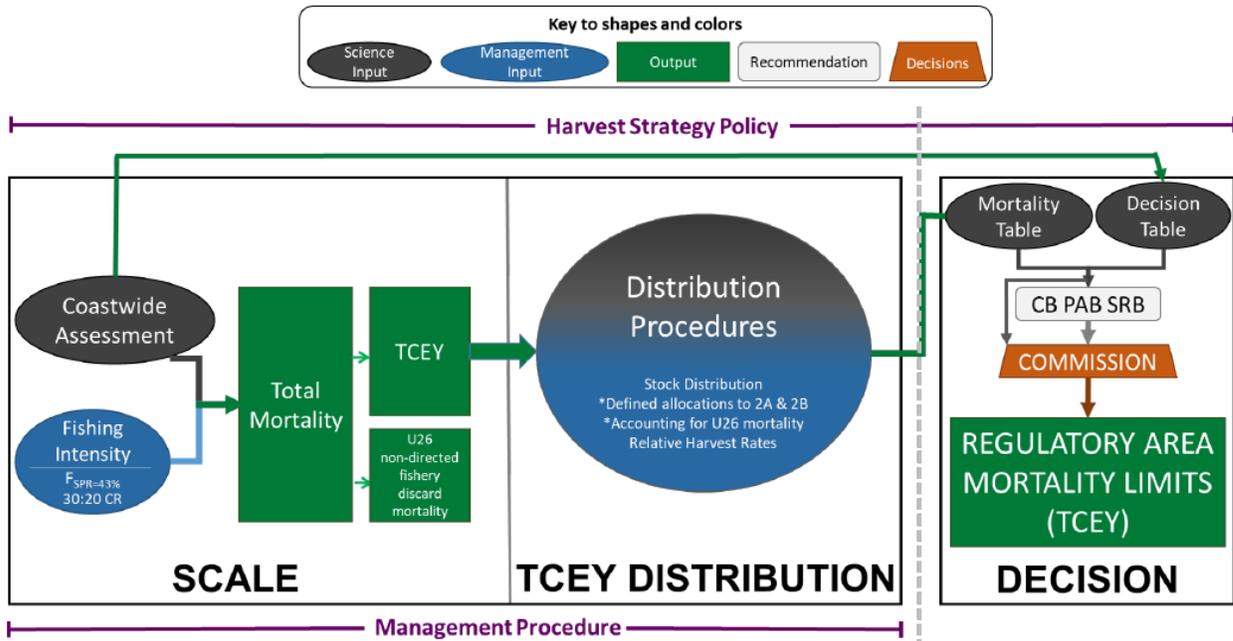


Figure 8 Diagram of the IPHC interim harvest strategy policy (reflecting paragraph ID002 in IPHC CIRCULAR 2020-007) showing the coastwide scale and TCEY distribution components that comprise the management procedure.

Source: Reproduced from Hicks et al. 2021

Items with an asterisk are three-year interim agreements through 2022. The decision component is the Commission decision-making procedure, which considers inputs from many sources.

The process starts with IPHC Secretariat determining the scale or size of acceptable coastwide removals, based on the stock assessment and target SPR. An SPR-based harvest policy defines a default or reference level of fishing intensity ($F_{xx\%}$) to determine mortality limits. The level of fishing intensity is the level of fishing that would reduce the lifetime spawning output per recruit to xx% of the unfished level given current biology, fishery characteristics and demographics where lower values indicate higher fishing intensity. The IPHC has used an $F_{43\%}$ SPR as an interim management procedure, or “handrail” to guide management decisions.⁴

The Total Mortality determined from F_{SPR} is split into two components: under 26-inch (U26) non-directed commercial fishing (i.e., U26 bycatch) mortality and all other mortality which is called the Total Constant Exploitation Yield (TCEY) and consists of mostly (but not exclusively) over 26-inch (O26) halibut. The IPHC delineates U26 and O26 differently for several reasons. The directed commercial fisheries encounter mainly O26 halibut, whereas U26 Pacific halibut are highly mobile and much less likely to occur in the same IPHC Regulatory Area in the upcoming year in which mortality limits would apply. Additionally, the setline survey captures almost exclusively O26 halibut. There is currently no reliable tool for describing the annual distribution of U26 across the entire IPHC convention area, and the mortality of U26 Pacific halibut has a differing effect on the Spawning Potential Ratio than O26 fish (they

⁴ This fishing intensity adopted in 2016 for the IPHC interim harvest policy was $F_{SPR=46\%}$. In response to MSE simulations investigating the coastwide scale portion of the harvest strategy policy the reference fishing intensity was adjusted to $F_{SPR=43\%}$ after the 2020 Annual Meeting (AM096). The MSE simulations found that an $F_{SPR=43\%}$ in conjunction with a control rule where the fishing intensity is reduced when the stock status is estimated to be below 30% and set to zero when stock status is estimated to be below 20% would successfully meet the coastwide conservation and fishery objective (paragraph ID002 in [IPHC CIRCULAR 2020-007](#)).

are not entirely exchangeable although the SPR-based harvest policy accounts for the mortality of all sizes) (IPHC 2020).

In the next step, the TCEY is distributed among IPHC Regulatory Areas based on estimates of biomass from the setline survey and defined relative harvest rates (HR in Table 1), where western areas (3B and all of Area 4) are harvested at a lower level (a factor of 0.75). For example, Table 4 demonstrates O32 stock distribution from the IPHC setline survey and the resulting TCEY distribution for 2022 based on the interim management procedure. Currently, there are interim agreements through 2022 for IPHC Regulatory Areas 2A and 2B that define how the mortality limits are specifically determined in each of those Areas. Table 4 demonstrates these adjustments in blue. These agreements impact the remaining Areas, as can be seen by comparing the TCEY distribution row to the ‘Final % from total TCEY’ row in Table 4.

Table 4 IPHC Interim management procedure and adjustments for 2022 TCEY distribution

	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
O32 Stock Distribution	1.8%	12.0%	11.3%	33.6%	18.8%	6.9%	5.7%	10.0%	100%
HR	1.0	1.0	1.0	1.0	0.75	0.75	0.75	0.75	NA
TCEY Distribution	2.0%	13.4%	12.6%	37.5%	15.7%	5.8%	4.8%	8.3%	100%
Adjusted	1.65	18.0%	<i>Depends on total TCEY</i>						
Final % from total TCEY	4.0%	18.3%	11.5%	34.4%	14.4%	5.3%	4.4%	7.6%	100%
TCEYs	1.65	7.56	4.75	14.19	5.94	2.18	1.80	3.15	41.22

Source: Reproduced from presentation of Agenda item 5.4 IPHC-2021-IM097-10 Rev_1
 Note: 2B includes 0.14 Mlb accounting for U26 non-directed discards in AK

The third step in the allocation of harvest is to subtract all other removals of O26 halibut from the TCEY, in order to determine the Fishery Constant Exploitation Yield or FCEY. For example, Table 5 demonstrates mortality limits and projections for 2022 FCEY and non-FCEY using the IPHC’s interim management procedure. The FCEY includes commercial fishery limits in all areas, and other sectors in any Area subject to Catch Sharing Plans for allocation of the halibut harvest (i.e., the CSP in Areas 2C and 3A). The Catch Sharing Plans are developed by the responsible fishery management organizations in each Area.

Non-FCEY removals include catches which either have no explicit limits on the amount of harvest (unguided sport harvest in Alaska, subsistence/personal use harvest in Canada and Alaska, and wastage from the commercial halibut fishery, except where this is explicitly included in catch-sharing plans) or catches which the IPHC has no authority to manage (non-directed bycatch mortality, such as halibut PSC in Alaska). The FCEY is determined by subtracting all other removals of O26 halibut from the TCEY. Most non-FCEY values are assumed to remain constant at the previous year’s level (e.g., unguided recreational landings) or rate (e.g., discard mortality). O26 non-directed discards are also subtracted from the TCEY within each IPHC Area when calculating the FCEY. According to the IPHC’s Interim Management Procedure (specified during AM096 para. 97), the default projection for non-directed discards is to use the three-year average of recent non-directed discard mortality to avoid some of the interannual variability of annual discard estimates.

Since 2019, the Commission has adopted fishery mortality limits at the TCEY-level (as shown in Figure 8). Prior to this decision⁵ (AM093–Rec.05 (para. 30)), IPHC determined fishery mortality limits at the FCEY level. Moving the point of decision-making does not necessarily change the accounting or the impacts of one sector’s mortality on another’s opportunity; however, it may make clearer the point of accountability. For instance, under the current interim harvest strategy policy, the IPHC both sets and evaluates at the TCEY-level which includes the mortality from both FCEY and non-FCEY components. This provides more visibility to the domestic managing parties’ role in evaluating the trade-offs among sectors within its Area’s TCEY. Although the IPHC’s decision-making stops at the TCEY level, the IPHC Secretariat continues to project non-FCEY components and FCEY components based on the remaining available mortality and any catch sharing plans identified by the domestic parties for the benefit of understanding the impacts of the TCEY decisions. For example, the Area 2C and 3A TCEY are distributed according to Figure 9.

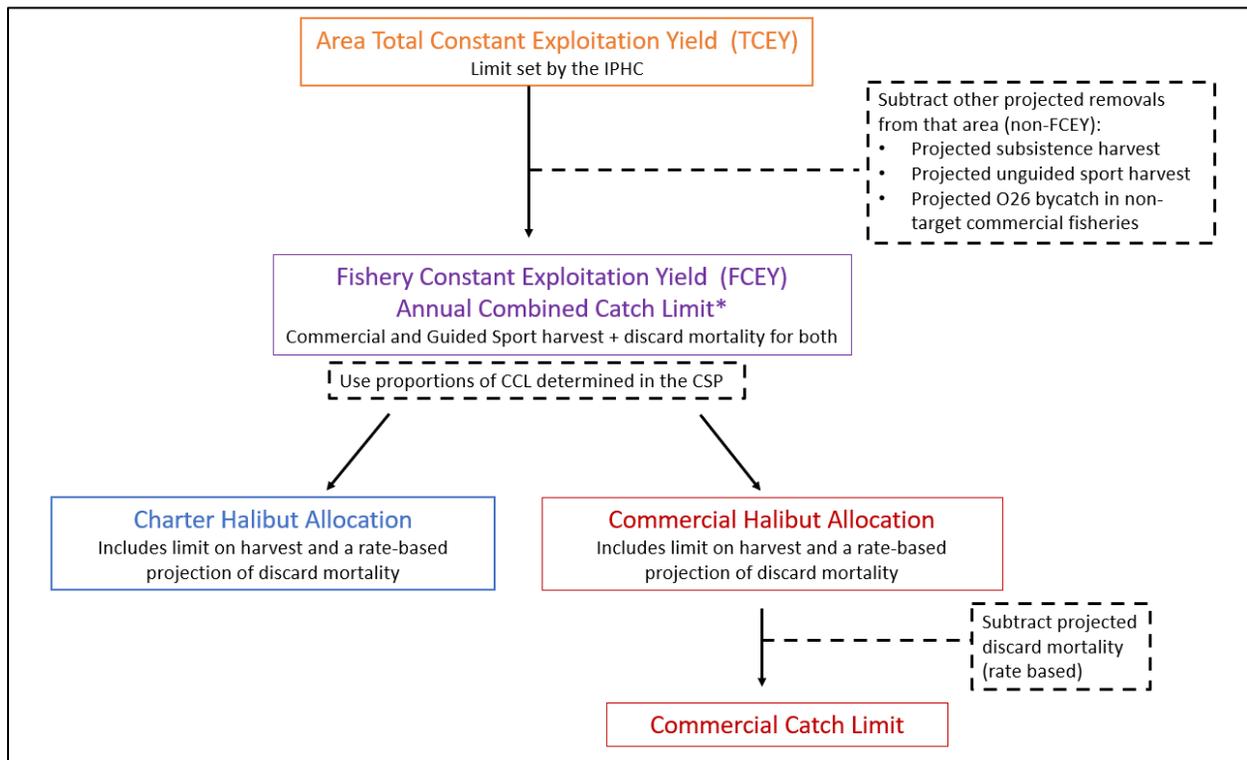


Figure 9 Area 2C and 3A TCEY distribution process

* The Area 2C and 3A FCEY also accounts for FISS and research mortality and Area 2C accounts for Metlakatla harvest as well (e.g., In 2021, this represented 370,991 lb mortality in Area 3A and 168,000 lb mortality in 2C). These sources of mortality are not explicitly deducted from the FCEY; however, they are accounted for in the FCEY due to inherent underages that typically occur each year from the commercial and guided sport sectors. This mortality is also accounted in the assessment process.

The Area 2C and 3A CSP allocations are applied in Table 5 based on the 2022 reference TCEY resulting from the interim management procedure and the CSP allocations that are listed in Table 7 and Table 9 in Section 5.1. Under the interim management procedure, the 2022 Area 2C FCEY (essentially⁶ corresponding to the combined catch limit (CCL), further described in Section 5.1) is less than 5 Mlb, which means the recreational component of the FCEY in Area 2C (the charter halibut sector) would be allocated 18.3% of the CCL and the commercial landings plus the projected commercial discards make up the other 81.7%. In Area 3A, under the interim management procedure the FCEY is 11.72 Mlb which

⁵ See 2017 IPHC Annual Meeting Report at: <https://www.iphc.int/uploads/pdf/am/2017am/iphc-2017-am093-r.pdf>

⁶ The Area 2C and 3A FCEY also accounts for FISS and research mortality and Area 2C accounts for Metlakatla harvest as well but these sources of mortality are not explicitly deducted from the FCEY.

means that the CSP allocation for Area 3A would be at its third step (as shown in Table 9), allocating 17.5% to the recreational FCEY (the charter halibut sector) and 82.5% to the commercial landing plus projected commercial discards.

Table 5 Detailed sector mortality table using the IPHC interim management procedure for 2022

	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
Commercial discards	0.07	0.21	NA	NA	0.29	0.07	0.06	0.02	0.73
O26 Non-directed discards	0.09	0.21	0.07	0.72	0.34	0.23	0.11	1.93	3.69
Recreational	NA	0.03	1.09	1.58	0.01	0.01	0.00	0.00	2.71
Subsistence	NA	0.41	0.29	0.18	0.01	0.01	0.00	0.04	0.94
Total non-FCEY	0.16	0.86	1.45	2.47	0.66	0.32	0.18	1.99	8.07
Commercial discards	NA	NA	0.10	0.40	NA	NA	NA	NA	0.50
Recreational	0.60	1.01	0.60	2.05	NA	NA	NA	NA	4.26
Subsistence	0.03	NA	NA	NA	NA	NA	NA	NA	0.03
Commercial landings	0.86	5.70	2.60	9.28	5.28	1.86	1.63	1.16	28.35
Total FCEY	1.49	6.70	3.30	11.72	5.28	1.86	1.63	1.16	33.15
							4C FCEY	0.54	
							4D FCEY	0.54	
							4E FCEY	0.08	
TCEY	1.65	7.56	4.75	14.19	5.94	2.18	1.80	3.15	41.22
U26 Non-directed discards	0.00	0.03	0.00	0.29	0.07	0.07	0.01	0.72	1.20
Total	1.65	7.59	4.75	14.48	6.01	2.25	1.82	3.87	42.42

Source: Reproduced from presentation of Agenda item 5.4 IPHC-2021-IM097-10 Rev_1

Note that this table was prepared for the IPHC interim meeting, which provides preliminary estimates for some of the projected sources of mortality (e.g., O26 non-directed discards). These projections are expected to be updated for the Annual IPHC meeting in January 2022, thus the components of the TCEY may be slightly different for mortality tables produced at that time.

As illustrated in Figure 8, the IPHC Secretariat provides mortality tables (similar to Table 5) and decision tables (which demonstrate the relative probability of a different stock status under different levels of fishing intensity) in advance of the IPHC Annual Meeting in January, which are distributed to allow the halibut stakeholders to discuss and provide comment to the IPHC. Once the Annual Meeting commences, the IPHC considers all of the input—public comment, recommendations from its advisory bodies, and the catch limit calculations—and then adopts Area-based TCEY and other measures which seek to balance the advice it has received, with stock conservation being the primary consideration. The final catch limits set by the IPHC may differ from the limits identified in the interim management procedure in two primary ways: 1) the Commissioners could choose a different SPR and/or 2) the IPHC could choose to use an alternative distribution of the harvest by Area. These decisions then have downstream implications for the fishery catch limits set within each area.

4.2.3 Catch Limits Adopted by the IPHC Relative to Reference Levels

Due to a combination of changing harvest policies and Commission decisions that depart from harvest policy recommendations, the IPHC has adopted coastwide catch limits of varying fishing intensities in recent years. The Commission has adopted TCEYs above those recommended by the harvest policy in three of the last five years (Table 6).

Similar to the coastwide catch limit, the TCEY and FCEY limits in each IPHC Regulatory Area adopted by the Commissioners often differ from those recommended by the IPHC harvest policy (Table 6). Additionally, in 2018 the Commission did not reach agreement on new Pacific halibut catch limits for the 2018 fishing period. Thus, by default, the catch limits set for the 2017 fishing period remained in place, unless more restrictive regulations are put in place by the Contracting Parties, in accordance with The Convention between Canada and the United States of America for the preservation of the [Pacific] halibut fishery of the Northern Pacific Ocean and Bering Sea (Article I, paragraph 2). Both Canada via Fisheries

and Oceans Canada (DFO), and the United States of America, via NOAA Fisheries, adopted and implemented 2018 catch limits for the commercial halibut fisheries and charter management measures in Area 2C and 3A, which are demonstrated in Table 6. These adopted limits differed from the harvest policy but were very close to the suggested catch limits from the Commission (para. 131 in the Report of the 94th Session of the IPHC Annual Meeting).⁷

For Area 2C, within the last five years (2017-2021; Table 6), the TCEY as well as resulting FCEY have been greater than the TCEY and FCEY of the harvest policy recommendations. Area 3A has seen quite a bit more fluctuation in whether the adopted TCEY and FCEY is greater or less than the amount suggested in the harvest policy. The adopted limits for 3A have oscillated between higher and lower than the harvest policy throughout the five-year timeseries.

⁷ <https://www.iphc.int/uploads/pdf/am/2018am/iphc-2018-am094-r.pdf>

Table 6 TCEY and FCEY by IPHC Regulatory Area as recommended by IPHC harvest policy and adopted by commissioners

Year	Area	TCEY				FCEY			
		Harvest Policy	Adopted	Difference (adopted-policy)	% Difference	Harvest Policy	Adopted	Difference (adopted-policy)	% Difference
2021	2A	1.65	1.65	0.00	0%	1.51	1.51	0.00	0%
	2B	7.00	7.00	0.00	0%	6.15	6.15	0.00	0%
	2C	5.16	5.80	0.64	12%	3.55	4.41	0.86	24%
	3A	14.12	14.00	-0.12	-1%	11.09	11.14	0.05	0%
	3B	3.12	3.12	0.00	0%	2.56	2.56	0.00	0%
	4A	2.51	2.05	-0.46	-18%	2.09	1.66	-0.43	-21%
	4B	1.47	1.40	-0.07	-5%	1.29	1.23	-0.06	-5%
	4CDE	3.98	3.98	0.00	0%	1.67	1.67	0.00	0%
	Total	39.00	39.00	0.00	0%	29.91	30.34	0.43	1%
2020	2A	1.65	1.65	0.00	0%	1.50	1.50	0.00	0%
	2B	5.80	6.83	1.03	18%	5.44	6.00	0.56	10%
	2C	4.97	5.85	0.88	18%	3.28	4.26	0.98	30%
	3A	9.80	12.20	2.40	24%	6.41	9.06	2.65	41%
	3B	2.94	3.12	0.18	6%	2.30	2.41	0.11	5%
	4A	2.26	1.75	-0.51	-23%	1.87	1.41	-0.46	-25%
	4B	1.27	1.31	0.04	3%	1.06	1.10	0.04	4%
	4CDE	3.22	3.90	0.68	21%	0.69	1.73	1.04	151%
	Total	31.90	36.60	4.70	15%	22.54	27.48	4.94	22%
2019	2A	0.78	1.65	0.87	112%	0.64	1.50	0.86	134%
	2B	4.91	6.83	1.92	39%	4.09	5.95	1.86	45%
	2C	6.26	6.34	0.08	1%	4.42	4.49	0.07	2%
	3A	16.35	13.50	-2.85	-17%	13.12	10.26	-2.86	-22%
	3B	2.97	2.90	-0.07	-2%	2.41	2.33	-0.08	-3%
	4A	2.21	1.94	-0.27	-12%	1.92	1.65	-0.27	-14%
	4B	1.95	1.45	-0.50	-26%	1.70	1.21	-0.49	-29%
	4CDE	4.59	4.00	-0.59	-13%	2.62	2.04	-0.58	-22%
	Total	40.00	38.61	-1.39	-3%	30.90	29.43	-1.47	-5%
2018*	2A	0.59	1.32	0.73	124%	0.47	1.19	0.72	153%
	2B	3.84	7.10	3.26	85%	3.14	6.32	3.18	101%
	2C	5.65	6.34	0.69	12%	3.76	4.45	0.69	18%
	3A	12.07	12.54	0.47	4%	8.98	9.45	0.47	5%
	3B	2.56	3.27	0.71	28%	1.95	2.62	0.67	34%
	4A	1.69	1.74	0.05	3%	1.32	1.37	0.05	4%
	4B	1.21	1.28	0.07	6%	0.99	1.05	0.06	6%
	4CDE	3.39	3.62	0.23	7%	1.36	1.58	0.22	16%
	Total	31.00	37.21	6.21	20%	21.96	28.04	6.08	28%
2017	2A	0.96	1.47	0.51	53%	0.84	1.33	0.49	58%
	2B	6.08	8.32	2.24	37%	5.28	7.45	2.17	41%
	2C	6.47	7.04	0.57	9%	4.69	5.25	0.56	12%
	3A	13.84	12.96	-0.88	-6%	10.88	10.00	-0.88	-8%
	3B	4.39	3.98	-0.41	-9%	3.53	3.14	-0.39	-11%
	4A	1.84	1.80	-0.04	-2%	1.43	1.39	-0.04	-3%
	4B	1.46	1.34	-0.12	-8%	1.25	1.14	-0.11	-9%
	4CDE	4.06	3.84	-0.22	-5%	1.92	1.70	-0.22	-11%
	Total	39.10	40.74	1.64	4%	29.81	31.40	1.59	5%

Source: <https://www.iphc.int/data/time-series-datasets>

* Adopted limits in 2018 demonstrate the IPHC Regulatory Area limits "suggested" by the Commission and subsequently adopted by the contracting parties.

4.2.4 Halibut Mortality Across Sectors and Areas

Halibut mortality can be categorized into four major components: commercial fishery landings along with commercial fishery incidental mortality (including survey and research mortality), recreational, subsistence, and bycatch mortality of Pacific halibut in fisheries targeting other species. Figure 10 demonstrates a timeseries of these sources of mortality at a coastwide level (1995-2021). Throughout this period, the commercial halibut fishery (including, in this figure, discard mortality, FISS and research mortality and in Area 2C Metlakata harvest) has continuously represented the largest source of mortality. The relative mortality of the commercial halibut fishing sector has ranged from a high of 78.6% of the total coastwide mortality in 2002 to a low of 58.9% of the relative mortality in 2014. Between 1995 to 2014, discard mortality in the non-directed commercial groundfish fisheries represented the next highest source of halibut mortality, with the expectation of 2007. Within that timeframe, this sector has ranged from 23.1% in 1995 down to 12.6% in 2007. In 2007 and since 2015, the recreational sectors (including the guided and unguided sectors as well as their associated discard mortality) have become the second greatest source of mortality. Between 2015 and 2021 the recreational sectors have ranged 17-20% of the coastwide mortality. Subsistence mortality has consistently been estimated between 1-3% of the coastwide mortality in this timeseries.

The IPHC's SPR-based management approach is designed to conserve spawning biomass across differing stock states, patterns in fishery selectivity and/or allocation among different fisheries. However, as a fully allocated coast-wide stock, halibut use in one sector can have implications for other users. For instance, based on the management procedure of deducting non-FCEY sources of mortality prior to setting the Area commercial catch limits, Figure 10 demonstrates that when overall halibut abundance was higher, the commercial halibut fishery harvested a higher proportion of the total mortality. But these relationships are complex due to the allocative decisions under different authorities, which often occur at different scales. Most broadly, allocative decisions are made through annual International negotiations between the U.S. and Canada, but also among the U.S. and Alaska regions at the IPHC. As described in Section 4.2.2, allocative decisions at the IPHC can result in a coastwide TCEY that differs from the reference level and/or a different distribution of halibut opportunity among Regulatory Areas. Allocative decisions made by the domestic managing agencies can also impact user groups within a regulatory Area, for example through a change in PSC limits or adoption of catch sharing plans.

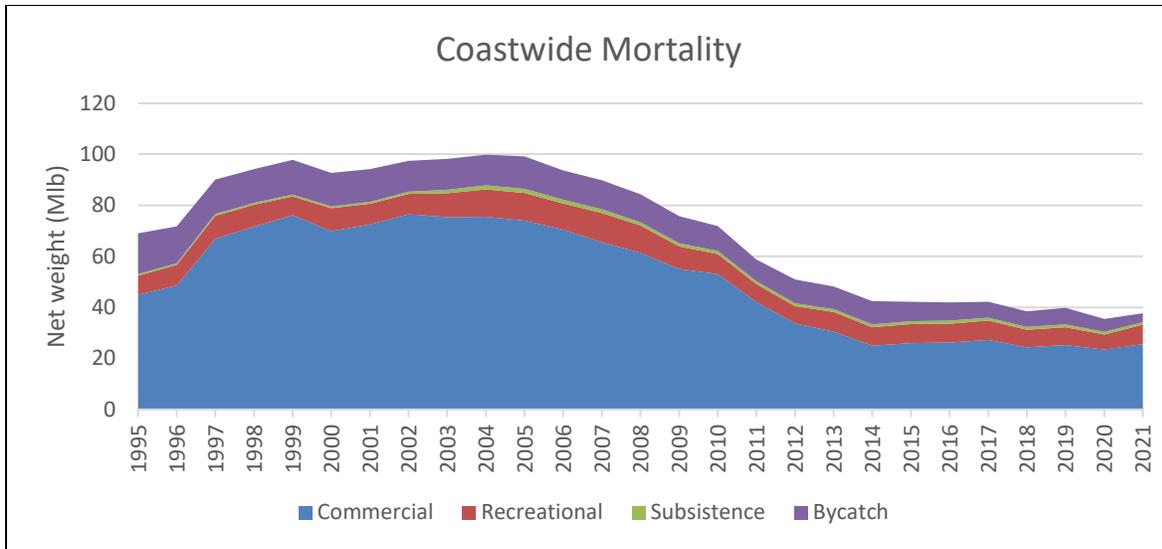


Figure 10 Time-series of coastwide mortality by source

Source: IPHC timeseries dataset, <https://www.iphc.int/data/time-series-datasets> and Erikson et al. (2021) for 2021 data
 Commercial = commercial landings, FISS and research, Metlakata harvest and commercial discard mortality; Recreational = guided and unguided harvest, discard mortality and Guided Angler Fish; Subsistence = Subsistence harvest; Bycatch = non-target commercial discard mortality

Figure 11 demonstrates a timeseries of halibut mortality by these same four broad sectors specifically for Area 2C (1995-2021). Commercial halibut mortality (including FISS and research mortality, Metlakata harvest and commercial discard mortality) has ranged from 88% of the Area-wide mortality in 1999 which decreased to a low of 54% of the Area-wide mortality in 2013. This pattern of relative halibut mortality is primarily a trade-off with harvest in the guided and unguided recreational sectors in Area 2C. The recreational sector demonstrated its lowest percentage of relative mortality in 1999 (15%) and its highest percentage of relative mortality in 2013 (38%).

In Area 2C and 3A the recreational halibut fishery is comprised of two sectors that are managed differently: the unguided sector, and the guided (charter) sector. Charter regulations apply if a charter vessel guide is providing assistance, for compensation, to a person who is sport fishing, to take or attempt to take fish during any part of a charter vessel fishing trip (defined at §300.61). Unguided anglers either use their own vessels and equipment, they may fish with family or friends (on condition that they do not provide compensation as defined in Federal regulations) or they may rent a vessel and fish with no assistance from a guide. The unguided sector has been consistently managed under a bag limit that consists of two-fish of any size per day with no additional controls on harvest. The halibut mortality from the unguided sector in Area 2C and 3A is accounted for in the stock assessment and deducted from the TCEY prior to the establishment of the catch limits under the FCEY. The charter sector in Area 2C and 3A is managed according to the CSP (described in Section 5) and includes management measures that seek to limit the sector to a specific allocation identified through the IPHC’s TCEY and the CSP (see Table 15 for a list of resulting management measures).

Figure 12 demonstrates the relative mortality (i.e., yield) associated with the unguided and charter sector in Area 2C. Due to measures implemented prior to the CSP (Table 16), the Area 2C charter sector had a sharp decline in associated halibut mortality in 2009 and again in 2011. The decline in mortality from the Area 2C charter sector in 2011 brought this sector below the total mortality for the unguided sector and it has remained lower since that time.

The differently managed recreational sectors have been one topic of public testimony and discussion in the development of the CSP and in recent years (for example, see Charter Halibut Management Committee recommendations from December 2018⁸). According to the final rule for the CSP (78 FR 75844), the CSP focuses on the charter halibut fisheries in Areas 2C and 3A and not the unguided sport fisheries primarily because of the growth exhibited by the charter sector while the commercial and unguided recreational sectors have declined or remained relatively steady. The Council's objective for the CSP was to address the ongoing allocation conflicts between the commercial and charter halibut fisheries due to this growth (see problem statement in Section 2). Moreover, the charter sector represents a commercial industry (similar to the commercial longline sector) that receives compensation for aiding anglers in the access of halibut. Testimony has highlighted the increasing proportion of the recreational halibut mortality attributed to the unguided sector since the CSP as well as the economic impacts on the charter sector of creating a substitute market with differentiated opportunity available for anglers.

In addition, when the CSP was analyzed concerns were raised about the potential impact of an increase in unguided or "bareboat" rentals on halibut harvest (NPMFC/ NMFS 2013). Some businesses in Alaska offer clients the opportunity to rent a boat to access marine waters, affording anglers the opportunity to fish without a guide onboard and without any physical direction from a guide during any portion of a fishing trip (therefore not falling under the definitions of guided sport fishing). Thus, these anglers are legally able to access the unguided halibut daily bag limits of two fish of any size, (just as an angler aboard a private vessel could), rather than being held to the more restrictive guided or "charter" angler daily bag limits. While in these ways, the unguided rental vessel subsector is distinguished from the charter sector, both types of operations involve monetary exchange or some form of compensation. This component of the fishery has continued to be of interest to the Council and in 2019 an analysis considered a registration requirement for unguided rental vessels used for harvesting halibut and the potential to align the bag and size limits for halibut harvested by anglers on unguided rental vessels with those of anglers on charter vessels (NPFMC 2019b). The Council ultimately took no action given the lack of existing data on the unguided halibut rental vessel subsector and the difficulty in defining the types of operations that would qualify. The Council wished to explore alternative non-regulatory methods to quantify the number and geographic scope of unguided rental boat activities in recreational halibut fisheries off Alaska.

