Analysis of Management Options for the Area 2C and 3A Charter Halibut Fisheries for 2025

A Report to the North Pacific Fishery Management Council

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1.0 Introduction

The International Pacific Halibut Commission (IPHC) approves catch limits for Pacific halibut each year for Regulatory Areas in Alaska. In IPHC Regulatory Areas 2C and 3A, which roughly correspond with Southeast and Southcentral Alaska, these catch limits are allocated between the commercial longline fishery and the sport charter fishery. The allocations are specified in the North Pacific Fishery Management Council's Halibut Catch Sharing Plan (CSP)[1]. The allocations vary with the magnitude of the overall catch limit, such that the percentage allocated to the charter sector increases slightly as catch limits decrease. The CSP also specifies that release mortality will count toward the sector's allocation. The CSP further specifies that, effective in 2014, charter harvest accounting will be based on numbers of halibut reported harvested in Alaska Department of Fish and Game (ADF&G) saltwater guide logbooks.

The charter fishery in Areas 2C and 3A is managed under regulations reviewed and recommended each year by the North Pacific Fishery Management Council (Council) and approved and published by the IPHC and NOAA as annual management measures. As the first step in this process, the Council's Charter Halibut Management Committee met October 25, 2024, to develop alternative management measures for analysis by the ADF&G for the 2025 season. ADF&G staff provided preliminary estimates of charter harvest and release mortality for the 2024 season to committee members prior to the meeting. In Area 2C, electronic reporting of trips using eLogbook became mandatory in 2021; therefore, logbook data for all trips that were submitted prior to September 27th, 2024, were used for preliminary estimates. In recent years, no harvest was reported in Area 2C after October 15th. In Area 3A, where use of paper logbooks is still widespread, the preliminary estimates were based on logbook data for trips through August 31st, 2024. Estimates will be finalized by fall of 2025 once all logbook data are entered and edited.

At the time of the October meeting, the 2024 preliminary reported harvest in Area 2C for the charter fishery was 89,303 halibut with an estimated average net weight of 9.07 lb (St. Saviour 2024). The Area 2C preliminary estimate of charter removals was 0.843 million pounds (Mlb), including an estimated 0.032 Mlb of release mortality. The preliminary estimate of charter removals was 4.0% over the 0.810 Mlb allocation. Charter halibut regulations in 2C included a one-fish bag limit, a reverse slot limit allowing for harvest of fish less than or equal to 40 inches or greater than or equal to 80 inches (U40O80) February 1st through July 14th. From July 15th through December 31st, the slot limit was decreased to less than or equal to 36 inches and greater than or equal to 80 inches (U36O80). Fridays were closed to halibut retention from July 19th through September 13th.

In Area 3A, an estimated 161,439 halibut were harvested with an average weight of 9.85 lb (St. Saviour 2024) when preliminary estimates were reported to the Charter Halibut Management Committee in October. The preliminary estimate of charter removals for Area 3A was 1.607 Mlb, including 0.017 Mlb of release mortality. The preliminary estimate was 15.0% under the allocation of 1.89 Mlb. Charter regulations in 3A included a two-fish bag limit of which one fish could be any size and the second must be less than or equal to 28 inches, no harvest of halibut on Wednesdays, a limit of one trip per vessel per day, and a limit of one trip per Charter Halibut Permit (CHP) per day.

[1] Catch Sharing Plan regulations are at: https://www.federalregister.gov/documents/2013/12/12/2013-29598/pacific-halibut-fisheries-catch-sharing-plan-for-guided-sport-and-commercial-fisheries-in-alaska

The Charter Committee considered the performance of last year's measures, and in light of recent trends in effort, numbers of halibut harvested by charter anglers, average weight of halibut, halibut abundance, and economic considerations, identified the following measures for analysis for 2025:

Area 2C (all options include a one-fish bag limit and inflation factor for release mortality):

- Reverse Slot ranging from 32 – 50 inches on the low end and 50 – 80 inches on the upper end.
- Reverse Slot confined to ranges of 35 – 40 inches on the low end and 80 inches on the upper end and a limit of one trip per vessel and one trip per permit per day.
- Reverse Slot with day closures on Tuesday, Thursday, and Saturday with savings in removals displayed for each day of closure.
    a. Analyzed for each day from May 15th – September 15th or for the entire season
    b. Analyzed for lower slot limits ranging from 32 inches to 50 inches, and an upper slot limit of 80 inches.
    c. Include results as an excel workbook so members of the CHMC can select different closure day combinations or date range combinations and determine removals.
- Reverse Slot with day closures confined to ranges of 32 – 42 inches on the low end and 80 inches on the upper end and a limit of one trip per vessel and one trip per permit per day.

- Differential Reverse Slot displayed in removals.
    a. Analyzed for lower slot limits ranging from 38-42 inches at the beginning of the season, changing to a range of 32-38 inches for the end of the season, and an upper slot limit of 80 inches throughout the season.
    b. Analyzed to change lower slot limits on July 1st, July 15th, and August 1st.

Area 3A (all options include, unless otherwise noted, a two-fish bag limit with a maximum size limit of 28 inches on one fish and one fish of any size, one trip per vessel and one trip per CHP per day, and all Wednesdays closed to retention of halibut):

- Day of the week closures on Wednesdays[2] from June 4th – Sept 3rd or for the entire season;
- Day of the week closures on Tuesdays from June 3rd – Sept 2nd or for the entire season;
- Maximum size limits of 26 – 32 inches on one fish;
- Annual limits of 2 – 4 fish; and
- Any combination of the above management measures.

This analysis provides information to stakeholders and the Council to assist them in selecting management measures likely to keep total charter removals within their allocations. The charter allocations will be derived from catch limits determined by the IPHC at their Annual Meeting in January 2025. The charter allocations will not be known when the Council is expected to make its recommendations in December 2024. It is recommended that the Council include contingencies to accommodate adoption of a range of catch limits.

The IPHC's 2024 stock assessment results were made available to the public on November 22nd. There are no Regulatory Area TCEYs to use as reference points for the analyses for the 2C and 3A charter

[2] Analysis of day of the week closures on Wednesdays also evaluates Wednesdays being open.

management measures; still, there are several reference points that the Council may wish to consider in making recommendations for 2025:

- The Coastwide TCEY in 2024 was 35.28 Mlb.
- The 2024 Stock Assessment estimated a 3-year surplus TCEY for of 37.4 Mlb;
- The TCEY at the reference fishing intensity ($F_{43\%}$) is estimated to be 39.8 Mlb.

Updated estimates of the commercial fishery CPUE in recent years were lower than previously estimated and resulted in a 17% decrease to the spawning biomass compared to what was estimated at the end of 2023. The estimated spawning biomass increased slightly from 145 Mlb at the beginning of 2024 to 147 Mlb at the beginning of 2025 due to the continued maturation of the 2012 year-class and the onset of maturity of the 2016 year-class.

In addition to the Coastwide TCEY, the Council may wish to consider changes in the stock distribution as estimated by the IPHC's Fishery Independent Setline Survey. While modelled numbers-per-unit-effort (NPUE) of all sizes were up from 2023 to 2024 by +11% in Region 2 and +1% in Region 3, weight-per-unit-effort (WPUE) of halibut over 32' (O32) was down -6% in 2C and -18% in 3A. In 2024, modelled stock distribution continued to increase in Region 2 to 27% of the coastwide total and decreased slightly in Region 3 to 44% of the coastwide total. In recent years, distribution procedures have considered the distribution of O32 biomass among Regulatory Areas, in addition to other factors such as relative harvest rates, socio-economic considerations, international agreements, and both survey and fishery CPUE when determining Regulatory Area TCEYs.

Considering the paucity of information on 2025 catch limits and distribution to Regulatory Areas, we have used the 2024 allocations as reference points for the 2025 charter management measures. Results presented here are within the context of allocations set for 2024:

IPHC Area	2024 Allocation (Mlb)
2C	0.81
3A	1.89

This analysis projects total charter fishery removals under the current (status quo) charter fishery regulations in each Regulatory Area. As shown below, under current regulations the projected charter removal in 2025 for Area 2C is 0.883 Mlb. The projected removal for Area 3A is 1.763 Mlb.

Area	Projected Status Quo Charter Removals (Mlb)	Status Quo TCEY Difference (Mlb) (2025 Projection - 2024 Allocation)
2C	0.883	+ 0.073
3A	1.763	- 0.127

For consistency with analyses reported in recent years, the analyses included in this report generally follow previously reported methods (Webster and Powers 2018, 2019, and 2020; Webster, Jevons, and Powers 2021; King, Webster, and Jevons 2022; and Bowman, Webster, Carr, and Jevons 2023). The analyses cover a range of alternatives as proposed by the Charter Halibut Management Committee to allow stakeholders, the Council, and the IPHC to select the desired management measures to meet the

charter allocation for each Area. Where applicable, results reference candidate measures that result in projected charter removals within the 2024 allocation.

2.0 General Methods

2.1 Definitions and Basic Calculations

Throughout this analysis, the term "harvest" means the number of halibut killed and landed in the charter fishery. "Yield" is the harvest expressed in units of weight. "Release mortality" refers to halibut that die as a result of stress or injury from being caught and then released and is expressed in units of weight. Finally, "removals" refers to all halibut killed in the sport fishery, including harvest and release mortality, and is measured in units of weight. Weight is based on length data from harvested halibut sampled at ports and the length-weight relationship developed by IPHC (Webster and Stewart 2022). Removals are generally projected from harvest, average weight, and release mortality as follows:

$$Harvest(no.fish) = Effort\ (angler\ days) \times HPUE\ (harvest\ per\ angler\ day),$$

$$Yield(lb) = Harvest \times AverageNetWeight(lb), \text{ and}$$

$$Removals\ (lb) = Yield(lb) \times r(lb)$$

where *r* is the release mortality expansion factor.

In prior years, in IPHC Area 2C the release mortality expansion factor was estimated as a function of the lower limit of the reverse slot limit. It was noted that the strength of this correlation has decreased steadily and there no longer appears to be a meaningful relationship between estimated release mortality and the lower reverse slot limit. Therefore, Area 2C and Area 3A release mortality was forecast as the 5-year average ratio of estimated release mortality to estimated yield in each respective area:

$$r(lb)=1+[ReleaseMortality(lb)/Yield\ (lb)]$$

which for 2024 is 1.042 in Area 2C and 1.008 in Area 3A.

2.2 Calculations by Subarea

All calculations for Area 2C and Area 3A were done by Subarea and then summed to obtain yield estimates for each Regulatory Area. Analyses were done at the Subarea level because many of the variables analyzed (harvest, effort, average weight, etc.) vary substantially by Subarea.

There are six Subareas in Area 2C and eight Subareas in Area 3A (Table 2C.1 and Table 3A.10, Figure 1). With few exceptions, the Subareas correspond to ADF&G sport fishery management areas as well as the reporting areas used for the ADF&G Statewide Harvest Survey (SWHS, mail survey of sport fishing). The Juneau and Haines/Skagway Areas were combined because the Haines/Skagway Area is not sampled for average weight and harvests are quite small. SWHS Area J is split into three Subareas: Eastern Prince William Sound (EPWS), Western Prince William Sound (WPWS), and the North Gulf Coast (NG). Likewise, Cook Inlet (SWHS Area P) is split into Central Cook Inlet (CCI) and Lower Cook Inlet (LCI) Subareas. These SWHS areas were split into Subareas such that the landings in each Subarea could be matched to estimates of average weight from port sampling. ADF&G obtained length measurements from harvested halibut and interviewed anglers and charter captains in at least one port in each Subarea. In addition, SWHS Area G (Glacier Bay) is divided into the 2C and 3A portions using statistical areas reported during biological sampling and in saltwater guide logbooks.

2.3 Harvest Forecasts

Time series methods are used to forecast harvest per unit effort (HPUE) in both Areas. Effort is measured in angler days; any days when bottomfish hours or bottomfish statistical areas were recorded in the logbook or halibut were harvested are considered days with halibut effort, permitting that day was open to

harvest of halibut. Forecasts are inherently uncertain because they rely only on past data, which are not necessarily indicative of future trends. Time series forecasts can't be used in all instances because they assume that the same underlying processes are in place as those that generated the historical data. Therefore, recent regulation changes or social/economic conditions may bias a forecast or render it unsuitable for other regulatory scenarios. Time series methods used in this report include simple and double exponential smoothing models using SAS/ETS™[3] software. Simple exponential models have a single parameter representing the level of the estimate and typically fit best to data without a clear trend. Double exponential models have a parameter for level and a parameter for trend, and typically fit best to data with a trend. Both models contain a smoothing weight, the value of which determines how much weight is given to more recent observations. The smoothing weights are optimized to minimize one-step-ahead prediction errors over the entire time series. Generally, the stronger the trend and lower the variability, the higher the smoothing weight and the more emphasis is placed on recent observations. Generally, both simple and double exponential models were run for each time series and the forecasts with the smallest AICc value (Akaike Information Criterion, corrected for small sample size) were selected.

