

## Supplemental Analysis of Management Options for the Area 3A Charter Halibut Fisheries for 2020

A Report to the North Pacific Fishery Management Council

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### 1. Introduction

The Council’s Charter Halibut Management Committee met October 29, 2019, to develop alternative management measures to be analyzed by the ADF&G for the 2020 season. Status quo regulations in Regulatory Area 3A include a two fish bag limit: one fish of any size and one less than or equal to 28 inches, a limit of one trip per vessel per day and one trip per charter halibut permit per day, an annual limit of four fish retained while fishing on charter vessels in Regulatory Area 3A, Wednesdays are closed all year, and 5 Tuesdays are closed. The charter committee considered the performance of last year’s measures, and in light of recent trends in effort, number of halibut harvested by charter anglers, average weight of halibut, halibut abundance, and economic considerations, identified the following measures in Regulatory Area 3A for analysis for 2020:

- 1) Status quo.
- 2) Fewer or additional Tuesday closures throughout the year.
- 3) Opening all Tuesdays and opening some Wednesdays throughout the year.

Results of ADF&G’s analysis of management measures were presented at the December 2019 Council meeting within the context of two possible scenarios based on the IPHC’s stock assessment reported at the November 25, 2019 IPHC Interim Meeting (Stewart et al. 2019). The first scenario is consistent with the interim management procedure and uses a coastwide TCEY at the reference level (SPR<sub>46%</sub>) of 31.9 Mlb; distributed mortality limits use a fixed TCEY for 2A (Washington, Oregon, California); a TCEY for 2B (British Columbia) based on a formula set forth at the 2019 IPHC annual meeting and an additional adjustment to the 2B TCEY for U26 bycatch mitigation; and the Space Time Model proportional distribution for all areas in Alaska. The second scenario uses the status quo TCEY of 38.6 Mlb (equating to an SPR<sub>40%</sub>) and the same distribution procedures set forth in the previous scenario. None of the management measures requested for Area 3A resulted in removal forecasts that were below either allocation scenario.

Regulatory Area	Charter Allocation (Mlb) <sup>a</sup>	
	Reference TCEY	Status Quo TCEY
3A	1.24	1.66

<sup>a</sup>The Reference TCEY uses SPR<sub>46%</sub> and is 31.9 Mlb. The status quo TCEY (2019) uses SPR<sub>40%</sub> and is 38.6 Mlb.

Noting that none of the requested analyses resulted in removal estimates within the range of likely allocations, ADF&G staff provided additional analyses to the Charter Halibut Management Committee at their December 3, 2019 meeting. Additional analyses included management measures requested for past analyses. Several options resulted in removal forecasts below the Status Quo TCEY scenario; however, no analyses resulted in removal forecasts at or below the Reference TCEY. As such, the Charter Halibut Management Committee requested, and the Council agreed, to have ADF&G staff analyze a wider range of management measures to include combining day of the week closures and reverse slot limits to make recommendations relative to the Reference TCEY catch allocation specified by the IPHC. The Council intends to review and adopt the Committee’s recommended management measures at the February 2020

meeting. Methods and results of additional analyses presented at the Charter Halibut Management Committee in December and ensuing analyses requested by the Committee and the Council are outlined in this document. For information on general methods, analyses presented at the December 2019 Council meeting for Regulatory Area 3A, and analyses for Regulatory Area 2C, see Webster and Powers (2019).

## **2. Area 3A Management Measures**

### **2.1 Maximum Size Limit on One Fish Combined with Tuesday closures**

#### ***2.1.1 Approach***

Status quo for this regulatory mechanism is a maximum size limit on one fish of 28 inches and five Tuesday closures. Other size limits and Tuesday closures were explored for flexibility in recommending management measures. Charter removals were projected under maximum size limits ranging from 26 to 30 inches and Tuesday closures ranging from zero to thirteen days or for the entire season. Projected removals include a 1.1% inflation factor to account for release mortality. These projections incorporate all other status quo measures.