In terms of subsistence and non-directed commercial discard mortality, variable amount of halibut mortality has been associated with subsistence fishing in Area 2C (1-10% of relative Area-wide mortality). The use of trawl gear in the GOA east of 140° W long (Southeast outside) is prohibited (§679.7(b)), thus for Area 2C non-directed commercial discard mortality remains low (0.3- 3.4% of relative Area-wide mortality).

⁸ <https://meetings.npfmc.org/CommentReview/DownloadFile?p=2b43998a-52aa-42ac-8da4-695726ccbe89.pdf&fileName=C1%20MINUTES%20Charter%20Halibut%20Management%20Committee%20.pdf>

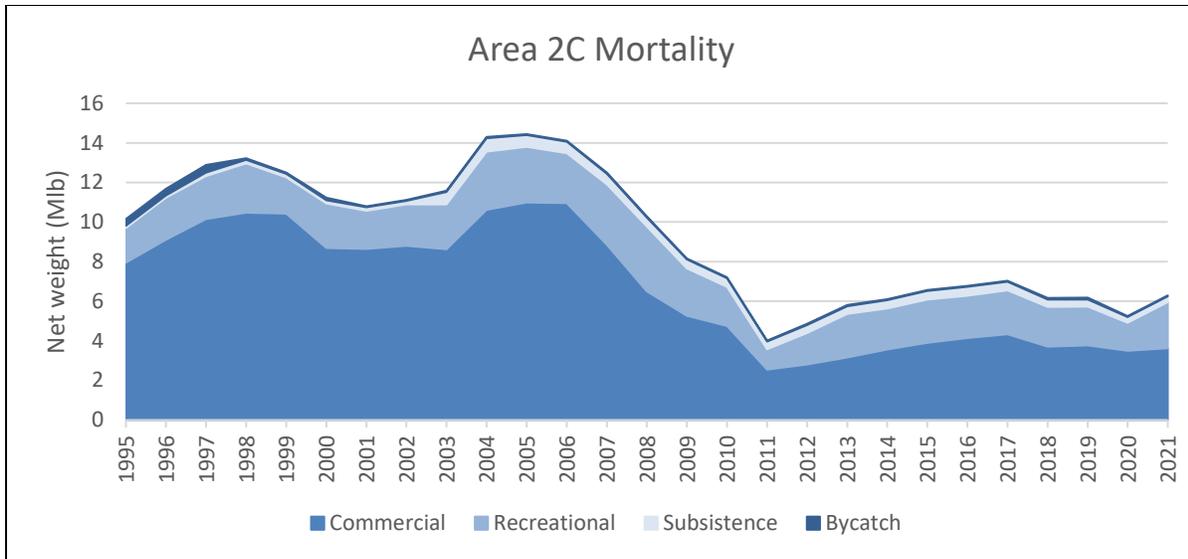


Figure 11 Time-series of Area 2C mortality by source

Source: I. Stewart, personal communication, 12/9/21 and Erikson et al. (2021) for 2021 data
 Commercial = commercial landings, FISS and research, Metlakata harvest and commercial discard mortality; Recreational = guided and unguided harvest, discard mortality and Guided Angler Fish; Subsistence = Subsistence harvest; Bycatch = non-target commercial discard mortality

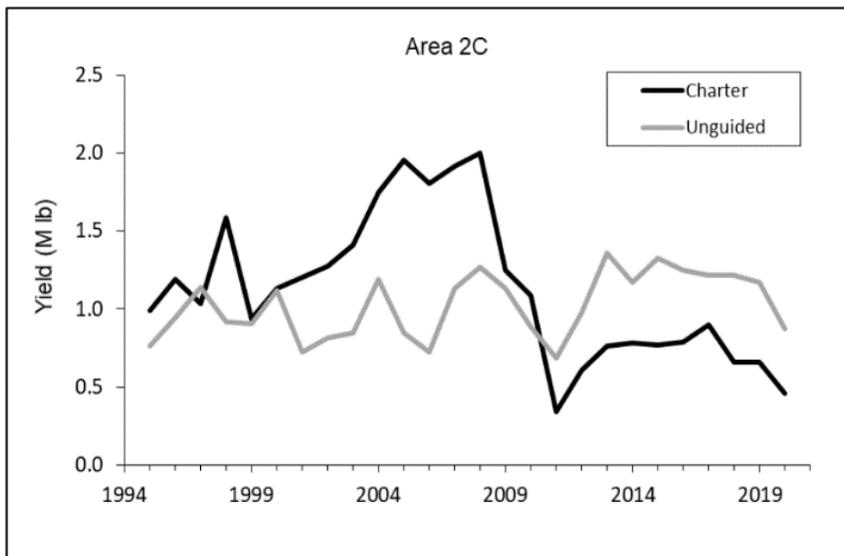


Figure 12 Charter and unguided harvest yield (Mlb) in Area 2C, 1995 - 2020

Source: Reproduced from ADF&G 2021b

Halibut mortality in Area 3A has followed a slightly different trend than Area 2C (Figure 13). In Area 2C harvest opportunity began declining 2005 and relative to coastwide trends, began to level out earlier; around 2011 (Figure 11). More similar to coastwide trends, Area 3A halibut mortality continued to decline until 2014 before it became relatively level.

The commercial sector in Area 3A (including FISS and research mortality, as well as commercial discard mortality) has ranged from 79% of the Area-wide mortality in 1998 and 1999, decreasing to 58% of the Area-wide mortality in 2015. The recreational sector remained a relatively consistent portion of mortality from 1995- 2010 (on average 16% of the Area-wide mortality) and then began to comprise of a larger

portion as the Area TCEY decreased. Since 2010, the Area 3A recreational sector represented an average of 25% of the Area-wide mortality. However, as can be seen in Figure 14, the charter portion of the recreational mortality has declined in most years since 2007. Mortality in the Area 3A unguided sector has remained less than the charter sector, although it has approached levels of the charter sector in recent years.

In Area 3A, trawl fisheries are responsible for the majority of the non-directed commercial discard mortality, with hook-and-line fisheries a distant second. State-managed crab and scallop fisheries are also known to take Pacific halibut as non-directed commercial discard mortality, but at low levels (Erikson et al. 2021). Due to fishery closures and market impacts, the non-directed commercial discard mortality decreased to 3% of the Area-wide mortality in 2021. Throughout the rest of the timeseries in Figure 13, non-directed commercial discard mortality ranged from 7-14% of the Area-wide mortality.

The impacts of non-directed commercial discard mortality have been a source of testimony from those under the CSP as the mortality associated with this sector may affect what is available for the commercial and charter sector, particularly from non-directed commercial discard mortality within Area 3A. As described in Section 4.2.2, the IPHC's Interim Management Procedure uses a three-year average of recent non-directed discard mortality to project removals for the following year. That projection is deducted from the TCEY prior to the establishment of the CSP and resulting allocations.

GOA halibut prohibited species catch (PSC) limits are set for the trawl and hook-and-line sectors in Federal regulations at §679.21. A PSC limit is an apportioned, non-retainable amount of fish (except when retention is required or authorized by other applicable law, such as for the Prohibited Species Donation Program), provided to a groundfish fishery to limit the bycatch of that designed prohibited species (i.e., halibut) in a fishery. As described in Section 3.6 of the GOA Groundfish Fishery Management Plan (FMP), when a halibut PSC limit is reached in a specific management area, further fishing with specific types of gear or modes of operation is prohibited by those who take their halibut PSC limit in that area.

Both trawl and hook-and-line halibut PSC limits were reduced in 2014 under Amendment 95 to the GOA Groundfish FMP, with a 17% reduction to the trawl limit and 7% reduction to the non-demersal shelf rockfish (DSR) hook-and-line limit. The Amendment 95 analysis expected this reduction would benefit the halibut commercial and charter sectors with an increased amount of O26 available for these sectors, as well as possible future beneficial impacts from U26 halibut recruiting to be available for the directed fisheries (NPFMC 2013).

Federal regulations at §679.21(d)(3) define an annual PSC limit of 1,705 mt for the trawl sector. Of that amount, 191 mt is deducted and allocated to the Rockfish Program. The remaining trawl halibut PSC limit is then apportioned as PSC allowances within the fishery categories of shallow-water species and deep-water species⁹ and further between seasons annually through the groundfish harvest specifications process. This apportionment process is based on each category's proportional share of the anticipated halibut PSC during a fishing year and the need to optimize the amount of total groundfish harvest under the halibut PSC limit. Federal regulations define additional factors to consider in setting annual seasonal apportionments (§679.21(d)(4)(ii)). While overall PSC limits remain hard caps, there is some flexibility built into the apportionment process with a certain amount of halibut PSC able to be rollover from one season to the next within a fishery.

⁹ Fishing in a shallow-water species fishery is defined as fishing with trawl gear during any weekly reporting period that results in a retained aggregate catch of pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, and "other species" that is greater than the retained aggregate amount of other GOA groundfish species or species group. Fishing in a deep-water species fishery is defined as fishing with trawl gear during any weekly reporting period that results in a retained aggregate of groundfish and is not a shallow-water species (§679.21(d)(3)(iii)).

The halibut PSC limit for hook-and-line gear is allocated to the DSR fishery in the Southeast Outside District and to the hook-and-line fisheries other than the DSR fishery. There is also some flexibility built in to allow reallocation of unused halibut PSC rollover from the Central GOA Rockfish Program or from the hook-and-line catcher processors to the hook-and-line catcher vessel sector. The hook-and-line sablefish IFQ fishery is exempt from halibut PSC limits, as are pot and jig gear for all groundfish fisheries.

Subsistence harvest in Area 3A makes up a small portion of the Area-wide mortality, ranging from 0.2-1.7% throughout the timeseries.

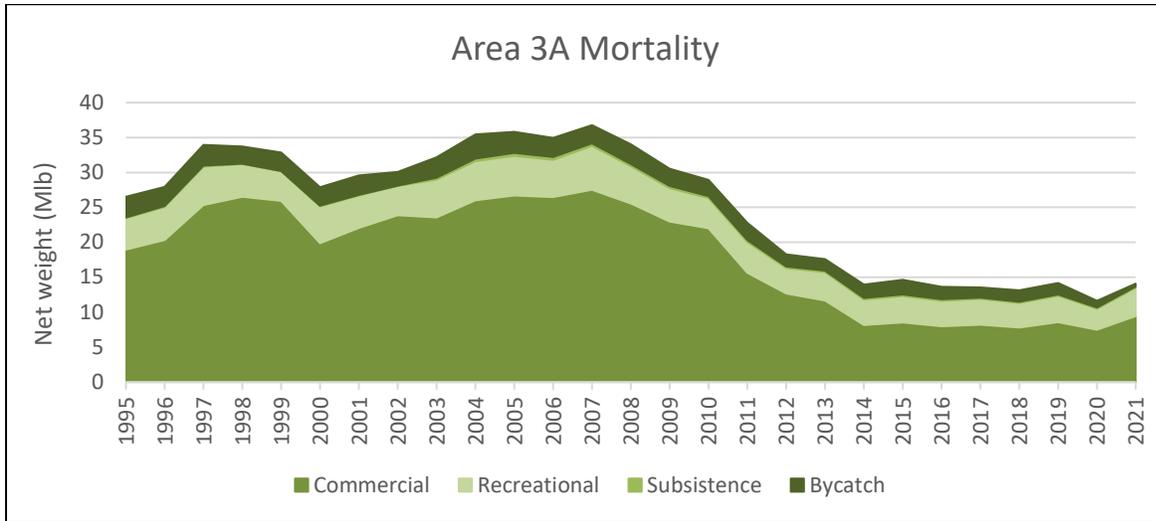


Figure 13 Time-series of Area 3A mortality by source

Source: I. Stewart, personal communication, 12/9/21 Erikson et al. (2021) for 2021 data
 Commercial = commercial landings, FISS and research, and commercial discard mortality; Recreational = guided and unguided harvest, discard mortality and Guided Angler Fish; Subsistence = Subsistence harvest; Bycatch = non-target commercial discard mortality

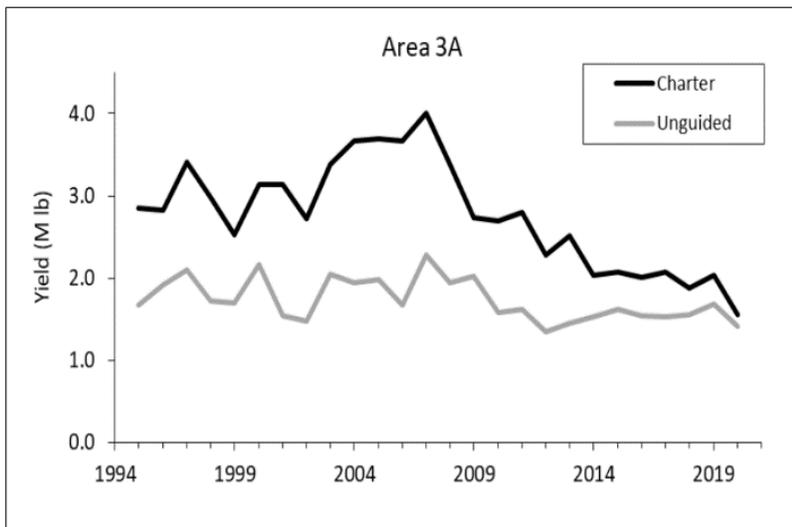


Figure 14 Charter and unguided harvest yield (Mlb) in Area 3A, 1995- 2020

Source: Reproduced from ADF&G 2021b

5. The Allocation and Management Established by the CSP

The CSP was developed in response to increasing harvests in the charter fisheries in Areas 2C and 3A over the previous 20 years. Until 2003, charter and unguided anglers were managed under the same two-halibut daily bag limit in all IPHC Regulatory Areas in Alaska. In 2003, NMFS implemented a final rule to establish a guideline harvest level (GHL) that identified target harvest limits for the charter fishery in Areas 2C and 3A (68 FR 47256, August 8, 2003). After the GHL was implemented, NMFS and the IPHC implemented a variety of additional management measures in Areas 2C and 3A in an effort to constrain charter fishery harvests to the harvest limits established by the GHL. Additional historical background on the management of the charter fisheries is included in previous analysis written in development of the CSP (NPFMC/ NMFS 2011; NPFMC/ NMFS 2013).

The CSP replaced the charter halibut Guideline Harvest Level (GHL) for managing the charter halibut fisheries in Areas 2C and 3A (§300.65) in 2014. The CSP defines an annual process for allocating halibut between the commercial and charter fisheries so that each sector's allocation varies in proportion to halibut abundance, specifies a public process for setting annual management measures, and authorizes limited annual leases of commercial IFQ for use in the charter fishery as guided angler fish (GAF).

This section provides a summary of these aspects of the CSP. Additional detail on the development and rationale for the CSP can be found in CSP Analysis (NPFMC 2013), preamble for the CSP proposed rule (78 FR 39122, June 28, 2013), and in the final rule implementing the CSP (78 FR 75844, December 12, 2013).

5.1 Description of the Allocation

The CSP establishes commercial IFQ and charter fishery allocations that vary proportionally with changing levels of annual halibut abundance and that are intended to balance the differing needs of the commercial IFQ and charter fisheries over a wide range of halibut abundance in Areas 2C and 3A. Under the CSP, the IPHC identifies the combined (commercial IFQ and charter) catch limits (CCL) for Areas 2C and 3A pursuant to the CSP's allocation formulas (for Area 2C and 3A this in essence matches the FCEY set in Table 5).

As can be seen in the Table 7 and Table 9 below, the CSP percentage allocation differs between Areas 2C and 3A and varies somewhat, depending upon the CCL. Overall, the charter fishery's relative share of the CCL is higher when the CCL is lower, but lower when the CCL is higher. The IPHC multiplies the CSP allocation percentages for Areas 2C and 3A by the annual CCL in that area to calculate the commercial and charter halibut allocations in net pounds. Fishery-specific commercial catch limits are calculated by deducting separate estimates of the mortality of discarded fish (previously referred to as wastage) from the commercial IFQ. For the charter sector, discard mortality remains a component of projected removals for which management measures are considered under (see Section 0 for a more detailed description).

Table 7 Area 2C CSP allocations to the charter and commercial halibut fisheries relative to the annual Combined Catch Limit (CCL)

Area 2C annual CCL for halibut in net lb.	Charter halibut fishery CSP allocation (% of annual CCL or net lb.)	Commercial halibut fishery CSP allocation (% of annual CCL or net lb.)
0 to 4,999,999	18.30%	81.70%
5,000,000 to 5,755,000	915,000 lb.	Area 2C CCL minus 915,000 lb.
5,755,001 and up	15.90%	84.10%

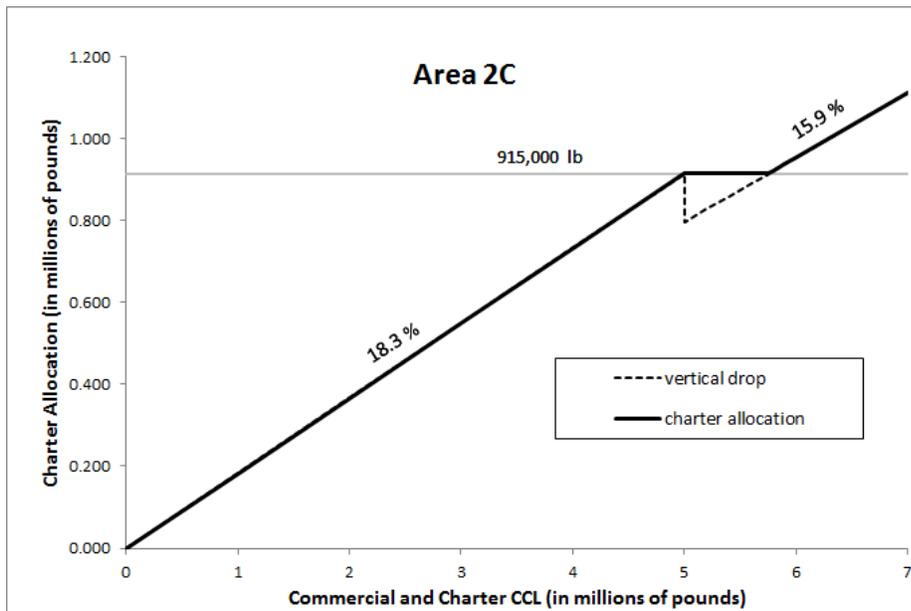


Figure 15 Area 2C charter allocations at varying levels of the annual Combined Catch Limit (CCL)

Table 8 shows the history of the Area 2C allocation split since the implementation of the CSP. For Area 2C the CCL has consistently been under the 5 Mlb threshold (with the expectation of 2017), thus the allocation has consistently been set at the first step of the allocation (with the expectation of 2017). Under the first step of the allocation, the charter fishery in Area 2C is allocated its highest percentage (18.3%) of the CCL, with the commercial sector receiving 81.7% of the allocation. In 2017, when the CCL was 5.25 Mlb, the charter sector’s allocation was set at 915,000 lb which represented 17.4% of the CCL and represents an 82.6% allocation to the commercial sector in Area 2C.

Table 8 Timeseries of allocation levels for Area 2C since the implementation of the CSP

2C	CCL	% Charter	% Commercial	Level of the allocation
2014	4,159,720	18.3%	81.7%	step 1
2015	4,650,000	18.3%	81.7%	step 1
2016	4,950,000	18.3%	81.7%	step 1
2017	5,250,000	17.4%	82.6%	step 2
2018*	4,450,000	18.2%	81.8%	step 1
2019	4,490,000	18.3%	81.7%	step 1
2020	4,260,000	18.3%	81.7%	step 1
2021	4,410,000	18.4%	81.6%	step 1

Source: IPHC regulations

* In 2018, the IPHC Commissioners failed to reach an agreement and de facto adopted catch limits from 2017; however, these numbers represent the more restrictive limits implemented by NMFS for Area 2C and 3A

Table 9 Area 3A CSP allocations to the charter and commercial halibut fisheries relative to the annual Combined Catch Limit (CCL)

Area 3A annual CCL for halibut in net lb.	Charter halibut fishery CSP allocation (% of annual CCL or net lb.)	Commercial halibut fishery CSP allocation (% of annual CCL or net lb.)
0 to 9,999,999	18.90%	81.10%
10,000,000 to 10,800,000	1,890,000 lb.	Area 3A CCL minus 1,890,000 lb.
10,800,001 to 20,000,000	17.50%	82.50%
20,000,001 to 25,000,000	3,500,000 lb.	Area 3A CCL minus 3,500,000 lb.
25,000,001 and up	14.00%	86.00%

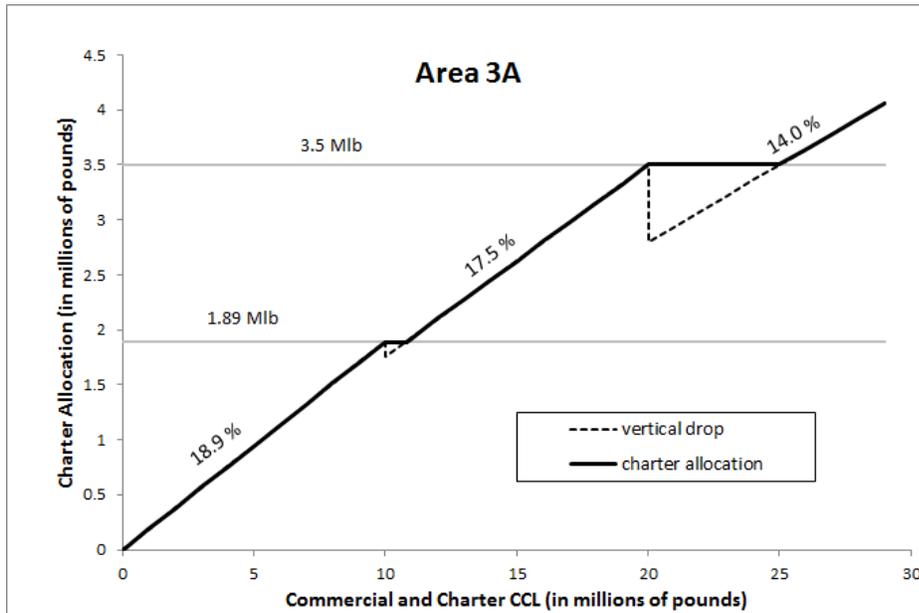


Figure 16 Area 3A charter allocations at varying levels of the annual Combined Catch Limit (CCL)

The allocations set in Area 3A through the CSP have experienced more variability than Area 2C based on the CCL available and the additional steps within the allocation. As can be seen in Table 10, the lower CCLs since 2014 have primarily kept the allocations at step 1 (an 18.9% allocation to the charter sector) and step 2 (a set 1.89 Mlb allocation to the charter sector). In 2021, with a CCL of 11.14 Mlb, the allocation reached step 3 which represented a 17.5% allocation to the charter sector.

Table 10 Timeseries of allocation levels for Area 2C since the implementation of the CSP

3A	CCL	% Charter	% Commercial	Level of the allocation
2014	9,429,730	18.9%	81.1%	step 1
2015	10,100,000	18.7%	81.3%	step 2
2016	9,600,000	18.9%	81.1%	step 1
2017	10,000,000	18.9%	81.1%	step 2
2018*	9,460,000	18.9%	81.1%	step 1
2019	10,260,000	18.4%	81.6%	step 2
2020	9,050,000	18.9%	81.1%	step 1
2021	11,140,000	17.5%	82.5%	step 3

Source: IPHC regulations

* In 2018, the IPHC Commissioners failed to reach an agreement and de facto adopted catch limits from 2017; however, these numbers represent the more restrictive limits implemented by NMFS for Area 2C and 3A

5.1 Discussion and Rationale Around the Current Allocations

In addition to the status quo GHGs, the Council considered four different allocation options at final action¹⁰ for Area 2C and 3A depicted in Table 11 and Table 12. The basis for these allocation percentages are listed in In addition to the inefficiencies identified in the system, revisions to charter management measures were instigated by different agencies (NMFS with and without Council recommendations, through State Executive Orders, and through the IPHC) and at different points in the season. This led to instability and uncertainty in the charter sector, particular in Area 2C. The lack of a responsive management system allowed for more harvest from the charter sector (which came off the TCEY) to erode what was available for the commercial sector.

Table 13. More description of the Council’s rationale for its preferred alternatives are included in NPFMC/ NMFS (2013).

Table 11 Allocations considered for Area 2C

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

Source: NPFMC/NMFS 2013

Acronyms include: constant exploitation yield (CEY), guideline harvest level (GHL), CCL = combined catch limit, and PPA = preliminary preferred alternative

¹⁰ The Council considered a number of other allocations prior to final action as described in Section 1.7.6 Rejected Alternatives in NPFMC/ NMFS (2013).

Table 12 Allocations considered for Area 3A

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

Source: NPFMC/NMFS 2013

Acronyms include: constant exploitation yield (CEY), guideline harvest level (GHL), CCL = combined catch limit, and PPA = preliminary preferred alternative

Alternative 1. The GHL: The Council’s no action alternative would have continued the GHL Program. The GHL established five different limits (in pounds) with the highest level established as 125% of average 1995-1999 charter halibut harvest (see Table 20 and Table 21 in the Appendix for charter and commercial harvest over the full timeseries considered). The GHL was based on the TCEY (Table 11 and Table 12); therefore, it was not necessarily affected by other projected removals in that regulatory Area. All of the alternatives for the proposed CSP were based on the CCL (i.e., the FCEY) which means both commercial and charter allocations would be impacted by other sources of removals (i.e., unguided, subsistence and non-directed commercial discard mortality).

Under the no action alternative, there was no management process that automatically responded to an overage of the GHL. Overage occurred frequency, particularly in Area 2C. The GHL was not a “hard cap”; that is, the fishery did not close when the GHL was reached. One of the primary concerns of this system was the delayed-feedback loop of management measures that were established in Federal regulation and the amount of time it took for an amendment of charter management measures to go through the rule-making process.

For example, the final analysis described an Area 2C GHL overage in 2004, which was not identified until September 2005 (NPFMC/ NMFS 2013). The Council initiated an analysis to implement restrictive management measures in October 2005. The Council selected an annual limit of five fish as its preferred alternative for Area 2C in April 2006. The Council rescinded this preferred alternative in October 2006, upon request of NMFS because of high implementation and enforcement costs. At that same meeting, ADF&G reported that charter halibut harvests in 2005 and 2006 exceeded the Area 2C GHL by increasing levels in those two years. The Council added several management options to Alternative 2, which resulted in a revised analysis in April 2007 and selection of a new preferred alternative in June 2007 for implementation for the 2008 charter season. Because the Council action could not be implemented in time for the 2007 charter season, NMFS initiated its own analysis of alternatives to be implemented for the 2007 charter season. In summary, the delayed feedback resulted in restrictive action in 2007 for an overage in 2004.

In addition to the inefficiencies identified in the system, revisions to charter management measures were instigated by different agencies (NMFS with and without Council recommendations, through State Executive Orders, and through the IPHC) and at different points in the season. This led to instability and uncertainty in the charter sector, particular in Area 2C. The lack of a responsive management system allowed for more harvest from the charter sector (which came off the TCEY) to erode what was available for the commercial sector.

Table 13 The basis for the allocations established under each CSP alternative

	Alternative 1 No action	Alternative 2	Alternative 3 PA for Area 2C	Alternative 4 PA for Area 3A	Alternative 5
Allocation basis	125% of average 1995-1999 charter halibut harvest	< Lower Abundance: 125% of average 2001-2005 charter harvest divided by combined charter and commercial halibut harvests > Higher abundance: Area 2C: 2005 charter harvest, Area 3A: 125% of 1995-1999 average harvest	Modified Alternative 2 by: 1) eliminating the $\pm 3.5\%$ target range around the allocations, and 2) adjusting allocations for conversion from the statewide harvest survey to logbooks with crew harvests removed.	Modified Alternative 2 allocations to the charter sector by $+3.5\%$ of combined catch limit (CCL) at the two lower (of three) CCL	Modified Alternative 3 allocations to the charter sector by $+3.5\%$ of CCL at the two lower CCL levels

Source: NPFMC/ NMFS 2013

Alternative 2. The 2008 preferred alternative allocations: Under Alternative 2, the GHL would be replaced with a CSP management system. The allocations contained two tiers for both Area 2C and 3A. The allocations for the lowest tier of CCLs were based on 125% of the 2001 through 2005 average charter harvest for both Areas, which was the same formula selected by the Council to set the GHs (as a percentage) updated through 2005. This was intended to allow some future growth in the sector. For the higher tier of CCLs, Area 2C limits were established using the percentage of charter harvest in 2005, relative to commercial harvest. Because Area 2C charter harvest exceeded the GHL from 2004 through 2010, it was determined that this was a more appropriate basis for calculating allocation percentages at the higher CCLs (versus a formula based on 125% of the harvests). For Area 3C the allocation for the higher tier of CCLs were based on 125% of the average charter harvest from 1995 through 1999 (i.e., the GHL allocation as a percentage). Because the Area 3A charter harvest had rarely exceeded the GHL since implementation, it was determined that the GHL formula is an appropriate allocation target in this area at the higher combined annual limits.

Rather than the annual process for setting management measures that was ultimately implemented with the CSP, the 2008 preferred alternative included a matrix of management measures that would be put in place depending on where the CCL was set and the projected charter removals. The allocations under Alternative 2 included a $\pm 3.5\%$ range. If the projected removals were expected to be outside of that allocation range, additional management measures were triggered within the matrix. Unlike the current annual process, the Council did not intent to revisit or readjust the bag limits and measures specified in the matrix based on projected charter removals.

At Council final action in October 2021, the allocations under Alternative 2 could have been adopted without the management measure matrix (which had been identified as problematic after the Council recommended it in 2008). The analysis stated that this matrix could be replaced with the 2012 approach to establishing management measures (the annual process explained in Section 5.2). In this case the $\pm 3.5\%$ range for the allocation would be unnecessary because the annual process allows for more specificity in recommending management measures that minimize the difference between the projected harvest and the target allocation, without exceeding the allocation.

Alternative 3. The 2008 preferred alternative allocations adjusted for logbooks: Along with implementation of the CSP, the Council recommended use of the ADF&G logbooks as the official data collection method for the assessment of charter halibut harvest. Since the mid-1990s, ADF&G has

provided the IPHC and Council with estimates of charter yield based in part on estimates from the department's Statewide Harvest Survey (SWHS). The CSP analysis compared these data sources and demonstrated the difference between the harvest estimates provided by the ADF&G logbooks and the SWHS. Moreover, prior to 2009 for Area 2C and 2014 for Area 3A, charter skippers and crew were able to harvest halibut during the charter.

Alternative 3 applied an adjustment factor based on the 5-year average (2006–2010) of the difference between the harvest estimates provided by the logbooks and the SWHS, with the adjustment factor reduced by the amount of harvest attributed to skipper and crew. This led to a 5.6% adjustment for allocations considered for Area 2C (a 1%-point increase at the lower CCL and a 0.8%-point increase at the higher CCL) and an 11.6% adjustment for Area 3A (a 1.8%-point increase at the lower CCL, and a 1.6%-point increase at the higher CCL).

This alternative allocation did not include the $\pm 3.5\%$ range because it was deemed unnecessary with the 2012 approach to establishing management measures.

Alternative 3 was the Council's final preferred allocation for Area 2C.

Alternative 4. The 2008 preferred alternative allocation + 3.5%:

The allocations considered under Alternative 4 increase the 2008 preferred alternative allocation by 3.5%-points of combined charter and commercial catch limit in the lower two allocation tiers in both Areas. The highest tier remained unchanged from the 2008 preferred alternative allocation.