For Area 2C, there was a significant change in how effort is managed when day closures to halibut retention were implemented in 2023 and 2024. This was the first time that days have been closed in this area. This disruption in the time series, therefore, did not allow us to forecast for effort in 2024 as was done in the past. Therefore, the preliminary estimates of effort for 2024 were used as the best indication of status quo effort for 2025. Harvest forecasts for 2025were calculated for each Subarea as the product of the effort and HPUE forecasts.

Simple exponential and double exponential forecasts were generated for 2025 HPUE using logbook data for 2009- 2024. The years 2020 and 2021 were omitted from all Areas due to the impacts of COVID-19 on recreational fishing practices during that period. Simple exponential models were used for all Areas except for the Area EF HPUE forecast.

In 3A, there were substantial and incremental changes in regulations over recent years that specifically targeted fishing effort including vessel trip limits, CHP trip limits, closing days to halibut retention, and annual limits. Therefore, the 2024 estimate of effort in 3A was assumed as the status quo effort for 2025 as has been the practice in recent years. In addition, implementation of the first size limits in Area 3A in 2014 resulted in a marked decline in the proportion of the charter halibut harvest made up of second fish in the bag limit. The largest decreases were in Subareas with the highest average weights (Glacier Bay and Yakutat). In other words, at ports with large halibut available, fewer anglers harvested a second fish, preferring instead to focus on harvesting one large fish. The decrease in retention of a second fish by anglers caused HPUE to decline as well (Figure 3). However, the areawide proportion of second fish retained continued to decline every year through 2019 even though changes in size limits and annual limits were quite minor. In 2020, the proportion of second fish in the harvest increased in all 3A ports and remained high in 2021. Areawide, HPUE was likely impacted by the regulations implemented in response to the COVID-19 pandemic in both 2020 and 2021, therefore, forecasts were generated for HPUE using logbook data for 2009-2019 and 2022-2024 for all Subareas in Area 3A (Table 3A.12, Figure 3).

2.4 Accounting for Release Mortality of Halibut

Under the CSP, the charter halibut allocation includes total removals by the charter sector, including harvest and release mortality. All sizes of release mortality have been estimated for 2013-2024 for inclusion in the IPHC's annual stock assessment as part of sport fishery removals. Estimation methods are documented in Webster and Buzzee (2020) and in ADF&G's annual reports to the IPHC[4].

[3] SAS/ETS™ software, Version 9.4, SAS System for Windows, Copyright © (2002-2024), SAS Institute, Inc.
[4] The ADF&G annual reports to the IPHC are available for download at https://www.npfmc.org/fisheries-issues/fisheries/halibut-fisheries/halibut-recreation/

The numbers and average weight of released fish are expected to vary with the regulations (e.g., types of size limits, bag limits, annual limits). For example, anglers would be expected to release more fish under a one-fish bag limit than a two-fish bag limit as they search for the largest fish possible to retain. The average weight of released fish would be expected to be higher under maximum size limits or reverse slot limits than under a minimum size limit, because more of the released fish would be large. On the other hand, the number of fish released is likely to be higher under a minimum than maximum size limit because smaller fish are relatively more abundant and more likely to be caught. Under reverse slot limits, the amount of release mortality would be expected to vary with the sizes and range of the protected slot. A wide protected slot would likely result in more released fish than a narrow slot, and a higher protected slot would result in a higher average weight of released fish. Under annual limits, both the number of fish and average weight of released fish would likely increase as annual limits are made more restrictive. Seasonal or daily closures will also increase the total number of released fish.

Previously in Area 2C, under reverse slot limits, the ratio of release mortality to charter yield (in pounds) showed a strong correlation to the lower bound of the reverse slot limit, and a linear regression model was used to determine release mortality inflation factors. Recently, however, the strength of the correlation has decreased. For 2025, a 5-year average of the ratio of release mortality to charter yield. Under status quo regulations, the predicted 2025 ratio of release mortality to harvested halibut is 0.042.

In Area 3A, the ratio of release mortality to charter yield has generally decreased over time, mostly due to a decrease in the number of released fish rather than to changes in the average weight of released fish. The ratio was 0.018 in 2013, and then decreased steadily from 0.022 in 2014 to 0.006 in 2023. For 2025 projections, the 5-year average of 0.008 was applied to yield to account for release mortality under the status quo management measures.

3.0 Area 2C Management Measures

3.1 Status Quo Forecast of the Number of Fish Harvested

Status quo measures for Area 2C include a one-fish bag limit, a U40O80 reverse slot limit through July 14th and a U36O80 reverse slot limit July 15th onward, and closed Fridays July 18th and through September 12th. The best forecast for effort in 2C in 2025 is the current year's effort. HPUE is predicted to increase slightly in all ports. The 2025 status quo effort forecast for Area 2C is 115,872 angler-days, the weighted average HPUE forecast is 0.775 halibut per angler-day, and the harvest forecast is 89,727 halibut, with a 95% margin of error (±2 standard errors) of ± 2,457 fish (Table 2C.3).

3.2 Reverse Slot Limit

3.2.1 Approach

Reverse slot size limits have been used to manage the Area 2C charter fishery since 2012. The goal of the reverse slot limit is to control the average weight of the harvest by requiring retained fish to be either below a lower size limit or above an upper size limit. The reverse slot size limit functions mostly as a maximum size limit, while still preserving the opportunity for anglers to retain exceptionally large fish. The charter industry and the Council have recommended reverse slot size limits because they effectively control average weight without severely impacting angler demand under a one-fish bag limit, thus preserving charter revenues in the face of restrictions.

Average weight under reverse slot limits was predicted using the same methods used for 2014-2024. Briefly, this procedure fixes the proportion of harvest above the upper size limit equal to the proportion in 2010, the last year without a size limit. The proportion of harvest below the lower size limit is assigned the remainder. Average weight is then estimated as a weighted mean of the average weight of fish above and below the upper and lower limits in 2010, where the weighting factors are the respective proportions of harvest above and below those limits. All estimates of average weight were adjusted to account for the updated length-weight relationship in all 2C analyses.

Average weights estimated from the fishery in 2021-2024 were compared to the 2010 predicted average weights for the size limits that were in place at the time. The average weights estimated from the fishery included any illegally harvested fish in the protected size slot between the lower and upper size limits (illegal-size fish made up an estimated 0.3% to 1.6% of the Area 2C harvest each year). Errors in predicted average weights since 2021 ranged from -3.2% to +73.7% for individual Subareas. Predicted average weight errors were highly variable among years and among Subareas. Correction factors were developed for the predicted average weights for each Subarea. The correction factors were based on the average ratio of the predicted and observed average weights from all years and ranged from 0.64 to 1.00 among Subareas.

This analysis assumes that there are no day of the week closures for 2025. To add the harvest from closed Fridays back in, the proportional reduction of harvest by Subarea was determined for days of the week closed in 2022. The year 2022 was used because it is the most recent year with finalized data with all days open. This proportional reduction of harvest by Subarea for nine Fridays was then added back in to the 2025 status quo forecast of harvest.

Total charter removals were projected for 2025 under a range of reverse slot limits with lower limits ranging from 32 to 50 inches and upper limits ranging from 50 to 80 inches. Projections of charter removals include the correction factors for bias in estimation of average weight as well as an inflation factor for predicted release mortality based on the lower slot limit.

3.2.2 Results

The projected charter removal under the status quo size limit of U40O80 is 0.982 Mlb, and for a size limit of U36O40 it is 0.847 (Table 2C.4). Projections ranged from 0.695 to 1.934 Mlb. Most options for reverse slot limits were above the 2024 allocation of 0.810 Mlb. The most liberal combinations of reverse slot

limits that were below the 2024 allocation are shaded in Table 2C.4. Limiting this analysis to U35O80 to U40O80 and a limit of one trip per vessel and one trip per permit per day resulted in a range of projections from 0.777 to 0.957 Mlb (Table 2C.5).

3.3 Reverse Slot Limit with Day of the Week Closures and one-trip per vessel and permit per day (presented as Savings Per Day)

3.3.1 Approach

Harvest was projected with day of the week closures in Area 2C with reverse slot limits ranging from a lower limit of 32 to 50 inches and with the upper limit fixed at 80 inches. The potential effect of closing days on each day from May 13th through September 9th was estimated (Table 2C.6). To give decision makers more flexibility, the information is presented as savings per day in lbs. Removals can be calculated by subtracting the amount saved by closing each individual day from the estimated removals with no days closed at a given lower slot limit. The analysis relied on complete logbook data for 2023. This analysis entailed estimating the proportional effect of each day closure in 2023 and applying those to the harvest forecast for 2025, adjusted to assume all days are open to fishing, as described in section 3.2.1.

The first step was to identify dates that would be closed in 2025. Once the specific closed dates were identified, the corresponding dates were identified from the 2023 data set for analyses, assuming the same day of the week. The analysis assumed that the proportion of harvest occurring on each day in 2023 would be eliminated if those days were closed. In other words, the harvest that occurred on those days represented the maximum potential change in harvest if those days were closed. All analyses were done by Subarea to account for differences in the structure of the charter fleet among Subareas. The total annual harvest under each scenario of closed days was compared to the harvest scenario of no closed days to estimate the proportional change in harvest for 2025.

To estimate the effect of one trip per vessel and permit per day, the proportion of halibut retained on second+ trips in a day 2021 through 2023 was subtracted from harvest estimates used in the “Day of the week closure” analyses.

A day of the week closure would be unlikely to achieve the estimated maximum reductions in halibut harvest because of the potential for displaced clients to book on alternate dates. We do not have sufficient information to accurately estimate the effect of a day of the week closure; we can only say that it would reduce halibut harvest by no more than the presented maximum reductions, and that the reduction would likely be less.

3.3.2 Results

Lower slot limits of 35 inches and less were below the 2024 allocation of 0.810 Mlb without any day closures. This table can be used to evaluate how day closures might allow for greater lengths on the lower end of the slot limit. An approximation of status quo reverse slot limit of U40O80 changing to U36O80 midseason is U38O80. The total removals without day closures at U38O80 is estimated to be 0.921 Mlb (Table 2C.6). Of the days analyzed, the maximum projected savings is on Tuesdays. Closing at least 11 Tuesdays is projected to save the necessary 111,196 lb (at the U38O80 slot limit) to get below the 2024 allocation. Each day has a different savings, so the days selected influence how many days will be required to get below the 2024 allocation.

Limiting trips to one per day reduces the number of halibut retained by 2.7% area-wide. Total removals without day closures at U38O80 is estimated to be 0.897 Mlb (Table 2C.7). Closing at least 8 Tuesdays is projected to save the necessary 86,905 lb (at the U38O80 slot limit) to get below the 2024 allocation. Each day has a different savings, so the days selected influence how many days will be required to get below the 2024 allocation.

3.4 Differential Reverse Slot Limit

This management measure would allow for a mid-season change to the lower limit in the reverse slot limit.

3.4.1 Approach

This management measure would allow for a mid-season change to the lower limit in the reverse slot limit. Three dates for changing the size limits were evaluated: July 1, July 15, and August 1. The analysis evaluated a range of initial lower slot limits of 38-42 inches and ending lower slot limits of 32-38 inches. All analyses assumed an upper limit of 80 inches for the entire season.

The analysis used harvest data from 2022 and evaluated the proportion of harvest prior to the requested date of regulation change in each area. The year 2022 was used as the base year because it is the most recent year without a mid-season change. Further, the proportion of harvest occurring in the early part of the season has declined, likely from a reduction in overall sport fishing effort due to changes in regulations in other fisheries that limit opportunities during the early part of the season. The proportion of harvest before and after each date in 2022 was used to estimate the harvest during that portion of the season in 2025; this was done by Subarea to account for differences in timing of the fishery. Mean weights were estimated using the same methods as described in section 3.2.1.

All projections include an inflation factor for predicted release mortality and a correction for average weight as described in previous sections.

To estimate the effect of one trip per vessel and permit per day, the proportion of halibut retained on second+ trips in a day 2021 through 2023 was subtracted from harvest estimates used in the “Differential Reverse Slot Limit” analyses.

Such a management measure could have an impact on the effort and proportion of harvest before and after the date of regulation change. It is possible that there would be an increase in effort before the date of regulation change, shifting in the distribution of effort within the year. The scale of this impact cannot be predicted with available data.

3.4.2 Results

Forecasted removals from this analysis ranged from 0.766 to 0.988 Mlb. Several combinations of starting and ending slots are under the 2024 allocation of 0.810 (Table 2C.8). Combining this analysis with one-trip per vessel and permit per day reduces the range of removals to 0.746 to 0.972 Mlb (Table 2C.9).

4.0 Area 3A Management Measures

4.1 Status Quo Forecast of the Number of Fish Harvested

The status quo measures for Area 3A included a two-fish bag limit with a maximum size limit of 28 inches on one fish, no retention of halibut on Wednesdays, and limits of one trip per vessel and one trip per CHP per day. The status quo effort forecast for Area 3A for 2025 is 107,393 angler-days, with a weighted average HPUE of 1.519 halibut per angler-day, and the harvest forecast is 163,135 halibut with a 95% margin of error (± 2 standard errors) of 4,745 fish (Table 3A.12).