The analysis followed the same harvest projection procedures as the analysis for Tuesday closures (Webster and Powers 2019).

Average weight under each size limit was calculated as a weighted mean of the fish of any size and the fish subject to a maximum size limit. The average weight for the fish of any size was assumed to be the corrected 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 corrected average weight of fish less than or equal to the specified size limit in 2013. In recent years, the average weights from 2013 for each size limit differed from average weights observed under those size limits. 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 to match current average weights. Corrections were based on the difference between predicted and estimated (observed) average weights for 2017-2019. Average weights for past years tended to be underestimated for all subareas, ranging from 52% below to 7% above observed values across all subareas and years, and from 29% to 16% below observed values across years for Area 3A overall. Correction factors, based on the average ratio of the predicted and observed average weights, ranged from 1.00 to 1.98 among subareas.

These average weights were then weighted by the 2020 projected proportions of harvest made up of “first” and “second” fish in angler’s bag limits. 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 2020 from 2010-2019 logbook data using the exponentially-weighted time series models described in Webster and Powers (2019). These forecasted proportions ranged from 42-44% in Cook Inlet down to 4-9% in the Glacier Bay and Yakutat subareas, with a weighted average of 36% for Area 3A overall.

#### ***2.1.2 Results***

Under status quo regulations, which include a 28-inch maximum size limit on the second fish and five Tuesday closures, the projected removal of 1.938 Mlb is approximately 0.70 Mlb more than the Reference TCEY catch allocation of 1.24 Mlb and 0.32 Mlb more than the Status Quo TCEY catch allocation of 1.66 Mlb (Table 1). Closing all Tuesdays and a maximum size of 26 inches on the second fish resulted in a projected removal of 1.696 Mlb, still more than either catch allocation. Specific dates for Tuesday closures can be found in Webster and Powers (2019, Table 22).

## **2.2 Status Quo with All Tuesdays Closed and Additional Days Closed Combined with Maximum Size Limits**

### **2.2.1 Approach**

Status quo regulations in Area 3A included a year-round closure of the charter fishery on Wednesdays, as well as five Tuesdays closed in July and early August. The potential effect of closing all Tuesdays with additional days of the week (Monday or Thursday) closed in June – August was estimated. Other size limits were also explored for flexibility in recommending management measures. Charter removals were projected under maximum size limits ranging from 26 to 30 inches and Monday or Thursday closures ranging from zero to thirteen days or for the entire season. Projected removals include a 1.1% inflation factor to account for release mortality. These projections incorporate all other status quo measures.

The analysis followed the same procedures as the analysis for Tuesday closures (Webster and Powers 2019). The analysis estimated the proportional reduction in halibut harvest with each additional daily closure in 2017 and applied those proportional reductions to the harvest forecast for 2020. 2017 was used as the base year because it is the most recent year with complete data and the same or fewer closed days as status quo.

The first step was to identify the dates of specific days that would be closed in 2020 under each possible number of closed days. Specific days were selected such that, for each scenario, 60-75% of the closed days fall before August 1. Once the specific closed dates for each scenario were identified, the closest date range for the same day of the week was identified from the 2017 data set for analysis. For example, when evaluating closing Mondays from July 16 – August 6, 2020, we used harvest from Mondays between July 13 – August 3, 2017.

The analysis assumed that the proportion of harvest occurring on each date in 2017 would be eliminated if those dates were closed in 2020. The total annual harvest under each scenario of closed days was compared to the harvest scenario of five closed Tuesdays (status quo) to estimate the proportional change for 2020. The harvest reductions under each scenario of closed days 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 alternate dates either on the same vessel or another vessel with available space. There is a substantial amount of latent capacity on charter vessels in Area 3A (Marrinan and Fey 2017).

Methods for changes in the maximum size limit followed the procedures outlined in section 2.1.1.