The 3.5% increase equates to the upper bound of the target range in the Council's 2008 preliminary preferred alternative.

This alternative allocation did not include the $\pm 3.5\%$ range because it was deemed unnecessary with the 2012 approach to establishing management measures.

Alternative 4 was the Council's final preferred allocation for Area 3A.

Alternative 5. The 2008 preferred alternative allocation adjusted for logbooks + 3.5%:

The allocations considered under Alternative 5 provided the highest (or equal) allocation percentage to the charter sector at all tiers of CCL, relative to the other alternatives considered. This allocation adjusted the 2008 preferred alternative allocation based on the 5-year average (2006–2010) of the difference between the harvest estimates provided by the logbooks and the SWHS, with the adjustment factor reduced by the amount of harvest attributed to skipper and crew *and also* increased the lowest two tiers of the allocation by 3.5%-points of combined charter and commercial catch limit. These allocations are the same as allocations under Alternative 3 + 3.5%-points on the lowest two tiers.

This alternative allocation did not include the $\pm 3.5\%$ range because it was deemed unnecessary with the 2012 approach to establishing management measures.

Removal of Vertical Drops

Under all proposed allocations, there is a transition in which the percentage allocation assigned to the charter sector in both Areas is reduced under a higher CCL. In order to avoid a situation in which the charter sector allocation (in pounds) drops when the CCL increases (i.e., a one-pound increase in the CCL results in a reduction to the charter sector's allocation of hundreds of thousands of pounds), the Council adopted an approach to hold the charter sector's allocation as a fixed poundage for a small, defined range of the CCLs.

Public Input

Given the long timeframe for developing the CSP, much of the allocation debate at final action (October 2012) was around the baseline years to use, whether to account for the shift from the SWHS to logbook data, and the relationship of the allocation to the GHL. The Council received hundreds of letters of public testimony at final action.¹¹

- There was substantial testimony from the commercial sector supporting the allocations established in 2008 (allocations under Alternative 2). Commercial participants felt a reallocation had been taking place for years as the charter sector continued to grow and harvested over its GHL. They supported the use of logbooks for future accounting of the harvest but did not feel like a logbook adjustment was appropriate as this data source did not exist during the base years (see for example, written testimony from the Halibut Coalition and Alaska Longline Fishermen’s Association). Much of the testimony from the commercial sector highlighted personal experience with declining revenues and QS values in the halibut fisheries. Many had purchased QS after implementation of the IFQ Program and were struggling to remain profitable amid loan payments and fishing costs with the drastically declining QS.
- Charter sector testimony generally supported allocations that more closely mirrored the GHL.¹² They stated that these thresholds better represented the historical harvest and participation in the fishery and that in recent years both Area 2C and 3A had been within their GHL limits. Based on a comparison of alternatives to the GHL, some testimony supported the allocation represented in Alternative 5 (e.g., SouthEast Alaska Guides Organization and Seward Charterboat Association) and some testimony suggested a different allocation structure to more closely match the GHL (e.g., Alaska Charter Association).
 - The allocation structure proposed by Alaska Charter Association and support by others (e.g., Deep Creek Charter Association and D. Bondioli) removed the flatline portions of the allocation and replaced them with a quadratic formula that provided a continuous increase in the percent of the allocation. Supporters felt this allocation did a better job of matching the GHL as well as “floating with halibut abundance”, as was described as a Council goal.
 - Much of the testimony also did not support the further regulatory separation of the guided and unguided sport fishing sectors and felt the allocations should be reconsidered with additional consideration of this sector.
 - Testimony from charter representative also highlighted their priority for the long-term solution of developing a common pool compensated reallocation opportunity. Much of the charter testimony did not perceive the GAF program as a viable solution to the allocation conflict (see more discussion on GAF in Section 6.3).

Council Rationale

The Council ultimately recommended the allocation from Alternative 3 for Area 2C and the allocation from Alternative 4 for Area 3A. As stated in the Council’s rationale (NPMFC/ NMFS 2013) one of the Council’s primary objectives in adopting the CSP is to create a management program that requires both the commercial and guided charter sector to share in the burden of conservation at low levels of halibut

¹¹ All available documents on the Oct 2012 CSP action including written testimony:
https://meetings.npmfc.org/CommentReview/DownloadFile?p=8a375d74-2ea5-4f20-846d-6d0fd48f1ac7.pdf&fileName=C1_Halibut_Fisheries_Issues-compressed.pdf

¹² Some of the written letters from charter representative did not support the CSP in any allocation structure.

abundance, which is in contrast to a CSP that ‘matches’ the GHL. The Council stated that its challenge was in balancing historical harvest, but in the face of declining exploitable biomass in both Areas. As presented in all of the CSP options, the charter allocation is smaller than the GHL at low levels of abundance and is larger than the GHL at higher levels of abundance.

The Council acknowledged it was recommending different allocation alternatives for Area 2C and 3A, citing distinct trends in both Area-wide halibut abundance and charter fishing effort. Both sets of allocations take into account the conversion from SWHS to logbooks either explicitly through Alternative 3 (for Area 2C) or implicitly based on the harvest rates adjusted for logbooks prior to final action (Area 3A). The Council sought to balance historical harvests, the economic impact to each sector, and the status of the halibut stock, whose exploitable biomass had been in decline for both Areas, under the range of allocations recommended. Council members stated that the circumstances of these factors made it impossible to make both sectors whole economically under the current conditions of the stock.

For Area 2C, the Council’s preferred allocation was Alternative 3, which used the 2008 allocations adjusted for using logbooks as the new primary data source with which to report charter harvest and including the moratorium on harvest by skippers and crew. The Council stated this adjustment was appropriate for Area 2C, because without this adjustment, the charter sector would be held to allocations based on years in which the SWHS was used to determine charter harvest. However, these limits would be evaluated based on their harvest from the ADF&G logbook, which are on average had been higher than the SWHS estimates. The Council acknowledged that the conversion to logbooks gave no net benefit to the charter sector because logbooks merely reflect better estimates of charter halibut harvests, but at the same time it resulted in a reduction to the allocation to the commercial sector.

The analysis and public testimony highlighted dramatic economic losses in revenue and QS value, particularly for the commercial participants in Area 2C. While ex-vessel prices had also been increasing this did not balance the impact to QS value and IFQ revenue.

The preferred allocation for the Area 3A closely approximates the charter sector harvest in years prior to 2012 final action, adjusted for conversion to logbooks and the moratorium on harvest by skippers and crew. While this approach gave some deference to the historical harvest of this sector, it was not intended to insulate the charter sector from more restrictive management measures if the CCL declines further in the future. The Council did not feel it would be appropriate to adopt a higher charter sector allocation at times of high abundance that was more than the sector has historically harvested (as would have been the case with Alternative 3 and 5).

All of the alternatives contained allocations that were a higher percentage for the charter sector at lower levels of the CCL, relative to the charter sector’s allocation at higher CCLs. The Council stated this was intended to alleviate some of the effects of replacing the GHL stair-step benchmark in pounds with the CSP allocation percentages that vary with the CCL. A higher percentage at lower abundance levels is also intended to keep the charter businesses from being severely restricted at times of low abundance (NPFMC/ NMFS 2013).

5.2 Annual Management Cycle

The CSP also describes a public process by which the Council develops recommendations to the IPHC for charter angler harvest restrictions (annual management measures) that are intended to limit harvest to the annual charter fishery catch limit in Areas 2C and 3A. It has long been a goal for charter halibut management to have consistent management measures (e.g., bag limits, size restrictions, etc.) throughout the season. However, the absence of inseason management means that small variance relative to the charter sector's allocation were expected to occur. The process defined in the CSP and used to set annual management measures was developed to allow rapid annual adjustment of management measures to ensure the charter sector remains at or below its allocation given the best information available predicting charter harvest for the following year. This is a collaborative process between stakeholders, ADF&G, the Council, NMFS and the IPHC.

Each year in October, the Council's Charter Halibut Management Committee (Charter Committee) reviews charter harvest in Areas 2C and 3A during the current year in relation to the charter catch limit. The Charter Committee makes recommendations on possible management measures for Areas 2C and 3A to be analyzed for the coming year. Some of these measures directly restrict the number or size of fish that may be retained (e.g., daily bag limits, annual limits, and size limits), whereas other measures indirectly restrict the harvest (e.g., day of week closures, or trip limits).

In December of the same year, the Charter Committee meets again to review the ADF&G analysis. The Committee identifies various management measures that will most likely constrain charter halibut harvest under a range of possible catch limits that could eventually be adopted by the IPHC. In forming their recommendations, the Committee also considers economic impacts on charter operations. The NPFMC in turn considers the recommendations of the Committee along with public testimony to develop a recommendation to the IPHC.

At its annual meeting in January of each year, the IPHC allocates the CCL for Area 2C and Area 3A between the commercial IFQ fishery and the charter fishery for that year based on the CSP regulations described above. The IPHC takes into account Council recommendations, any additional information available to the IPHC, and input from the public and IPHC staff. Upon adoption of the regulations, the IPHC formally notifies the respective Canada and United States governments, and, after acceptance by the Secretary of State, and with the concurrence of the Secretary of Commerce, NMFS publishes in the Federal Register the charter halibut management measures for each area as part of the IPHC annual management measures.

5.3 Catch Monitoring and Estimation in the Sport Halibut Fisheries

As part of implementation of the CSP, the Council recommended using the ADF&G Saltwater Charter Logbook (i.e., logbook) as the primary data collection method for monitoring and managing the charter harvest. ADF&G developed the logbook program in 1998 to provide information on participation and harvest by individual vessels and businesses in charter fisheries for state-managed species, as well as halibut. Logbook data are compiled to show where fishing occurs, the extent of participation, and the species and the numbers of fish caught and retained by individual charter anglers. This information is essential to estimate harvest for regulation and management of the charter halibut fisheries in Areas 2C and 3A.

ADF&G estimates charter yield using reported logbook harvest combined with estimates of average weight from dockside sampling. Sampling occurs through onsite fishery monitoring programs in Southeast and Southcentral Alaska. Harvested halibut are measured and net weight is estimated from

weights predicted for each fish using the IPHC length-weight relationship. This allows for estimates of average weight by sector and port (Webster & Buzzee 2020).

5.4 Separate Accountability for Discard Mortality

The CSP includes a process of separate accountability for the commercial and charter halibut fishery discard mortality (a term that was previously referred to as wastage). Separate accountability means that each sector's discard mortality is included in their allocation.

Prior to the CSP, Area 2C and 3A commercial incidental mortality projection was accounted for in the 'other removals' category in the IPHC process (non-FCEY). This estimate was deducted from the TCEY, as is the case for commercial incidental mortality in other Regulatory Areas. If the Council had not adopted separate accountability measures through the CSP, commercial incidental mortality projection ultimately could have impacted both commercial and charter sector allocations under the CSP structure.

Under separate accountability in the CSP, Area 2C and 3A commercial incidental mortality is projected each year by the IPHC Secretariat using the rate from the previous year (discard mortality: landings) and deducted from the commercial allocation, resulting in the catch limits for the IFQ program.

Incidental mortality of halibut in the commercial fishery is the mortality of all halibut that do not become part of the landed catch. The three main sources of discard mortality estimate include: 1) fish that are captured and discarded because they are below the legal-size limit of 32 inches, 2) fish that are estimated to die on lost or abandoned fishing gear, and 3) fish that are discarded for regulatory reasons (e.g., the vessels trip limit has been exceeded). The methods that are applied to produce each of these estimates differ due to the amount and quality of information available. Information on lost gear and regulatory discards is collected through logbook interviews and fishing logs received by mail. Different mortality rates are applied to each category: released Pacific halibut have a 16% mortality rate and Pacific halibut mortality from lost gear is 100% (Erikson et al. 2021). In 2018, the IPHC requested that all sizes of discards be included in the directed commercial fishery allocations (prior to 2018 only fish greater than or equal to 26 inches were included). While the CSP is vague with regards to sizes of discards, release mortality of all sizes of halibut were included in projected charter removals for consistency with the commercial sector and the intent of the IPHC. All sizes of release mortality have been estimated for 2013-2021 for inclusion in the IPHC's annual stock assessment as part of sport fishery removals.

Until 2014, halibut discard mortality was not routinely estimated for the sport fishery or factored into the FCEY or GHL. Release mortality in recreational fisheries has not historically been documented due to the lack of information on mortality rates and sizes of released fish. In March 2012, the IPHC asked all agencies that provide estimates of recreational halibut harvest coastwide to implement data collection programs that would allow estimation of release mortality. The IPHC began incorporating estimates of sport fishery release mortality in total halibut removals for purposes of stock assessment in 2014. Each fall, ADF&G provides the IPHC with final estimates of release mortality in the sport fishery (guided and unguided) for the previous year and preliminary estimates for the current year.

ADF&G first undertook estimation of sport fishery release mortality in 2007 (Meyer 2007), using available Statewide Harvest Survey estimates of the numbers of released fish, an assumed mortality rate based on hook use data, and modeling of the size distribution of released fish. Meyer provides a detailed discussion of the methods that have been used to generate discard mortality rate estimates (2007; 2014, Webster and Buzzee 2020). The CSP established the ADF&G charter logbook as the preferred accounting method for charter harvest. Based on this guidance, the numbers of released fish are currently estimated using logbook data (as of 2014). Discard mortality rates for guided and unguided recreational fisheries are consistent with previous estimation methods (Meyer 2007) and are dependent on the hook type (circle versus other) that is used. The rates were derived as weighted estimates, with 3.5% mortality rate for

halibut released on circle hooks and a 10% mortality rate for halibut released upon all other hook types, weighted by the proportions of released fish caught on each hook type. Finally, in order to calculate estimated pounds of released mortality from the charter sector, an average weight of released fish is estimated by modeling the size distribution of released fish using creel sampling data on the size distribution of harvest and information from other fisheries (Meyer 2014, Webster and Buzzee 2020). All calculations are done for multiple subareas within Areas 2C and 3A and then summed.

There is no specific discard mortality estimate for GAF; only a single estimate for the charter halibut fishery in each area. Under the CSP, charter vessel guides are required to record the number of halibut kept and the number of halibut released in the ADF&G logbook. Under the CSP, guides are also required to record in the logbook the number of GAF harvested. The number of halibut released in pursuit of GAF are not differentiated from the number of halibut released in pursuit of non-GAF halibut kept by charter vessel anglers.

More recently, the IPHC has been engaged in research to improve knowledge on the discard mortality rates in the Pacific halibut charter recreational fisheries (Dykstra 2021). This research is focused on Area 2C and 3A, with field work conducted in Sitka and Seward in the summer of 2021. This project aims at better understanding the role of fishing practices and capture conditions on injury profile, physiological stress levels and survival in the Pacific halibut recreational fisheries in order to estimate DMRs. As of January 2022, analyses of the resulting data were underway (C. Dykstra, personal communication, 1/3/22).

5.5 Guided Angler Fish Program

In 2014, as part of the CSP, NMFS implemented the Guided Angler Fish (GAF) Program to authorize limited annual transfers of commercial halibut IFQ as GAF to qualified CHP holders. The GAF Program provides additional harvest opportunities for charter anglers. Using GAF, qualified CHP holders may lease or use their own commercial IFQ to offer charter anglers the opportunity to retain halibut up to the limit for unguided anglers when charter management measures limit charter anglers to a more restrictive harvest limit. For example, if charter management regulations in Area 2C restrict charter anglers to a one-halibut daily bag limit, a charter angler could retain one halibut and use one GAF to retain a second halibut, bringing the retained amount to two halibut—the same daily bag limit that applies to unguided anglers. The GAF Program is described in more detail in the CSP Analysis (NPFMC 2013) and in the proposed rule for the CSP (78 FR 39122, June 28, 2013), a NMFS “Frequency Asked Question” document,¹³ and updated information on GAF usage is made available annually through NMFS reports.¹⁴ Additional description of the GAF Program is provided below and Section 6.3 provides recent statistics on the program.

In order to receive GAF, an IFQ holder and a CHP holder receiving GAF must submit an application to NMFS for review and approval. GAF transfers may be between separate IFQ and CHP holders, or a person holding both IFQ and a CHP can transfer their IFQ to himself or herself as GAF. Upon approval of the transfer application, NMFS issues a GAF permit to the holder of the CHP. Once the transfer is approved, the GAF permit holder may offer additional GAF harvest opportunities to anglers on board the vessel on which the operator's GAF permit and the assigned CHP are used.

NMFS issues GAF in whole numbers of halibut based on a conversion factor from IFQ pounds. In 2014, the first year of the GAF program, the conversion factors for each Area were the average weight of all charter halibut harvested by area in the most recent year without a size limit in effect. For 2015 and

¹³ <https://www.fisheries.noaa.gov/resource/document/pacific-halibut-guided-angler-fish-gaf-program-frequently-asked-questions>

¹⁴ <https://www.fisheries.noaa.gov/resource/document/guided-angler-fish-gaf-program-annual-reports>

beyond, the conversion factors are based on the average net weights of GAF harvested in the applicable IPHC Regulatory Area (Area 2C or 3A) during the previous year (Table 14). Average weights are determined from data that charter vessel guides report directly to NMFS. For 2022, 74 pounds of IFQ yields one GAF in Area 2C, and 27 pounds of IFQ yields one GAF in Area 3A. As further described in Section 6.3 this difference is primarily a product of what GAF is used for in each Area (i.e., the restrictions it removes) and how that results in different sizes of GAF retained in each Area.

Table 14 IFQ pounds Conversion Factor for GAF in Area 2C and 3A

Year	Conversion Factor	
	IFQ lb / GAF	
	Area 2C	Area 3A
2014	26.4	12.8
2015	67.3	38.4
2016	65.1	36.1
2017	74	42
2018	71	44
2019	66	42
2020	61	40
2021	72	57
2022	74	27

Source: NMFS GAF Report, 2021

For practical reasons, there are specific dates associated with transfers of GAF and the return transfer of unused GAF. Figure 17 shows an example of this timeline for the year 2020. Applications for transfers of IFQ to GAF are accepted as soon as IFQ has been issued for the year and the conversion factor has been posted on NMFS’ website. Applications may continue to be received until one month prior to the end of the commercial fishing season, to ensure that all GAF transactions are completed before the automatic return date.

Returns of unused GAF from the charter sector back to the commercial sector can occur in one of two methods:

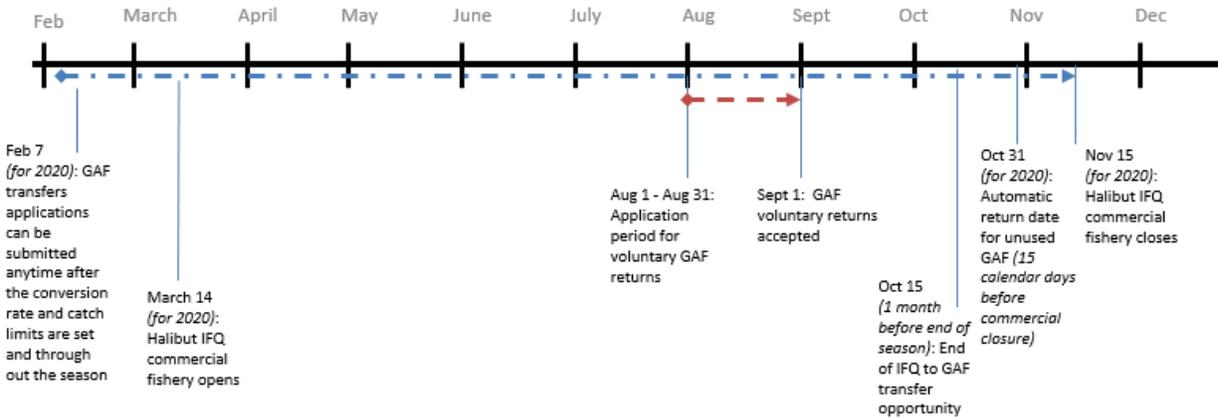
- 1) a voluntary return of unused GAF from the GAF/CHP holder back to the IFQ holder,¹⁵ or
- 2) a mandatory automatic return of GAF from the GAF/CHP holder back to the IFQ holder.

Voluntary returns of unused GAF can be arranged during the month of August (NMFS must receive application between August 1 through August 31). Returns will be processed on or after September 1. By this date, the majority of the charter season is typically complete and it allows the IFQ holder sufficient time to harvest that IFQ before the end of the season.

The automatic return date of unused GAF occurs 15 calendar days prior to the end of the commercial halibut season. Some of these dates could change annually, because they depend on the commercial IFQ season dates established by the IPHC. For 2021, the commercial fishing season remained open until Dec 7, thus the automatic transfer date of unused GAF to IFQ was set for Nov 22, 2021.

¹⁵ This transfer might be for compensation or not. Terms of these arrangements are private transactions between the GAF permit/ CHP holder and the commercial IFQ holders.

Figure 17 GAF transfer schedule using 2020 as an example



5.5.1 Record Keeping and Reporting Requirements

There are several unique Federal reporting and handling requirements associated with the use of GAF. Charter guides are required to mark retained GAF by removing the tips of the upper and lower lobes of the caudal fin. Additionally, charter vessel guides are required to retain the carcass showing the caudal fin clips until the halibut fillets are offloaded so that enforcement agents can verify the length and that the fish was retained and recorded as GAF.

The logbook is the primary reporting method for operators in the charter halibut fishery for GAF. In addition to general charter reporting requirements, vessel guides are required to report the GAF permit number and number of GAF retained in the logbook. For each halibut retained as GAF, charter vessel guides are also required to immediately record on the GAF permit log (on the back of the GAF permit), the date and total halibut length in inches. There are also requirements to enter GAF information into a NMFS-approved electronic reporting system by the end of the calendar day on the last day of a charter fishing trip in which a charter angler retained GAF. Complete reporting requirements can be found at 50 CFR 300.65(d)(4)(ii).

5.5.2 GAF Transfer Limits

Three restrictions on GAF transfers were implemented with the program. The restrictions on transfers of GAF are intended to prevent a particular individual, corporation, or other entity from acquiring an excessive share of halibut fishing privileges as GAF.

First, IFQ holders in Area 2C are limited to transferring up to 1,500 pounds or 10%, whichever is greater, of their initially issued annual halibut IFQ for use as GAF. In Area 3A, IFQ holders may transfer up to 1,500 pounds or 15%, whichever is greater, of their initially issued annual halibut IFQ for use as GAF. This restriction was intended to further the Council and the IFQ program’s goal for an owner-on board IFQ fishery. IFQ holders in Area 3A are able to transfer up to 15% of their IFQ as GAF because IFQ holdings are generally larger in Area 3A than in Area 2C and restricting Area 3A IFQ holders to leasing up to 10% of their IFQ holdings could limit the amount of IFQ available for lease as GAF.

The other transfer restrictions are intended to balance the GAF needs of different types of charter operations to maximize the opportunity for all charter operators to acquire GAF. Because holders of charter halibut permits endorsed for more than six anglers are likely to be larger charter operations, the Council was concerned these larger charter operations would have more financial resources to acquire GAF than smaller operations unless a limit was placed on the number of GAF that could be assigned to a

charter halibut permit. Depending on the supply of IFQ available to be transferred as GAF, this program could put different charter operations in direct competition with each other for GAF. These restrictions promote opportunity for charter operations of different types. Therefore, the second restriction for GAF transfers is that no more than a total of 400 GAF will be assigned during one year to a GAF permit assigned to a CHP that is endorsed for six or fewer anglers. The third restriction states that no more than a total of 600 GAF will be assigned during one year to a GAF permit assigned to a CHP endorsed for more than six anglers. This rule does not limit the amount of GAF transfers for military charter halibut permits. CQEs that hold quota share are allowed to transfer IFQ as GAF. The limits on these transfers depend on whether the GAF permit holder is a CQE, an eligible community resident, or a non-resident.

Details and rationale for GAF transfer restrictions are further described in the proposed rule for the CSP (78 FR 39122, July 25, 2013).

5.5.3 Cost Recovery for GAF

NMFS' costs associated with management, data collection, and enforcement of the GAF Program are recoverable through IFQ Program Cost Recovery fees. NMFS does not track fees associated with GAF separately from other IFQ Program fees. Even with the additional costs to develop and implement the GAF Program, total NMFS costs associated with the IFQ Program were less in 2014 than in 2013. NMFS collected cost information for the development of the database and electronic reporting systems for the GAF Program. These costs totaled \$78,700 across multiple years and were subject to IFQ Program Cost Recovery fees.

5.6 Recreational Quota Entity

During the development of the CSP, the Council considered several mechanisms for building in compensated reallocation of halibut from the commercial halibut sector to the charter sector. Options considered would have allowed the development of a common pool management system and/or an individual private management system. Three sub-options included potential common pool management systems: (1) federal Common Pool; (2) State Common Pool; or (3) Regional Non-Profit Association Common Pool. The Council removed the common pool options in October 2007 because the draft analysis identified a number of hurdles to its successful and timely implementation. These hurdles included 1) the need for both Federal and state legislation to authorize the proposed actions; 2) the need for funding the purchase of commercial QS; 3) controversy regarding the proposed pro rata reduction of the value of commercial halibut QS; and 4) the additional time required to allow various facets of the proposed program to be implemented. The Council continued to include an alternative with regulations for guided angler fish (GAF). The final analysis for the CSP (NPFMC/ NMFS 2013) described this as a simpler, more limited approach that would allow voluntary, in-season leasing of commercial halibut IFQs to individual charter halibut permit holders while the Council considers a "permanent management solution". The reference to a permanent management solution was the Council's intention to continue to separately consider a common-pool program for permanent compensated reallocation (NPFMC/ NMFS 2013).

The halibut charter representatives continued to spearhead the effort to develop this concept and address the previously defined hurdles. Through funding from the National Fish and Wildlife Foundation's Fisheries Innovation Fund, Environmental Defense Fund and in-kind contributions from the charter sector, the Catch Accountability Through Compensated Halibut (CATCH) project generated a proposal for a non-profit organization to represent guided anglers and to have the opportunity to purchase commercial halibut quota to be added to the charter allocation and hold it in a common pool for all guided anglers (Yamada & Flumerflet 2014). This proposal spurred several versions of analysis that resulted in the development of the RQE Program.

In December 2016, the Council took final action to approve a regulatory program that authorizes a charter halibut RQE to purchase and hold commercial halibut quota share on behalf of the charter halibut anglers in IPHC Regulatory Areas 2C and 3A. The RQE provides a mechanism for compensated reallocation of a portion of commercial halibut quota share to the charter halibut fishery. This final rule became effective October 22, 2018 (83 FR 47819, September 21, 2018). This program is summarized below, but further detail can be found in the final analysis (NMFS 2017c) and the proposed rule (82 FR 46016, October 03, 2017).

Under this program, any halibut quota share purchased by a RQE may augment the apportioned pounds of halibut for the charter catch limit for that Area in that year, which can be used to relax the annual charter management measures (e.g., bag limits and size restrictions) up to the allowance for the unguided recreational sector. Halibut QS held by the RQE will generate annual pounds of recreational fishing quota (RFQ); a type of annual harvest privilege similar to IFQ that has special requirements that pertain only to the RQE. RFQ will be calculated in the same manner as IFQ. The specific amount of RFQ (in net pounds) will be determined by the number of QS units held by the RQE as of October 1 of the preceding calendar year, the total number of halibut QS units issued in Area 2C or 3A as of January 15 of the year the IFQ or RFQ is issued, and the total amount of halibut allocated to the commercial IFQ fisheries in Areas 2C and 3A for that year.

Although the amount of RFQ is calculated in the same way as IFQ, it is subject to different requirements. The additional pounds of RFQ for each regulatory Area will be combined with the charter catch limit determined under the CSP to calculate an adjusted charter catch limit for the year for Area 2C or 3A. Annual charter management measures for Areas 2C and 3A will be analyzed, recommended to the IPHC, and adopted for implementation based on the estimated adjusted charter catch limits. RFQ held by the RQE would be available for harvest by all charter anglers aboard registered charter vessels of any size, regardless of the QS class from which that RFQ originated. RFQ cannot be transferred as GAF. These management measures apply for all charter halibut anglers in the corresponding IPHC Areas. In other words, there is no option for certain anglers or certain operators to opt out.

5.6.1 Transfer Restrictions

Under the RQE Program, two-way transfers of QS are permitted. Quota share acquired by the RQE may be transferred to an otherwise eligible participant in the commercial IFQ fishery. Because QS and the resulting IFQ used in the commercial IFQ fishery is subject to vessel categories and block designations on initially-issued QS—unlike the QS and resulting RFQ used by the RQE, which is exempt from such categories and designations—NMFS will track QS units, IFQ pounds, and vessel class and block designations that apply to ensure that original categories and designations for the commercial IFQ fishery are maintained during the transfer process.

The Council included a number of types of transfer restrictions on an RQE's acquisition of QS including: restrictions on the type of quota share that can be purchased (i.e., QS class and block status) that differ by Area, annual limits on transfer, total limits on holdings, and combined limits on how much QS can be held and GAF could be transferred in a year. These limits are depicted in Figure 18. Further details and rationale for the restrictions established are in the final analysis (NMFS 2017c) and in the proposed rule (82 FR 46016, October 03, 2017).

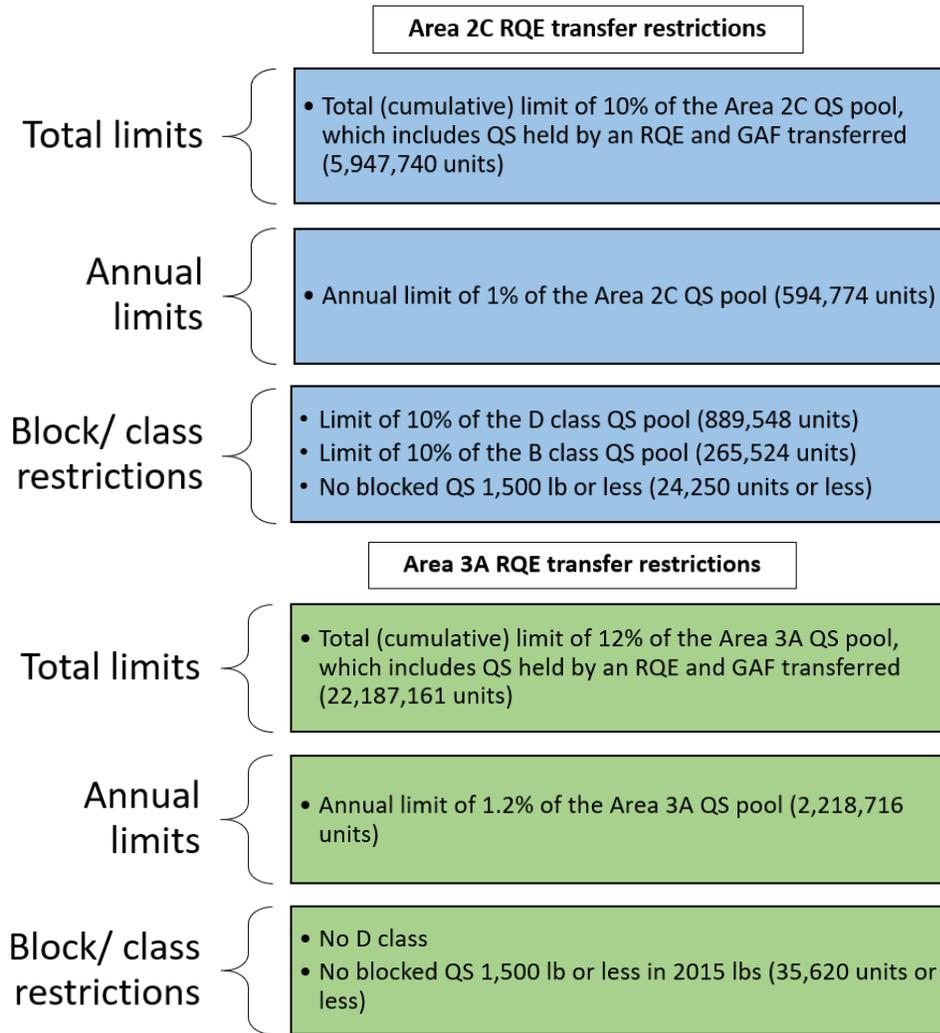


Figure 18 RQE transfer restrictions for Area 2C and 3A

5.6.2 Current Status

On March 4, 2020, NMFS approved an application for the CATCH Association (Catch Accountability through Compensated Halibut) to serve as the RQE. The CATCH association achieved the requirements to form the RQE by submitting articles of incorporation and management organization information to NMFS, including: 1) bylaws, and 2) a list of key personnel including, but not limited to, the board of directors, officers, representatives, and managers.