4.2 Forecast of the Average Weight in each Subarea

4.2.1 Approach

Average weight was calculated as a weighted mean of the fish of any size and the fish subject to a maximum size limit. Calculations were done for each Subarea, then aggregated to Area 3A. The average weight for the fish of any size was assumed to be the overall average weight in 2013, the last year without a size limit in Area 3A. The average weight for size-restricted fish was calculated as the average weight of fish less than or equal to the specified size limit in 2013 (28 inches under status quo, size limits from 26 to 32 inches were all evaluated). These average weights were then weighted by the 2025 projected proportions of harvest made up of "first" and "second" fish in an angler's bag limit. These terms do not refer to the order in which the fish were caught, but rather to whether the fish came from limits of one or two fish. For example, if an angler kept only one halibut on a trip, the fish was designated a "first" fish. If an angler kept two halibut, one was designated "first" and the other "second." The proportions of "second" fish in the harvest were forecasted for 2025 from 2010-2019 and 2022-2024 logbook data using the exponentially weighted time series models described in Section 2.3. Data from 2020 and 2021 were excluded to mimic the methods used to forecast HPUE and because the substantial increase seen in second fish in 2020 and 2021 was likely a result of regulations reflective of pandemic conditions. HPUE forecasts ranged from 0.94 in subarea H to 1.84 in subarea CCI (Figure 3).

The average weights predicted using this method for each size limit differed from average weights observed under those size limits in past years. Factors contributing to those differences include changes since 2013 in the size distribution of the population, changes in the sizes of fish anglers are willing to keep given annual limits, and changes in the proportions of first and second fish in the harvest. Therefore, the predicted average weights were corrected, or adjusted to match current average weights. Bias corrections were based on the difference between predicted and estimated (observed) average weights for 2019-2024. Predicted average weights for past years tended to be underestimated for most Subareas, ranging from 40.5% below to 58.6% above observed values across all Subareas and years. Correction factors, based on the average ratio of the predicted and observed average weights, ranged from 0.803 to 1.213 among Subareas.

4.2.2 Results

The status quo forecast of average weight in 3A is 10.72 lbs. Status quo is based on a two fish bag limit with one fish of any size and a maximum size limit of 28 inches on one fish, and Wednesday closures. This is above the 2024 preliminary average weight estimate of 9.85 lbs. Estimated removals, including yield and release mortality, under status quo regulations is 1.764 Mlb and is below the 2024 allocation of 1.890 Mlb.

4.3 Maximum Size Limit on One Fish Combined with day closures

4.3.1 Approach

Charter removals were projected under maximum size limits ranging from 26 to 32 inches on the second fish and Tuesday closures from June 4–September 3 or for the entire season were explored for flexibility in recommending management measures. Projected removals include a 0.8% inflation factor to account for release mortality and a correction for the average weight as described above. These projections

incorporate all other status quo measures. Wednesday closures were also projected for the same size limits June 4th -September 3rd and for the entire season. In this case, closed Wednesdays closed were status quo, so effectively, this analysis provides information on opening Wednesdays. This analysis used data from 2014 to determine the proportion of halibut that were harvested on each Wednesday in that year and applied those proportions to the 2025 forecasted harvest. 2014 was used as a reference year because that was the most recent year without Wednesday closures. Closing Wednesdays June 4th -September 3rd is projected to increase the harvest by 3.8% relative to status quo. Opening all Wednesdays is projected to increase harvest by 18% (Table 3A.13).

The analysis for Tuesday closures relied on logbook data from 2024, the most recent year in which the fishery was open on all Tuesdays and closed on Wednesdays. The analysis proceeded by estimating the proportional effect of each Tuesdays in 2024 and applying those proportional effects to the harvest forecast for 2025. The first step was to identify the dates of specific Tuesdays that would be closed in 2024 under each possible number of closed days. A range of 13 Tuesday closures during the period June 3rd – September 2nd, 2025, and all Tuesdays from February – December 2025 were evaluated (Table 3A.14). Once the specific closed Tuesdays were identified, the corresponding Tuesday to each of those dates was identified from 2024. The analysis assumed the proportions of harvest occurring on each Tuesday in 2024 would be added or eliminated if those days were opened or closed, respectively. Closing all Tuesdays beyond the June 3rd – September 2nd period would reduce harvest by 13.3% (Table 3A.14).

As outlined in the 2C analysis of daily closures, the harvest reductions (relative to all Tuesdays open) under each scenario represent the maximum expected reduction in the number of fish harvested. A day of the week closure would be unlikely to achieve the maximum reduction in halibut harvest because of the potential for displaced anglers to book on alternate dates. We do not have sufficient information to accurately estimate the effect of a day of the week closure; we can only say it would reduce halibut harvest by no more than the presented maximum reductions, and that the reduction would likely be less.

Average weight under each size limit from 26 to 32 inches was calculated as a weighted mean of the fish of any size and the fish subject to a maximum size limit as outlined in section 4.2.1.

4.3.2 Results

Removal estimates for combinations of closed Wednesdays and size limits on one fish ranged from 1.677 Mlb for a 26-inch fish with all Wednesdays closed to 2.289 Mlb for a 32-inch fish with no Wednesdays closed (Table 3A.15). Combinations of size limits and closed days that were below the 2024 allocation of 1.89 Mlb ranged from 28 to 31 inches and 7 to All closed Wednesdays.

Removal estimates for combinations of closed Tuesdays, status quo (closed Wednesdays), and size limits on one fish ranged from 1.425 Mlb for a 26-inch fish with all Tuesdays closed to 1.19 Mlb for a 32-inch fish with no Tuesdays closed (Table 3A.16). Combinations of size limits and closed days that were below the 2024 allocation of 1.89 Mlb ranged from 28 to 32 inches and zero to All closed Tuesdays.

4.4 Maximum Size Limit on One Fish Combined with Annual Limits

4.4.1 Approach

Combinations of other size limits and annual limits were explored to provide the Council flexibility in recommending management measures. Charter removals were projected under maximum size limits ranging from 26 to 32 inches on the second fish and annual limits of two to four fish. Projected removals include a 0.8% inflation factor to account for release mortality. These projections incorporate all other status quo measures, including the charter vessel trip limit, permit trip limit, and a Wednesday closure for the entire year.

Average weight under each size limit was calculated as described in section 4.2.1.

The effects of various annual limits on harvest were estimated using charter logbook data that summarized the distribution of annual harvests by individual licensed anglers from 2023. Calculations of

annual harvests could not be done for youth anglers because they are not required to be licensed, and therefore harvest cannot be assigned to individuals. Youth accounted for 5.6% of charter effort in Area 3A in 2023. Because the proportion of youth effort was relatively low, we assume that leaving youth anglers out of the calculations did not bias estimates of the effects of implementing annual limits.

For each Subarea, harvests under each proposed annual limit were estimated by truncating the annual harvest of each angler during 2023 at the given annual limit. For example, if 500 anglers harvested four fish each in 2023 (2,000 fish total), then under an annual limit of three fish, that group of 500 anglers would only harvest 1,500 fish. The number of anglers that would be affected by each annual limit was calculated as the number of anglers that harvested more than the given annual limit in 2023. In the example above, all 500 anglers harvested more than three fish and would be affected by a three-fish annual limit, but anglers that harvested three or fewer fish would be unaffected. Using this approach, the annual harvest by licensed anglers was calculated over a range of annual limits and the percentage reduction in harvest was calculated by comparison to their total harvest with no annual limit. All calculations were done by Subarea and summed to obtain the harvests under each annual limit in Area 3A.

Doing the calculations by Subarea slightly underestimates the harvest reductions associated with annual limits because some anglers fish in multiple Subareas within a year. For example, if an individual angler caught two fish in each of two Subareas in the base year, the analysis by Subarea would indicate that a three-fish annual limit would have no effect on that angler's annual harvest in either Subarea. In reality, the limit would cut that angler's annual harvest by 25 percent. The degree of underestimation depends on how many anglers fished multiple Subareas in a year. The magnitude of this error was evaluated by comparing the percentage harvest reductions estimated from Subarea and areawide data. The Subarea method underestimated the reductions in harvest by 3.5% to 0.5% percentage points for annual limits from two to four fish, respectively. The underestimation caused by anglers fishing multiple Subareas was considered negligible. Furthermore, because this underestimated the reduction of harvest, results are considered conservative estimates.

4.4.2 Results

The effects of annual limits varied by Subarea, with the largest effects in the Kodiak Subarea (Table 3A.17). Areawide, application of annual limits to the harvest would result in harvest reductions of 3.6% to 15.1% with four to two fish annual limits. With all other status quo measures in effect (and all Tuesdays open), implementing a two to four-fish annual limit is estimated to reduce the harvest by 25,861 to 5,827 halibut (Table 3A.17).

A 32-inch size limit on the second fish combined with a four-fish annual limit is forecast to constrain removals to just below the 2024 allocation of 1.89 Mlb; options for smaller size limits and more restrictive annual limits are also available (Table 3A.18).

Removal estimates for combinations of closed Tuesdays, status quo (closed Wednesdays), size limits on one fish, and annual limits ranged from 1.187 Mlb to 1.849 Mlb. All combinations of size limits and closed days were below the 2024 allocation of 1.89 Mlb (Table 3A.19).

5.0 Implementation Considerations

5.1 Size Limits

There are no anticipated problems associated with implementation of a reverse slot limit in Area 2C or maximum size limit on the second fish in Area 3A. Size limits have been used successfully in both Regulatory Areas for several years. Maximum size limits and reverse slot limits are implemented for the charter halibut fishery to control the average weight of harvested fish. This type of regulation increases the number of fish released thereby increasing removals associated with release mortality. Not only do these size limits generate additional regulatory (versus voluntary) release of halibut, but they also increase the average weight of released fish. The relative impact of size limits, in terms of release mortality and angler satisfaction, is expected to vary by Subarea due to variation in the availability of large fish caught. For example, clients fishing in Subareas where large fish are commonly caught would likely end up releasing relatively more fish above the maximum size limit or in the protected slot, and those fish would likely be larger. Although release mortality is likely higher under size limits, it is included in the estimates of removals and is accounted for in the charter sector allocation.

5.2 Annual Limits

Annual limits were implemented in Area 3A in 2015– 2019. If annual limits are recommended for the charter fishery, it is crucial for enforcement purposes to ensure that the regulation is accompanied by a recording requirement like that implemented in past years. Specifically, immediately upon retaining a halibut, charter anglers must record, the date, location (IPHC area), and species (halibut) on their harvest record. Enforcement of the annual limit consists of checking anglers with halibut to make sure the harvest is recorded. It is expected that Guided Angler Fish (GAF) taken under the CSP would be exempt from the recording requirement as these harvests accrue toward the IFQ fishery allocation.

Halibut harvest accounting by individual anglers would be implemented through ADF&G charter logbooks as was done in past years. Logbooks require reporting the number of halibut kept and released by individual anglers, as well as the angler's name and fishing license/ID number. No number can be recorded for youth anglers as they are not required to be licensed. Under the CSP, all anglers (including youth) are required to certify in the logbook that the reported number of halibut kept and released is correct.

Another concern with annual limits is that compliance may be low among youth anglers. Youth anglers are not required to be licensed but are still required to complete a harvest record upon harvesting halibut. Although enforcement in the field would be no different for youth anglers, their annual harvests cannot be evaluated post-season using logbook data. However, youth anglers comprised only 5.5% of angler-days in Area 3A in 2023, so harvest by youth anglers beyond the annual limit is unlikely to be substantial.

5.3 Daily Closures

As mentioned earlier, the primary issue with daily closures is that the effect cannot be accurately predicted or evaluated. Daily closures are expected to reduce effort, and therefore their effect is confounded with any factors that affect effort (e.g., trip limits, economic trends, or client changeover days at lodges). This analysis could only estimate the maximum potential change in halibut harvest but cannot predict possible changes in angler behavior, such as anglers booking alternate days. Closure of days during the peak season (June through August) may be more effective than closure of a day or two here and there. With each additional day closed, there would be fewer days available to rebook and fewer charters available to take the displaced anglers. The effectiveness of day of the week closures in Area 2C is expected to be similar to those seen in Area 3A. However, differences in business models and angler behavior between the Areas may impact the effectiveness of this management measure.

Another impact of daily closures is the potential increase in the harvest of other species such as salmon, rockfishes, sablefish, and lingcod. Some charter businesses are able to book anglers to catch other species, particularly salmon. Increases in harvest may intensify conservation concerns for these stocks.

5.4 Mid-season Changes

A mid-season change from a higher to lower slot limit could potentially encourage fishers to shift their effort to the beginning of the season prior to the date when the slot limit changes. Additionally, anglers may shift their effort towards other species later in the season. The issues in anticipating changes in effort outlined under section 5.4 above could possibly be applied to a mid-season change management measure.

This could also result in an increase in releases later in the season once the lower slot limit is decreased. Similar issues regarding release mortality outlined in section 5.1 may apply to a mid-season change management measure. It is possible that a shift in effort combined with increased releases later on in the season could negate savings calculated, but by what magnitude is difficult to determine.

6.0 References

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Analysis of Management Options for the Area 2C Charter Halibut Fisheries for 2025

Table 2C.1: Subareas of IPHC Areas 2C, ports where ADF&G halibut sampling occurs, and Subarea abbreviations used in tables and figures in this report.