### **2.2.2 Results**

The potential reductions in harvest relative to status quo ranged from 9.5% for all Tuesdays and no closed Monday or Thursday to 25.1% or 26.3% for all closed Tuesdays and Mondays or Thursdays, respectively (Tables 2 & 4). Proportional reductions and projected removals varied slightly and were generally similar between Monday and Thursday closures. For the entire year, Thursdays had slightly more savings than Mondays. The projected removals were also estimated with a range of maximum size limits of 26 to 30 inches on one fish. Estimated removals associated with these scenarios ranged from 1.781 Mlb for all Tuesdays and one Monday or Thursday closed with a 30-inch size limit on one fish to 1.386 Mlb for all Thursdays closed with a 26-inch size limit (Tables 3 & 5). Many combinations of all Tuesdays closed with additional daily closures and maximum size limits would be possible under the Status Quo TCEY catch allocation of 1.66 Mlb. Additional restrictions would be necessary under the Reference TCEY catch allocation of 1.24 Mlb for 2020.

## **2.3 Maximum Size Limit on One Fish Combined with Annual Limits of 2 – 4 Fish**

### **2.3.1 Approach**

The status quo is a maximum size limit on one fish of 28 inches and an annual limit of four fish. 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 30 inches and annual limits of two to four fish. Projected removals include a 1.1% inflation factor to account for release mortality. These projections incorporate all other status quo measures, including the charter vessel trip limit, permit trip limit, Wednesday closure for the entire year, and five Tuesday closures in July and August.

Average weight under each size limit was calculated as described in section 2.1.1.

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 2018, the most recent year with complete logbook data. 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 a relatively steady average of 5.4% of charter effort in Area 3A during the years 2016-2018. Because the proportion of youth effort was steady and 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 2018 at the given annual limit. For example, if 500 anglers harvested four fish each in 2018 (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 2018. 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 an annual limit of four fish (status quo). 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 2.5 to 0.9 percentage points for annual limits from 2 to 4 fish, respectively. The underestimation caused by anglers fishing multiple areas was considered negligible. Furthermore, because this underestimated the reduction of harvest, results are considered conservative estimates.

### **2.3.2 Results**

The effects of annual limits varied by subarea, with the largest effects in the Kodiak, Yakutat, and Cook Inlet subareas (Table 6). Areawide, application of lower annual limits to the harvest would result in harvest reductions of 9.7% under a two-fish annual limit and 3.6% under a three-fish limit. With all other status quo measures in effect, lowering the annual limit from four to three fish is estimated to reduce the harvest from 132,453 to 127,656 halibut and reduce it to 119,660 fish under a two fish annual limit.

An annual limit of two fish and a maximum size limit on one fish of 26-inches resulted in a projected removal of 1.70 Mlb (Table 7). All annual limits and size limits evaluated were insufficient to result in removals that achieved the charter allocation associated with the Reference TCEY or the Status Quo TCEY.

## **2.4 Maximum Size Limit on One Fish Combined with Annual Limits of 2 – 3 Fish and Tuesday Closures**

### **2.4.1 Approach**

The status quo is a maximum size limit on one fish of 28 inches, an annual limit of four fish, and five Tuesday closures. Other combinations of size limits, annual limits, and Tuesday closures were explored to provide the Council flexibility in recommending management measures. Charter removals were projected under maximum size limits ranging from 26 to 30 inches, 1 – 13 Tuesday closures or a Tuesday closure for the entire season and annual limits of two to four fish (see Table 1 for four fish). Projected removals include a 1.1% inflation factor to account for release mortality. These projections incorporate 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 2.1.1. Effects of annual limits were calculated as described in section 2.3.1. These were applied prior to the effect of Tuesday closures as annual limits are expected to have a more definitive effect on harvest. Effects of Tuesday closures were then applied following the methods outlined in Webster and Powers (2019).

### **2.4.2 Results**

Under a three fish annual limit, closing all Tuesdays and a maximum size limit of 26 inches on one fish would be needed for the harvest forecast to be below the Status Quo TCEY catch allocation (Table 8). Under a two fish annual limit, several combinations of size limits and Tuesday closures result in projected removals below the Status Quo TCEY allocation (Table 9). No combinations of maximum size limits, Tuesday closures, and annual limits resulted in projected removals below the Reference TCEY catch allocation.