The RQE has not yet purchased halibut QS primarily because the RQE has not yet established a long-term funding mechanism. If it acquired funds through donations, grants, or other private funding sources, these sources could contribute to halibut QS purchases. Representatives of the charter sector have long voiced support for a Charter Halibut Stamp (NPFMC 2021b) as a way to fund compensated reallocation of halibut, in which charter anglers would be required to possess a stamp in order to harvest halibut on a charter vessel. However, the principal challenge has been in securing an enforcement mechanism to require operators (or anglers) to purchase a Charter Halibut Stamp. The Council is currently considering federal regulations to establish a fee collection program for charter vessel operators to fund the RQE and its purchase of QS. In the Initial Review analysis (NPFMC 2021b) the Council asked staff to broadly consider mechanisms that could facilitate this fee collection. Staff in particular focused on the mechanics

and decision-points around the concepts of a charter halibut stamp and an annual operator fee. The analysis highlighted the challenges and costs as well of the advantages of each option.

The Council wished to consider these options with NMFS as the primary fee collection agency for whatever type of program was developed. Council members highlighted that NMFS has experience with fee collection programs and a more direct link to the NMFS Alaska Region could add legitimacy to the fee requirement and ensure that there is associated enforcement. NMFS currently does not have the authority to collect these funds, thus their collection and appropriation for use by the RQE under any of the options considered would require parallel Congressional action.

A bill currently being considered in U.S. Congress to amend the Magnuson-Stevens Fishery Conservation and Management Act would grant this authority. The U.S. Senate Bill S.273- Driftnet Modernization and Bycatch Reduction Act was (re)introduced¹⁶ in the Senate on February 8, 2021. On September 14, 2021, the U.S. Senate considered the bill, amended the language on the fee provision appropriations, and the bill passed in the Senate that day.

A similar bill related to S.273 was introduced in the House of Representatives as H.R. 404 on January 21, 2021. H.R. 404 was referred to the House Committee on Natural Resources, Subcommittee on Water, Oceans, and Wildlife. On November 17, 2021, the bill was moved out of the committee and ordered to be reported. With respect to the RQE funding authorization, S.B 273 and H.R. 404 are, as of this writing (12/29/2021), equivalent.¹⁷

The Council is tentatively scheduled to continue consideration of this action in April 2022.

5.6.3 Potential Cumulative Impacts

If the Council decides to move into “Step 3” of an allocation review, and identifies reallocation alternatives, that analysis will need to include the expected cumulative impacts of annual leasing through the GAF Program, the potential for compensated reallocation available through the RQE, and any additional reallocation under consideration. That analysis would take into account both the available opportunities and the status of these programs.

Expected impacts of the RQE Program, including the cumulative impacts of GAF and RQE, were evaluated in the analysis implementing the RQE (NMFS 2017b). In addition to the impacts for the charter halibut sector (anglers, operators, and support sectors) the analysis considered the QS market impacts, impacts on the commercial IFQ fishery and participants, impacts on subsistence and unguided fishermen and a broader discussion of community impacts associated with halibut stakeholders. Ultimately the Council selected options to establish annual limits on QS transfers made by the RQE as a cumulative limit with the total amount of GAF that can be leased each year. The Council also established restrictions on the purchase of certain QS classes and blocks in both areas (see more specific restrictions in Section 5.6.1). The Council’s rationale stated it intended to provide the RQE with a reasonable opportunity to purchase QS, while also working to mitigate the expected impacts on the QS market, entry opportunities and commercial halibut participants.

¹⁶ On March 27, 2019 Senate Bill S.906- Driftnet Modernization and Bycatch Reduction Act was introduced in the U.S. Senate to amend the Magnuson-Stevens Fishery Conservation and Management Act. The Senate Bill S.906 passed the Senate (July 22, 2020) and the House (December 10, 2020); however, President Trump vetoed S.906 on January 1, 2021.

¹⁷ Updates can be found at Congress.gov: <https://www.congress.gov/bill/117th-congress/senate-bill/273/committees>

Any consideration of reallocation would need to consider the potential cumulative impacts of the compensated reallocation that is possible under the RQE Program along with the impacts of any new reallocation of halibut harvesting opportunity.

6. Sector Profiles

The following section provides an overview of select trends in the commercial and charter halibut fisheries in Area 2C and 3A. These dashboard metrics were designed in a similar fashion to those used in the BSAI Pacific cod Allocation Review (NPFMC 2019a), which was the first stand-alone allocation review and intended to serve as a structural model for allocation reviews in the North Pacific. The dashboard metrics included were identified to provide information about the ways in which the two fleets derive benefits from, and are dependent upon, Pacific halibut. They also provide insight into fleet participation and adaptation from 2006 through the most recent year of data available.¹⁸

Specifically, these dashboards cover 1) allocation and removals of halibut, 2) participation metrics, 3) value metrics, 4) diversification metrics, 5) metrics related to ports, trips and deliveries, and 6) regional participation as represented by QS holder or CHP holder regional groupings.

Although the analyst sought to create broad categories of similar dashboards between the sectors, in most cases, the metrics used under each category are not perfectly equivalent. For example, the types of participation metrics used in demonstrating trends for the commercial sector includes vessel landings, persons landing, and IFQ permit holders. Participation metrics in the charter sector includes the number of businesses, vessels, and unique anglers participating in the charter halibut fishery. While these metrics all broadly measure types of participation, there are different assumptions built into these numbers and individually they represent different types of information.

Moreover, this information is certainly not all encompassing of the ways in which individuals and communities benefit from and are impacted by access to halibut in these sectors. These indicators were identified in the workplan stage (NPFMC 2021b) to provide accessible indicators with which to evaluate fishery trends. Recent and ongoing research is being conducted on the economic impacts and marginal values associated with halibut in the charter and commercial sectors.¹⁹ Information from these studies

¹⁸ The timeseries of 2006 to the most recent year available is used in the dashboard, unless there is a specific reason to include a shorter series. The CSP began in 2014; however, the Council spent many years on discussion and development of the program prior to CSP implementation, thus a longer baseline will be informative. Beginning in 2006 allow the continuous use of ADF&G logbook data throughout the timeseries (ADF&G logbooks were required in 1998- 2001 and then again from 2006 to present day). This range of years covers a timeseries through years of economic recession and the recent COVID-19 pandemic, as well as dating back to years in which the charter management measures were two halibut of any size for both Area 2C and 3A. A longer timeseries of commercial and charter removals is also included in Table 20 and Table 21.

¹⁹ For example, several economic impact studies have recently been conducted for one or both of the sectors in the CSP. Lew & Seung (2018) estimate contributions of the saltwater charter fishing industry in Alaska to the economy for 2011-2013 and 2015. This study uses a social accounting matrix (SAM) model and incorporates charter survey data on expenditures described in Lew & Lee (2018). This study demonstrates a total Southern Alaska charter industry output of \$248 million in 2011, \$140.7 million in 2012, and 166.1 million in 2013, pre-CSP. After implementation of the CSP (in 2015) the estimated industry output was estimated at \$165.7 million. This study covers responses from Southern Alaska (both Area 2C and 3A) and it was not specific to halibut charters. The authors provide some contextual explanation for the changes in impacts over the years based on management changes, but stress that for the charter sector in particular the link between a specific allocation (such as the halibut CSP defines) and shock to the system is difficult to identify because of the complex types of behavioral responses that may occur.

More recently, the IPHC has developed and has been expanding on a Pacific halibut multiregional economic impact assessment (PHMEIA) model. This is a similar multiregional SAM model with the aim of providing an all-sectors-encompassing assessment of the socioeconomic impact of the Pacific halibut resource that includes the full scope of Pacific halibut's contribution to regional economies of Canada and USA (Hutniczak 2021). The current model demonstrates the economic impact on households from the commercial halibut sector and the charter halibut sector with and without the inclusion of accounting for angler expenditures outside of charter fees. Currently, the model continues to rely heavily on secondary data sources, and as such, the results are conditional on the adopted assumptions for the components for which data are not yet available. In order to accurately capture the economic

align with the “factors to consider when reviewing and making allocation decision” identified in NMFS Procedural Directive 01-119-02 and could aid the analytical discussion should the Council choose to initiate Step 3 of the Allocation Review and consider a different allocation structure.

Again, this stage of the Allocation Review is not meant to provide an in-depth analysis of the effects of the CSP or its allocations. The intent is to provide information on how the allocation is being used in each sector with an opportunity for the public and the Council to consider whether to recommend changes to the allocation and/or program to better achieve the program’s objectives. The analysis of the impacts of a different type of allocation would occur under “Step 3” of an allocation review in which specific changes are suggested.

In addition to the commercial and charter halibut sector, this allocation review also includes additional dashboard metrics for the GAF Program, because this Program was implemented along with the CSP as a method for individual temporary compensated reallocation. These metrics are derived from the NMFS GAF reports and highlight participation in the program and characteristics of use.

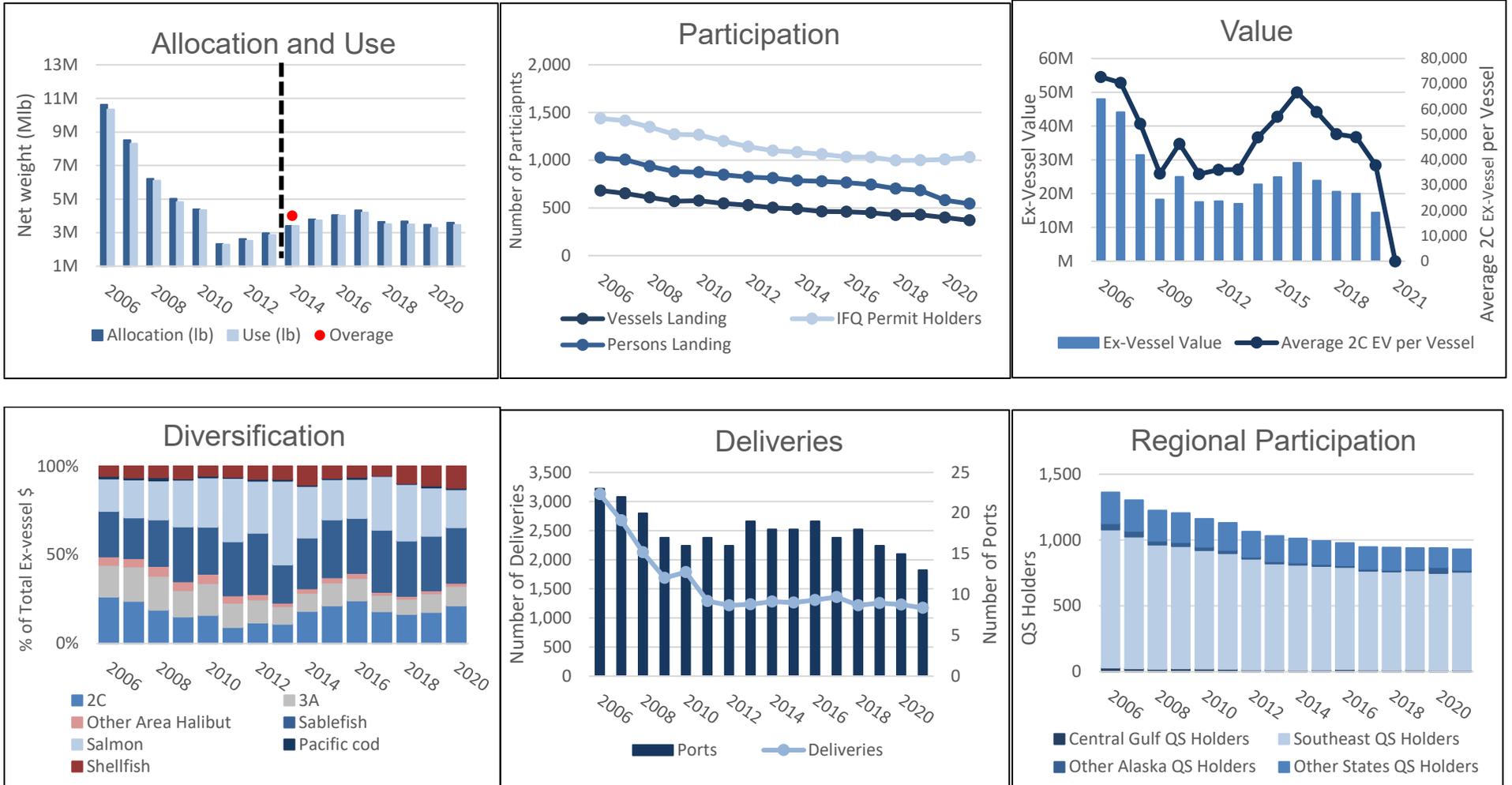
Tables corresponding with all of the dashboard metrics are all included in the Appendix.

impact of the Pacific halibut, the IPHC has also designed a series of surveys to gather information from the sectors relying on the Pacific halibut resource, intended to fill identified socioeconomic data gaps. The survey target groups are commercial fishermen, processing plant operators, and charter business owners. Preliminary results are presented in Hutniczak (2021).

While economic impacts can provide important contextual information about the economic interdependencies of a resource and the potential distributional impacts of an allocation, NMFS Procedural Directive 01-119-02 warns that an allocation that maximizes economic impacts could reward the highest spender or highest cost producer, and thereby promote inefficient practices and processes and reduce economic efficiency relative to alternative allocations. Ideally these metrics would be paired with a comparable understanding of the marginal value in all sectors (as well as the other factors highlighted in NMFS Procedural Directive 01-119-02). Although some research has been conducted on the economic value of charter fishing for non-Alaska resident anglers (Lew & Larson 2015) and resident anglers (Lew & Larson 2017), particularly in terms of willingness to pay to relieve different management measures; there is currently a lack of literature on comparable marginal economic values between the disparate commercial and charter sectors.

6.1 Area 2C and 3A Commercial Halibut Sector

Area 2C Commercial Halibut



Area 3A Commercial Halibut

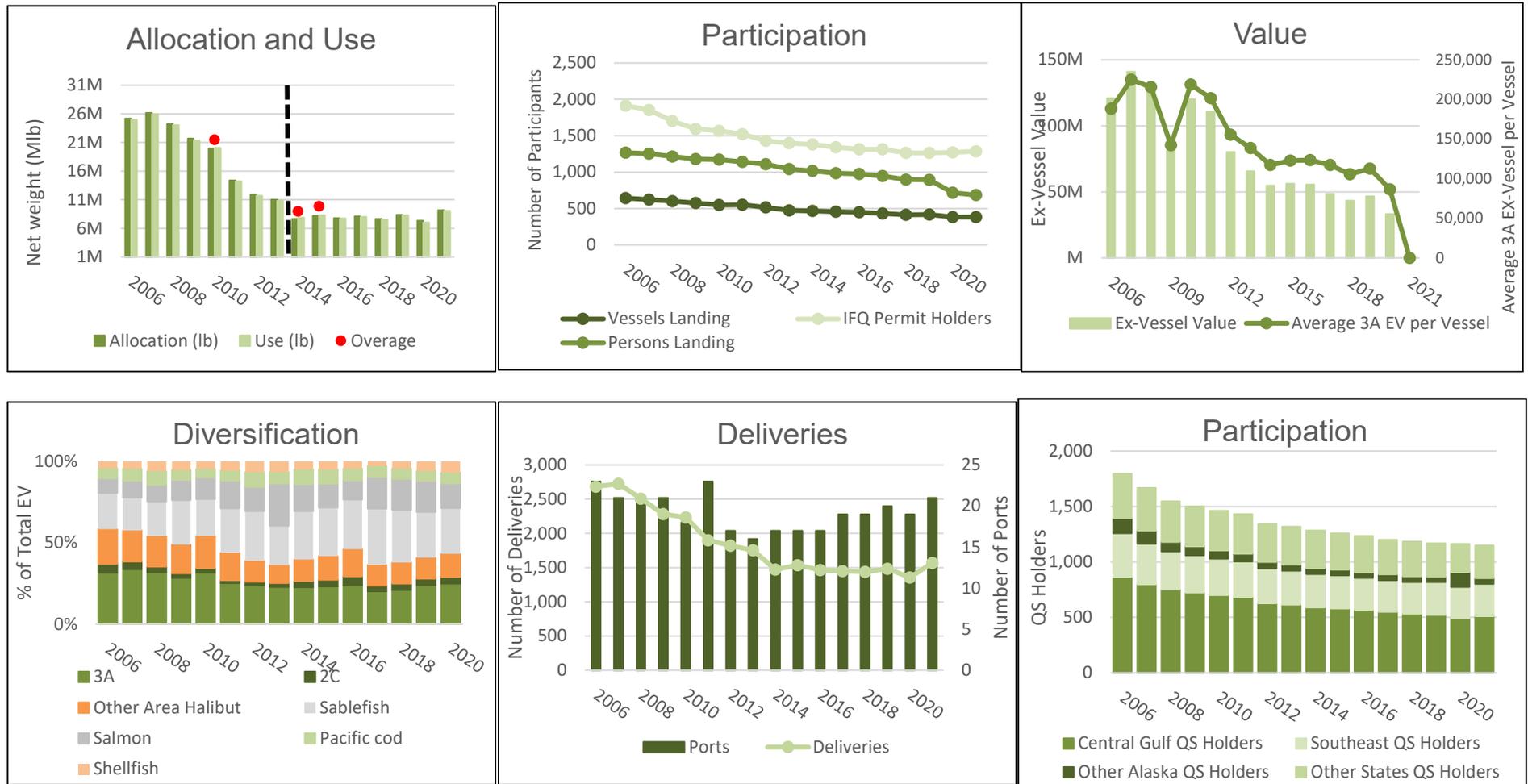


Figure 19 Dashboard metrics for the Area 2C and 3A commercial halibut fishery

Sources: Diversification figure sourced through ADF&G/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT; all other figures sourced through NMFS Restricted Access Management (RAM) division and compiled by AKFIN

Prior to 2014, the allocation includes IFQ TAC and the use represent commercial IFQ landings. After 2014, the allocation includes the IFQ TAC + the projected discard mortality for the commercial fishery (the commercial halibut portion of the CCL) and the use includes IFQ landings + estimated discard mortality. Slight overages in in 2014 in both Areas and 2015 in Area 3A was a result of higher than projected discard mortality. Note that estimated discard mortality may also include a small amount of discard mortality associated with the Area 2C Metlakatla fishery and FISS and research in both Areas

Since 1995, the commercial halibut sector off of Alaska has been managed under an Individual Fishing Quota (IFQ) Program. The fundamental component of the IFQ program is quota share (QS), issued to participants as a percentage of the QS pool for a species-specific IFQ regulatory area, which is translated into annual IFQ allocations in the form of fishable pounds. The IFQ Program was developed to address issues associated with the race-for-fish that had resulted from the open-access and effort control management of the halibut and sablefish fisheries. Specifically, the Council identified several problems that emerged in these fisheries due to the previous management regime, including increased harvesting capacity, decreased product quality, increased conflicts among fishermen, adverse effects on halibut and sablefish stocks, and unintended distributions of benefits and costs from the fisheries (NPFMC & NMFS 1992).

Allocation and Use

One of the realized benefits of the IFQ Program management structure is greater precision and individual accountability in harvesting the full allocation designated to the commercial halibut sector. The dashboard figures showing allocation and use demonstrate the commercial IFQ TAC versus IFQ landings in years prior to the CSP (2006- 2013) and IFQ TAC + projected discard mortality versus IFQ landings + estimated discard mortality in the years under the CSP (2014 – 2021). This represents the commercial sectors' portion of the CCL under the CSP. Area 2C has consistently used between 94% (in 2020) and 100% (2010 and 2014) of its allocation. Area 3A typically uses 99% of its allocation but has ranged from 95% (2020) to 103% (2014). The slight overages in removals that appear for Area 3A in 2010, 2014, and 2015 are primarily a result of higher than projected discard mortality in that year.²⁰ However, discard mortality estimates also include a small amount of mortality associated with Area 2C Metlakatla fishery and FISS and research in both Areas.

Following a similar trend to the spawning stock biomass (Figure 6) the commercial halibut allocation for Area 2C declined until 2011, at which point allocations slightly increased until 2017 and then stabilized around 3.5 Mlb 2018-2021. In Area 3A, the commercial allocations continued to decline until 2014, at which point they have somewhat stabilized between 2015-2021, with an average of 7.75 Mlb allocation. Some of the stabilization in allocations are in part due to IPHC Commissioner decisions regarding coastwide and Area-specific TCEY (for example reference vs adopted TCEY in Area 3A as highlighted in the Report of the 96th Session of the IPHC Annual Meeting).

Participation Rates

In developing the IFQ Program, the Council sought to address the problems with the race for fish, including excess harvesting capacity and gear conflicts that had resulted from the previous management regime. At the same time, the Council also sought to limit excessive consolidation through additional provisions implemented in the program. Participation in the halibut IFQ fishery changed drastically in the first few years of the IFQ Program (NPFMC/ NMFS 2016). Within the provided timeseries, participation rates in terms of persons landing IFQ and vessel participation have continued to decline slowly in both the Area 2C and Area 3A fishery. The number of IFQ permit holders in Area 2C and 3A is another metric that has typically been declining each year.

Ex-Vessel Value

The overall ex-vessel value of the halibut IFQ fisheries in Area 2C and 3A have declined with similar patterns to the decline in the catch limits throughout the timeseries. Area 3A has seen more of a steady decrease with a high of \$141 million in 2007 and \$108 million less (\$33 million) in 2020. Area 2C has seen substantial declines as well, but with more fluctuation. The maximum ex-vessel value for the

²⁰ When just considering IFQ landings, Area 3A harvested 101% of its IFQ TAC in 2010, 100% of its IFQ TAC in 2014, and 99% of its IFQ TAC in 2015.

timeseries was \$48 million in 2006 with a minimum of \$14 million in 2020. In addition to a relatively lower catch limit in each of these Areas in 2020, halibut ex-vessel prices were lower in 2020 due to impacts from the COVID-19 pandemic (Hutniczak 2021). While the number of participating vessels has declined in Area 3A the average ex-vessel value per vessel has also declined. Area 2C again has more variability in average ex-vessel value per vessel with a spike in 2016, bringing the average per vessel value up to \$66,655.

Diversification

Commercial halibut harvesters in both Area 2C and 3A tend to have a diverse portfolio of fisheries they participate in, but these portfolios differ by Area. The diversification figures demonstrate the fisheries that Area 2C and 3A vessels earn revenue from and the proportion of the fleet's ex-vessel revenue that has come from each fishery between 2006 through 2020. For instance, of those vessels that harvest Area 2C halibut, revenue from the Area 2C halibut fishery has represented between 9% (2011) and 26% (2006) of the fleet's overall ex-vessel revenue. The Area 2C halibut vessels also rely on revenue from Area 3A halibut fishing, salmon fishing, as well as sablefish IFQ fishing. Halibut fishing in other Areas, Pacific cod fishing and shellfish fishing have typically made up a small portion of the fleet's revenue in Area 2C.

For those vessels that harvest Area 3A halibut, from 2006 through 2020, an average of 26% of the fleet's ex-vessel revenue is derived from the Area 3A halibut fishery, with an average of 27% attributed to the sablefish fishery. For Area 3A, throughout the presented timeseries, an average of 16% of the fleet's ex-vessel revenue came from harvesting IFQ halibut in Areas other than 2C and 3A, an average of 15% came from harvesting salmon, and on average less than 10% came from either Pacific cod or shellfish landings. Overall diversification has remained somewhat consistent over the years for both Areas, although there have been some years (e.g., 2013) where revenue from salmon fishing has made up a greater percentage of total ex-vessel revenue for vessels in Area 2C.

Ports and Deliveries

The figures also illustrate trends in the number of ports and deliveries associated with Area 2C and 3A commercial halibut. The table in the Appendix supplements this information with the number of registered buyers (i.e., those authorized entities accepting deliveries of IFQ halibut). Throughout the timeseries, the ports of Petersburg, Sitka, Juneau, Ketchikan, and Craig have received the greatest amount of Area 2C halibut each year. The number of ports has ranged from a maximum of 23 (in 2006) to a minimum of 13 (in 2021). For Area 2C, the number of deliveries declined until 2012, similar to the decline in commercial TAC, and became relatively more consistent in the years that follow (2013 through 2021). Since 2013, Area 2C has had an average of 1,258 deliveries, which represents an average of 2.8 trips per vessel.

The ports with the greatest amount of Area 3A halibut delivered each year within the timeseries includes Seward, Kodiak, and Homer; with Homer listed as the port receiving the greatest amount of Area 3A halibut in 11 of the 16 years. Within the presented timeseries, the number of ports has ranged from a maximum of 23 (in 2006) to a minimum of 16 (in 2013). Again, similar to trends in Area 3A commercial TAC, the number of deliveries declined in Area 3A until 2014, and since has become relatively more consistent. With an average of 1,471 deliveries from 2015 through 2021, vessels made an average of 3.5 deliveries each throughout that time period.

Regional Participation

Regional participation is demonstrated in the figures by four regional categories (Southeast QS holders, Central Gulf QS holders, Other Alaska QS holders, and Other State QS holders) connected to communities by a QS holder's registered address. The Appendix also includes information on vessel

owner regional association. In terms of QS holders, the figures for both Areas demonstrate a consistent decline in the total numbers of QS holders throughout the timeseries. For Area 2C, the largest number of QS holders are associated with Southeast which had a maximum of 1,049 QS holders in 2006 (within this 2006 through 2021 timeseries) and a minimum of 737 QS holders in 2020, representing a 30% decline. Between 2006 and 2020 the number of Central Gulf QS holders declined by 60%, the number of Other Alaska QS holders declined by 6% and the number of QS holder from other states declined by 38%. For Area 3A, the largest number of QS holders are associated with the Central Gulf which had a maximum of 865 QS holders in 2006 and a minimum of 493 QS holders in 2020, representing a 43% decline. Within the 2006 through 2020 time period there was also a 36% decline in Area 3A QS from other states outside of Alaska, a 28% decline in QS holders from Southeast, and a 2% decline in Area 3A QS holders from other Alaskan communities.

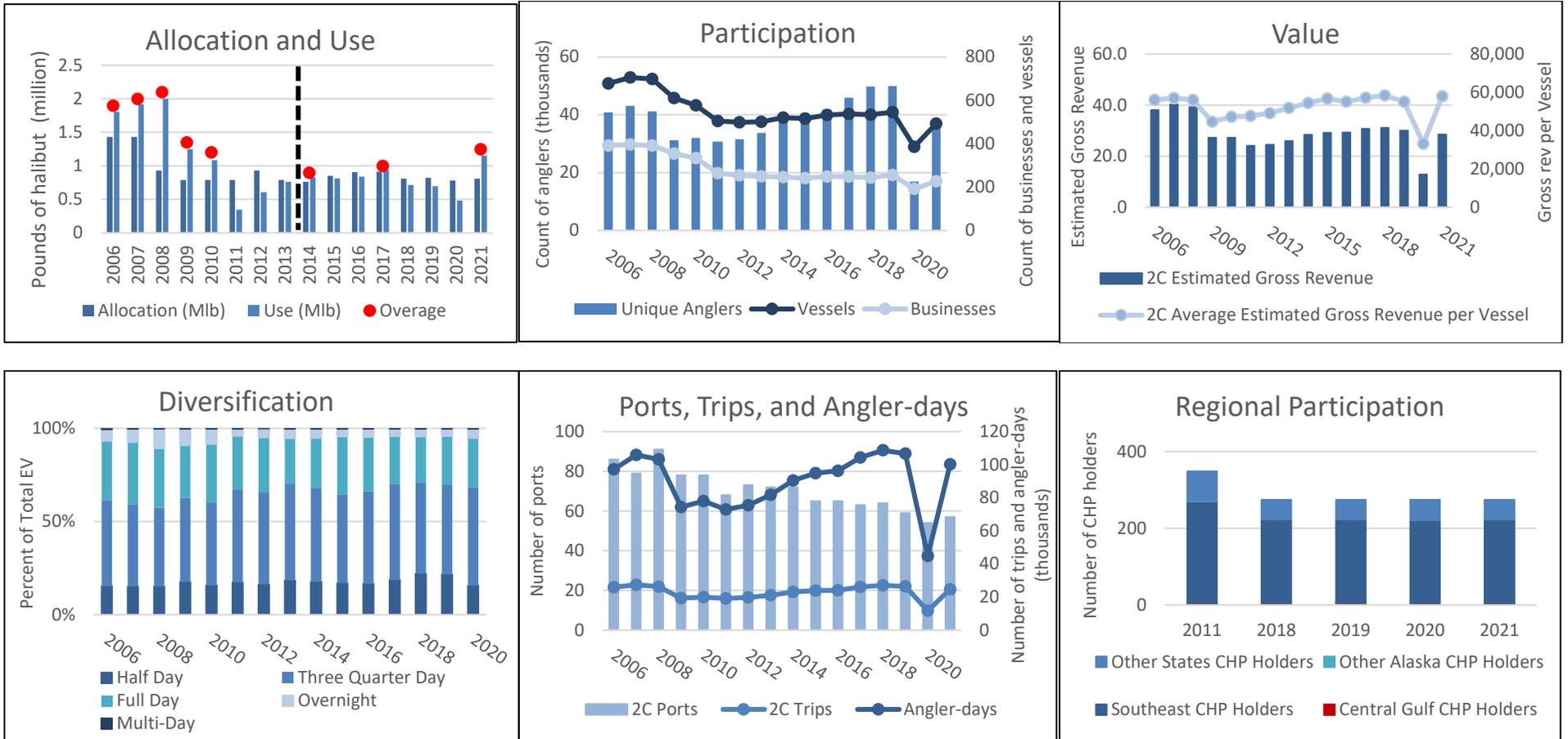
Similar to what is seen in pervious figures on participation, the number of total participating vessels has demonstrated a continuous decline for both Areas over the time period presented. The majority of vessels participating in the Area 2C halibut fishery are associated with Southeast communities (on average, 86% of the vessels). From 2006 through 2020, the number of vessels from Southeast communities participating in the Area 2C halibut fishery declined from a maximum of 567 vessels (2006) to a minimum of 342 (2020), a 40% reduction. The largest proportion of vessels that participate in the Area 3A halibut fishery come from the Central Gulf, 40% on average throughout the 2006 though 2020 timeseries. However, similar to Area 2C, the number of vessels from Central Gulf communities participating in the Area 3A halibut fishery declined from a maximum of 301 vessels (2006) to a minimum of 177 (2020), a 41% reduction.