IPHC Area	Subarea	Ports with Sampling and Angler Interviews	Abbreviations
2C	Ketchikan	Ketchikan	Ketch, A
	Prince of Wales Island	Craig, Klawock	PWalesI, PWI, B
	Petersburg/Wrangell	Petersburg, Wrangell	Pburg, C
	Sitka	Sitka	D
	Juneau, Haines, Skagway	Juneau	Jun, E, EF
	Glacier Bay (2C portion)	Gustavus, Elfin Cove	GlacB, GlacB-2C, G2C

Table 2C.2: Charter logbook effort, harvest per unit effort, and harvest of halibut in IPHC Area 2C, 2015 - 2024. Preliminary numbers for 2024 (in italics) are based on logbook data for charter trips entered as of November 6th, 2024.

	Subarea						
Year	Ketch	PWI	Pburg	Sitka	Jun	GlacB-2C	Total 2C
Effort (angler-days)*							
2015	16,685	21,931	3,071	31,113	11,391	10,613	94,804
2016	16,595	23,440	3,373	31,093	12,069	9,694	96,264
2017	18,678	25,466	3,133	33,481	13,729	9,786	104,273
2018	21,661	25,708	3,538	32,394	13,993	11,396	108,690
2019	20,998	24,412	3,194	33,057	14,674	10,414	106,749
2020	4,521	12,644	1,934	16,605	4,089	5,133	44,926
2021	13,536	26,082	3,303	33,689	12,112	12,618	101,340
2022	21,223	28,486	3,293	37,044	12,965	13,761	116,772
2023	25,240	27,772	3,302	33,862	12,717	13,100	115,993
2024	*26,005*	*27,750*	*2,635*	*33,692*	*13,313*	*12,477*	*115,872*
Halibut Harvest per Angler-Day (HPUE)							
2015	0.465	0.744	0.691	0.759	0.675	0.768	0.693
2016	0.507	0.725	0.621	0.789	0.633	0.667	0.687
2017	0.460	0.753	0.630	0.777	0.592	0.692	0.677
2018	0.440	0.729	0.606	0.751	0.572	0.637	0.644
2019	0.439	0.742	0.523	0.766	0.615	0.699	0.661
2020	0.776	0.771	0.768	0.834	0.854	0.783	0.804
2021	0.674	0.794	0.668	0.806	0.718	0.786	0.768
2022	0.480	0.794	0.610	0.807	0.689	0.706	0.714
2023	0.533	0.814	0.631	0.824	0.741	0.721	0.732
2024	*0.587*	*0.870*	*0.687*	*0.839*	*0.777*	*0.794*	*0.775*
Harvest (number of halibut)							
2015	7,762	16,322	2,121	23,611	7,687	8,153	65,656
2016	8,414	16,999	2,095	24,528	7,642	6,469	66,147
2017	8,590	19,173	1,975	26,018	8,123	6,769	70,648
2018	9,530	18,731	2,143	24,327	7,998	7,255	69,984
2019	9,217	18,105	1,672	25,306	9,020	7,280	70,600
2020	3,507	9,750	1,485	13,848	3,490	4,020	36,100
2021	9,125	20,706	2,206	27,155	8,692	9,919	77,803
2022	10,177	22,608	2,009	29,693	8,928	9,721	83,136
2023	13,454	22,618	2,082	27,896	9,419	9,442	84,911
2024	*15,270*	*24,145*	*1,809*	*28,281*	*10,343*	*9,904*	*89,752*

*Effort is defined as an angler-day on open days with recorded bottomfish hours or harvest of at least one halibut.

Table 2C.3. Forecasts of effort, halibut harvest per unit effort (HPUE), and harvest (numbers of halibut) for Area 2C in 2025 under status quo regulations, with associated standard errors. Status quo regulations include a one-fish bag limit, a U40O80 reverse slot size limit through July 14th, a U36O80 reverse slot size limit after July 14th, and Fridays closed beginning on July 19th through September 13th.

Subarea	Effort (angler-days)**	HPUE	Std Error	Harvest (no. halibut)	Std Error
Ketch	26,005	0.587	0.045	15,264	1,162
PWI	27,750	0.869	0.044	24,127	1,225
Pburg	2,635	0.687	0.047	1,810	123
Sitka	33,692	0.834	0.045	28,090	1,519
Jun	13,313	0.817	0.045	10,872	596
GlacB-2C	12,477	0.767	0.057	9,564	712
Area 2C	115,872	0.775	*	89,727	2,457

*This SE cannot be calculated because unlike effort and harvest, HPUE is not expected to additive across subareas.

**2C regulations in 2023 measures aimed to reduce effort through day closures. For this year, preliminary effort data for 2024 was used in the 2025 forecasts.

Table 2C.4. Projected charter removals (Mlb, includes release mortality) for Area 2C in 2025 under reverse slot limits ranging from U32O50 to U50O80 with a 1-fish bag limit. Shaded cells represent projections for the most liberal combinations that do not exceed the 2024 allocation of 0.810 Mlb. All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. The harvest projection is for all days open throughout the season. The last column is the discard mortality estimate (Mlb) for the UXO80 removal estimates.

Harvest = 95,926

Lower Limit (in)	Upper Length Limit (in)																*Amount of discard mortality at uXo80*
	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	
32	1.437	1.332	1.255	1.168	1.107	1.049	0.969	0.893	0.850	0.817	0.784	0.761	0.730	0.711	0.709	0.695	0.028
33	1.465	1.362	1.286	1.200	1.138	1.082	1.002	0.926	0.883	0.850	0.817	0.795	0.763	0.745	0.743	0.728	0.029
34	1.499	1.398	1.322	1.236	1.176	1.119	1.040	0.965	0.922	0.889	0.856	0.834	0.803	0.784	0.782	0.768	0.031
35	1.524	1.424	1.349	1.264	1.204	1.148	1.069	0.994	0.952	0.919	0.886	0.864	0.833	0.814	0.812	0.798	0.032
36	1.565	1.467	1.393	1.309	1.250	1.194	1.116	1.042	1.000	0.967	0.934	0.912	0.881	0.863	0.861	0.847	0.034
37	1.590	1.493	1.419	1.336	1.277	1.222	1.145	1.071	1.029	0.996	0.964	0.942	0.911	0.892	0.890	0.876	0.035
38	1.628	1.532	1.460	1.378	1.319	1.265	1.188	1.115	1.073	1.041	1.008	0.986	0.956	0.937	0.935	0.921	0.037
39	1.655	1.561	1.490	1.408	1.350	1.296	1.220	1.147	1.105	1.073	1.041	1.019	0.989	0.970	0.968	0.954	0.038
40	1.678	1.585	1.515	1.434	1.377	1.323	1.247	1.174	1.133	1.101	1.069	1.047	1.017	0.998	0.996	0.982	0.040
41	1.706	1.615	1.545	1.465	1.408	1.355	1.280	1.208	1.167	1.135	1.103	1.081	1.051	1.033	1.030	1.017	0.041
42	1.724	1.634	1.565	1.486	1.430	1.377	1.302	1.230	1.189	1.157	1.126	1.104	1.074	1.056	1.054	1.040	0.042
43	1.745	1.655	1.587	1.509	1.453	1.400	1.326	1.254	1.214	1.182	1.150	1.129	1.099	1.081	1.079	1.065	0.043
44	1.774	1.686	1.619	1.541	1.486	1.434	1.360	1.289	1.249	1.217	1.186	1.165	1.134	1.116	1.114	1.100	0.044
45	1.806	1.719	1.653	1.577	1.522	1.470	1.397	1.327	1.287	1.255	1.224	1.203	1.173	1.155	1.153	1.139	0.046
46	1.827	1.742	1.677	1.601	1.547	1.496	1.422	1.353	1.313	1.282	1.250	1.229	1.199	1.181	1.179	1.166	0.047
47	1.856	1.773	1.708	1.633	1.580	1.529	1.457	1.388	1.348	1.317	1.286	1.265	1.235	1.217	1.215	1.201	0.048
48	1.877	1.795	1.731	1.657	1.604	1.553	1.481	1.412	1.373	1.342	1.311	1.290	1.260	1.242	1.240	1.227	0.049
49	1.911	1.830	1.768	1.694	1.642	1.592	1.521	1.453	1.413	1.383	1.352	1.331	1.302	1.284	1.282	1.268	0.051
50	1.934	1.855	1.793	1.721	1.669	1.620	1.549	1.481	1.442	1.412	1.381	1.360	1.331	1.313	1.311	1.298	0.052

Table 2C.5. Projected charter removals (Mlb, includes release mortality) for Area 2C in 2025 under reverse slot limits ranging from U35O80 to U40O80 with a 1-fish bag limit *and* a limit of **one trip per vessel and one trip per permit per day.** All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. The harvest projection is for all days open throughout the season.

Harvest = 93,202

		Upper Length Limit (in)
		80
Lower Length Limit (in)	35	0.777
	36	0.824
	37	0.853
	38	0.897
	39	0.929
	40	0.957

Table 2C.6. Projected charter **savings per day** (lbs) for Area 2C in 2025 under reverse slot limits with lower limits of the protected slot ranging from 32 to 50 inches and an upper limit of 80 inches with days closed between May 15 and September 15 for **Tuesday, Thursday, and Saturday.** All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. To determine removals from a closed day(s), take the total removals for a given lower slot limit and subtract the savings from a date(s) in that row.

a. Tuesday closures

Lower Length Limit (in)	Closed Tuesdays																		Projected removals (O80)
	September 9	September 2	August 26	August 19	August 12	August 5	July 29	July 22	July 15	July 8	July 1	June 24	June 17	June 10	June 3	May 27	May 20	May 13	
32	1,897	4,420	6,573	8,184	6,610	9,130	9,499	8,821	7,954	9,563	6,899	8,494	7,867	5,529	4,755	3,140	2,254	967	694,913
33	2,004	4,632	6,893	8,579	6,929	9,570	9,956	9,239	8,322	10,021	7,223	8,895	8,240	5,774	4,991	3,287	2,360	1,018	728,419
34	2,123	4,899	7,264	9,028	7,298	10,085	10,486	9,733	8,756	10,549	7,599	9,374	8,689	6,086	5,270	3,479	2,501	1,085	768,088
35	2,217	5,093	7,546	9,380	7,587	10,481	10,890	10,113	9,096	10,963	7,881	9,735	9,038	6,326	5,492	3,626	2,607	1,131	797,970
36	2,376	5,414	8,003	9,936	8,036	11,113	11,539	10,717	9,627	11,617	8,319	10,311	9,585	6,709	5,862	3,875	2,786	1,216	846,577
37	2,467	5,620	8,277	10,275	8,320	11,508	11,934	11,093	9,963	12,014	8,586	10,674	9,925	6,957	6,085	4,029	2,896	1,265	876,190
38	2,615	5,920	8,702	10,805	8,766	12,113	12,544	11,666	10,471	12,632	9,017	11,223	10,451	7,303	6,410	4,238	3,046	1,333	921,196
39	2,718	6,139	9,010	11,182	9,072	12,543	12,984	12,077	10,836	13,076	9,315	11,616	10,822	7,569	6,659	4,407	3,167	1,389	954,090
40	2,824	6,324	9,278	11,519	9,350	12,921	13,362	12,439	11,156	13,476	9,563	11,949	11,167	7,799	6,894	4,561	3,279	1,438	982,376
41	2,945	6,558	9,599	11,923	9,696	13,388	13,824	12,877	11,545	13,947	9,879	12,367	11,574	8,066	7,153	4,728	3,396	1,491	1,016,534
42	3,025	6,717	9,815	12,196	9,925	13,701	14,132	13,179	11,819	14,275	10,078	12,645	11,864	8,275	7,351	4,866	3,497	1,532	1,039,750
43	3,107	6,885	10,049	12,496	10,174	14,043	14,470	13,504	12,117	14,626	10,295	12,950	12,157	8,492	7,556	5,001	3,589	1,569	1,064,687
44	3,234	7,117	10,387	12,910	10,510	14,507	14,945	13,951	12,508	15,120	10,616	13,367	12,582	8,775	7,840	5,192	3,730	1,635	1,100,461
45	3,357	7,383	10,742	13,340	10,866	15,006	15,448	14,433	12,934	15,634	10,948	13,824	13,030	9,104	8,145	5,410	3,890	1,708	1,138,779
46	3,450	7,576	10,986	13,631	11,111	15,351	15,791	14,768	13,225	15,991	11,172	14,138	13,359	9,343	8,366	5,578	4,019	1,767	1,165,575
47	3,579	7,810	11,326	14,058	11,469	15,831	16,274	15,226	13,629	16,494	11,508	14,567	13,795	9,619	8,640	5,754	4,148	1,824	1,201,382
48	3,670	7,978	11,565	14,343	11,700	16,155	16,606	15,539	13,898	16,838	11,731	14,859	14,095	9,821	8,843	5,895	4,255	1,876	1,226,753
49	3,789	8,241	11,956	14,848	12,117	16,717	17,176	16,080	14,396	17,427	12,139	15,371	14,587	10,164	9,140	6,087	4,388	1,926	1,268,036
50	3,896	8,437	12,235	15,211	12,425	17,127	17,578	16,469	14,751	17,855	12,402	15,730	14,954	10,413	9,386	6,244	4,498	1,969	1,297,521