## **2.5 Reverse Slot Limit Combined with a Maximum Size Limit**

### **2.5.1 Approach**

This measure would combine a reverse slot limit on one fish, as is in place in Area 2C, with the status quo maximum size limit of 28 inches on the second fish. This regulation is functionally similar to a maximum size limit on both fish, but provides anglers with the potential of harvesting one halibut of exceptional size (above the upper limit). All other status quo management measures would remain in place.

Because a reverse slot limit has never been implemented in Area 3A, there were no empirical data on how the fishery might respond to such a regulation. This regulation limits the size of the fish that, under status quo regulations, can be of any length. It was assumed that restricting the length of both fish would increase the incentive to harvest two fish, thereby increasing the HPUE and the number of fish harvested. However, there are no data to indicate how many more second fish would be retained or how much the harvest could increase.

Because a single prediction could not be made with confidence, two scenarios were projected bracketing a plausible range of assumptions. Both scenarios used the 2019 preliminary effort as the projected effort for 2020. The low harvest scenario used the time series forecasts of HPUE and the time series forecast of proportion of second fish for 2020. Use of this scenario assumes that a size limit on both fish would not increase retention of second fish by anglers. The high harvest scenario used the HPUEs and the corresponding proportions of second fish from 2013, the last year before implementation of any size limit. Implementation of the maximum size limit on one fish in 2014 resulted in immediate and substantial decreases in HPUE and the proportion of second fish in subareas with large fish available (Webster and Powers 2019).

The method of projecting removals under this option was a hybrid of the reverse slot and maximum size methods, but still followed the basic logic in Section 2.1. Harvest (numbers of fish) was projected as effort multiplied by HPUE. The average weight of the first fish was projected exactly as was done for the

reverse slot limit in Area 2C (Webster and Powers 2019), but using length data from 2013, the last year without a size limit in Area 3A. The average weight of the second fish was calculated as the average weight of U28 fish in 2013 for the high harvest scenario and the average weight of U28 fish in 2019 for the low harvest scenario. The overall average weight was calculated as a weighted mean of the first and second fish, where the weighting factors were the projected proportions of first and second fish.

Projections were made for lower size limits ranging from 35-60 inches (U35-U60) and upper limits ranging from 60-80 inches (O60-O80). The lack of experience with this measure created another problem, namely there were no empirical mean weight data to correct the predictions to current conditions, as was done with the status quo measures (Webster and Powers 2019). However, imposition of a U60-O60 size limit would be the functional equivalent of one fish of any size and a maximum size limit of 28 inches on the second fish. To correct mean weight, the projections for the low harvest scenario were adjusted by a single correction factor to make the projected yield under a U60-O60 reverse slot limit match the projected yield under the status quo (one fish of any size plus one fish under 28 inches). Correcting the yield was the functional equivalent of correcting mean weight because under the low harvest scenario and the status quo forecast, harvest (number of fish) was the same. This same correction factor was used to correct for mean weight under the high harvest scenario.

Finally, the yield projections were inflated by a factor of 4% to account for release mortality. This is higher than the release mortality inflation factor used for standard projections because there will likely be an increase in number and size of released fish under a reverse slot limit, but lower than the value used for 2C because of differences in observed length distributions between the two Areas. This number was selected arbitrarily, as there were no data upon which to base an estimate. However, we know from reverse slot limits in Area 2C that the imposition of a protected slot will increase the number and average weight of released fish.

### **2.5.2 Results**

The differing harvests under each scenario resulted in substantially different projections of removals. Under the low harvest scenario that assumes the reverse slot limit will not entice more anglers to keep a second fish, projected removals ranged from 1.461 Mlb to 1.994 Mlb for the range of size limits considered (Table 10a). Under the low scenario, there are several different reverse slot limits with projected removals at or below the 1.66 Mlb allocation associated with the Status Quo TCEY; no reverse slot limits are below the catch allocation associated with the Reference TCEY. Under the high harvest scenario, projected removals ranged from 1.891 Mlb to 2.456 Mlb (Table 10b). Under the high harvest scenario, projected removals are above both allocations for all reverse slot limits analyzed.