Summary

Overall, the allocation of the commercial halibut sector has been fully utilized within 6% of the full allocation each year shown in the dashboard figures for Area 2C and 3A. IFQ Program management structure allows for greater precision and predictability in harvesting the commercial halibut TAC. In both Areas there has been a substantial decline in the pounds available for harvest since the mid-2000s. In 2021, the Area 2C IFQ TAC was about one-third of what it was in 2006. This has greatly affected participation and value in the fishery. Participation (in terms of number of participating vessels) was greatly affected by the implementation of the IFQ Program (not shown in the dashboard metrics, but highlighted in NPFMC/ NMFS 2016), but there has been a continued gradual decline in vessel landings, persons landing, and number IFQ permit holders, throughout the 2006 through 2021 timeseries in both Areas. There has been more fluctuation in value (ex-vessel revenue and on a per vessel basis) for Area 2C, but recent data in both Areas (through 2020) demonstrate a declining trend. Regional participation (measured as QS holder associated region as well as vessel owner associated region in the appendix) has declined as a whole; however, ownership trends based on the regional groupings demonstrated shown proportional decline in all regional categories, with a slight increase in of Are 3A halibut QS being held by “other AK QS holders” (i.e., QS holders from Alaska but outside of Southeast Alaska and the Central Gulf).

6.2 Area 2C and 3A Charter Halibut Sector

Area 2C Charter Halibut



Area 3A Charter Halibut

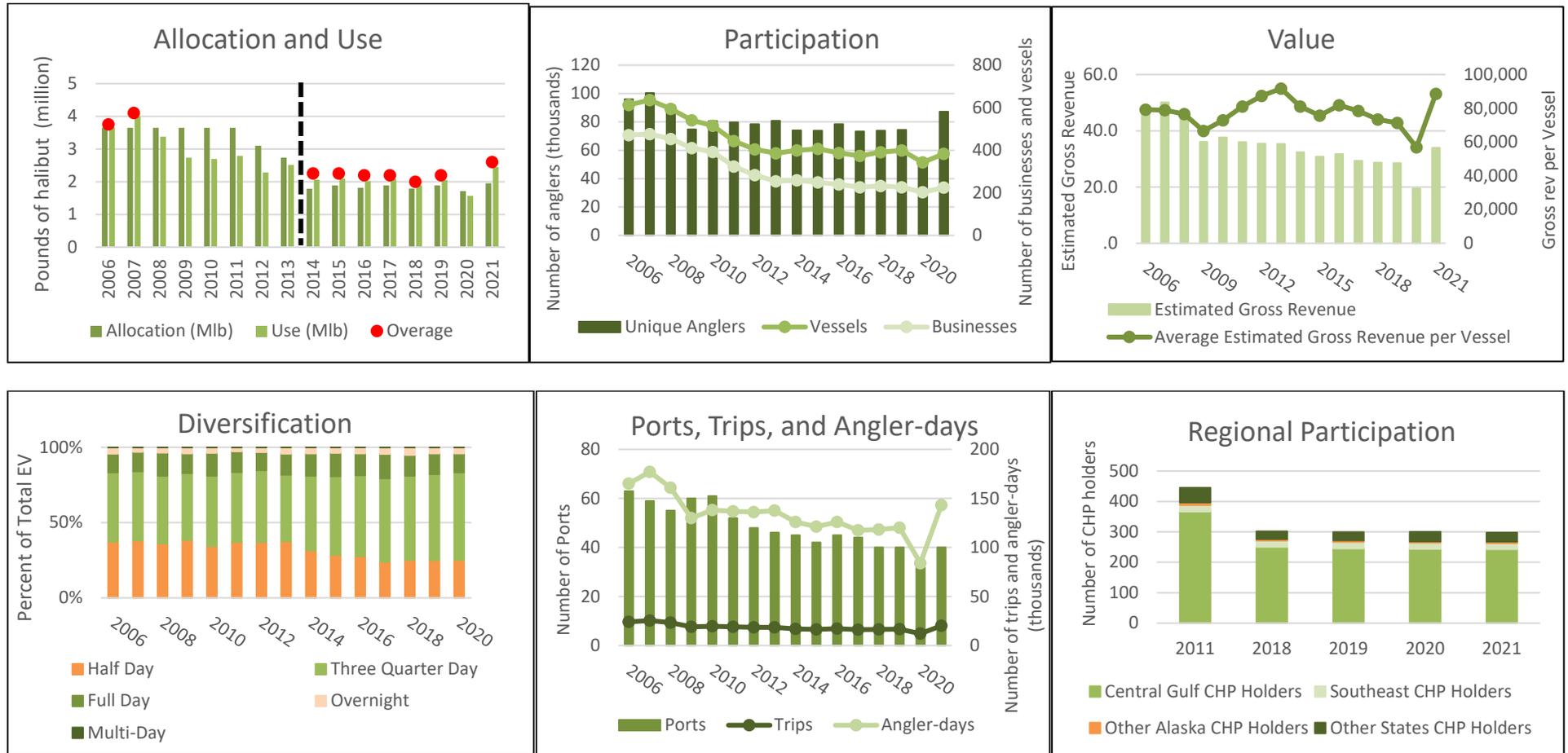


Figure 20 Dashboard metrics for the Area 2C and 3A charter halibut fishery

Sources: Use estimates prior to 2014 are derived from the Statewide Harvest Survey and do not include discard mortality. Use estimates from 2014 on include estimated discard mortality and are sourced from ADF&G saltwater logbook data provided by ADF&G. Participation, port, trip, and angler-days figures are also sourced through ADF&G saltwater logbook data provided by ADF&G. Values for 2021 in these figures are preliminary. Businesses, vessels and ports are included with the harvest of at least one halibut. A trip, unique angler or an angler-day is counted if there is a client record of a halibut harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded. It excludes days closed to charter halibut fishing and they exclude any recorded crew harvest.

The value and diversification figures are sourced through ADF&G saltwater logbook data assembled by AKFIN are to be used for estimation purposes only and may be subject to change with improvements in data quality. The total and per vessel estimated gross revenues are the product of angler-days multiplied by an average price. The creation of these metrics and further caveats are further described in the text.

Data for CHP holder community is sourced through NMFS RAM permits and licenses database, available at: [https://www.fisheries.noaa.gov/alaska/commercial-fishing/permits-and-licenses-issued-alaska#charter-\(sport\)-halibut](https://www.fisheries.noaa.gov/alaska/commercial-fishing/permits-and-licenses-issued-alaska#charter-(sport)-halibut). CHP holder information was only available for 2011 and 2018 – 2021. These counts includes CQE and MWR permits.

Allocation, Use, and Annual Management Measures

In order to understand the context of the allocation and use in the charter halibut sector, it is also important to understand the management structure (i.e., guideline harvest level (GHL) or CSP) and the management measures (e.g., bag limits, size restrictions day-of-the-week closures) that were in place at the time (Table 15 and Table 16).

Table 15 Area 2C charter halibut management measures

Year	Mgmt Type	Area 2C Charter Management Measures
2006	GHL	Two fish any size, State EO prohibiting crew harvest 5/26-12/31.
2007	GHL	Two fish (one ≤ 32"; effective 6/1), no crew retention 5/1-12/31 (State EO and Federal Rule).
2008	GHL	Two fish (one ≤ 32"), except one-fish bag limit Jun 1-10 (halted by injunction).
2009	GHL	One fish any size, no harvest by skipper & crew, line limit (effective 6/5).
2010	GHL	One fish any size, no harvest by skipper & crew, line limit.
2011	GHL	One fish ≤ 37", no harvest by skipper and crew, line limit.
2012	GHL	One fish ≤ 45" or ≥ 68", no harvest by skipper and crew, line limit.
2013	GHL	One fish ≤ 45" or ≥ 68", no harvest by skipper and crew, line limit.
2014	CSP	One fish ≤ 44" or ≥ 76", CSP provisions.
2015	CSP	One fish ≤ 42" or ≥ 80", CSP provisions.
2016	CSP	One fish ≤ 43" or ≥ 80", CSP provisions.
2017	CSP	One fish ≤ 44" or ≥ 80", CSP provisions.
2018	CSP	One fish ≤ 38" or ≥ 80", CSP provisions.
2019	CSP	One fish ≤ 38" or ≥ 80", CSP provisions.
2020	CSP	One fish ≤ 40" or ≥ 80"; changed to one fish ≤ 45" or ≥ 80" on 6/15/2020, CSP provisions.
2021	CSP	One fish ≤ 50" or ≥ 72", CSP provisions.

Source: NPFMC/ NMFS 2013 (Table 1-18) and updated based on ADF&G report 10/26/2021

CSP provisions means no harvest by skipper or crew. In addition, the State of Alaska regulations for Southeast Alaska still state that the maximum number of fishing lines that may be fished from a vessel engaged in charter activities is equal to the number of paying clients on board the vessel but cannot exceed six lines.

Table 16 Area 3A charter halibut management measures

Year	Mgmt Type	Area 3A Charter Management Measures
2006	GHL	Two fish any size, no limit on crew retention.
2007	GHL	Two fish any size, state EO prohibiting crew harvest 5/1-12/31.
2008	GHL	Two fish any size, state EO prohibiting crew harvest 5/24-9/1.
2009	GHL	Two fish any size, state EO prohibiting crew harvest 5/23-9/1.
2010	GHL	Two fish any size, no limit on crew retention.
2011	GHL	Two fish any size, no limit on crew retention.
2012	GHL	Two fish any size, no limit on crew retention.
2013	GHL	Two fish any size, no limit on crew retention.
2014	CSP	Two fish (one ≤ 29"), CSP provisions.
2015	CSP	Two fish (one ≤ 29"), 5-fish annual limit, Thursday closure (6/15-8/31), CSP provisions.
2016	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, CSP provisions.
2017	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 3 Tuesdays closed, CSP provisions.
2018	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 6 Tuesdays closed, CSP provisions.
2019	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 5 Tuesdays closed, CSP provisions.
2020	CSP	Two fish (one ≤ 26"), 4-fish annual limit, Wednesday and Tuesday closure, CSP provisions. On 6/15/20 begin fishing with two fish (one ≤ 32"), no annual limit, 7 days fishing per week, CSP provisions.
2021	CSP	Two fish (one ≤ 32"), Wednesday closure, CSP provisions.

Source: NPFMC/ NMFS 2013 (Table 1-18) and updated based on ADF&G report 10/26/2021

CSP provisions means no harvest by skipper or crew. Throughout the CSP there has also been a limit of 1 trip per CHP per day and 1 trip per vessel per day.

The charter halibut sector went through a series of management changes prior to the implementation of the CSP, which are more thoroughly described in other sources (e.g., NPFMC/ NMFS 2013; NMFS. 2017b). Until 2003, charter and unguided anglers were managed under the same two-halibut daily bag limit in all IPHC Regulatory Areas in Alaska. In 2003, NMFS implemented a final rule to establish a guideline harvest level (GHL) that identified target harvest limits for the charter fishery in Areas 2C and 3A (68 FR 47256, August 8, 2003). Charter yield from Area 2C exceeded the GHL each year between 2004 through 2010; in 2008 the sector harvested 114.7% over the Area 2C GHL. Area 3A exceed the GHL in 2004 through 2007 by an average of 2.9%. As the GHL alone did not appear to constrain harvest, NMFS and the IPHC implemented a variety of additional management measures in Areas 2C and 3A in an effort to constrain charter fishery harvests to the harvest limits established by the GHL. In 2011, the IPHC implemented a bag limit and size restriction of one fish ≤ 37 inches with no harvesting by skippers or crew in Area 2C in response to the continuous overage in this sector. This resulted in a substantial decline in charter halibut effort, with the total harvest 32% of what it had been in the previous year and 56.3% under the GHL.

In 2012, the Council adopted a new approach which requires annual analysis and recommendation of management measure to the IPHC for implementation in the upcoming season. This is the process that was officially adopted into the CSP in order to provide a timely and responsive set of management measures that take into account the most recent harvest projection information available and can provide more efficient utilization of the charter sector's allocation.

Area 2C under the CSP

The CSP was implemented in 2014, as described in Section 5, including the 2012 process by which the Council develops recommendations to the IPHC for charter annual management measures. Under this management system, charter fishery management became more restrictive in Area 2C to maintain charter

fishery harvests within the Area 2C CSP allocations. Area 2C charter representatives have typically recommended a reverse slot limit as a preferred management measure over other measures used in Area 3A (e.g., day-of-the-week closures). This is in part due to many operations' reliance on cruise ships for clientele and the challenges with scheduling around cruise ships as well as lodges that operate throughout the week.

The year 2020 was unique due to the onset of the COVID-19 pandemic and subsequent response, including a dramatic drop in out-of-state Alaskan tourism. In 2020, the charter fishery in Area 2C had a catch limit of 780,000 pounds and was originally set under a one-fish daily bag limit with a reverse slot limit that allowed the retention of a halibut of 40 inches or less, or 80 inches or more, and a prohibition on the harvest of halibut by skippers or crew. Due to the expected impacts of the COVID-19 pandemic, these measures were relaxed and the charter sector began fishing under a new set of measures beginning June 14, 2020 (85 FR 37023, June 19, 2020). The reverse slot limit was relaxed to allow the retention of a halibut of 45 inches or less, or 80 inches or more; however, Area 2C still ended up 38.1% below its allocation.

Since the CSP program began, Area 2C exceeded its allocation in 2014 (by 8.7%), in 2017 (by 2.8%), and in 2021 (by a preliminary estimate of 42.5%). The recommended management measures for Area 2C in 2021 had included a 35% "COVID buffer" due to expectations of the constraining impacts of the pandemic on angler effort in Southeast Alaska. The ADF&G analysis (ADF&G 2021a) demonstrated that realized removals were more similar to estimates without a COVID buffer. Although some Southeast ports were not up to pre-pandemic effort levels (i.e., Juneau and Ketchikan), harvest was near or greater than pre-pandemic levels likely due to a wider slot limit than in recent years and increasing angler success rates. All Area 2C ports saw substantially greater harvest and effort in 2021 relative to 2020.

Area 3A under the CSP

In Area 3A, a two-fish daily bag limit with no size limits was maintained until the CSP went into effect in 2014. Since 2014, the Area 3A charter fishery has continued to be managed under a two-fish daily bag limit with no harvest by charter captains or crew, but management measures have become increasingly restrictive each year to maintain charter fishery harvests within the CSP allocation. Other types of restrictions have included annual limits on the number of halibut a charter angler can harvest, one halibut trip per vessel per day, one trip per CHP per day, a size limit on one of the two fish in the daily bag limit, and day-of-the-week closures. Since the CSP program began, Area 3A has been over its allocation in every year except for 2020 (between 5.4% up to the preliminary estimate in 2021 of 25.9% over). Predicting harvest in Area 3A is more difficult given the combination of measures and the inability to fully predict angler response to the types of measures used (e.g., if Wednesdays are closed to charter halibut fishing, will anglers be able to rebook on a different day of the week?). It is also difficult to retrospectively identify the "cause" of the overage in this area.

In 2020, Area 3A had an allocation of 1.710 MIb and began the year with a two-fish daily bag limit with a 26-inch maximum size limit on one fish; a 4-fish annual limit for each charter fishery angler; closures to charter fishing on Wednesdays and Thursdays throughout the year; a limit of only one charter trip per day per vessel (and per charter halibut permit); and a prohibition on the harvest of halibut by skippers or crew. These measures were also relaxed mid-season due to the expected impacts of the pandemic. The size limit changed to a 32-inch maximum size limit on one fish, and the annual limits and day-of-the-week closures were withdrawn beginning June 15, 2020. Area 3A ended up 8.4% under its allocation for 2020.

In 2021, a 25% "COVID buffer" in Area 3A also proved to be too high. Area 3A preliminary removals were 25.9% over the allocation. The 2.454 MIb estimated removals was more in line with the December 2020 projections of 2.470 MIb of removals, which did not include a COVID buffer. In Southcentral, both

effort and harvest had increased in all ports, and were up past pre-pandemic levels in many ports. Harvest per unit effort was also greater in most 3A ports, indicating more fish harvested per angler per day.

Participation

In the dashboard figures participation is represented in terms of the number of charter businesses with anglers retaining halibut, the number of unique vessels that have been associated with halibut charter trips, and the number of unique anglers with either bottomfishing effort recorded in the logbook (either stat areas or hours) or who had at least one halibut recorded in the logbook.

For Area 2C, these metrics show different trends in participation. In Area 2C, the number of charter businesses have generally declined from 2007 through 2018, with some slight variability. The largest decline was 70 less businesses harvesting halibut between 2010 and 2011. The number of unique anglers declined from 2007 until 2011, at which point the number began rebounding until 2020. The number of vessels also began to rebounded after a decline from 2007 through 2013. In 2020, under the COVID-19 pandemic all metrics of participation were down, with an increase in 2021 which did not reach Area 2C pre-pandemic levels.

The participation metrics for Area 3A have all had more of a consistent downward trend from 2007 through 2013. The number of vessels and unique anglers generally leveled off until the pandemic in 2020. The number of businesses continued to slowly decline, with some variability. Under the pandemic, all metrics declined, but all metrics rebounded in 2021. The number of charter halibut businesses and vessels did not quite reach pre-pandemic levels in 2021; however, the number of unique anglers exceeded pre-pandemic levels. This may have been related to relaxed charter halibut management measures in 2021 in addition travel that felt more appealing (e.g., less travel restrictions, higher vaccination rates, etc.)

Estimated Value

The objective of the figures on estimated value is to demonstrate trends of within-sector gross revenue and average gross revenue per vessel as it relates to angler-days (i.e., essentially the number of times an angler paid to fish halibut on a charter). In order to arrive at an estimated value for charter gross revenue the analysts relied on the number of angler-days from ADF&G logbook data and a price structure for trips based off of information collected in the 2017 Alaska Saltwater Sport Fishing Charter Business Survey and analyzed in Lew & Lee (2019).²¹ ADF&G logbook data was used to identify the proportion of trips that fell into different categories (half-day, three quarters-day, full day, overnight, or multi-day) also used in the diversification figures.²²

The figures on estimated values include several important caveats:

²¹ The Alaska Saltwater Sport Fishing Charter Business Survey, administered in 2011 -2013, 2015, and 2017 has also routinely gathered information on gross revenue (and expenditures) from charter businesses. Population-level estimates are between \$111.54 million (2017) and \$177.63 million (2013) in total revenues for businesses (Lew & Lee 2019). These estimates are much greater than the value estimates provided in the dashboards for several reasons. The survey estimates reported in Lew & Lee (2019) are based on charter revenue from a variety of sources including charter trips (not only halibut), non-fishing charter trips, client referrals, and CHP sales/leasing revenue. The estimates from Lew & Lee (2019) do not depend on a formulated pricing structure which may leave out additional value such as the costs of booking a private trip. The revenue estimates included in the dashboard are solely based on angler-days (with halibut or bottom-fishing effort) and a pricing structure with the additional parameters and caveats identified in this section. This allows for estimates throughout the time-series and keeps the values tied as closely as possible to the use of halibut.

²² The proportion of trips that fell into different trip categories (i.e., half-day, three quarters-day, full day, overnight, or multi-day) was sourced from ADF&G logbook data and compiled by AKFIN. These data are to be used for estimation purposes only and may be subject to change with improvements in data quality.

- It is not appropriate to compare these values to the total ex-vessel value or per vessel ex-vessel values in the commercial sector dashboards as these estimates of gross revenue inherently represent different types of values generated from the use of halibut in the charter sector and there are different assumptions built into these estimates. For example, the charter sector value metrics are scaled to angler-days, and therefore there are many other sources of revenue that are not included in these estimates (e.g., revenue generated from a lodge experience, revenue from non-halibut or non-fishing trips, leasing CHPs, etc.). Even if the analysts were seeking to isolate the revenue that specifically is derived from access to halibut, it could be that an operation would not be profitable enough to have salmon charter trips without augmenting halibut charter trips, for example. Disentangling the values derived from halibut would require special attention to and defense around what types of values are being included and why. Given the different ways the sectors derive value from the use of halibut, this analysis does not seek to create a value metric that is truly comparable; the primary goal is to demonstrate trends of within-sector value changes within the identified parameters.
- Angler-day is defined as any day where halibut were harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded. This metric could over-estimate the number of paid halibut trips because it may include a trip that was taken to target rockfish, for example. However, ADF&G logbook forms do not specifically ask about an angler's *intention* to target halibut and this broader definition also includes anglers that paid to target halibut but did not harvest one, which is meant to be included in this metric.
- Analysts sought to estimate average charter halibut trip prices for the timeseries; however, there is no annual comprehensive data collection on price or revenue information for the charter halibut sector. Moreover, charter trips are often priced differently according to the length of the trip, the species targeted, the time of season (i.e., peak season versus early/ late season), and some operations also have differentiated prices for anglers wishing to book a private trip. Additionally, charter halibut trips that are paired with additional values (e.g., the accommodations and experience of a lodge, food/ beverages, packing and shipping of fish, etc.) will often have the charter price incorporated in the overall cost of the package.

In order to generate price estimates, analysts used the price provided through the 2017 Alaska Saltwater Sport Fishing Charter Business Survey, which was the most recent survey conducted on costs and earnings in the charter sector. The analysts used the population-level estimates of average reported price for halibut trips, multi-species, and two-species trips, to the extent these estimates could be produced for each category.²³ These prices are divided into trip categories representing the length of trip as shown in Table 17. Linking the price exclusively to the length of the trip means these prices do not represent any other values generated by the charter business such as revenue derived from a lodge experience or the benefit of a private charter. Additionally, using these same prices (adjusted for inflation) throughout the timeseries, assumes that the prices have not drastically changed throughout this timeseries. Analysts do not know whether this is the case; however, Lew & Lee (2019) demonstrated little variation in prices reported across years of the survey (also conducted in 2011, 2012, 2013, and 2015).

- Analysts categorized the trips according to different “trip categories” as seen in Table 17. The trip categories correspond with different hours of fishing effort that were identified in the ADF&G logbook. Another caveat to the price structure used is that not all charter operators would classify their trip categories by these same thresholds of time.

²³ For three-quarter day trips, the average price was estimated from halibut and two-species trips, and for over-night trips the average price was estimated from multi-species and two-species trips.

Table 17 Trip prices used in estimating gross revenue values for the charter sector

Trip category	Price (in 2017 USD)
Half-day (<5 hrs)	\$224.50
Three quarters-day (5-7 hrs)	\$293.10
Full day (8-9 hrs)	\$353.15
Overnight (10-16 hrs)	\$551.65
Multiday (>16 hrs)	\$1,742.97

The estimated gross revenue metrics produced follows a similar trend as angler-days during the presented timeseries (2006 through 2020). For Area 2C, estimated gross revenue from charter halibut trips peaked in 2007 and 2008 at about \$39.7 million. There was a decline in 2009 which aligned with the decline in Area 2C angler-days. This was the first year Area 2C operated under a 1-fish bag limit, and likely tourism was experiencing impacts from the global recession as well. In 2010, there was a slight increase in angler-days and gross revenue, followed by a decline in 2011, which aligned with more restrictive management measure of 1-fish \leq 37 inches. From 2012 to 2018, the angler-days and estimated gross revenues in Area 2C increased. Similar to other metrics angler-days and estimated gross revenue both declined drastically in 2020 during the beginning of the pandemic.

For Area 3A, estimated gross revenue based on charter halibut trips peaked in 2007 at about \$50.2 million, aligning with the peak number of angler-days within the presented timeseries. Both angler-days and estimated revenue then declined until 2009, despite unchanged management measures in this Area. Again, external economic factors (like the global recession) likely played a role in this change in angler demand. Between 2010 and 2019, Area 3A has experienced a general downward trend, with some variability in both angler-effort as well as estimated gross revenue. Management measures implemented with the start of the CSP may have had an impact on this trend, but in particular day-of-the-week closures most directly would decrease angler-days and the revenue derived from those days, unless the anglers were able to rebook on open days. Area 3A also experienced a drastic decline in angler-days and associated gross revenue in the first year of the pandemic.

The average gross revenue per vessel simply divides the total estimated gross revenue derived from charter halibut trips by the number of vessels that are associated with the harvest of halibut throughout the timeseries. This metric follows a similar pattern as the total gross revenue in Area 2C. The Area 3A per vessel gross revenue diverges from the patterns of the total gross revenue in Area 3A in 2009 through 2013 due to decline in the number of participating vessels.

Diversification

There are a number of types of diversification that could be considered relative to charter halibut businesses. Operations may diversify in terms of target species or services they offer (e.g., hunting, wildlife/ glacier viewing, rental boats, etc.). Individuals may diversify in terms of other employment. Some of these types of diversification are described in current literature. For example, Beaudreau et al. (2018) describes a shift in species diversification for charter operations in both Area 2C and 3A since the 1990s. This analysis used semi-structured interviews with charter captains and an analysis of ADF&G logbook data to understand changes to harvesting patterns both in terms of introducing new target species as well as increased retention of certain species (e.g., rockfishes, sablefish, and Pacific cod). In this study, charter captains from Southeast attributed harvest diversification to the additional restriction in the charter halibut fishery, whereas charter captains from Southcentral highlighted changing angler interests and the availability of other species.

Additionally, the Alaska Saltwater Sport Fishing Charter Business Survey asked respondents what percent of their total annual household income was earned through their charter business. Lew & Lee (2019) illustrate that for the respondents of the 2017 survey, about 85% of respondents reported some household income being generated outside their charter business. This is similar to responses from previous surveys (2011, 2012, 2013, and 2015), with the largest proportion of respondents consistently stating that income from their charter business accounted for between 1 and 25% of their total annual household income (Lew & Lee 2019). It is also worth noting that there is substantial diversity in charter operations, with the vast majority catering to less than 390 halibut angler-days per season, but some businesses catering to several thousand (NPFMC 2021b).

The figures in the dashboard metrics illustrate diversification in terms of the types of halibut trips offered (i.e., half-day trip, three quarters-day, full day, overnight, or multi-day), which was also used to generate the value metrics. These halibut trips could include trips where other species were harvested, which may render a higher price. Many charters also offer non-halibut species trips; however, these were not evaluated at this time. As previously described, trips were categorized according to duration as identified in the ADF&G logbook data²⁴ and described in Table 17.

Based on these definitions, three-quarter day trips are the most popular for both Area 2C and 3A. In Area 2C the second most popular trip is a full day, whereas in Area 3A the second most popular trip is a half-day. Overnight trips are more common in Area 2C than in 3A, representing an average of 5.8% of the trips in 2C compared to 3.8% of the trips in Area 3A. Multi-day trips, in which the logbook notes more than 16 hours on the water at one time, are rare in both Areas.

Angler-day, Trips, and Ports

Angler-days is a measure of effort defined as any day where halibut were harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded. Trends in angler-days are described previously in relation to the gross ex-vessel value estimates. Preliminary data from 2021 demonstrate a rebound in the number of angler-days after 2020. Area 2C did not quite reach to 2019 levels, whereas the number of angler-days in Area 3A were the highest they have been in the last 12 years. Additional figures in the Appendix (Figure 22 and Figure 23) also demonstrate that there have been differing trends in angler-days (effort) by sub-area.

The number of ports represents the number of locations identified in the ADF&G logbook as the “community or port where trip ended (where fish or clients were off-loaded from vessel)” and that are associated with halibut charter trips. This includes most of the major harbors in Area 2C and 3A, but some of the most active “ports” are also the location of remote lodges. Likely due to the number of remote lodges, Area 2C has consistently had a higher number of ports than Area 3A, with an average of 70 ports relative to Area 3A’s average of 48 ports, 2006 through 2021. Both Areas appear to be experiencing a gradual decline in the number of ports with some variability throughout the timeseries. This is similar to the pattern of decline in the number of businesses in both Areas.

There was a consistent pattern in the number of charter trips (where halibut was retained or days that were open to halibut retention where bottomfish hours or statistical areas were recorded) and even a very similar number of trips for both Areas between 2006 and 2011. At this point the number of trips in Area 2C began to increase and the number of trips in Area 3A began to decrease, similar to the divergence in angler-days. Trips in both Areas declined drastically in 2020 until they reached about the same level (near 12,000 trips). While preliminary estimates demonstrate trips in both Areas have rebounded in 2021

²⁴ These ADF&G logbook data compiled by AKFIN are to be used for estimation purposes only and may be subject to change with improvements in data quality.

relative to 2020, similar to other metrics Area 2C is not at pre-pandemic levels while Area 3A exceeded pre-pandemic levels.

Regional Participation

Regional participation is demonstrated in the figures by four regional categories (Southeast CHP holders, Central Gulf CHP holders, Other Alaska CHP holders, and Other State CHP holders) connected to communities through a CHP holder's registered address.²⁵ These CHP holder communities were only available from NMFS Restricted Access Management (RAM) Program as the initial allocations (2011) and 2018 through 2021. In Area 2C there was a total of 578 CHPs and 274 CHP holders in 2021. In Area 3A there was a total of 488 CHPs and 298 CHP holders in 2021.

For both Areas 2C and 3A, the majority of CHP holders have registered addresses in the corresponding Area (on average, 79% of 2C CHP holders have an address in a Southeast Alaska community and 82% of 3A CHP holders have an address in a Central Gulf community). Area 2C has a greater proportion of CHP holders associated with addresses outside of Alaska (19% on average) relative to Area 3A (9.8% on average). Less than 2% of Area 2C CHPs on average are held by CHP holders from the Central Gulf while Area 3A has on average 6.3% of CHP holders associated with an address in Southeast Alaska. There are only a few CHP holders associated with other Alaska locations. For Area 2C, the communities with the greatest number of CHP holders include Sitka, Ketchikan, Juneau, Craig, and Petersburg. For Area 3A, the communities with the greatest number of CHP holders include: Homer, Kodiak, Soldotna, Seward, Ninilchik, and Anchorage.

Originally, a number of interim permits were issued while in a state of appeal. Some of these CHPs from the 2011 dataset were later changed (e.g., from interim status to non-transferable or transferable status) or rescinded when the permit holder's appeal was not successful. Since that time, the figures demonstrate that there has been little change in the number of CHP holders in each regional grouping.²⁶

Summary

So far, the CSP management appears to have been more successful in the Area 2C charter halibut sector than 3A. Since implementation, Area 2C has more efficiently used its allocation relative to pre-CSP, remaining within or near its allocation, with the exception of the years of the COVID-19 pandemic. Excluding 2020 and 2021, Area 2C has been an average of 4.5% under its allocation since 2014, relative to an average of 22% over the allocation from 2006 through 2013 and much more variability in rates of use. In addition, the management measures imposed throughout the CSP have not drastically changed year-to-year; they have been a 1 fish reverse slot limit so far through the CSP. This makes the harvest projections more accurate, is easier for compliance and enforcement, and may have less of an impact on angler demand. Since implementation of the CSP (excluding pandemic years), angler-days and the estimated value derived from halibut charter fishing have increased in most years even in years with slightly lower allocations in Area 2C. In addition, participation (number of vessels and businesses) has been relatively consistent, with some decline in the number of ports. In addition, there has been little change in regional participation shown by CHP regional holdings in Area 2C.

However, the consistency in management measures is also based on the allocation established from the FCEY set at the IPHC. A decline in the Area 2C FCEY could require additional types of restriction (e.g.,

²⁵ These metrics include Community Quota Entity Permits and U.S. military's Morale, Welfare and Recreation Program permits.