Table 2C.6. (continued)

b. Thursday closures

Lower Length Limit (in)	Closed Thursdays																		Projected removals (O80)
	September 12	September 5	August 29	August 22	August 15	August 8	August 1	July 25	July 18	July 11	July 4	June 27	June 20	June 13	June 6	May 30	May 23	May 16	
32	893	2,884	5,847	7,922	7,253	8,549	9,321	9,339	9,913	8,774	6,546	8,568	7,755	6,266	4,881	3,048	2,199	1,599	694,913
33	948	3,035	6,145	8,287	7,594	8,953	9,760	9,785	10,387	9,182	6,869	8,972	8,123	6,551	5,122	3,202	2,304	1,676	728,419
34	1,011	3,222	6,490	8,724	7,994	9,426	10,285	10,307	10,943	9,664	7,248	9,456	8,559	6,906	5,409	3,388	2,443	1,778	768,088
35	1,055	3,356	6,749	9,047	8,301	9,782	10,671	10,702	11,359	10,035	7,535	9,822	8,890	7,175	5,631	3,536	2,543	1,852	797,970
36	1,132	3,586	7,186	9,560	8,775	10,354	11,295	11,335	12,020	10,619	7,999	10,401	9,421	7,608	6,006	3,799	2,721	1,985	846,577
37	1,174	3,730	7,452	9,875	9,074	10,705	11,674	11,723	12,423	10,975	8,282	10,753	9,752	7,885	6,237	3,951	2,826	2,061	876,190
38	1,249	3,944	7,850	10,358	9,544	11,241	12,256	12,321	13,060	11,525	8,724	11,303	10,252	8,281	6,564	4,153	2,966	2,163	921,196
39	1,297	4,097	8,144	10,708	9,868	11,631	12,679	12,751	13,507	11,923	9,037	11,695	10,614	8,579	6,819	4,330	3,086	2,252	954,090
40	1,346	4,232	8,398	10,993	10,151	11,955	13,026	13,117	13,887	12,270	9,316	12,040	10,924	8,830	7,043	4,496	3,187	2,328	982,376
41	1,404	4,403	8,709	11,346	10,508	12,355	13,456	13,568	14,362	12,682	9,657	12,451	11,306	9,133	7,302	4,659	3,294	2,405	1,016,534
42	1,438	4,513	8,913	11,582	10,741	12,622	13,740	13,867	14,668	12,971	9,882	12,736	11,565	9,355	7,493	4,802	3,383	2,472	1,039,750
43	1,467	4,627	9,142	11,837	10,995	12,918	14,046	14,195	15,001	13,277	10,122	13,027	11,848	9,591	7,700	4,945	3,467	2,534	1,064,687
44	1,531	4,796	9,457	12,209	11,345	13,330	14,498	14,657	15,485	13,714	10,470	13,467	12,234	9,904	7,974	5,149	3,601	2,636	1,100,461
45	1,589	4,983	9,798	12,608	11,717	13,773	14,983	15,149	15,994	14,176	10,833	13,929	12,655	10,265	8,281	5,373	3,755	2,751	1,138,779
46	1,637	5,123	10,031	12,882	11,971	14,071	15,318	15,484	16,343	14,498	11,091	14,262	12,944	10,521	8,496	5,542	3,874	2,843	1,165,575
47	1,701	5,293	10,346	13,256	12,342	14,488	15,771	15,954	16,843	14,940	11,448	14,707	13,338	10,830	8,760	5,720	3,991	2,929	1,201,382
48	1,749	5,417	10,569	13,518	12,584	14,776	16,091	16,277	17,183	15,246	11,693	15,020	13,609	11,053	8,956	5,871	4,093	3,008	1,226,753
49	1,797	5,585	10,916	13,981	13,031	15,283	16,631	16,836	17,770	15,778	12,089	15,532	14,079	11,433	9,253	6,055	4,214	3,095	1,268,036
50	1,840	5,722	11,182	14,278	13,341	15,628	16,989	17,224	18,170	16,146	12,383	15,889	14,412	11,703	9,490	6,219	4,307	3,163	1,297,521

Table 2C.6. (continued)

c. Saturday closures

Lower Length Limit (in)	Closed Saturdays																		Projected removals (O80)
	September 13	September 6	August 30	August 23	August 16	August 9	August 2	July 26	July 19	July 12	July 5	June 28	June 21	June 14	June 7	May 31	May 24	May 17	
32	574	1,335	4,379	6,884	7,476	2,766	8,696	8,103	9,202	8,754	7,319	5,797	8,179	5,984	4,948	3,811	1,197	1,800	694,913
33	609	1,410	4,598	7,199	7,837	2,879	9,117	8,503	9,638	9,171	7,672	6,079	8,575	6,273	5,186	4,014	1,255	1,885	728,419
34	652	1,504	4,857	7,577	8,265	3,022	9,605	8,961	10,161	9,660	8,087	6,413	9,040	6,621	5,468	4,255	1,329	1,999	768,088
35	678	1,565	5,036	7,861	8,574	3,139	9,972	9,304	10,542	10,026	8,397	6,663	9,390	6,882	5,685	4,442	1,382	2,081	797,970
36	727	1,684	5,345	8,308	9,078	3,304	10,558	9,868	11,157	10,603	8,886	7,078	9,961	7,315	6,048	4,784	1,474	2,228	846,577
37	752	1,755	5,533	8,588	9,384	3,420	10,911	10,204	11,533	10,951	9,188	7,330	10,305	7,575	6,267	4,984	1,526	2,313	876,190
38	797	1,854	5,815	9,013	9,859	3,592	11,471	10,725	12,113	11,509	9,668	7,707	10,829	7,959	6,580	5,251	1,603	2,425	921,196
39	827	1,932	6,023	9,320	10,199	3,710	11,866	11,105	12,530	11,898	9,999	7,987	11,215	8,252	6,826	5,479	1,664	2,524	954,090
40	853	1,993	6,179	9,572	10,472	3,818	12,205	11,425	12,869	12,233	10,285	8,225	11,545	8,504	7,038	5,688	1,717	2,607	982,376
41	886	2,072	6,389	9,887	10,821	3,950	12,622	11,816	13,297	12,646	10,647	8,512	11,940	8,795	7,278	5,909	1,775	2,691	1,016,534
42	901	2,119	6,510	10,100	11,039	4,052	12,892	12,068	13,573	12,914	10,876	8,707	12,208	9,004	7,457	6,083	1,819	2,764	1,039,750
43	914	2,172	6,653	10,332	11,278	4,158	13,184	12,351	13,870	13,197	11,122	8,920	12,496	9,221	7,649	6,270	1,861	2,832	1,064,687
44	952	2,253	6,861	10,654	11,638	4,283	13,616	12,760	14,314	13,628	11,485	9,221	12,917	9,544	7,915	6,524	1,932	2,945	1,100,461
45	987	2,346	7,091	11,007	12,023	4,428	14,065	13,187	14,792	14,072	11,863	9,547	13,362	9,892	8,208	6,806	2,008	3,072	1,138,779
46	1,015	2,414	7,242	11,248	12,287	4,531	14,374	13,473	15,123	14,382	12,127	9,773	13,672	10,142	8,412	7,010	2,067	3,173	1,165,575
47	1,053	2,489	7,449	11,576	12,650	4,668	14,817	13,883	15,571	14,826	12,507	10,070	14,090	10,453	8,665	7,237	2,132	3,267	1,201,382
48	1,082	2,552	7,598	11,801	12,907	4,752	15,121	14,170	15,887	15,130	12,762	10,283	14,389	10,686	8,855	7,422	2,186	3,354	1,226,753
49	1,107	2,619	7,837	12,211	13,331	4,938	15,634	14,643	16,416	15,647	13,199	10,625	14,870	11,035	9,149	7,650	2,253	3,450	1,268,036
50	1,126	2,675	7,994	12,481	13,608	5,068	15,986	14,974	16,763	15,994	13,501	10,872	15,210	11,289	9,367	7,859	2,302	3,525	1,297,521

Table 2C.7. Projected charter **savings per day** (lbs) for Area 2C in 2025 under reverse slot limits with lower limits of the protected slot ranging from 32 to 42 inches and an upper limit of 80 inches with days closed between May 15 and September 15 for **Tuesday, Thursday, and Saturday *and* a limit of one trip per vessel and one trip per permit per day** All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. To determine removals from a closed day(s), take the total removals for a given lower slot limit and subtract the savings from a date(s) in that row.

a. Tuesday closures

Lower Length Limit (in)	Closed Tuesdays																		Projected removals (O80)
	September 9	September 2	August 26	August 19	August 12	August 5	July 29	July 22	July 15	July 8	July 1	June 24	June 17	June 10	June 3	May 27	May 20	May 13	
32	1,833	4,302	6,398	7,963	6,416	8,878	9,246	8,590	7,755	9,316	6,702	8,266	7,659	5,423	4,650	3,087	2,218	948	676,876
33	1,937	4,508	6,709	8,346	6,724	9,304	9,688	8,996	8,113	9,760	7,015	8,655	8,021	5,663	4,881	3,232	2,322	997	709,390
34	2,051	4,767	7,069	8,781	7,082	9,804	10,203	9,476	8,535	10,273	7,379	9,120	8,456	5,969	5,153	3,421	2,460	1,062	747,935
35	2,142	4,956	7,343	9,124	7,362	10,189	10,597	9,847	8,867	10,676	7,653	9,472	8,797	6,204	5,370	3,565	2,564	1,108	777,063
36	2,296	5,268	7,788	9,664	7,798	10,803	11,227	10,434	9,385	11,313	8,077	10,032	9,329	6,581	5,733	3,810	2,742	1,191	824,405
37	2,384	5,469	8,055	9,994	8,073	11,187	11,612	10,800	9,712	11,701	8,337	10,384	9,660	6,824	5,951	3,961	2,849	1,239	853,238
38	2,526	5,760	8,467	10,508	8,504	11,773	12,204	11,356	10,206	12,300	8,754	10,917	10,170	7,163	6,267	4,167	2,996	1,306	896,905
39	2,626	5,973	8,768	10,875	8,801	12,191	12,632	11,757	10,562	12,733	9,042	11,300	10,531	7,424	6,512	4,333	3,116	1,361	928,972
40	2,729	6,154	9,029	11,203	9,072	12,560	13,001	12,110	10,875	13,123	9,284	11,625	10,868	7,650	6,742	4,485	3,226	1,409	956,606
41	2,845	6,381	9,340	11,595	9,406	13,013	13,449	12,536	11,254	13,581	9,589	12,030	11,262	7,912	6,995	4,648	3,342	1,461	989,743
42	2,923	6,537	9,552	11,862	9,630	13,319	13,750	12,832	11,521	13,902	9,783	12,303	11,547	8,118	7,189	4,785	3,441	1,501	1,012,520

Table 2C.7. (continued)

b. Thursday closures

Lower Length Limit (in)	Closed Thursdays																		Projected removals (O80)
	September 12	September 5	August 29	August 22	August 15	August 8	August 1	July 25	July 18	July 11	July 4	June 27	June 20	June 13	June 6	May 30	May 23	May 16	
32	855	2,794	5,685	7,722	7,044	8,328	9,079	9,089	9,632	8,556	6,356	8,344	7,553	6,129	4,773	3,011	2,166	1,579	676,876
33	906	2,939	5,974	8,076	7,375	8,720	9,505	9,522	10,091	8,953	6,669	8,735	7,910	6,407	5,008	3,162	2,269	1,655	709,390
34	966	3,120	6,308	8,501	7,762	9,179	10,015	10,028	10,629	9,422	7,035	9,206	8,333	6,755	5,289	3,345	2,406	1,756	747,935
35	1,009	3,249	6,560	8,816	8,060	9,527	10,392	10,413	11,033	9,784	7,315	9,562	8,656	7,017	5,506	3,492	2,505	1,829	777,063
36	1,083	3,472	6,986	9,316	8,520	10,084	10,999	11,029	11,675	10,353	7,765	10,126	9,173	7,441	5,874	3,752	2,680	1,960	824,405
37	1,123	3,612	7,244	9,622	8,810	10,426	11,368	11,407	12,067	10,701	8,040	10,469	9,495	7,713	6,100	3,902	2,784	2,036	853,238
38	1,194	3,818	7,630	10,092	9,265	10,946	11,932	11,986	12,682	11,235	8,467	11,002	9,981	8,099	6,418	4,101	2,921	2,136	896,905
39	1,241	3,967	7,916	10,433	9,579	11,326	12,344	12,405	13,117	11,623	8,771	11,384	10,333	8,391	6,668	4,276	3,039	2,224	928,972
40	1,287	4,098	8,164	10,712	9,855	11,642	12,684	12,762	13,487	11,963	9,043	11,720	10,636	8,638	6,888	4,440	3,140	2,299	956,606
41	1,343	4,263	8,465	11,054	10,200	12,031	13,100	13,199	13,947	12,363	9,372	12,119	11,007	8,933	7,141	4,601	3,245	2,375	989,743
42	1,375	4,371	8,665	11,286	10,428	12,292	13,378	13,492	14,246	12,646	9,593	12,399	11,260	9,152	7,328	4,743	3,333	2,442	1,012,520