The results of these two scenarios are not presented as a choice, but rather to show the results of uncertainty in the calculations. The projections are highly sensitive to the proportion of second fish retained, and we lack the history with this management measure to say with reasonable certainty how many more anglers would retain a second fish. We also lack information to evaluate the level to which anglers may attempt to high-grade under such restrictions, which may result in substantial differences between predicted versus observed average weights. Our recommendation is to view these results as two extremes outlining a plausible range of projections.

## **2.6 Reverse Slot Limit Combined with a Maximum Size Limit and Tuesday Closures**

### **2.6.1 Approach**

As outlined above, this measure would combine a reverse slot limit on one fish with the status quo maximum size limit (28 inches) or a maximum size of 26 inches on the second fish. This regulation is functionally similar to a maximum size limit on both fish but provides anglers with the potential of harvesting one halibut of exceptional size. This management measure also provides flexibility in the number of closed Tuesdays. All other status quo management measures would remain in place.

The above scenarios bracket a range of plausible assumptions; a reverse slot limit has never been implemented in Area 3A and no empirical data exist on how the fishery might respond to such a regulation. This regulation limits the size of the fish that, under status quo regulations, can be of any length. It was assumed that restricting the length of both fish would increase the incentive to harvest two fish, thereby the number of fish harvested.

To provide information that is better suited for decision making, this scenario represents a moderate approach, bracketed between the low and high harvest scenarios outlined in section 2.5.1. The 2019 preliminary effort was used as the projected effort for 2020, as was the time series forecasts of HPUE. This approach then used the proportion of second fish from 2013, the last year before implementation of a size limit on one fish. Implementation of the maximum size limit on one fish in 2014 resulted in immediate and substantial decreases in HPUE and the proportion of second fish in subareas with large fish available (Webster and Powers 2019). It should be noted that there is still a considerable amount of uncertainty in this approach. Under status quo management measures, harvest (number of fish) forecasts range from 132,453 fish under the low harvest to scenario, to 158,674 fish using this moderate approach, to 174,415 fish under the high harvest scenario.

Effects of Tuesday closures were applied to this moderate harvest scenario following the methods outlined in Webster and Powers (2019).

The average weight of the first fish was projected exactly as was done in section 2.5.1. The average weight of the second fish was calculated as the average weight of U26 or U28 fish in 2013, allowing for the possibility that there may be additional high grading with the more restrictive size limits on both fish. There were no U26 fish caught in 3A and landed in Gustavus or Elfin Cove (G3A) in 2013, therefore, the average weight of U26 fish in Yakutat, the nearest port to this fishing area, was applied to G3A. The overall average weight for all sizes of fish was calculated as a weighted mean of the first and second fish, where the weighting factors were the projected proportions of first and second fish.

Projections were made for lower size limits ranging from 35-60 inches (U35-U60) and upper limits ranging from 60-80 inches (O60-O80). The lack of experience with this measure created another problem, namely there were no empirical mean weight data to correct the predictions to current conditions. These data were corrected using the factor developed in the low harvest scenario outlined in section 2.5.1. Finally, the yield projections were inflated by a factor of 4% to account for release mortality (see Section 2.5).

### **2.6.2 Results**

The harvest scenario used for this analysis projects 158,674 fish will be removed under status quo Tuesday closures (5). For a size limit of 28 inches on one fish (status quo) and a reverse slot on the other fish, projected removals ranged from 1.563 Milb to 2.428 Milb for the range of size limits and Tuesday closures considered (Appendix Table A1a-o). For a size limit of 26 inches on one fish and a reverse slot on the other fish, projected removals ranged from 1.462 Milb to 2.308 Milb for the range of size limits and Tuesday closures considered (Appendix Table A2a-o). For both 26 and 28 inch size limits on one fish, there are several different combinations of reverse slot limit limits and Tuesday closures with projected removals at or below the 1.66 Milb allocation associated with the Status Quo TCEY (Tables 11 & 12) with workable lower limits ranging from 4 – All Tuesdays closed at lower slots of 35 – 44 inches. No combinations of reverse slot limits, maximum sizes on the second fish, and Tuesday closures are below the catch allocation associated with the Reference TCEY.