²⁶ Note that since 2020 CHP have been required to be renewed annually. This process is in part to aid in the identification of permits that are no longer active and the identification of non-transferable permits that are no longer valid. With better accounting of permits, in the near future, the total number of valid permits may be different than those reported in previous years.

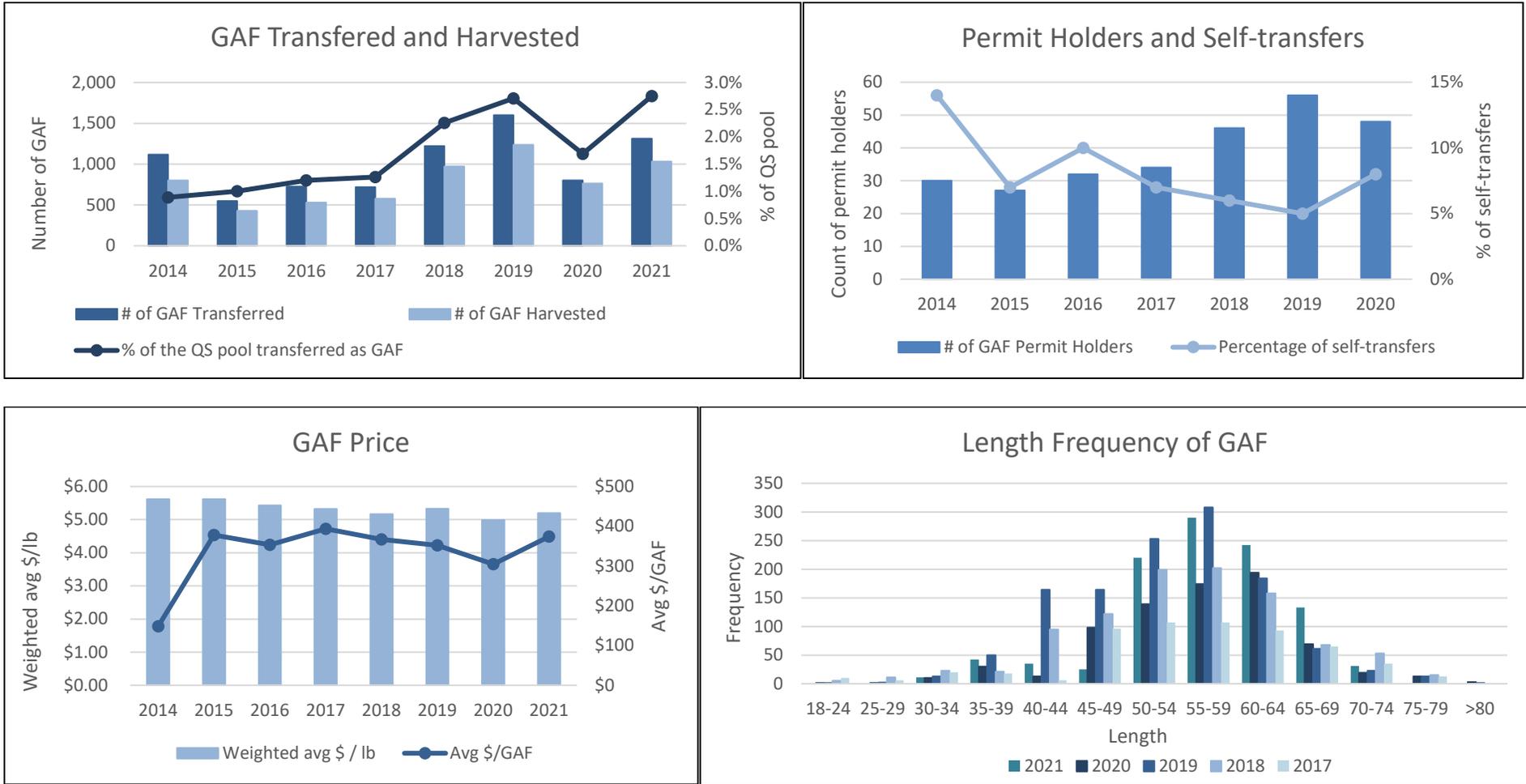
day-of-the-week closures and annual limits) that may have more of a drastic effect on charter operators' revenue, angler opportunity, and the ability to predict Area 2C removals. For example, the Charter Halibut Management Committee recommended a wide range of possible management measures for Area 2C in 2022, which could constitute a wide range of possible impacts and which depend on the outcome of the IPHC meeting. These impacts may be felt differently across the diverse operational structures in Area 2C. Moreover, as the lower slot limits became more restrictive in 2018 and 2019, after a drop in the charter catch limit, the predicted removals were not as accurate as they had been in pervious years under the CSP (11.6% under in 2018 and 15% under in 2019). It may be that there are certain thresholds for size limits in which angler/ operator behavior changes and these changes are more difficult for ADF&G to predict.

Area 3A has been on average 10.5% over its allocation during the CSP management (excluding 2020 and 2021), and over its allocation in most years of the CSP. Prior to the CSP (2006 through 2013), Area 3A removals were an average of 13.3% under its allocation. However, the Area 3A charter sector had operated under a 3.65 Mlb allocation up until 2011, during which time (2006-2011) the Area 3A FCEY had declined by 43%. Three years later, in the first year of the CSP, the allocation was set to less than half of the amount (1.782 Mlb). Pre-CSP Area 3A operated under restrictions similar to the unguided sector, essentially two-fish of any size. Since 2014, this sector has experienced increasingly restrictive management measures, (except for an additional Tuesday open in 2019 and the less restrictive measure under the COVID-19 pandemic). As described above, the suite of additional management measures imposed on Area 3A over of short period of years, increases the challenges of predicting harvest and average weight, particularly when tied to likely changes in angler behavior. However, unlike Area 2C, predictions of charter removals appeared to be gaining accuracy prior to the pandemic.

As highlighted in Section 5.1, the allocations chosen for Area 3A closely approximated the charter sector harvest in years prior to 2012 final action, adjusted for conversion to logbooks and the moratorium on harvest by skippers and crew; however, they did not insulate the sector from further declines in the CCL. Between 2012 and 2014, the Area 3A FCEY declined an additional 21%, which likely contributed to the challenges adjusting under the new management system.

6.3 GAF Metrics

Area 2C



Area 3A

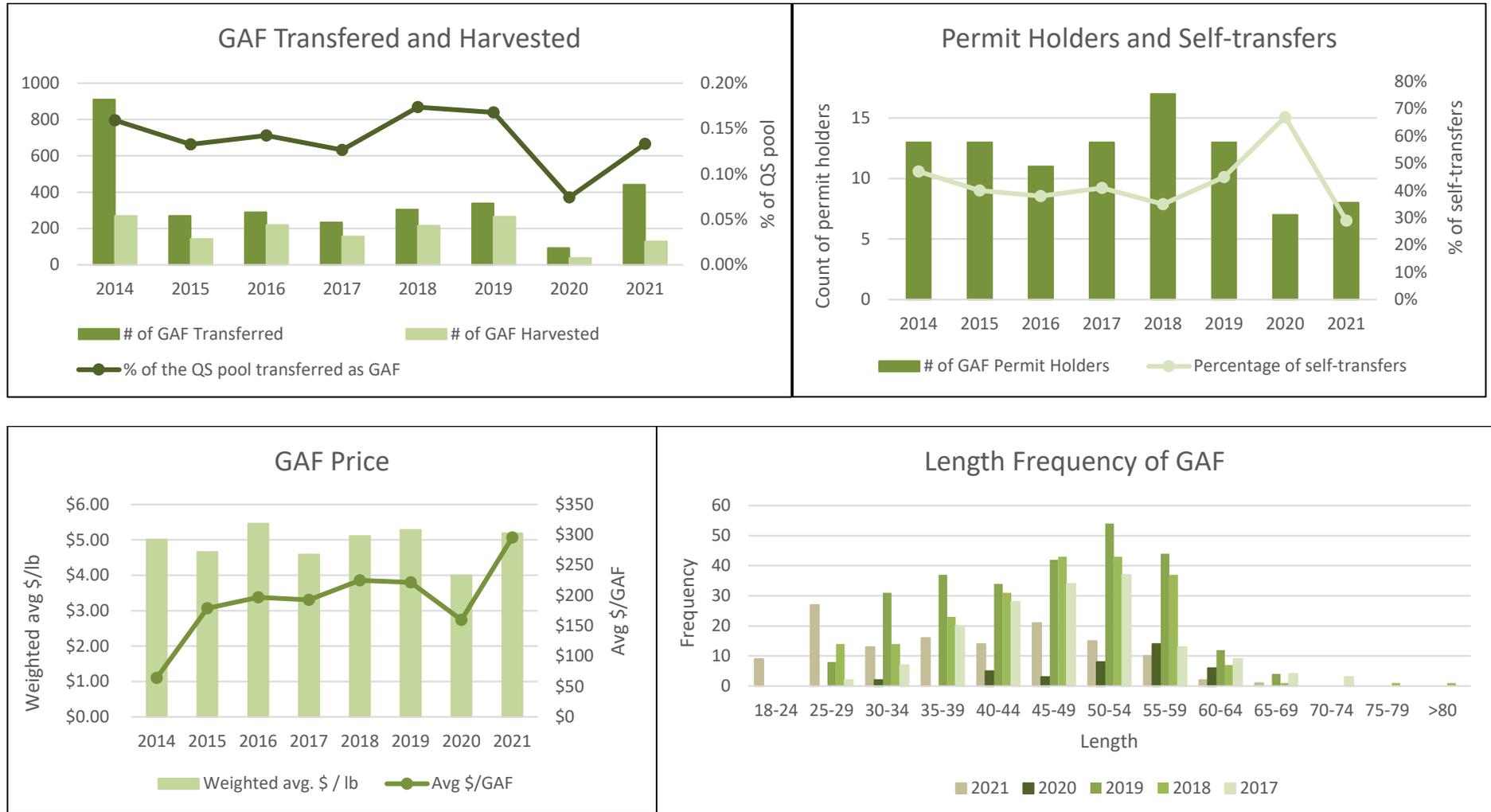


Figure 21 Dashboard metrics for the Guided Angler Fish (GAF) Program
 Sources: NMFS 2021 GAF report: <https://www.fisheries.noaa.gov/resource/document/guided-angler-fish-gaf-program-annual-reports>

The GAF Program allows for additional harvest of halibut above the charter sector's CSP allocation by allowing CHP holder to lease halibut IFQ from a commercial QS holder, as described in Section 0. The metrics included are sourced from NMFS annual GAF report²⁷ based on GAF transfer applications and reporting requirements associated with harvesting a GAF.

Limited Participation in GAF

The GAF dashboard metrics demonstrate that this additional transfer opportunity has not been widely used; however, some operations have incorporated it into their businesses, and a small number of businesses substantially use GAF each year. The extent of participation can be seen through the figures on **GAF transferred and harvested** as well as the number of **GAF permit holders** involved in the program. The figures demonstrate that between 2014 and 2021, the maximum pounds transferred as Area 2C GAF in one year was 97,680 lb in 2019 (1,601 GAF), which represents 2.7% of the Area 2C IFQ TAC in that year. This is an overall small amount of the QS pool and less than the transfer limits imposed through the RQE (10% for Area 2C and 12% for Area 3A; as described in Section 5.6.1). A study of the first two years of the GAF Program demonstrated these transfers tend to come from specific sub-markets of D and C Class shares (Krotez et al. 2016); however, in these two years the GAF transfers still represented a small proportion of the total amount of pounds of halibut IFQ transferred relative to within-commercial sector transfers. Throughout this timeseries, Area 2C charter anglers harvested between 27,849 net lb (2015) and 76,529 net lb (2021) of IFQ as GAF. GAF permit holders are a subset of the CHP holders; therefore, the number of GAF permit holders reflects the number of unique CHP holders participating in GAF. In Area 2C, a maximum of 59 CHP holders have received GAF in one year (2021), relative to 578 CHP holders in Area 2C overall (including CQE and MWR permit holders who can also be GAF permit holders). This amounts to a maximum of 10% of Area 2C CHP holders participating in one year.

Use in 3A relative to 2C

The dashboard figures show a clear picture of greater GAF participation in Area 2C relative to Area 3A. The figures demonstrate that between 2014 and 2021, the maximum pounds transferred as Area 3A GAF in one year was 13,524 lb in 2019 (338 GAF), which represents 0.2% of the Area 3A IFQ TAC in that year. Area 3A charter anglers harvested between 2,147 net lb (2020) and 10,652 net lb (2019) of IFQ as GAF. In Area 3A, a maximum of 17 CHP holders have received GAF in one year (2018), relative to 488 Area 3A CHP holders (a maximum of 3% of CHP holders participating). Moreover, of the few permit holder that have used GAF in Area 3A, an average of 43% of the pounds converted have been **self-transfers** (i.e., the same person held both the IFQ and the charter halibut permit and transferred the IFQ to themselves), relative to Area 2C which has an average of 8% self-transfers.

This lack of participation in Area 3A is despite lower **GAF prices** in Area 3A relative to Area 2C. For both Areas, the weighted average price per pound of GAF has been consistently between \$4 - \$5.75/ lb. Given the higher conversion rates for Area 2C, this tends to make a GAF overall more expensive in Area 2C. Excluding 2014 (because the conversions rates were based on average weights from the whole fishery in that year), the average price per GAF in Area 3A is \$210 relative to an average price per GAF in Area 2C of \$360.

Anecdotally, NMFS staff have heard that the cost of leasing GAF is sometimes wholly absorbed by a business. For example, a charter business may use GAF as a perk they are able to share with anglers for specific reasons (e.g., long-time repeat clients, client referrals, etc). This may be the case in particular for lodges if they have a greater profit margin and have the ability to incorporate these additional costs. Conversely, a charter business may lease GAF and make it available to their anglers when they catch a

²⁷ <https://www.fisheries.noaa.gov/resource/document/guided-angler-fish-gaf-program-annual-reports>

halibut that would otherwise be prohibited from keeping (e.g., a fish within the protected slot limit) if the angler is willing to pay the direct cost of the GAF. Additionally, there are likely some hybrid scenarios where the expense is shared between the angler and operator.

Different Role of GAF in 3A Relative to 2C

The particularly low participation in the GAF Program in Area 3A relative to Area 2C may be in part due to the different “product” that is being purchased with the use of GAF in each Area. Given the recent management measures, in Area 2C a GAF may be used by an angler to supplement a halibut that fits within the reverse slot limit (see Table 15 for reverse slot limits that have been adopted since the implementation of the CSP in Area 2C) or if an angler only catches halibut that are within the reverse slot limit, it may be the difference between retaining one halibut or none at all. For Area 3A, there has been a wider array of management measures imposed (see Table 16 for these measures); however, since the CSP was implemented anglers in Area 3A have consistently been able to harvest at least 1 fish of any size on days that are open to charter halibut fishing. Therefore, an Area 3A charter angler may be using GAF in order to retain a second fish of a larger size (i.e., they are paying for a larger second fish not necessarily a whole additional fish). The exception in Area 3A is that GAF could also be used to retain a halibut on a day that would otherwise be closed to charter halibut fishing or to retain a halibut above the annual limit.

The **length frequency** figures demonstrates that Area 2C GAF is typically used to retain a size of halibut within the protected slot limit. Since the implementation of the CSP, the lower range of the reverse slot limit for Area 2C has been between U38 to U50 with the upper slot limit O72 to O80. The length of GAF in the figure for Area 2C shows a fairly normal distribution within this range. These tend to be larger GAF than in Area 3A (hence the higher conversion rate for Area 2C). The distribution of length frequency in Area 3A appear to be much more variable over the years. Again, with more self-transfers and different types of measures to be addressed with GAF, operators may use GAF in variable ways in Area 3A. For example, in 2021 21% of the Area 3A GAF were in the 25 to 29-inch range. Given the relaxed management measures in Area 3A for 2021 relative to previous years, it is possible these GAF were used to retain smaller halibut during the Wednesday closure.

Similarities in Trends

While the dashboard figures illustrate substantial difference in GAF participation between Area 2C and 3A, there are some similar patterns to these use metrics. A relatively higher volume of GAF were transferred the first year of the program in both Areas, but the number of transfers dropped sharply in the following year. This may be in part due to the higher conversion factor when based on the GAF retained in the previous year, versus the conversion factor in the first year of the Program which was based off of the average weight of all charter halibut harvested by area in the most recent year without a size limit in effect. For Area 2C, the transfers and use of GAF has increased slightly each year since 2015, until 2020 when the COVID-19 pandemic disrupted patterns in angler effort. Participation unsurprisingly dropped off in both Areas for 2020, given the impacts on tourism and angler effort. Transfers and use of GAF increased for both Areas in 2021 despite relatively relaxed management measures that year. It is difficult to say with certainty, but it is possible that without the effects of the pandemic there may have been an increasing trend of GAF use, particularly in Area 2C.

Negative Perception

In addition to the expense (including transaction costs), and the differentiate “products” that can be purchased from leasing GAF in Area 3A relative to 2C, low participation rates in this Program are also likely related to negative perceptions of the Program. During the development of the CSP at the Council, records note minimal support for the GAF Program from charter representatives (for example, testimony

from Alaska Charter Association and Homer Charter Association, in Oct 2012).²⁸ Charter sector representatives testified to a number of aspects of the GAF Program they disagreed with including equity concerns (feeling the provision was more favorable to the commercial sector), the limited duration of opportunity (not a permeant reallocation²⁹), concerns about monitoring and enforcement costs, a perception of perpetuating opportunities for absentee ownership in the commercial fishery and concerns about allowing some charter businesses (particularly those with the ability to self-lease quota or more access to capital) to be more competitive than others (see Alaska Charter Association testimony in Oct 2012). Several studies (e.g., Chan et al. 2018, Lew et al. 2016) have demonstrated that this negative perception of the GAF Program continued after implementation.

Feedback on the GAF Program

In addition, stakeholders have communicated challenges they have experienced with the GAF Program and ideas for improvement to NMFS staff throughout the years. For example, particularly following implementation, concerns were expressed about the timeline (depicted in Figure 17) and the rigid dates that established when voluntary transfers could be accepted and when the automatic returns would be initiated. Moreover, in 2021, the halibut season was extended until Dec 7 (relative to its typical mid-Nov closure). Since the automatic return date of GAF back into IFQ happens 15 days before the end of the season this may become more problematic. This means the commercial QS holder would have to go out later in the winter to catch any remaining IFQ.

Given the limited use of the GAF, there could be ways to make the Program more appealing if desired by stakeholders and the Council. For example, the provisions of the Program could be made to better facilitate self-transfers, which is one of the ways it is currently used. To be eligible to purchase halibut quota share, a person must have 150 or more days of experience working as part of a harvesting crew in any U.S. commercial fishery. Timing spent guiding a charter is not counted towards crew sea days, and therefore many operators are not eligible to purchase halibut QS directly. Additionally, there are limits on the amount of IFQ that can be leased as GAF, which also applies to self-transfers (i.e., 1,500 lb or 10% (2C) or 15% (3A) of a person's QS holdings, whichever is greater). If desired, the Council could consider changing one or both of these provisions. In consideration of the original program the Council rejected an option that would have allowed charter permit holders to purchase commercial halibut QS (rather than leasing IFQ) because the proposal was not supported by the charter halibut sector (NPFMC/ NMFS 2013). Therefore, it is unclear the level of support these changes would have from either commercial or charter stakeholders at this time.

²⁸ Krotez et al. (2016) highlighted that support for this provision primarily came from the commercial sector (for example, testimony from Halibut Coalition and many individual commercial operators supporting their testimony in Oct 2012).

²⁹ Several charter representatives testified to supporting a "long-term solution" of a common-pool based compensated allocation shift mechanism to the charter sector as a whole. Charter sector efforts led to the design and later implementation of the RQE (see Section 5.6).

7. Review of the Program Objectives

One of the basic charges of this review is to evaluate program objectives relative to the current fisheries and to determine whether the objectives are being met by the current allocation or if other relevant factors have changed enough to warrant an in-depth formal analysis of the allocation. Four objectives were identified based on the Council's stated objectives and problem statement (Section 2) and are listed below. Evaluation of these objectives are inherently somewhat subjective; however, the analysts use available information as well as data when appropriate to provide a preliminary assessment of whether these objectives are being met with the current program.

Analysts also note that these particular goals speak more to the overall program design itself rather than the specific allocation. Part of this Allocation Review process is for the Council and the public to consider whether the current program objectives remain relevant and are clear enough to convey the expectations for this allocation. If the Council feels additional objectives are appropriate it could choose to augment or modify the identified list.

The identified objectives include:

(1) create a management regime that provides separate accountability for each sector;

As described in Section 0, this management system does build in separate accountability by including both sectors into the CCL as well as each sector's projected halibut discard mortality in its own allocation. For the commercial halibut sector, the projected discard mortality is deducted from the Area 2C and 3A FCEY prior to setting the IFQ TAC.³⁰ For the charter halibut sector, the projected discard mortality is included in ADF&G assessment of total projected charter removals under different combinations of management measures.

Prior to the CSP, the GHL was routinely exceeded with no direct response in management measures and discard mortality from the charter fishery was not projected or deducted from the TCEY at all, nor was it accounted for in the stock assessment. This is typically a small source of mortality; however, leaving it unaccounted for could affect the overall spawning biomass in a very minor way. In March 2012, the IPHC asked all agencies that provide estimates of recreational halibut harvest coastwide to implement data collection programs that would allow estimation of release mortality. The IPHC began incorporating estimates of sport fishery release mortality in total halibut removals for purposes of stock assessment in 2014.

Prior to the CSP, commercial halibut discard mortality was accounted for, but it was deducted from 'other removals' in the TCEY. This means if it continued to be accounted for in this way under the CSP, it would affect the allocation available for both the commercial and charter sectors.

Overall, it appears the CSP management system has achieved separate accountability in incorporating the charter sector into the CCL and accounting for discard mortality from each sector separately.

(2) management tools and season length should be established during the year prior to the year in which they would take effect, and that the tools selected, and season length should not change in season;

As described in Section 5.1, the CSP established a system specifically to address the goal of no in season management changes for the charter halibut sector. This was a priority identified by the Council in the

³⁰ Note that this is essentially the same process of deducting discard mortality that occurs in the other IPHC Areas off Alaska as well. The projected discard mortality is deducted at the FCEY stage (see Section 4.2.2), but since charter halibut effort is negligible in other Areas the impact is still results in a deduction from the commercial halibut IFQ TAC.

development of the CSP, primarily due to testimony around the industry challenges and costs from not being able to book anglers or having to cancel reservations due to management measures that may change in season. Charter industry representatives stated that client dissatisfaction from canceled trips could have significant and longer-term impacts, as client satisfaction, word of mouth referrals, and repeat customers have been vital to their operations (NPFMC/ NMFS 2013). In addition, real-time data was not available to allow for in season reaction to unexpected charter harvest.

Instead, the CSP employs a public process and coordinated management effort among agencies (ADF&G, NMFS, and the IPHC) to analyze and recommend new management measures each year based on the expected allocation and the projected charter removals under different management measures. Section 5.2 describes the principal role the Charter Halibut Management Committee has undertaken in this process in recommending measures that are both intended to keep the charter halibut sector under its allocation while simultaneously seeking to minimize adverse economic impacts to the charter operators and maximum harvest opportunity for anglers.

Overall, it appears the CSP has created a management system which does not change in season. This can be seen through the history of management measures in Table 15 and Table 16, since implementation of the CSP in 2014, management measures (including season length) have been established prior to when they take effect and have not changed in season, with the expectation of emergency action taken on account of the COVID-19 pandemic in 2020. However, it is worth noting that these measures are not established in the year “prior to the year in which they take effect”, as noted in the objective. They are established at the IPHC meeting, which typically occurs in January of the year in which the measures are intended for.

(3) evaluate its success in achieving the sport charter sector allocation and specific needs for predictability, advance notice, and season length each year, and adjust its management tools as needed;

The third objective includes goals about providing predictability, advance notice, and consistent season length each year. Consistent season length is discussed previously under objective 2 and the ability to achieve the sport charter sector allocation is discussed under objective 4. The goals of predictably and advance notice were also highlighted by the charter sector as important. For instance, the Area 2C charter sector experienced a variable management process under the GHL, including multiple regulatory agencies imposing regulations and at different times in the season (see Table 15 and Table 16). Under the CSP, there has been more predictability in the annual process as identified in Section 5.2 and with the expectation of pandemic years there have been no inseason management changes as described under Objective 2.

However, the resulting impacts of the process may be overall more unpredictable and more uncertain for the charter sector relative to GHL management. With a process that is designed to respond to the most up-to-date information on projections of harvest and effort from the charter sector, the trade-off is management measures that inherently change each year for both Areas. Moreover, IPHC Commissions are not bound to apportioning Coastwide TCEY in a certain way relative to the regulatory Areas. As demonstrated in Table 6, the adopted TCEY for Area 2C and 3A have differed from the reference levels in every year through the timeseries. Thus, similar to the commercial allocations, the charter allocations now remain uncertain until after the final IPHC meeting in January/ February.

Charter stakeholders have described how management measures that change every year can affect annual stability and predictability for their businesses (F. Braden & R. Yamada, personal communication, 1/6/2022; A. Mezirow, personal communication, 1/6/2022). For example, there may be uncertainty in knowing whether there would be day of the week closures for halibut fishing. Despite generally having advance notice on management measures prior to the start of the charter season, with annually changing

management measures charter operator may have difficulty booking trips one-year out, a strategy that could help retain repeat clientele. In addition to short-term predictability, management measures that change annually can also affect long-term stability in terms of how a charter business owner may need to market their operation (F. Braden, personal communication, 1/6/2022). For instance, management measures that very restrictive (e.g., 1 fish \leq 37 inches, which was implemented in 2011 for Area 2C) may require a specific market strategy that targets a different type of angler than one who would be interested harvesting to fill their freezer or a trip that could guarantee the retention of a halibut they caught. It is difficult to create a marketing strategy when the measures could drastically change from one year to the next.

Finally, in terms of advance notice, the current process is relatively compressed for analysts, managers and stakeholders. This schedule has fit into the allotted time (with the process described in Section 5.2), taking into consideration Council meetings, IPHC meetings and Charter Halibut Management Committee Meetings; however, it does not often afford the charter sector much opportunity to evaluate management options and consult with other industry participants prior to making a recommendation.

Overall, it is more subjective whether the CSP has created more predictability and/ or advance notice; however, there are certainly aspects of the program which appear to have created more instability for the charter sector from year to year. For Area 3A, throughout the GHL the management measures remained 2 fish of any size, whereas under the CSP the measures have become more restrictive in nearly every year. For Area 2C, there is a more predictable process for amending management measures, but those changes have now also become annual and depending on the Area TCEY adopted by the IPHC, and the projections for charter removals, the changes could be drastic from one year to the next affecting both year-out and long-term planning.

In development of the CSP, the Council indicated that one objective of this amendment is to create a CSP that requires both the charter and commercial IFQ fisheries to share the burden of conservation at low levels of abundance (NPFMC/ NMFS 2013). This objective presents challenges for creating inter-annual stability in harvest opportunity for the charter sector.

(4) adjust management measures as needed to ensure that the sport charter sector is held at or below its allocation, recognizing that there may be annual overages or underages.

Objective 4 considers whether the charter halibut sector has been held at or below its allocation throughout the CSP. For context, dashboard metrics in Section 6.2 (as well as Table 20 and Table 21) illustrate the charter halibut sector yield or removals relative to its limits and Area 3A had a history of harvesting under the GHL from 2008 up to the CSP implementation. Since the CSP has been in place, Area 3A has had overages in every year except for 2020. In 2020, the sector was 8.4% under its allocation and in 2021 preliminary estimates show the sector with its greatest overage of 25.9% over its allocation. On average since CSP implementation, but excluding the pandemic years, Area 3A has been 10.5% over its allocation, with smaller overages in more recent years. As described in Section 6.2, predicting harvest in Area 3A has proven to be more difficult given the combination of measures and the inability to fully predict angler response to the types of measures that have been employed. The system in place which allows for annual adjustments to be made based on realized effort and harvest, but even still, it may be difficult to retrospectively identify the “cause” of the overage and adjust the predictions accordingly.

The Council had expected that projections would improve overtime as fishery information improved, allowing for greater precision in selecting appropriate harvest restrictions (NPFMC/ NMFS 2013). This has not necessarily been shown to be the case. ADF&G analysts have highlighted that the greatest challenge in predicting charter removals has to do with uncertainly in angler behavior (S. Webster, personal communication, 1/7/2022). Many of the measures ADF&G is asked to evaluate have a behavioral component that cannot be modeled with past data on charter harvest and effort. For example,

how many anglers are able to re-book if days are closed? How many anglers/businesses focus on only one big fish (and high grade) when the second fish has a size limit; is this further affected by annual limits? Is there a tipping point for size limits where angler behavior changes? Moreover, certain sub-areas may have a different behavioral response to measures depending on the type of anglers they cater to or the size of fish they typically encounter. In part, predictions may also be more accurate when the allocations do not drastically change from one year to the next, which depends on both the reference Area TCEY and the IPHC Commissioners' decision-making.

Table 18 and Source: (S. Webster, personal communication, 1/3/2022)
Use data is charter yield in 2012 -2013 (no discard mortality) and charter removals in 2014-2021 (yield + discard mortality).
Removals from 2021 are preliminary.

Table 19 demonstrates the predicted yield or removals relative to the estimated values. Area 2C had a pattern of exceeding the GHl prior to implementation of the CSP, sometimes by a substantial amount (e.g., in 2008 the sector exceeded the GHl by 114.7%). Since the new management system, Area 2C has remained near or under its allocation in most years, with the exception of a preliminary estimated overage in 2021 of 42.5%. As described in Section 6.2, 2021 was a particularly challenging year to project removals for the charter sector given the uncertainties with angler demand during the ongoing pandemic. Including a COVID-buffer for projected removals proved to be unnecessary amid realized levels of angler effort in both Areas. In 2020, Area 2C was 38.1% under its allocation. Excluding the pandemic years, Area 2C has been on average 4.5% under its allocation since implementation of the CSP.

Area 3A had a history of harvesting under the GHl from 2008 up to the CSP implementation. Since the CSP has been in place, Area 3A has had overages in every year except for 2020. In 2020, the sector was 8.4% under its allocation and in 2021 preliminary estimates show the sector with its greatest overage of 25.9% over its allocation. On average since CSP implementation, but excluding the pandemic years, Area 3A has been 10.5% over its allocation, with smaller overages in more recent years. As described in Section 6.2, predicting harvest in Area 3A has proven to be more difficult given the combination of measures and the inability to fully predict angler response to the types of measures that have been employed. The system in place which allows for annual adjustments to be made based on realized effort and harvest, but even still, it may be difficult to retrospectively identify the "cause" of the overage and adjust the predictions accordingly.

The Council had expected that projections would improve overtime as fishery information improved, allowing for greater precision in selecting appropriate harvest restrictions (NPFMC/ NMFS 2013). This has not necessarily been shown to be the case. ADF&G analysts have highlighted that the greatest challenge in predicting charter removals has to do with uncertainty in angler behavior (S. Webster, personal communication, 1/7/2022). Many of the measures ADF&G is asked to evaluate have a behavioral component that cannot be modeled with past data on charter harvest and effort. For example, how many anglers are able to re-book if days are closed? How many anglers/businesses focus on only one big fish (and high grade) when the second fish has a size limit; is this further affected by annual limits? Is there a tipping point for size limits where angler behavior changes? Moreover, certain sub-areas may have a different behavioral response to measures depending on the type of anglers they cater to or the size of fish they typically encounter. In part, predictions may also be more accurate when the allocations do not drastically change from one year to the next, which depends on both the reference Area TCEY and the IPHC Commissioners' decision-making.