Table 2C.7. (continued)

c. Saturday closures

Lower Length Limit (in)	Closed Saturdays																		Projected removals (O80)
	September 13	September 6	August 30	August 23	August 16	August 9	August 2	July 26	July 19	July 12	July 5	June 28	June 21	June 14	June 7	May 31	May 24	May 17	
32	547	1,295	4,249	6,710	7,266	2,703	8,450	7,881	8,953	8,507	7,100	5,650	7,968	5,845	4,847	3,746	1,174	1,778	676,876
33	581	1,368	4,461	7,017	7,614	2,814	8,857	8,269	9,375	8,910	7,441	5,924	8,352	6,126	5,079	3,945	1,230	1,863	709,390
34	622	1,458	4,711	7,385	8,029	2,953	9,330	8,713	9,882	9,383	7,842	6,249	8,804	6,466	5,355	4,181	1,302	1,975	747,935
35	646	1,518	4,886	7,662	8,329	3,067	9,687	9,047	10,253	9,739	8,143	6,493	9,145	6,720	5,568	4,365	1,354	2,056	777,063
36	693	1,634	5,186	8,097	8,819	3,229	10,256	9,595	10,852	10,299	8,617	6,897	9,702	7,144	5,924	4,701	1,444	2,202	824,405
37	717	1,702	5,367	8,370	9,116	3,343	10,599	9,922	11,217	10,637	8,909	7,143	10,036	7,398	6,138	4,898	1,496	2,286	853,238
38	760	1,798	5,640	8,783	9,575	3,510	11,140	10,426	11,779	11,176	9,373	7,508	10,546	7,772	6,444	5,160	1,571	2,396	896,905
39	788	1,874	5,841	9,082	9,905	3,626	11,524	10,796	12,185	11,555	9,694	7,782	10,922	8,058	6,686	5,385	1,630	2,494	928,972
40	813	1,934	5,993	9,329	10,171	3,731	11,854	11,108	12,515	11,881	9,971	8,014	11,244	8,305	6,894	5,590	1,683	2,577	956,606
41	844	2,009	6,196	9,634	10,509	3,861	12,258	11,487	12,929	12,280	10,321	8,293	11,628	8,589	7,128	5,807	1,739	2,659	989,743
42	859	2,056	6,315	9,843	10,722	3,960	12,521	11,734	13,200	12,542	10,545	8,485	11,890	8,794	7,304	5,979	1,783	2,732	1,012,520

Table 2C.8. Projected removals (Mlb) for changing the lower slot limit from a range of 38-42 inches at start of the season to 32-38 inches after July 1, July 15, and August 1. All analyses assume an upper slot limit of 80 inches and all days of the season open to fishing and include corrections for errors in estimation of average weight and inflation factors for release mortality.

Removals				
Starting Lower Slot Limit	Ending Lower Slot Limit	1-Jul	15-Jul	1-Aug
38	32	0.766	0.799	0.842
	33	0.789	0.817	0.854
	34	0.816	0.838	0.867
	35	0.837	0.855	0.878
	36	0.870	0.881	0.895
	37	0.890	0.897	0.905
	38	0.921	0.921	0.921
39	32	0.766	0.814	0.863
	33	0.799	0.832	0.875
	34	0.827	0.854	0.889
	35	0.847	0.870	0.899
	36	0.880	0.896	0.916
	37	0.901	0.912	0.927
	38	0.932	0.936	0.943
40	32	0.785	0.827	0.882
	33	0.809	0.845	0.893
	34	0.836	0.867	0.907
	35	0.856	0.883	0.918
	36	0.889	0.909	0.935
	37	0.910	0.925	0.945
	38	0.941	0.950	0.961
41	32	0.796	0.843	0.904
	33	0.819	0.861	0.915
	34	0.846	0.883	0.929
	35	0.867	0.899	0.940
	36	0.900	0.925	0.957
	37	0.920	0.941	0.967
	38	0.952	0.965	0.983
42	32	0.804	0.854	0.919
	33	0.827	0.872	0.931
	34	0.854	0.893	0.945
	35	0.875	0.910	0.955
	36	0.908	0.936	0.972
	37	0.928	0.952	0.982
	38	0.959	0.976	0.998

Table 2C.9. Projected removals (Mlb) for changing the lower slot limit from a range of 38-42 inches at start of the season to 32-38 inches after July 1, July 15, and August 1 *and* **a limit of one trip per vessel and one trip per permit per day**. All analyses assume an upper slot limit of 80 inches and all days of the season open to fishing and include corrections for errors in estimation of average weight and inflation factors for release mortality.

Removals				
Starting Lower Slot Limit	Ending Lower Slot Limit	1-Jul	15-Jul	1-Aug
38	32	0.746	0.778	0.820
	33	0.768	0.796	0.831
	34	0.795	0.816	0.845
	35	0.815	0.832	0.855
	36	0.847	0.858	0.871
	37	0.867	0.873	0.882
	38	0.897	0.897	0.897
39	32	0.756	0.793	0.841
	33	0.779	0.810	0.852
	34	0.805	0.831	0.865
	35	0.825	0.847	0.876
	36	0.857	0.872	0.892
	37	0.877	0.888	0.902
	38	0.907	0.912	0.918
40	32	0.765	0.806	0.859
	33	0.788	0.823	0.870
	34	0.814	0.844	0.883
	35	0.834	0.860	0.894
	36	0.866	0.885	0.910
	37	0.886	0.901	0.920
	38	0.916	0.925	0.936
41	32	0.775	0.821	0.880
	33	0.798	0.839	0.891
	34	0.824	0.859	0.905
	35	0.844	0.875	0.915
	36	0.877	0.901	0.932
	37	0.896	0.916	0.942
	38	0.927	0.940	0.957
42	32	0.783	0.832	0.895
	33	0.806	0.849	0.906
	34	0.832	0.870	0.920
	35	0.852	0.886	0.930
	36	0.884	0.911	0.947
	37	0.904	0.927	0.957
	38	0.934	0.951	0.972

Analysis of Management Options for the Area 3A Charter Halibut Fisheries for 2025

Table 3A.10: Subareas of IPHC Area 3A, ports where ADF&G halibut sampling occurs, and Subarea abbreviations used in tables and figures in this report.

IPHC Area	Subarea	Ports with Sampling and Angler Interviews	Abbreviations
3A	Glacier Bay (3A portion)	Gustavus, Elfin Cove	GlacB, GlacB-3A, G3A
	Yakutat	Yakutat	Yak, H
	Eastern Prince William Sound	Valdez	EPWS
	Western Prince William Sound	Whittier	WPWS
	North Gulf	Seward	NGulf, NGC
	Lower Cook Inlet	Homer	LCI
	Central Cook Inlet	Anchor Point, Deep Creek	CCI
	Kodiak	Kodiak	Kod, QR

Table 3A.11. Charter logbook effort, harvest per unit effort, and harvest of halibut in IPHC Area 3A, 2015 - 2024. Preliminary estimates for 2024 (in italics) are based on logbook data for charter trips through August 31, 2024, entered as of November 6th, 2024.

	Subarea								
Year	GlacB-3A	Yak	EPWS	WPWS	NGulf	CCI	LCI	Kod	Tot 3A
Effort (angler-days)									
2015	1,852	3,267	3,527	3,484	30,864	19,882	33,011	8,756	104,643
2016	1,887	3,382	4,126	4,094	33,007	16,865	36,978	8,427	108,766
2017	2,211	3,405	3,579	3,679	27,934	17,330	35,426	7,899	101,463
2018	2,739	4,412	4,045	3,955	27,535	16,871	33,723	8,476	101,756
2019	2,094	4,365	4,653	4,764	29,889	15,184	33,663	8,961	103,573
2020	958	1,994	3,495	3,770	20,694	10,773	24,250	5,851	71,745
2021	1,282	4,220	4,940	4,721	32,297	17,284	46,506	12,628	123,878
2022	1,130	4,130	4,718	4,597	30,120	15,897	42,965	12,385	115,942
2023	1,046	2,874	3,925	4,730	26,020	12,840	39,899	11,778	103,112
2024	*1,136*	*3,106*	*4,052*	*5,222*	*27,321*	*12,136*	*41,180*	*10,614*	*104,767*
Halibut Harvest per Angler-Day (HPUE)									
2015	0.746	0.983	1.218	1.330	1.501	1.802	1.791	1.010	1.564
2016	0.757	0.964	1.149	1.096	1.294	1.705	1.741	1.001	1.455
2017	0.728	0.939	1.143	1.016	1.166	1.665	1.718	0.983	1.406
2018	0.688	0.980	1.187	1.088	1.056	1.670	1.668	0.883	1.340
2019	0.755	0.985	1.103	1.094	1.143	1.660	1.642	0.916	1.343
2020	0.899	1.157	1.379	1.296	1.212	1.779	1.744	1.227	1.486
2021	0.981	1.116	1.431	1.138	1.177	1.831	1.759	1.154	1.489
2022	0.662	0.888	1.364	0.936	1.225	1.795	1.746	1.129	1.463
2023	0.598	1.020	1.240	1.073	1.279	1.820	1.766	1.204	1.508
2024	*0.613*	*0.921*	*1.314*	*1.178*	*1.269*	*1.840*	*1.807*	*1.230*	*1.527*
Harvest (number of halibut)*									
2015	1,381	3,210	4,296	4,635	46,321	35,834	59,110	8,845	163,632
2016	1,428	3,259	4,742	4,487	42,721	28,747	64,392	8,438	158,214
2017	1,609	3,196	4,090	3,737	32,576	28,850	60,845	7,761	142,664
2018	1,884	4,322	4,803	4,302	29,068	28,183	56,262	7,488	136,312
2019	1,582	4,301	5,132	5,214	34,171	25,200	55,274	8,208	139,082
2020	861	2,308	4,882	4,887	25,078	19,094	42,299	7,180	106,589
2021	1,257	4,709	7,070	5,371	38,000	31,640	81,825	14,569	184,441
2022	748	3,668	6,437	4,304	36,909	28,534	75,015	13,977	169,592
2023	626	2,707	4,867	5,076	33,262	23,245	70,809	14,054	154,646
2024	*703*	*2,835*	*5,293*	*6,181*	*34,711*	*22,334*	*74,392*	*12,950*	*159,399*

*Effort is defined as an angler-day on open days with recorded bottomfish hours or harvest of at least one halibut.

Table 3A.12. Forecasts of effort (angler-days), halibut harvest per unit effort (HPUE), and harvest (numbers of halibut) for Area 3A in 2025 under status quo regulations, with associated standard errors. Status quo regulations include a two-fish bag limit with a maximum size limit of 28 inches on one of the fish, no retention of halibut on Wednesdays, CHP trip limits, and vessel trip limits.

Subarea	Effort (angler-days)	Std Error	HPUE	Std Error	Harvest (no. halibut)	Std Error
CCI	12,277	69	1.840	0.117	22,590	1,445
EPWS	3,974	46	1.300	0.136	5,167	543
GlacB	1,136	9	0.613	0.158	696	180
Yak	3,384	126	0.942	0.139	3,190	485
LCI	42,153	436	1.807	0.072	76,186	3,145
NGulf	27,572	257	1.269	0.100	34,980	2,777
Kod	11,877	213	1.230	0.108	14,604	1,308
WPWS	5,021	102	1.140	0.146	5,722	740
Area 3A	107,393	69	1.519	NA	163,135	4,745

Table 3A.13. Area 3A projected harvest, change in harvest, and specified dates with status quo (grey) management measures combined with Wednesday openings.

Number of Closed Wednesdays	Beginning and Ending Dates	Percentage change in harvest	Projected Harvest (no. Fish	Projected Removals (Mlb) (Size limit of 2nd fish is 28")
0	NA	18.0%	192,362	2.079
1	July 30	16.7%	190,323	2.057
2	July 30 - Aug 6	16.2%	189,608	2.049
3	July 23 - Aug 6	15.6%	188,490	2.037
4	July 16 - Aug 6	14.8%	187,345	2.024
5	July 16 - Aug 13	14.1%	186,199	2.011
6	July 9 - Aug 13	13.2%	184,681	1.995
7	July 2 - Aug 13	12.0%	182,675	1.973
8	July 2 - Aug 20	10.8%	180,856	1.953
9	June 25 - Aug 20	9.4%	178,643	1.929
10	June 18 - Aug 20	7.9%	176,089	1.901
11	June 18 - Aug 27	6.9%	174,529	1.884
12	June 11 - Aug 27	5.2%	171,707	1.854
13	June 4 - Aug 27	3.5%	168,857	1.824
14	June 4 - Sept 3	3.8%	166,225	1.830
48	Feb 01 - Dec 31	0.0%	163,135	1.762

Table 3A.14. Area 3A projected harvest, change in harvest, and specified dates with status quo (grey) management measures combined with Tuesday closures.