Table 18 Area 2C allocations and predicted use relative to use estimates

Area 2C					
Year	GHL/CSP Allocation (Mlbs)	Predicted Usage (Mlbs)	Final Usage Estimates (Mlbs)	Predicted to go over allocation?	Over allocation?
2012	0.931	0.721	0.605	no	no
2013	0.788	0.802	0.762	yes	no
2014	0.761	0.756	0.827	no	yes
2015	0.851	0.828	0.814	no	no
2016	0.906	0.877	0.839	no	no
2017	0.915	0.888	0.938	no	yes
2018	0.810	0.809	0.716	no	no
2019	0.820	0.833	0.697	yes	no
2020	0.780	0.873	0.483	yes, but COVID	no
2021	0.810	1.209	1.154	yes, but COVID	yes

Source: (S. Webster, personal communication, 1/3/2022)
 Use data is charter yield in 2012 -2013 (no discard mortality) and charter removals in 2014-2021 (yield + discard mortality).
 Removals from 2021 are preliminary.

Table 19 Area 3A allocations and predicted use relative to use estimates

Area 3A					
Year	GHL/CSP Allocation (Mlbs)	Predicted Usage (Mlbs)	Final Use Estimates (Mlbs)	Predicted to go over allocation?	Over allocation?
2012	3.103	2.746	2.284	no	no
2013	2.734	2.338	2.554	no	no
2014	1.782	1.796	2.068	yes	yes
2015	1.890	1.911	2.094	yes	yes
2016	1.814	1.799	2.021	no	yes
2017	1.890	1.874	2.089	no	yes
2018	1.790	1.777	1.886	no	yes
2019	1.890	1.882	2.054	no	yes
2020	1.710	2.573	1.567	yes, but COVID	no
2021	1.950	2.470	2.454	yes, but COVID	yes

Source: (S. Webster, personal communication, 1/3/2022)
 Use data is charter yield in 2012 -2013 (no discard mortality) and charter removals in 2014-2021 (yield + discard mortality).
 Removals from 2021 are preliminary.

The Council’s objective states that the CSP was expected to produce both overages and underages overtime, but it did not dictate what level was considered too high or low. The Council’s expectation was that these variances will balance over time, to ensure IPHC conservation and management objectives are achieved (NPFMC/ NMFS 2013).

A modest overage from the charter sector is not expected to impact the long-term sustainability of the halibut stock. The IPHC’s SPR-based management approach is designed to conserve spawning biomass across differing stock states, patterns in fishery selectivity and/or allocation among different fisheries. All estimated removals from the charter halibut sector are now accounted for in the stock assessment. Estimated mortality from other sectors may come in lower than their limits/ projections under the Area 2C

and 3A TCEY, thus total mortality might still not be greater than what was predicted in an Area for a given years.

However, relative to what would have been harvested had the sector remained under its allocation, the difference in removals may affect the harvestable biomass in the following year. In this way, there may be a modest short-term impact on the availability of halibut for other sectors in a year following an overage. Given the migratory nature of halibut, this could impact other Areas as well.

When the charter sector has an underage or overage there is no direct consequence in the following year. If the charter sector's removals were deducted from the TCEY (instead of under an allocation within the FCEY) an increased projection of removals for the following year may affect what is available for the other fisheries within the FCEY, as was the case under the GHL management system. However, under the CSP, the charter sector's projected removals, which take into account the previous year's harvest and average weight, affect only the charter sector's options for management measures that will be projected to keep the sector within its allocation.

Overall, it is a subjective judgement to determine what level of underages or overages are "too much". There is no biological or allocative rationale that has been stated for a specific threshold and no identified reaction for an unacceptable overage or underage. It is not likely that the overages that have occurred have had an impact on the long-term sustainability of the halibut stock; however, they may have a modest short-term impact on the availability of halibut for other sectors in the following year. Outside of an individual transferable quota program, it is unlikely the sector will ever have the level of precision in harvesting its allocation that exists in the commercial halibut sector; however, the CSP provides a response mechanism to be more or less conservative in measures the following year. Some types of management measures have inherently more uncertainty in their projections (i.e., projecting how a one fish bag limit would change the average weight of retained halibut in Area 3A). If the Council wished to be more cautious, the current management process can facilitate this in two ways: the Council could recommend management measures that are projected to result below the charter allocation with a buffer and/ or the Council could recommend management measures whose projected removals include less uncertainty.

Changes in Other Relevant Factors

Overall, many factors have changed since the CSP was implemented and allocations between the charter and commercial halibut were set. There have been changes in the way the IPHC manages and assesses halibut. For instance, within this time period the IPHC has switch from assessment that uses exploitable biomass to an SPR approach, the Commission now sets catch limits at the TCEY level rather than the FCEY level, there have been temporary agreements for fixed allocations in some Areas, and under the MSE additional changes could occur. In addition, there have changes in the charter halibut fishery based on subsequent Council actions including establishing the RQE Program and the requirement to renew CHPs annually (thereby providing better accounting of the non-transferable CHPs that are still valid, as well as collecting information on patterns of CHP leasing). There have been some informational improvements since the CSP was implemented, including overall increased knowledge about how the program has operated (e.g., trends in the fishery relative to different management measures, experience with predicting charter removals, and testimony on the impacts of the program) and some additional literature on economic impacts and economic value of the commercial and charter fisheries overall (e.g., Hutniczak 2021, Lew & Larson 2017, Lew & Lee 2019, Lew & Seung 2018).

These factors are certainly not all encompassing of the changing environment that has taken place since implementation of the CSP in 2014. Many additional external factors have greatly influence the prosecution of and values derived from commercial and charter halibut fisheries, including the global pandemic.

Despite evolving fisheries and the increased experience with the program, a large information deficit still exists that would likely prevent a clear analytical evaluation of the “optimal” allocation of halibut between the commercial and charter sectors. The original analysis also did not identify an optimal allocation as it cited the inability to quantify the contribution of each alternative to national welfare associated with all sources of these removals, as well as the effects these removals may have on users and use of the resource, both market and non-market, not associated with commercial fishing activity (NPFMC/ NMFS 2013).

8. Consideration of Next Steps

As described in Section 0, there are three steps to an allocation review process. In Step 1 the trigger was initiated (the 10-year timeframe). Step 2 was the production of this CSP Allocation Review. If, after considering this Allocation Review, advisory bodies, and public testimony, the Council determines that its objectives for the CSP are being met, then the allocation review is complete and the 10-year trigger for reevaluation is reset. However, if the Council deems that its objectives are not being met, it could ask for further analysis considering different allocation percentages of halibut in the commercial and charter sectors. This would trigger “Step 3” of the Allocation Review process and lead to more in-depth analysis on the implications of any proposed changes.

The Council could also initiate discussion papers or analyses to consider modifying other aspects of the CSP Program. While the point of the review is to focus on the allocation, this is also an opportunity to consider the program more holistically if the Council should choose. Similar to “Step 3” of an Allocation Review, this would require additional analysis to hone in on the impacts of the proposed change and allow for additional public comment.

Any broader programmatic changes that are within the Council’s authority (for example, those involving other halibut user groups) could be considered after receiving the CSP Allocation Review as well. This would also require a separate analytical process.

9. References

- Alaska Department of Fish and Game [ADF&G]. 2021a. ADF&G informational handout for Charter Halibut Management Committee Meeting. October 26, 2021. Anchorage, AK. Accessed from: https://meetings.npfmc.org/CommentReview/DownloadFile?p=dc0c22e2-58cd-4f65-acf5-a19db4d6b4d0.pdf&fileName=InfoHandoutADF%26G_2021.pdf
- ADF&G. 2021b. Final 2020 sport halibut harvest estimates for Areas 2C and 3A. Anchorage, AK. Accessed from: https://meetings.npfmc.org/CommentReview/DownloadFile?p=e66b7cf8-3756-4206-8001-142ac968d5c2.pdf&fileName=Area2C3A_Final2020.pdf
- Beaudreau, A.H. & M. N. Chan, & P.A. Loring. 2018. Harvest portfolio diversification and emergent conservation challenges in an Alaskan recreational fishery. *Biological Conservation*. 222. 268-277. 10.1016/j.biocon.2018.04.010.
- Chan, M. N., A.H. Beaudreau, & P.A. Loring. 2018. Evaluating the recreational fishery management toolbox: charter captains' perceptions of harvest controls, limited access, and quota leasing in the guide halibut fishing sector in Alaska. *Marine Policy* (91) 129-135.
- Erikson, L. H. Tran., T. Kong, and C. Prem. 2021. Fisheries data overview (2021): Preliminary. IPHC-2021-IM097-06 Rev 1. November 19, 2021, Seattle, WA. Accessed from: <https://iphc.int/uploads/pdf/im/im097/iphc-2021-im097-06.pdf>
- Dykstra. C. 2021. Evaluating discard mortality rates and developing best management practices in the Pacific halibut charter recreational fisheries. IPHC-2021-RAB022-11. Accessed from: <https://www.t.iphc.int/uploads/pdf/rab/2021/iphc-2021-rab022-11.pdf>
- Hicks A, Carpi P, Stewart I, Berukoff S. 2021. IPHC management strategy evaluation for Pacific halibut (*Hippoglossus stenolepis*). IPHC-2021-AM097-11. Accessed from: <https://www.iphc.int/uploads/pdf/am/am097/iphc-2021-am097-11.pdf>
<https://www.iphc.int/uploads/pdf/am/2018am/iphc-2018-am094-r.pdf>
- Hutniczak, B. 2021a. Pacific halibut market profile. IPHC-2021-ECON06. October 29, 2021. Seattle, WA. Accessed from: <https://www.iphc.int/uploads/pdf/economics/2021/iphc-2021-econ-06.pdf>
- Hutniczak, B. 2021b. Pacific halibut multiregional economic impact assessment (PHMEIA): a summary of progress. IPHC-2021-IM097-14 Rev_1. November 19, 2021. Seattle, WA. Accessed from: <https://www.iphc.int/uploads/pdf/im/im097/iphc-2021-im097-14.pdf>
- International Pacific Halibut Commission [IPHC]. 2020. Mortality limits including U26 discard mortality in non-directed fisheries. Agenda item 6.4 IPHC-2020-AM096-10. Accessed from: <https://iphc.int/uploads/pdf/am/2020am/ppt/iphc-2020-am096-10-p.pdf>
- Kroetz, K., J.N. Sanchirico, and D.K. Lew. 2016. Recreational Leasing of Alaska Commercial Halibut Quota: The First Two Years of the Guided Angler Fish Provision. *Resources for the Future Discussion Paper* 16-39. Washington, D.C. September 2016.
- Lew, D.K. and D.M. Larson. 2015. Stated preference for size and bag limits of Alaska charter boat anglers. *Marine Policy*, (61) 66-76.
- Lew, D. K., and Larson, D. M. 2017. Stated preferences of Alaska resident saltwater anglers for contemporary regulatory policies. *Marine Fisheries Review*, 79: 12–25.
- Lew, D. K. and J. Lee. 2018. Cost, earnings and employment in the Alaska saltwater sport fishing charter sector, 2015. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-AFSC-383.
- Lew, D. K. and J. Lee. 2019. Cost, earnings and employment in the Alaska saltwater sport fishing charter sector, 2017. U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-AFSC-398.

- Lew, D.K., Putman, D., and D.M. Larson. 2016. Attitudes and preferences towards Pacific halibut management alternative in the saltwater sport fishing charter sector in Alaska: Results from a survey of charter halibut permit holders. U.S. Department of Commerce, NOAA Tech. Memo. NMFS-AFSC-326.
- Meyer, S.C. 2007. Halibut discard mortality in recreational fisheries in IPHC Areas 2C and 3A. Unpublished discussion paper for the North Pacific Fishery Management Council, October 2007 meeting.
- Meyer, S.C. 2014. Estimation and projection of statewide recreational halibut harvest. Alaska Department of Fish and Game, Division of Sport Fish, Regional Operational Plan ROP. SF.4A.2014.08, Homer, AK. Available at: <http://www.sf.adfg.state.ak.us/FedAidPDFs/ROP.SF.4A.2014.08.pdf>
- National Marine Fisheries Service [NMFS]. 2016. Policy Directive 01-119 – Fisheries Allocation Review Policy. Procedural Directive 01-119-01- Criteria for Initiating Fisheries Allocation Reviews. Council Coordinating Committee Allocation Workgroup Guidance Document. Procedural Directive 01-119-02 - Recommended Practices and Factors to Consider when Reviewing and Making Allocation Decisions. July 27, 2016. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=361a7416-5c52-4c6e-b255-dabdddc5ac5f.pdf&fileName=D3%20Fisheries%20Allocation%20Procedural%20Directives.pdf>
- NMFS. 2017a. Policy Directive – Fisheries allocation review policy. February 23, 2017 (revised policy). Accessed from: <https://media.fisheries.noaa.gov/dam-migration/01-119.pdf>
- NMFS. 2017b. Secretarial Review Draft. Regulatory Impact Review/ Initial Regulatory Flexibility Analysis/ Environmental Assessment for a proposed regulatory amendment to allow a recreational quota entity to hold commercial halibut quota share for use by halibut charter anglers. July 2017. Juneau, AK. Accessed from: <https://www.regulations.gov/document/NOAA-NMFS-2016-0158-0002>
- North Pacific Fishery Management Council [NPFMC]. 2007. Minutes of 184th Plenary Session of the North Pacific Fishery Management Council. October 3-9, 2007. Anchorage, AK. Accessed from: <https://www.npfmc.org/wp-content/PDFdocuments/minutes/CouncilOct07.pdf>
- NPFMC. 2012. Council motion on Agenda item C-1 Halibut catch sharing plan final action. October 5, 2012. Accessed from:
- NPFMC. 2013. Final Environmental Assessment/ Regulatory Impact Review/ Initial Flexibility Analysis to reduce Gulf of Alaska halibut prohibited species catch limits: Amendment 95 to the Fishery Management Plan for groundfish of the Gulf of Alaska. November 2013. Anchorage, AK. Accessed from: <https://www.fisheries.noaa.gov/resource/document/final-ea-rir-irfa-reduce-gulf-alaska-halibut-prohibited-species-catch-limits>
- NPFMC. 2017a. Council motion on Agenda item D-3: allocation review triggers. June 12, 2017. Juneau, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=fceb51fb-01fa-456a-8bf7-5bc8a2d1fc40.pdf&fileName=MOTION%20D3.pdf>
- NPFMC. 2017b. Discussion paper: Allocation review triggers. June 2017. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=d8187f71-2494-4ba9-9bd7-28677715c094.pdf&fileName=D3%20Allocation%20Review%20Triggers%20discussion%20paper.pdf>
- NPFMC. 2019a. BSAI Pacific cod allocation review. May 22, 2019. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=9317ac25-1aa8-49c8-b547-da16b0a6cc94.pdf&fileName=D2%20BSAI%20Pcod%20Allocation%20Review%20June%202019%20Revised%20May%2022%2C%202019.pdf>

- NPFMC. 2019b. Initial Review Draft: Regulatory Impact Review for proposed regulatory amendment to the Federal regulations implementing the Pacific halibut fisheries off of Alaska unguided halibut rental vessel registration. December 2019. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=44b5363f-5b88-4295-88af-b58f59e41ca9.pdf&fileName=C8%20Unguided%20Rental%20Vessels%20Analysis.pdf>
- NPFMC. 2021a. Halibut Catch Sharing Plan Allocation Review: Workplan. October 2021. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=b6d004b2-5569-44bc-84e9-a81a4cc0feef.pdf&fileName=D1%20CSP%20allocation%20review%20workplan.pdf>
- NPFMC. 2021b. Initial Review Draft Regulatory Impact Review for a Proposed Regulatory Amendment Charter Halibut Recreational Quota Entity Funding Mechanism. October 2021. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=69470006-86b9-44e3-b78c-c2b5b154845c.pdf&fileName=C3%20RQE%20funding%20Analysis.pdf>
- North Pacific Fishery Management Council and National Marine Fisheries Service. [NPFMC/ NMFS]. 1992. Final supplemental environmental impact statement/ environmental impact statement for the individual fishing quota management alternative for fixed gear sablefish and halibut fisheries: Gulf of Alaska and Bering Sea Aleutian Islands. Anchorage, AK. September 15, 1992. Available at: https://alaskafisheries.noaa.gov/sites/default/files/analyses/amd_15_20_seis_0992.pdf
- NPFMC/ NMFS. 2011. Draft for Secretarial Review Regulatory Amendment for a Pacific Halibut Catch Sharing Plan for the Charter Sector and Commercial Setline Sector in International Pacific Halibut Commission Regulatory Area 2C and Area 3A. Environmental Assessment/ Regulatory Impact Review/ Initial Flexibility Analysis. June 23, 2011. Anchorage, AK.
- NPFMC/ NMFS. 2013. Regulatory Amendment for a Pacific Halibut Catch Sharing Plan for the Charter Sector and Commercial Setline Sector in International Pacific Halibut Commission Regulatory Area 2C and Area 3A. June 2013. Anchorage, AK. Accessed from: <https://www.regulations.gov/document/NOAA-NMFS-2011-0180-2208>
- NPFMC/ NMFS. 2016. Twenty-year review of the Pacific halibut and sablefish individual fishing quota management program. December 2016. Accessed from: https://www.npfmc.org/wp-content/PDFdocuments/halibut/IFQProgramReview_417.pdf
- Stewart, I., A. Hicks, R. Webster, D. Wilson, and B. Hutniczak. 2021. Summary of data, stock assessment, and harvest decision table for Pacific halibut (*Hippoglossus stenolepis*) at the end of 2021. IPHC- 2021- IM97-10 Rev_1. November 23, 2021. Seattle, WA. Accessed from: <https://iphc.int/uploads/pdf/im/im097/iphc-2021-im097-10.pdf>
- Webster, S. R., and B. Buzzee. 2020. Estimation and projection of statewide sport halibut harvest. Alaska Department of Fish and Game, Division of Sport Fish, Regional Operational Plan ROP.SF.4A.2020.04, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/ROP.SF.4A.2020.04.pdf>
- Yamada, R. and S. Flumerfelt. 2014. Integrating a recreational fishery into a catch share program: Case study of Alaska's guided halibut sport fishery. Report prepared for the Catch Accountability through Compensated Halibut (CATCH) Project.

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Appendix 1. Additional Tables and Figures

Table 20 Area 2C charter and commercial use and allocations, 1995 through 2021

Year	Mgmt Type	Charter Allocation (Mlb)	Charter Use (Mlb)	Commercial Allocation (Mlb)	Commercial Use (Mlb)	Charter % Use	Commercial % Use	Charter Allocation %	Commercial Allocation %
1995	no GHl	NA	0.986	9.000	7.787	11.2%	88.8%		
1996	no GHl	NA	1.187	9.000	8.534	12.2%	87.8%		
1997	no GHl	NA	1.034	10.000	9.638	9.7%	90.3%		
1998	no GHl	NA	1.584	10.500	9.660	14.1%	85.9%		
1999	no GHl	NA	0.939	10.490	9.898	8.7%	91.3%		
2000	no GHl	NA	1.130	8.400	8.192	12.1%	87.9%		
2001	no GHl	NA	1.202	8.780	8.170	12.8%	87.2%		
2002	no GHl	NA	1.275	8.500	8.432	13.1%	86.9%		
2003	no GHl	NA	1.412	8.500	8.242	14.6%	85.4%		
2004	GHl	1.432	1.750	10.500	10.088	14.8%	85.2%	12.0%	88.0%
2005	GHl	1.432	1.952	10.930	10.459	15.7%	84.3%	11.6%	88.4%
2006	GHl	1.432	1.804	10.630	10.340	14.9%	85.1%	11.9%	88.1%
2007	GHl	1.432	1.918	8.510	8.304	18.8%	81.2%	14.4%	85.6%
2008	GHl	0.931	1.999	6.210	6.107	24.7%	75.3%	13.0%	87.0%
2009	GHl	0.788	1.249	5.020	4.832	20.5%	79.5%	13.6%	86.4%
2010	GHl	0.788	1.086	4.400	4.350	20.0%	80.0%	15.2%	84.8%
2011	GHl	0.788	0.344	2.330	2.293	13.0%	87.0%	25.3%	74.7%
2012	GHl	0.931	0.605	2.624	2.527	19.3%	80.7%	26.2%	73.8%
2013	GHl	0.788	0.762	2.970	2.862	21.0%	79.0%	21.0%	79.0%
Under the CSP years, the allocations and use for both sectors incorporate discard mortality									
2014	CSP	0.761	0.827	3.399	3.412	19.5%	80.5%	18.3%	81.7%
2015	CSP	0.851	0.814	3.799	3.737	17.9%	82.1%	18.3%	81.7%
2016	CSP	0.906	0.839	4.044	4.020	17.3%	82.7%	18.3%	81.7%
2017	CSP	0.915	0.941	4.335	4.206	18.3%	81.7%	17.4%	82.6%
2018	CSP	0.810	0.716	3.640	3.510	16.9%	83.1%	18.2%	81.8%
2019	CSP	0.820	0.697	3.670	3.498	16.6%	83.4%	18.3%	81.7%
2020	CSP	0.780	0.483	3.480	3.288	12.8%	87.2%	18.3%	81.7%
2021	CSP	0.810	1.154	3.600	3.466	25.0%	75.0%	18.4%	81.6%

Source for commercial data: NMFS Restricted Access Management (RAM) division and compiled by AKFIN. Prior to 2014, the allocation includes IFQ TAC and the use represent commercial IFQ landings. After 2014, the allocation includes the IFQ TAC + the projected discard mortality for the commercial fishery (the commercial halibut portion of the CCL) and the use includes IFQ landings + estimated discard mortality. Slight overages in 2014 was a result of higher than projected discard mortality. Also note that estimated discard mortality may also include a small amount of discard mortality associated with the Metlakatla fishery and from FISS and research.

Source for charter data: Estimates of charter yield pre-CSP are derived from the SWHS (2006-2013) and estimates of removals (which account for release mortality) are derived from ADF&G logbook (2014-2021) and from dockside sampling (all years).

Removal estimates for 2021 are preliminary.

Table 21 Area 3A charter and commercial use and allocations, 1995 through 2021

Year	Mgmt Type	Charter Allocation (Mlb)	Charter Use (Mlb)	Commercial Allocation (Mlb)	Commercial Use (Mlb)	Charter % Use	Commercial % Use	Charter Allocation %	Commercial Allocation %
1995	no GHl	NA	2.845	20.000	17.978	13.7%	86.3%		
1996	no GHl	NA	2.822	20.000	19.366	12.7%	87.3%		
1997	no GHl	NA	3.413	25.000	24.277	12.3%	87.7%		
1998	no GHl	NA	2.985	26.000	24.606	10.8%	89.2%		
1999	no GHl	NA	2.533	24.670	24.309	9.4%	90.6%		
2000	no GHl	NA	3.140	18.310	18.066	14.8%	85.2%		
2001	no GHl	NA	3.132	21.890	21.071	12.9%	87.1%		
2002	no GHl	NA	2.724	22.630	22.560	10.8%	89.2%		
2003	no GHl	NA	3.382	22.630	22.280	13.2%	86.8%		
2004	GHl	3.650	3.668	25.060	24.581	13.0%	87.0%	12.7%	87.3%
2005	GHl	3.650	3.689	25.470	25.101	12.8%	87.2%	12.5%	87.5%
2006	GHl	3.650	3.664	25.200	24.953	12.8%	87.2%	12.7%	87.3%
2007	GHl	3.650	4.002	26.200	25.957	13.4%	86.6%	12.2%	87.8%
2008	GHl	3.650	3.378	24.220	24.020	12.3%	87.7%	13.1%	86.9%
2009	GHl	3.650	2.734	21.700	21.355	11.3%	88.7%	14.4%	85.6%
2010	GHl	3.650	2.698	19.990	20.092	11.8%	88.2%	15.4%	84.6%
2011	GHl	3.650	2.793	14.360	14.268	16.4%	83.6%	20.3%	79.7%
2012	GHl	3.103	2.284	11.918	11.688	16.3%	83.7%	20.7%	79.3%
2013	GHl	2.734	2.514	11.030	10.824	18.8%	81.2%	19.9%	80.1%
Under the CSP years, the allocations and use for both sectors incorporate discard mortality									
2014	CSP	1.782	2.066	7.648	7.877	20.8%	79.2%	18.9%	81.1%
2015	CSP	1.890	2.094	8.210	8.282	20.2%	79.8%	18.7%	81.3%
2016	CSP	1.814	2.021	7.786	7.736	20.7%	79.3%	18.9%	81.1%
2017	CSP	1.890	2.089	8.110	8.015	20.7%	79.3%	18.9%	81.1%
2018	CSP	1.790	1.886	7.670	7.505	20.1%	79.9%	18.9%	81.1%
2019	CSP	1.890	2.054	8.370	8.282	19.9%	80.1%	18.4%	81.6%
2020	CSP	1.710	1.567	7.340	7.006	18.3%	81.7%	18.9%	81.1%
2021	CSP	1.950	2.454	9.190	9.087	21.3%	78.7%	17.5%	82.5%

Source for commercial data: NMFS Restricted Access Management (RAM) division and compiled by AKFIN. Prior to 2014, the allocation includes IFQ TAC and the use represent commercial IFQ landings. After 2014, the allocation includes the IFQ TAC + the projected discard mortality for the commercial fishery (the commercial halibut portion of the CCL) and the use includes IFQ landings + estimated discard mortality. Slight overages in 2014 and 2015 was a result of higher than projected discard mortality. Also note that estimated discard mortality may also include a small amount of discard mortality associated with FISS and research.

Source for charter data: Estimates of charter yield pre-CSP are derived from the SWHS (2006-2013) and estimates of removals (which account for release mortality) are derived from ADF&G logbook (2014-2021) and from dockside sampling (all years).

Removal estimates for 2021 are preliminary

Commercial Halibut Tables for Dashboard Figures

Table 22 Allocations and use (includes discard mortality for years under the CSP)

Area 2C				Area 3A			
Year	Allocation (lb)	Use (lb)	% of Allocation	Year	Allocation (lb)	Use (lb)	% of Allocation
2006	10,630,000	10,339,799	97.3%	2006	25,200,000	24,952,541	99.0%
2007	8,510,000	8,304,159	97.6%	2007	26,200,000	25,957,340	99.1%
2008	6,210,000	6,106,851	98.3%	2008	24,220,000	24,020,377	99.2%
2009	5,020,000	4,832,092	96.3%	2009	21,700,000	21,354,893	98.4%
2010	4,400,000	4,350,002	98.9%	2010	19,990,000	20,092,309	100.5%
2011	2,330,000	2,292,926	98.4%	2011	14,360,000	14,268,030	99.4%
2012	2,624,000	2,527,243	96.3%	2012	11,918,000	11,688,285	98.1%
2013	2,970,000	2,861,611	96.4%	2013	11,030,000	10,824,454	98.1%
2014	3,398,720	3,412,436	100.4%	2014	7,647,730	7,877,094	103.0%
2015	3,799,000	3,736,986	98.4%	2015	8,210,000	8,281,683	100.9%
2016	4,044,000	4,020,497	99.4%	2016	7,786,000	7,735,892	99.4%
2017	4,335,000	4,206,373	97.0%	2017	8,110,000	8,015,099	98.8%
2018	3,640,000	3,510,162	96.4%	2018	7,670,000	7,504,597	97.8%
2019	3,670,000	3,497,649	95.3%	2019	8,370,000	8,281,519	98.9%
2020	3,480,000	3,287,826	94.5%	2020	7,340,000	7,006,145	95.5%
2021	3,600,000	3,466,367	96.3%	2021	9,190,000	9,087,063	98.9%

Source: NMFS Restricted Access Management (RAM) division and compiled by AKFIN (Copy of landing_qs(11-22-21))
 Prior to 2014, the allocation includes IFQ TAC and the use represent commercial IFQ landings. After 2014, the allocation includes the IFQ TAC + the projected discard mortality for the commercial fishery (the commercial halibut portion of the CCL) and the use includes IFQ landings + estimated discard mortality. Slight overages in in 2014 in both Areas and in Area 3A in 2015 was a result of higher than projected discard mortality. Also note that estimated discard mortality may also include a small amount of discard mortality associated with the Metlakatla fishery in Area 2C and FISS and research in both Areas.
 2021 removals are preliminary.