Number of Closed Tuesdays	Beginning and Ending Dates	Percentage change in harvest	Projected Harvest (no. Fish	Projected Removals (Mlb) (Size limit of 2nd fish is 28")
0	NA	0.0%	138,670	1.762
1	July 29	-1.2%	140,684	1.741
2	July 29 - Aug 5	-1.9%	142,234	1.728
3	July 22 - Aug 5	-3.4%	163,135	1.703
4	July 15 - Aug 5	-4.9%	161,059	1.677
5	July 15 - Aug 12	-6.2%	159,993	1.653
6	July - Aug 12	-7.4%	157,579	1.632
7	July 1 - Aug 12	-8.4%	155,238	1.614
8	July 1 - Aug 19	-9.3%	152,970	1.599
9	June 24 - Aug 19	-10.2%	151,017	1.582
10	June 17 - Aug 19	-11.1%	149,242	1.568
11	June 17 - Aug 26	-11.5%	147,921	1.560
12	June 10 - Aug 26	-12.3%	146,356	1.545
13	June 3 - Sept 2	-13.3%	144,961	1.528
48	Feb 01 - Dec 31	-14.6%	144,281	1.506

Table 3A.15. Area 3A projected harvest (upper table) and removals (lower table) for 2025 under a range of maximum size limits on one fish in the bag limit and **Wednesday closures**. Projected removals assume the following status quo measures: two fish bag limit – one of any size, one under X inches, limit of one trip per vessel and one trip per permit per day. All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. Shaded cells represent projections that do not exceed the 2024 allocation of 1.89 Mlb.

Projected Harvest (number of fish)

	Number of Wednesday Closures															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	All (SQ)
Harvest	163,135	166,225	168,857	171,707	174,529	176,089	178,643	180,856	182,675	184,681	186,199	187,345	188,490	189,608	190,323	192,362

Projected Charter Removals (Mlb)

Size limit	Number of Closed Wednesdays															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	All (SQ)
26	1.979	1.958	1.949	1.938	1.926	1.913	1.898	1.878	1.859	1.836	1.809	1.793	1.764	1.736	1.709	1.677
27	2.018	1.997	1.988	1.977	1.964	1.951	1.936	1.915	1.895	1.872	1.845	1.829	1.799	1.770	1.743	1.710
28	2.079	2.057	2.049	2.037	2.024	2.011	1.995	1.973	1.953	1.929	1.901	1.884	1.854	1.824	1.796	1.762
29	2.119	2.096	2.087	2.075	2.062	2.049	2.033	2.010	1.990	1.965	1.937	1.920	1.889	1.859	1.830	1.796
30	2.175	2.152	2.144	2.131	2.118	2.104	2.088	2.065	2.044	2.019	1.989	1.972	1.940	1.909	1.879	1.844
31	2.214	2.191	2.182	2.169	2.155	2.141	2.124	2.101	2.080	2.054	2.025	2.007	1.974	1.942	1.912	1.877
32	2.289	2.265	2.231	2.218	2.204	2.190	2.173	2.149	2.127	2.101	2.070	2.052	2.019	1.986	1.956	1.919

Table 3A.16. Area 3A projected harvest (upper table) and removals (lower table) for 2025 under a range of maximum size limits on one fish in the bag limit and **Tuesday closures**. Projected removals assume the following status quo measures: two fish bag limit – one of any size, one under X inches, limit of one trip per vessel and one trip per permit per day, and Wednesday closure all year. All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. Shaded cells represent projections that do not exceed the 2024 allocation of 1.89 Mlb.

Projected Harvest (number of fish)

	Number of Tuesday Closures														
	0 (SQ)	1	2	3	4	5	6	7	8	9	10	11	12	13	All
Harvest	163,135	161,059	159,993	157,579	155,238	152,970	151,017	148,817	147,419	145,804	144,353	143,622	142,234	140,684	138,670

Projected Charter Removals (Mlb)

	Number of Closed Tuesdays														
Size limit	0 (SQ)	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.677	1.657	1.645	1.620	1.596	1.573	1.553	1.531	1.517	1.500	1.486	1.478	1.464	1.447	1.425
27	1.710	1.690	1.677	1.652	1.627	1.604	1.584	1.562	1.546	1.530	1.515	1.507	1.492	1.475	1.453
28	1.762	1.741	1.728	1.703	1.677	1.653	1.632	1.609	1.593	1.576	1.561	1.553	1.538	1.520	1.497
29	1.796	1.774	1.761	1.735	1.709	1.684	1.663	1.639	1.624	1.606	1.590	1.582	1.567	1.549	1.525
30	1.844	1.822	1.809	1.782	1.755	1.729	1.708	1.684	1.667	1.649	1.633	1.625	1.609	1.591	1.566
31	1.877	1.854	1.840	1.813	1.786	1.760	1.738	1.713	1.697	1.678	1.662	1.653	1.637	1.619	1.594
32	1.919	1.896	1.882	1.854	1.826	1.800	1.777	1.752	1.735	1.716	1.699	1.690	1.674	1.655	1.630

Table 3A.17. Estimated effects of **annual limits of two to four halibut** on Area 3A anglers and projected harvest for 2025 under status quo measures. Status quo regulations include a two-fish bag limit with a maximum size limit of 28 inches on one of the fish, no retention of halibut on Wednesdays, CHP trip limits, and vessel trip limits. The percent of affected anglers is the portion of individual anglers that harvested more than each specified annual limit in 2023.

Annual Limit	Subarea								
	CCI	EPWS	GlacBay	Yak	LCI	NGulf	Kod	WPWS	Area 3A
				Estimated percent of anglers affected by an annual limit:					
2	14.0%	8.6%	8.9%	20.5%	15.0%	10.3%	44.1%	5.5%	15.1%
3	12.1%	4.7%	1.2%	11.2%	12.2%	7.5%	32.4%	2.3%	11.7%
4	2.9%	0.8%	0.0%	4.7%	2.8%	2.1%	17.3%	0.2%	3.5%
				Estimated percent change in harvest relative to no annual limit:					
2	-15.1%	-8.2%	-6.9%	-21.8%	-15.0%	-11.1%	-39.0%	-5.2%	-15.9%
3	-8.9%	-3.4%	-0.8%	-11.2%	-8.3%	-5.9%	-24.1%	-1.7%	-8.9%
4	-3.6%	-0.8%	0.0%	-5.4%	-2.8%	-2.1%	-13.1%	-0.2%	-3.6%
				Projected harvest (number of halibut):					
2	19,180	4,744	648	2,494	64,777	31,094	8,910	5,426	137,274
3	20,578	4,991	690	2,834	69,878	32,913	11,089	5,626	148,599
4	21,785	5,125	696	3,019	74,049	34,236	12,688	5,710	157,308
No Annual Limit	22,590	5,167	696	3,190	76,186	34,980	14,604	5,722	163,135

Table 3A.18. Area 3A projected harvest (upper table) and removals (lower table) for 2025 under a range of maximum size limits on one fish in the bag limit and for **annual limits ranging from two to four fish** per year. Projected removals assume the following status quo measures: two fish bag limit, limit of one trip per vessel and one trip per permit per day, and a Wednesday closure all year. All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality.

Projected Harvest (number of fish)

	Annual Limit (number of halibut)		
Year	2	3	4
2025	137,273	148,599	157,308

Projected Charter Removals (Mlb)

	Annual Limit (number of halibut)		
Size Limit (in)	2	3	4
26	1.407	1.527	1.616
27	1.435	1.557	1.647
28	1.479	1.604	1.698
29	1.507	1.634	1.730
30	1.548	1.679	1.777
31	1.575	1.708	1.808
32	1.611	1.747	1.849

Table 3A.19. Area 3A projected harvest and removals for 2025 under **annual limits** with a range of maximum size limits on one fish in the bag limit and **Tuesday closures**. Projected removals assume the following status quo measures: two fish bag limit – one of any size, limit of one trip per vessel and one trip per permit per day, Wednesday closure all year. All values in the table include corrections for errors in estimation of average weight and inflation factors for release mortality. Shaded cells represent projections that do not exceed the 2024 allocation of 1.89 Mlb.

a. Four-fish annual limit

Size limit	Number of Closed Tuesdays														
	0 (SQ)	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.616	1.596	1.582	1.559	1.535	1.513	1.494	1.473	1.459	1.443	1.429	1.421	1.408	1.392	1.370
27	1.647	1.627	1.613	1.589	1.565	1.543	1.523	1.502	1.487	1.471	1.457	1.449	1.435	1.419	1.397
28	1.698	1.677	1.663	1.638	1.613	1.590	1.570	1.548	1.533	1.516	1.501	1.493	1.479	1.462	1.440
29	1.730	1.709	1.694	1.669	1.644	1.620	1.599	1.577	1.562	1.545	1.530	1.522	1.507	1.490	1.467
30	1.777	1.755	1.740	1.714	1.688	1.664	1.643	1.620	1.604	1.587	1.571	1.563	1.548	1.530	1.507
31	1.808	1.786	1.771	1.744	1.718	1.693	1.671	1.648	1.632	1.615	1.599	1.590	1.575	1.557	1.533
32	1.849	1.826	1.810	1.783	1.757	1.731	1.709	1.685	1.669	1.651	1.635	1.626	1.610	1.592	1.568

b. Three-fish annual limit

Size limit	Number of Closed Tuesdays														
	0 (SQ)	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.527	1.508	1.492	1.469	1.447	1.426	1.408	1.389	1.375	1.361	1.347	1.340	1.327	1.312	1.292
27	1.557	1.538	1.521	1.498	1.476	1.454	1.436	1.416	1.402	1.387	1.374	1.366	1.353	1.338	1.317
28	1.604	1.585	1.568	1.544	1.521	1.499	1.480	1.459	1.445	1.429	1.416	1.408	1.395	1.379	1.358
29	1.634	1.615	1.597	1.573	1.550	1.527	1.508	1.487	1.472	1.457	1.442	1.435	1.421	1.405	1.383
30	1.679	1.658	1.641	1.616	1.592	1.569	1.549	1.527	1.512	1.496	1.481	1.473	1.459	1.443	1.421
31	1.708	1.688	1.669	1.644	1.619	1.596	1.576	1.554	1.539	1.522	1.507	1.499	1.485	1.468	1.446
32	1.747	1.726	1.707	1.681	1.656	1.632	1.611	1.589	1.573	1.556	1.541	1.533	1.518	1.501	1.478

Table 3A.19. (continued)

c. Two-fish annual limit

Size limit	Number of Closed Tuesdays														
	0 (SQ)	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.407	1.390	1.371	1.350	1.330	1.311	1.294	1.276	1.264	1.250	1.238	1.231	1.220	1.206	1.187
27	1.435	1.417	1.398	1.376	1.356	1.336	1.319	1.301	1.288	1.275	1.262	1.255	1.243	1.229	1.211
28	1.479	1.461	1.441	1.419	1.397	1.377	1.360	1.341	1.328	1.314	1.301	1.294	1.282	1.267	1.248
29	1.507	1.489	1.468	1.446	1.424	1.403	1.386	1.366	1.353	1.339	1.326	1.318	1.306	1.291	1.271
30	1.548	1.529	1.508	1.485	1.463	1.442	1.423	1.404	1.390	1.375	1.362	1.354	1.341	1.326	1.306
31	1.575	1.556	1.535	1.511	1.489	1.467	1.448	1.428	1.414	1.399	1.386	1.378	1.365	1.349	1.329
32	1.611	1.591	1.569	1.545	1.522	1.500	1.481	1.460	1.446	1.431	1.417	1.409	1.396	1.380	1.359

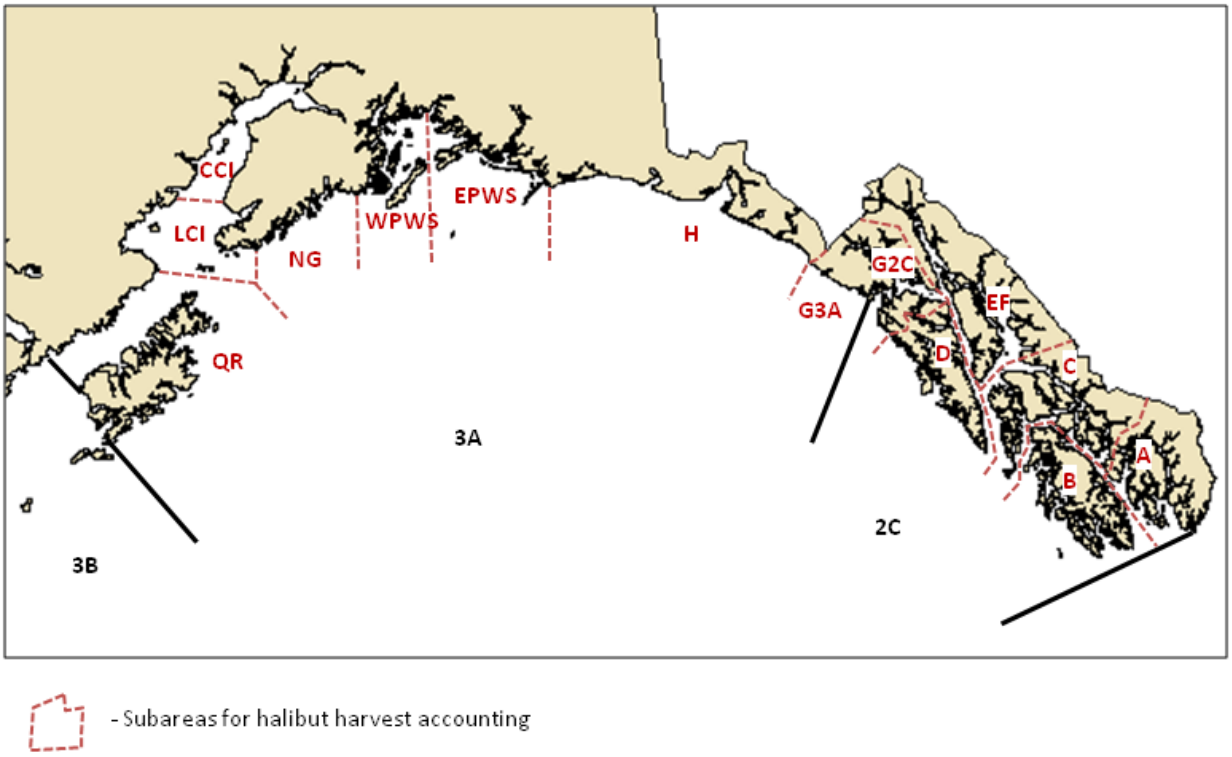


Figure 1. Subareas of IPHC Areas 2C and 3A used for analysis and reporting. A – Ketchikan; B - Prince of Wales (Craig, Klawock); C - Petersburg, Wrangell; D – Sitka; EF - Juneau, Haines, Skagway; G2C - Glacier Bay, Elfin Cove (2C areas); G3A - Glacier Bay, Elfin Cove (3A Areas); H – Yakutat; EPWS - Eastern Prince William Sound (Valdez, Cordova); WPWS - Western Prince William Sound (Whittier); NG - North Gulf (Seward); CCI - Central Cook Inlet (Deep Creek, Anchor Point); LCI - Lower Cook Inlet (Homer); QR – Kodiak.