Table 23 Participation (Number of vessels, persons landing halibut and persons allocated Area 2C and 3A halibut QS)

Area 2C			Area 3A				
Year	Vessels Landing	Persons Landing	Persons Allocated QS	Year	Vessels Landing	Persons Landing	Persons Allocated QS
2006	682	1,026	1,438	2006	644	1,268	1,915
2007	653	1,005	1,414	2007	623	1,252	1,854
2008	609	936	1,347	2008	600	1,216	1,701
2009	570	880	1,272	2009	576	1,179	1,594
2010	575	874	1,266	2010	549	1,172	1,567
2011	546	847	1,199	2011	552	1,141	1,521
2012	528	824	1,141	2012	518	1,108	1,430
2013	502	813	1,100	2013	473	1,041	1,398
2014	488	787	1,085	2014	466	1,016	1,380
2015	461	779	1,063	2015	458	986	1,341
2016	460	764	1,035	2016	450	976	1,314
2017	449	744	1,031	2017	432	946	1,313
2018	424	702	997	2018	414	896	1,264
2019	427	683	1,001	2019	418	893	1,265
2020	399	581	1,009	2020	383	717	1,271
2021	373	543	1,032	2021	383	685	1,286

Source: NMFS Restricted Access Management (RAM) division and compiled by AKFIN (Copy of landing_qs(11-22-21))
Numbers for 2021 are preliminary

Table 24 Value (ex-vessel value and ex-vessel value per vessel)

Area 2C			Area 3A		
Year	Ex-Vessel Value	Average 2C ex-vessel per vessel	Year	Ex-Vessel Value	Average 3A ex-vessel per vessel
2006	48,012,145	72,746	2006	120,946,451	188,390
2007	44,088,725	70,429	2007	140,988,843	224,863
2008	31,444,485	54,215	2008	127,501,177	215,374
2009	18,302,650	34,599	2009	81,586,983	142,138
2010	24,992,436	46,282	2010	120,067,417	218,702
2011	17,573,586	34,391	2011	110,771,585	201,403
2012	17,740,091	36,131	2012	80,318,751	155,656
2013	17,048,883	36,197	2013	65,769,605	138,754
2014	22,754,642	48,935	2014	54,901,219	117,310
2015	24,934,736	57,059	2015	56,100,647	122,759
2016	29,128,241	66,655	2016	55,579,600	123,510
2017	23,858,463	58,910	2017	48,642,105	117,210
2018	20,589,948	50,219	2018	43,418,487	105,641
2019	20,009,936	49,044	2019	46,706,252	112,817
2020	14,394,051	37,879	2020	33,139,805	86,527

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT (Copy of landing_qs(11-22-21))

Table 25 Diversification (percentage of ex-vessel revenue generated from fisheries for vessels that participate in Area 2C and Area 3A commercial halibut fishing)

	Year	2C	3A	Other Area Halibut	Sablefish	Salmon	Pacific cod	Shellfish
	2C	2006	17%	26%	30%	25%	18%	1%
2007		19%	23%	27%	22%	20%	1%	6%
2008		18%	18%	23%	25%	21%	2%	6%
2009		14%	14%	18%	29%	24%	1%	7%
2010		17%	15%	20%	25%	26%	1%	5%
2011		13%	9%	13%	30%	35%	1%	6%
2012		12%	11%	14%	32%	27%	1%	7%
2013		10%	11%	12%	21%	45%	1%	7%
2014		10%	18%	20%	27%	28%	1%	10%
2015		12%	21%	23%	31%	22%	1%	6%
2016		12%	23%	26%	30%	21%	1%	6%
2017		9%	18%	19%	34%	29%	0%	5%
2018		8%	16%	17%	30%	31%	1%	9%
2019		10%	17%	19%	30%	26%	1%	11%
2020		11%	20%	22%	30%	20%	1%	12%
	Year	2C	3A	Other Area Halibut	Sablefish	Salmon	Pacific cod	Shellfish
3A	2006	5%	32%	22%	22%	9%	6%	4%
	2007	5%	34%	19%	20%	11%	7%	5%
	2008	3%	32%	19%	21%	10%	8%	6%
	2009	3%	28%	17%	26%	12%	6%	5%
	2010	3%	31%	20%	22%	13%	5%	4%
	2011	2%	25%	17%	27%	17%	6%	6%
	2012	2%	23%	13%	30%	15%	9%	7%
	2013	2%	23%	11%	24%	26%	7%	7%
	2014	4%	23%	13%	30%	16%	9%	5%
	2015	4%	23%	15%	30%	15%	9%	5%
	2016	5%	24%	17%	31%	12%	7%	4%
	2017	3%	20%	13%	35%	19%	7%	3%
	2018	4%	21%	13%	32%	19%	6%	4%
	2019	4%	24%	13%	28%	19%	6%	6%
	2020	4%	25%	14%	28%	15%	7%	7%

Source: ADF&G/CFEC Fish Tickets, data compiled by AKFIN (Copy of landing_qs(11-22-21))

Table 26 Deliveries (number of deliveries, unique vessels, buyers and ports)

Area 2C					Area 3A				
Year	Deliveries	Vessels Landing	Buyers	Ports	Year	Deliveries	Vessels Landing	Buyers	Ports
2006	3,127	682	48	23	2006	2,685	644	96	23
2007	2,677	653	40	22	2007	2,725	623	99	21
2008	2,129	609	40	20	2008	2,509	600	84	21
2009	1,689	570	34	17	2009	2,284	576	79	21
2010	1,788	575	34	16	2010	2,234	549	70	18
2011	1,292	546	32	17	2011	1,899	552	75	23
2012	1,218	528	31	16	2012	1,821	518	66	17
2013	1,234	502	27	19	2013	1,755	473	59	16
2014	1,282	488	29	18	2014	1,471	466	68	17
2015	1,266	461	28	18	2015	1,536	458	61	17
2016	1,307	460	33	19	2016	1,465	450	61	17
2017	1,358	449	27	17	2017	1,449	432	67	19
2018	1,217	424	30	18	2018	1,440	414	60	19
2019	1,255	427	29	16	2019	1,483	418	64	20
2020	1,230	399	39	15	2020	1,355	383	61	19
2021	1,173	373	29	13	2021	1,572	385	69	21

Source: NMFS Restricted Access Management (RAM) division and compiled by AKFIN (Copy of landing_qs(11-22-21))
 Numbers for 2021 are preliminary

Table 27 Regional participation (QS owner and vessel owner communities)

	Year	Central Gulf Vessels	Southeast Vessels	Other Alaska Vessels	Other States Vessels	Central Gulf QS Holders	Southeast QS Holders	Other Alaska QS Holders	Other States QS Holders
2C	2006	6	567	5	97	30	1049	48	235
	2007	6	552	4	87	25	1001	43	233
	2008	5	518	3	81	21	943	32	229
	2009	4	480	2	76	25	929	30	221
	2010	3	490	0	78	23	899	28	212
	2011	3	462	2	74	21	879	25	205
	2012	5	444	3	71	16	841	16	191
	2013	4	425	3	65	15	807	16	193
	2014	4	426	3	53	14	797	17	185
	2015	3	393	4	60	15	788	15	175
	2016	4	395	4	55	19	776	13	169
	2017	5	375	3	57	16	750	15	166
	2018	5	365	2	51	14	746	13	170
	2019	4	362	2	57	15	755	11	158
	2020	3	342	2	49	12	737	45	145
	2021						14	744	16
3A	2006	301	185	19	135	865	393	137	400
	2007	284	190	20	127	797	366	119	385
	2008	277	184	17	121	751	342	87	367
	2009	266	170	18	116	724	334	82	361
	2010	266	163	14	105	700	329	74	359
	2011	269	154	16	110	685	319	70	357
	2012	265	135	12	102	627	314	59	341
	2013	225	135	14	97	614	307	55	342
	2014	213	139	14	98	590	301	52	340
	2015	221	130	12	92	581	297	52	329
	2016	212	134	10	91	568	287	52	329
	2017	207	112	12	81	549	285	54	313
	2018	195	124	12	77	534	284	51	316
	2019	191	132	11	79	522	297	49	301
	2020	177	131	11	63	493	281	134	256
	2021						511	292	49

Source: NMFS Restricted Access Management (RAM) division and compiled by AKFIN (Copy of landing_qs(11-22-21))

Charter Halibut Tables for Dashboard Figures

Table 28 Area 2C charter halibut regulations, allocations, and yields/ removals

Year	Mgmt Type	Area 2C Charter Management Measures	Allocation (Mlb)	Yield or Removals (Mlb)	Under (-)/ Over (+) Allocation	
					Mlb	%
2006	GHL	Two fish any size, State EO prohibiting crew harvest 5/26-12/31.	1.432	1.804	0.372	26.0%
2007	GHL	Two fish (one ≤ 32"; effective 6/1), no crew retention 5/1-12/31 (State EO and Federal Rule).	1.432	1.918	0.486	33.9%
2008	GHL	Two fish (one ≤ 32"), except one-fish bag limit Jun 1-10 (halted by injunction).	0.931	1.999	1.068	114.7%
2009	GHL	One fish any size, no harvest by skipper & crew, line limit (effective 6/5).	0.788	1.249	0.461	58.5%
2010	GHL	One fish any size, no harvest by skipper & crew, line limit.	0.788	1.086	0.298	37.8%
2011	GHL	One fish ≤ 37", no harvest by skipper and crew, line limit.	0.788	0.344	-0.444	-56.3%
2012	GHL	One fish ≤ 45" or ≥ 68", no harvest by skipper and crew, line limit.	0.931	0.605	-0.326	-35.0%
2013	GHL	One fish ≤ 45" or ≥ 68", no harvest by skipper and crew, line limit.	0.788	0.762	-0.026	-3.3%
2014	CSP	One fish ≤ 44" or ≥ 76", CSP provisions.	0.761	0.827	0.066	8.7%
2015	CSP	One fish ≤ 42" or ≥ 80", CSP provisions.	0.851	0.814	-0.037	-4.3%
2016	CSP	One fish ≤ 43" or ≥ 80", CSP provisions.	0.906	0.839	-0.067	-7.4%
2017	CSP	One fish ≤ 44" or ≥ 80", CSP provisions.	0.915	0.941	0.026	2.8%
2018	CSP	One fish ≤ 38" or ≥ 80", CSP provisions.	0.810	0.716	-0.094	-11.6%
2019	CSP	One fish ≤ 38" or ≥ 80", CSP provisions.	0.820	0.697	-0.123	-15.0%
2020	CSP	One fish ≤ 40" or ≥ 80"; changed to one fish ≤ 45" or ≥ 80" on 6/15/2020, CSP provisions.	0.780	0.483	-0.297	-38.0%
2021	CSP	One fish ≤ 50" or ≥ 72", CSP provisions.	0.810	1.154	0.344	42.5%

Source: Estimates of charter yield pre-CSP are derived from the SWHS (2006-2013) and estimates of removals (which account for release mortality) are derived from ADF&G logbook (2014-2021) and from dockside sampling (all years)

"CSP provisions" mean no harvest by captains or crew. In addition, the State of Alaska regulations for Southeast Alaska still dictate that the maximum number of fishing lines that may be fished from a vessel engaged in charter activities is equal to the number of paying clients on board the vessel but cannot exceed six lines.

Removal estimates for 2021 are preliminary.

Table 29 Area 3A charter halibut regulations, allocations, and yield/ removals

Year	Mgmt Type	Area 3A Charter Management Measures	Allocation (Mlb)	Yield or Removals (Mlb)	Under (-)/ Over (+) Allocation	
					Mlb	%
2006	GHL	Two fish any size, no limit on crew retention.	3.65	3.664	0.014	0.4%
2007	GHL	Two fish any size, state EO prohibiting crew harvest 5/1-12/31.	3.65	4.002	0.352	9.6%
2008	GHL	Two fish any size, state EO prohibiting crew harvest 5/24-9/1.	3.65	3.378	-0.272	-7.5%
2009	GHL	Two fish any size, state EO prohibiting crew harvest 5/23-9/1.	3.65	2.734	-0.916	-25.1%
2010	GHL	Two fish any size, no limit on crew retention.	3.65	2.698	-0.952	-26.1%
2011	GHL	Two fish any size, no limit on crew retention.	3.65	2.793	-0.857	-23.5%
2012	GHL	Two fish any size, no limit on crew retention.	3.103	2.284	-0.819	-26.4%
2013	GHL	Two fish any size, no limit on crew retention.	2.734	2.514	-0.220	-8.0%
2014	CSP	Two fish (one ≤ 29"), CSP provisions.	1.782	2.066	0.284	15.9%
2015	CSP	Two fish (one ≤ 29"), 5-fish annual limit, Thursday closure (6/15-8/31), CSP provisions.	1.890	2.094	0.204	10.8%
2016	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, CSP provisions.	1.814	2.021	0.207	11.4%
2017	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 3 Tuesdays closed, CSP provisions.	1.890	2.089	0.199	10.5%
2018	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 6 Tuesdays closed, CSP provisions.	1.790	1.886	0.096	5.4%
2019	CSP	Two fish (one ≤ 28"), 4-fish annual limit, Wednesday closure, 5 Tuesdays closed, CSP provisions.	1.890	2.054	0.164	8.7%
2020	CSP	Two fish (one ≤ 26"), 4-fish annual limit, Wednesday and Tuesday closure, CSP provisions. On 6/14/20 begin fishing with two fish (one ≤ 32"), no annual limit, 7 days fishing per week, CSP provisions.	1.71	1.567	-0.143	-8.4%
2021	CSP	Two fish (one ≤ 32"), Wednesday closure, CSP provisions.	1.95	2.454	0.504	25.9%

Source: Estimates of charter yield pre-CSP are derived from the SWHS (2006-2013) and estimates of removals (which account for release mortality) are derived from ADF&G logbook (2014-2021) and from dockside sampling (all years)

"CSP provisions" mean no harvest by captains or crew. Additionally, since 2014 vessels in Area 3A have been limited to one trip per day and since 2016 CHPs have been limited to one trip per day.

Removal estimates for 2021 are preliminary.

Table 30 Participation (vessels, businesses, and unique anglers)

Area 2C				Area 3A			
Year	Vessels	Businesses	Unique Anglers (thousands)	Year	Vessels	Businesses	Unique Anglers (thousands)
2006	678	392	40.83	2006	613	472	95.93
2007	705	396	43.06	2007	636	477	100.45
2008	698	392	41.22	2008	595	453	91.66
2009	611	354	31.19	2009	541	410	74.67
2010	577	334	31.97	2010	516	392	80.68
2011	505	264	30.46	2011	444	324	79.70
2012	498	255	31.55	2012	405	284	78.46
2013	501	250	33.73	2013	386	255	80.75
2014	520	246	37.72	2014	399	259	74.02
2015	515	241	40.58	2015	407	250	73.82
2016	532	248	41.84	2016	388	240	78.35
2017	537	248	45.91	2017	374	227	73.22
2018	533	244	49.73	2018	391	232	73.85
2019	545	256	49.93	2019	399	226	74.35
2020	386	192	16.94	2020	343	203	49.58
2021	492	227	37.36	2021	384	225	87.20

Source: ADF&G saltwater logbook data provided by ADF&G (Copy of chp_figures(1-1-22))

Values for 2021 are preliminary.

Businesses and vessels are counted with the harvest of at least one halibut.

A unique angler is counted if there is a client record of a halibut harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded. Excludes crew and anglers without a license (e.g., youth and blanks).

Table 31 Value (estimated gross revenue and average estimated gross revenue per vessel)

Area 2C			Area 3A		
Year	Estimated Gross Revenue (millions, 2017 USD)	Average Estimated Gross Revenue per Vessel	Year	Estimated Gross Revenue (millions, 2017 USD)	Average Estimated Gross Revenue per Vessel
2006	38.0	56,065	2006	48.6	79,230
2007	40.2	56,980	2007	50.2	78,861
2008	39.2	56,106	2008	45.6	76,645
2009	27.2	44,547	2009	36.1	66,679
2010	27.2	47,205	2010	37.6	72,957
2011	24.0	47,545	2011	36.0	81,044
2012	24.5	49,165	2012	35.4	87,430
2013	25.9	51,781	2013	35.4	91,687
2014	28.3	54,414	2014	32.4	81,110
2015	29.2	56,681	2015	30.8	75,715
2016	29.3	55,088	2016	31.8	81,840
2017	30.7	57,089	2017	29.4	78,515
2018	31.1	58,303	2018	28.7	73,464
2019	30.0	55,071	2019	28.5	71,466
2020	12.8	33,189	2020	19.5	56,870
2021	28.5	57,894	2021	34.0	88,581

Source: ADF&G saltwater logbook data compiled by AFKIN (Copy of chp_figures(1-1-22))

These data are to be used for estimation purposes only and may be subject to change with improvements in data quality.

The total and per vessel estimated gross revenues are the product of angler-days multiplied by an average price. The angler-day values are sourced from ADF&G saltwater logbook data provided by ADF&G. An angler-day and a trip is counted if there is a client record of a halibut harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded.

The average prices are estimated based on categories of trip length reported in ADF&G logbook data compiled by AKFIN. Price estimates are based on values from Lew and Lee (2018). Values for 2021 are based on preliminary estimates of angler-days.

The creation of these metrics and further caveats are further described in the analysis.

Table 32 Trips, ports, and angler-days

Area 2C				Area 3A			
Year	Trips (thousands)	Angler-days (thousands)	Ports	Year	Trips (thousands)	Angler-days (thousands)	Ports
2006	25.93	97.24	86	2006	24.12	140.94	63
2007	27.46	105.99	79	2007	25.49	151.65	59
2008	26.22	103.27	91	2008	23.31	137.65	55
2009	19.33	74.43	78	2009	18.99	110.89	60
2010	19.99	77.98	78	2010	19.61	118.43	61
2011	19.18	72.93	68	2011	19.02	117.81	52
2012	19.85	75.46	73	2012	18.45	117.65	48
2013	21.07	81.76	72	2013	18.46	119.08	46
2014	23.17	90.41	72	2014	17.05	109.03	45
2015	23.89	94.80	65	2015	16.50	104.64	42
2016	24.08	96.26	65	2016	17.14	108.77	45
2017	26.09	104.27	63	2017	16.09	101.46	44
2018	27.12	108.69	64	2018	16.56	101.76	40
2019	26.44	106.75	59	2019	16.71	103.57	40
2020	11.72	44.93	54	2020	12.16	71.75	32
2021	24.66	100.27	57	2021	20.11	123.02	40

Source: ADF&G saltwater logbook data provided by ADF&G (Copy of chp_figures(1-1-22))

Values for 2021 are preliminary.

Ports are counted for trips that end with the harvest of at least one halibut.

An angler-day and a trip is counted if there is a client record of a halibut harvested or days that were open to halibut retention where bottomfish hours or statistical areas were recorded.

Table 33 Diversification in type of halibut charter trip

	Year	Half Day	Three Quarter Day	Full Day	Overnight	Multi-Day
2C	2006	15.3%	46.0%	31.9%	6.2%	0.6%
	2007	15.2%	43.9%	33.5%	7.1%	0.3%
	2008	15.2%	42.1%	31.9%	10.6%	0.1%
	2009	17.6%	45.1%	28.2%	9.0%	0.1%
	2010	15.8%	44.4%	31.4%	8.4%	0.1%
	2011	17.3%	49.9%	28.7%	4.0%	0.1%
	2012	16.3%	49.2%	29.6%	4.8%	0.0%
	2013	18.4%	51.9%	24.3%	5.3%	0.1%
	2014	17.7%	50.1%	27.1%	5.0%	0.1%
	2015	16.8%	47.8%	31.1%	4.3%	0.1%
	2016	16.6%	49.6%	29.2%	4.5%	0.1%
	2017	18.8%	51.3%	25.8%	4.0%	0.1%
	2018	22.1%	48.8%	24.8%	4.3%	0.1%
	2019	21.7%	48.3%	25.9%	4.1%	0.1%
2020	15.5%	53.0%	26.3%	5.0%	0.2%	
3A	2006	37.4%	45.9%	12.4%	4.2%	0.1%
	2007	38.0%	46.1%	12.9%	3.0%	0.1%
	2008	36.1%	45.0%	15.3%	3.4%	0.2%
	2009	38.4%	44.5%	13.0%	4.1%	0.1%
	2010	34.3%	46.7%	15.2%	3.7%	0.1%
	2011	37.1%	46.4%	13.8%	2.6%	0.1%
	2012	37.1%	47.6%	12.2%	3.0%	0.1%
	2013	37.5%	44.2%	14.1%	4.2%	0.0%
	2014	31.4%	49.8%	14.7%	4.1%	0.0%
	2015	28.5%	52.3%	15.5%	3.7%	0.0%
	2016	27.6%	53.8%	14.5%	4.1%	0.0%
	2017	23.9%	55.5%	16.1%	4.4%	0.1%
	2018	25.0%	56.1%	13.8%	5.1%	0.1%
	2019	25.0%	57.2%	13.7%	4.1%	0.1%
2020	25.1%	58.2%	12.5%	4.0%	0.1%	

Source: ADF&G saltwater logbook data provided by ADF&G (Copy of chp_figures(1-1-22))
 These data are to be used for estimation purposes only and may be subject to change with improvements in data quality.
 Half-day trip = <5 hrs, Three-quarter day trip = 5-7 hrs, Full day trip = 8-9 hrs, Overnight trip = 10-16 hrs, Multi-day trip = >16 hrs.

Table 34 Regional Participation (CHP holder regional association)

2C	Year	Central Gulf CHP Holders	Southeast CHP Holders	Other Alaska CHP Holders	Other States CHP Holders
	2011	5	265	2	76
2018	5	218		51	
2019	5	218		51	
2020	5	217	1	51	
2021	5	219	1	49	

3A	Year	Central Gulf CHP Holders	Southeast CHP Holders	Other Alaska CHP Holders	Other States CHP Holders
	2011	367	21	9	48
2018	251	20	5	26	
2019	246	21	5	27	
2020	244	20	5	31	
2021	243	20	5	30	

Source: NMFS RAM (Copy of chp_figures(1-1-22))

GAF Tables for Dashboard Figures

Table 35 Summary of Area 2C IFQ to GAF transfers

Year	IFQ Pounds Transferred	Number of GAF Transferred	Number of GAF Permits Issued	Number of GAF Permit Holders	Percentage of self-transfers
2014	29,498	1,117	92	30	14%
2015	36,934	548	119	27	7%
2016	47,064	723	132	32	10%
2017	53,206	719	207	34	7%
2018	80,656	1,222	332	46	6%
2019	97,680	1,601	341	56	5%
2020	57,645	801	235	48	8%

Source: NMFS RAM Report

Table 36 Summary of Area 3A IFQ to GAF transfers

Year	IFQ Pounds Transferred	Number of GAF Transferred	Number of GAF Permits Issued	Number of GAF Permit Holders	Percentage of self-transfers
2014	11,654	910	19	13	47%
2015	10,337	269	25	13	40%
2016	10,442	289	26	11	38%
2017	9,786	233	22	13	41%
2018	12,760	304	31	17	35%
2019	13,524	338	29	13	45%
2020	5,240	92	15	7	67%

Source: NMFS RAM Report

Table 37 GAF prices

Area 2C				Area 3A			
Year	Weighted avg \$ / lb	IFQ lb / GAF	Avg \$/GAF	Year	Weighted avg. \$ / lb	IFQ lb / GAF	Avg \$/GAF
2014	\$5.62	26.4	\$148.37	2014	\$5.01	12.8	\$64.13
2015	\$5.62	67.3	\$378.23	2015	\$4.66	38.4	\$178.94
2016	\$5.43	65.1	\$353.49	2016	\$5.46	36.1	\$197.11
2017	\$5.32	74	\$393.68	2017	\$4.59	42	\$192.78
2018	\$5.17	71	\$367.07	2018	\$5.11	44	\$224.84
2019	\$5.33	66	\$351.78	2019	\$5.28	42	\$221.76
2020	\$4.99	61	\$304.39	2020	\$4.00	40	\$160.00
2021	\$5.20	72	\$374.40	2021	\$5.19	57	\$295.83

Source: NMFS RAM Report

Table 38 Area 2C GAF length frequency distribution in 2014 through 2020

Length in Inches	2020		2019		2018		2017	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
18-24	1	0.1%%	1	0.10%	5	0.50%	10	1.70%
25-29	1	0.10%	2	0.20%	11	1.10%	6	1.00%
30-34	10	1.30%	13	1.10%	23	2.40%	20	3.50%
35-39	30	3.90%	50	4.00%	21	2.20%	18	3.10%
40-44	13	1.70%	164	13.30%	95	9.80%	6	1.00%
45-49	98	12.80%	164	13.30%	122	12.60%	96	16.70%
50-54	139	18.20%	253	20.50%	199	20.50%	107	18.60%
55-59	174	22.80%	308	24.90%	202	20.80%	107	18.60%
60-64	194	25.40%	184	14.90%	158	16.30%	93	16.10%
65-69	69	9.00%	61	4.90%	68	7.00%	65	11.30%
70-74	19	2.50%	23	1.90%	53	5.50%	35	6.10%
75-79	13	1.70%	13	1.10%	15	1.50%	13	2.30%
>80	3	0.40%	1	0.10%	0	0.00%	0	0.00%
Total	764		1,237		972		576	

Source: NMFS RAM Report

Table 39 Area 3A GAF length frequency distribution in 2014 through 2020

Length in Inches	2020		2019		2018		2017	
	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
18-24	0	0.00%	0	0.00%	0	0.00%	0	0.00%
25-29	0	0.00%	8	3.00%	14	6.50%	2	1.30%
30-34	2	5.30%	31	11.70%	14	6.50%	7	4.50%
35-39	0	0.00%	37	13.90%	23	10.70%	20	12.70%
40-44	5	13.20%	34	12.80%	31	14.40%	28	17.80%
45-49	3	7.90%	42	15.80%	43	20.00%	34	21.70%
50-54	8	21.10%	54	20.30%	43	20.00%	37	23.60%
55-59	14	36.80%	44	16.50%	37	17.20%	13	8.30%
60-64	6	15.80%	12	4.50%	7	3.30%	9	5.70%
65-69	0	0.00%	4	1.50%	1	0.50%	4	2.50%
70-74	0	0.00%	0	0.00%	0	0.00%	3	1.90%
75-79	0	0.00%	0	0.00%	1	0.50%	0	0.00%
>80	0	0.00%	0	0.00%	1	0.50%	0	0.00%
Total	38		266		215		157	

Source: NMFS RAM Report

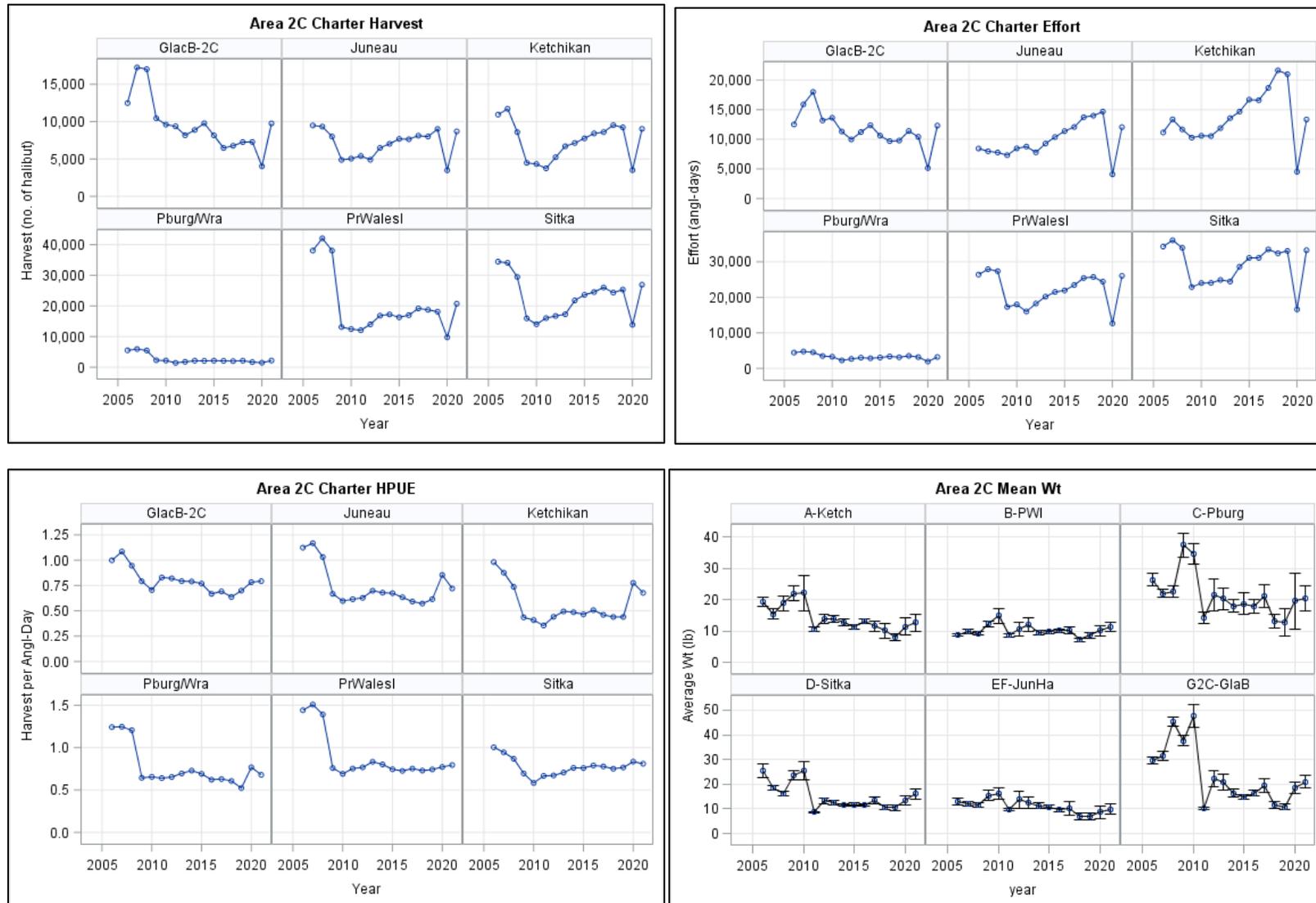


Figure 22 Harvest, effort, harvest-per-unit effort, and mean weight by subarea in IPHC Area 2C, 2006- 2021.

Source: ADF&G informational handout October 2021. All estimates for 2021 are preliminary.

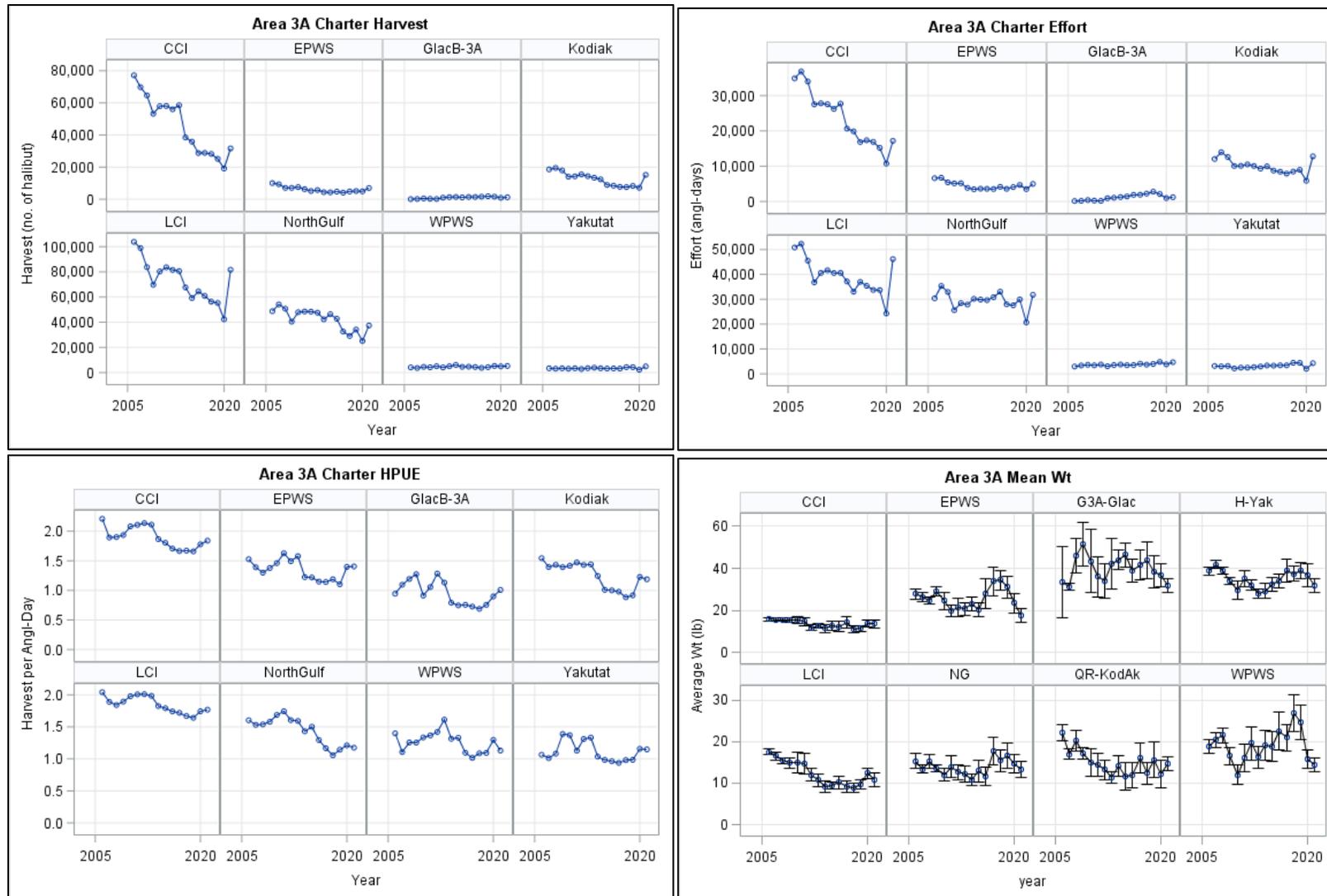


Figure 23 Harvest, effort, harvest-per-unit effort, and mean weight by subarea in IPHC Area 3A, 2006- 2021.

Source: ADF&G informational handout October 2021

All estimates for 2021 are preliminary.