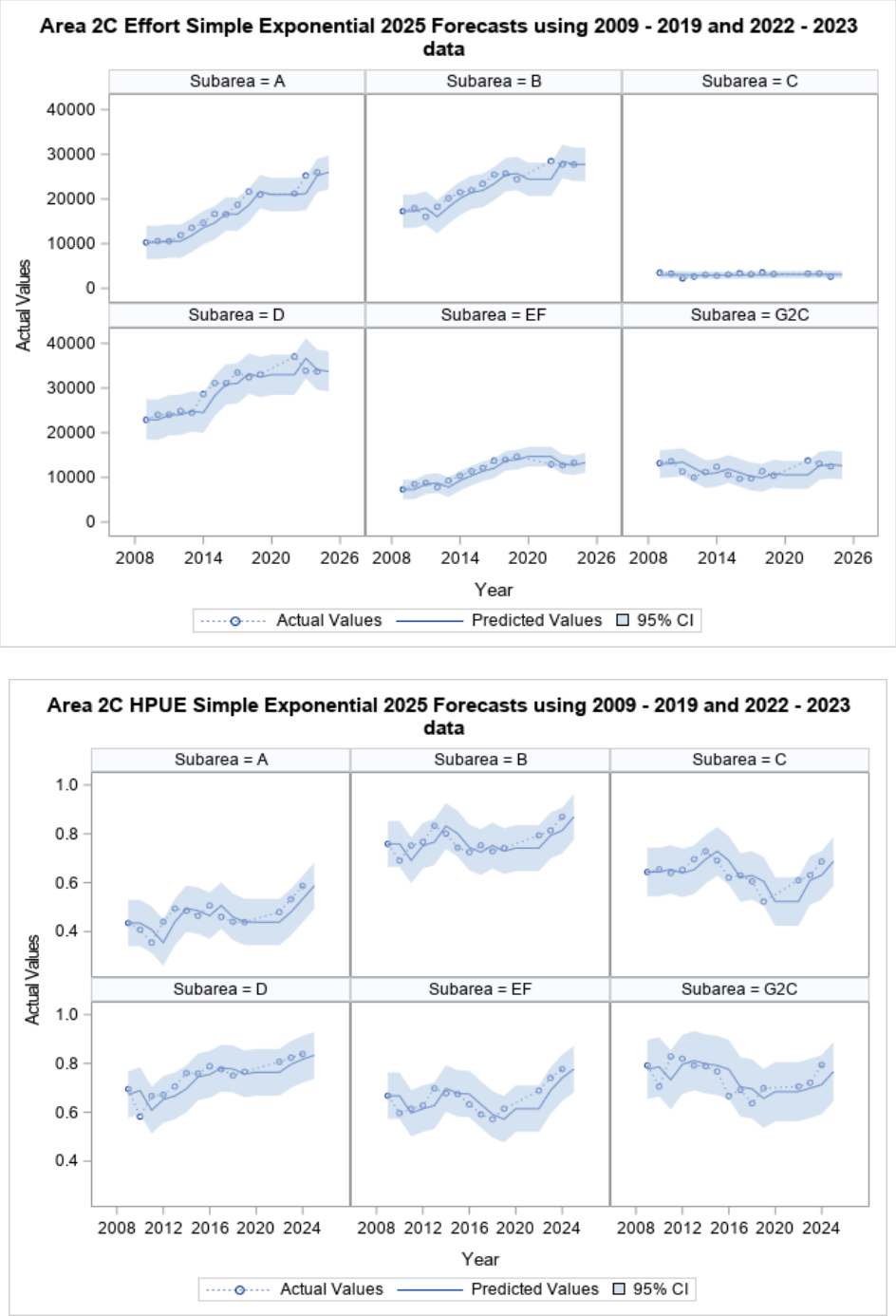
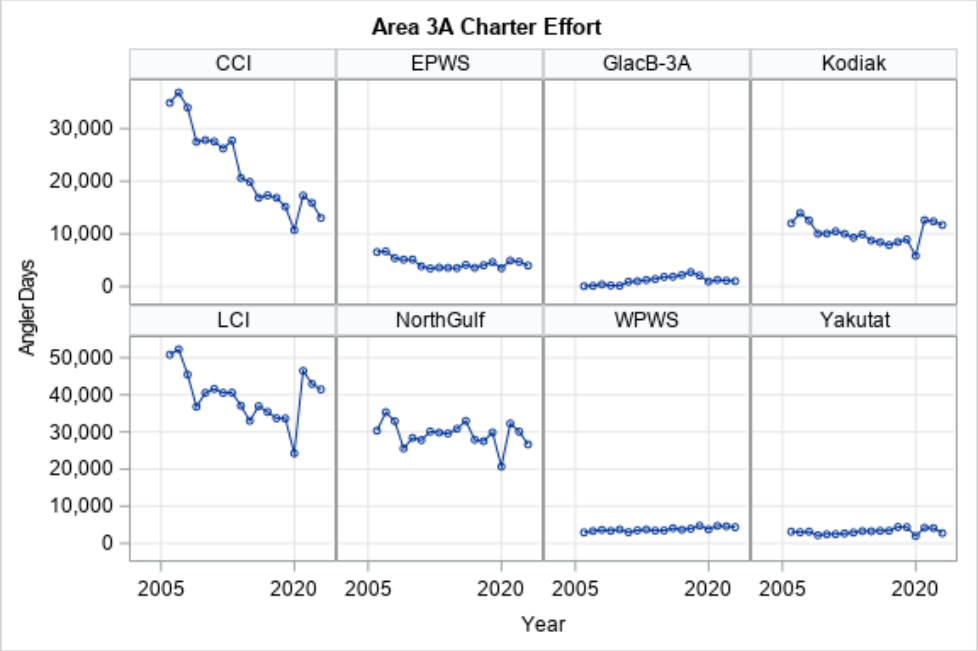


Figure 2 Time series of charter effort (upper) and HPUE (lower) by subarea of Area 2C, with predicted values and 2025 forecasts of HPUE only. Time series forecasts were made for effort are displayed here, however observed 2024 effort was used in the 2025 forecast. Shaded bands indicate 95% confidence intervals for the forecasts. (Source: ADF&G charter logbook).



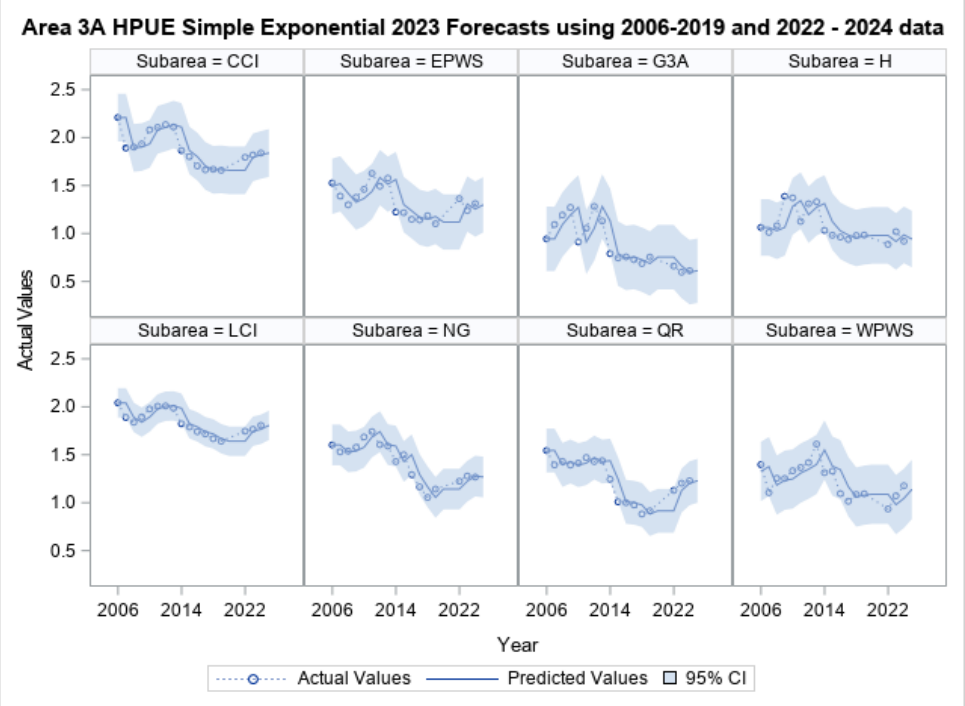


Figure 3 Time series of charter effort (upper) and HPUE (lower) by subarea of Area 3A, with predicted values and 2025 forecasts of HPUE only. No time series forecasts were made for effort. Shaded bands indicate 95% confidence intervals for the 2025 HPUE forecasts. (Source: ADF&G charter logbook)

Addendum

Table 2C.7.2. Expressed as projected charter **removals per day** (lbs) for Area 2C in 2025 under reverse slot limits with lower limits of the protected slot ranging from 32 to 42 inches and an upper limit of 80 inches with days closed between May 13 and September 9 for **Tuesday *and* a limit of one trip per vessel and one trip per permit per day.**

a.2. Tuesday closures

Lower Limit	September 9	September 2	August 26	August 19	August 12	August 5	July 29	July 22	July 15	July 8	July 1	June 24	June 17	June 10	June 3	May 27	May 20	May 13	Projected Removals
32	675,043	670,741	664,343	656,380	649,964	641,086	631,840	623,250	615,495	606,179	599,477	591,211	583,552	578,129	573,479	570,392	568,174	567,226	676,876
33	707,453	702,945	696,236	687,890	681,166	671,862	662,174	653,178	645,065	635,305	628,290	619,635	611,614	605,951	601,070	597,838	595,516	594,519	709,390
34	745,884	741,117	734,048	725,267	718,185	708,381	698,178	688,702	680,167	669,894	662,515	653,395	644,939	638,970	633,817	630,396	627,936	626,874	747,935
35	774,921	769,965	762,622	753,498	746,136	735,947	725,350	715,503	706,636	695,960	688,307	678,835	670,038	663,834	658,464	654,899	652,335	651,227	777,063
36	822,109	816,841	809,053	799,389	791,591	780,788	769,561	759,127	749,742	738,429	730,352	720,320	710,991	704,410	698,677	694,867	692,125	690,934	824,405
37	850,854	845,385	837,330	827,336	819,263	808,076	796,464	785,664	775,952	764,251	755,914	745,530	735,870	729,046	723,095	719,134	716,285	715,046	853,238
38	894,379	888,619	880,152	869,644	861,140	849,367	837,163	825,807	815,601	803,301	794,547	783,630	773,460	766,297	760,030	755,863	752,867	751,561	896,905
39	926,346	920,373	911,605	900,730	891,929	879,738	867,106	855,349	844,787	832,054	823,012	811,712	801,181	793,757	787,245	782,912	779,796	778,435	928,972
40	953,877	947,723	938,694	927,491	918,419	905,859	892,858	880,748	869,873	856,750	847,466	835,841	824,973	817,323	810,581	806,096	802,870	801,461	956,606
41	986,898	980,517	971,177	959,582	950,176	937,163	923,714	911,178	899,924	886,343	876,754	864,724	853,462	845,550	838,555	833,907	830,565	829,104	989,743
42	1,009,597	1,003,060	993,508	981,646	972,016	958,697	944,947	932,115	920,594	906,692	896,909	884,606	873,059	864,941	857,752	852,967	849,526	848,025	1,012,520