The results of the two scenarios in section 2.5.1 illustrate the uncertainty in these calculations. In this section, we use an approach that incorporates these two scenarios into a single projection to aid in the decision making process. Still, the projections are highly sensitive to the proportion of second fish retained, and we lack the history with this management measure to say with reasonable certainty how many more anglers would retain a second fish. We also lack information to evaluate the level to which

anglers may attempt to high-grade under such restrictions, which may result in substantial differences between predicted versus observed average weights. Our recommendation is to view this as one plausible scenario, while considering the results in section 2.5 (Tables 10a & 10b; status quo Tuesday closures under low and high harvest scenarios, respectively) relative to Appendix Table A1f (status quo Tuesday closures under moderate harvest scenario).

Finally, the harvest reductions under each scenario of closed days represent the maximum expected reduction in the number of fish harvested (Webster and Powers 2019). 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 alternate dates either on the same vessel or another vessel with available space. There is a substantial amount of latent capacity on charter vessels in Area 3A (Marrinan and Fey 2017).

## **2.7 Reverse Slot Limit Combined with a Maximum Size Limit of 26 inches and Additional Closure Dates**

### **2.7.1 Approach**

This measure would combine a reverse slot limit on one fish, a maximum size limit of 26 inches on the second fish, a closure of all Tuesdays, and additional closure dates on Mondays or Thursdays. All other status quo management measures would remain in place.

The scenarios in section 2.5 bracket a range of plausible assumptions, because a reverse slot limit has never been implemented in Area 3A, and no empirical data exist on how the fishery might respond to such a regulation. To provide information better suited for decision making, this scenario uses the moderate approach outlined in section 2.6.1. The 2019 preliminary effort was used as the projected effort for 2020, as was the time series forecasts of HPUE. This approach then used the proportion of second fish from 2013, the last year before implementation of any size limit. Effects of Tuesday closures and additional closure dates on Mondays or Thursdays were applied following the methods outlined in Webster and Powers (2019) and Section 2.2.1.

The average weight of the first fish was projected exactly as was done in Sections 2.5.1 and 2.6.1 The average weight of the second fish was calculated following the same methods used in Section 2.6.1.

Projections were made for lower size limits ranging from 35-60 inches (U35-U60) and upper limits ranging from 60-80 inches (O60-O80). As outlined in previous sections, these projections were adjusted using the factor developed in the low harvest scenario to correct fish size to current conditions and the yield projections were inflated by a factor of 4% to account for release mortality.

### **2.7.2 Results**

The harvest scenario used for this analysis projects 143,622 fish will be removed with all Tuesdays closed and no additional closure dates. For the addition of Monday closures (1 – 13 or all Mondays) with a reverse slot on one fish and a maximum size of 26 inches on the other fish, projected removals ranged from 1.211 Milb to 1.909 Milb for the range of size limits and closure dates considered (Appendix Table A3a-o). For the addition of Thursday closures (1 – 13 or all Thursdays) with a reverse slot on one fish and a maximum size of 26 inches on the other fish, projected removals ranged from 1.193 Milb to 1.909 Milb for the range of size limits and closure dates considered (Appendix Table A4a-o). For either day of the week, there are combinations of reverse slot limits and closure dates with projected removals at or below the 1.24 Milb allocation associated with the Reference TCEY (Tables 13b & 14b). For Mondays, 13 closure dates would allow for a U35O80 fish and all Mondays closed would allow for a U35O66 fish. For Thursdays, 12 closure dates would allow for a U35O78 fish, 13 closure dates would allow for a U35O72 fish, and all Thursdays closed would allow for a U35O64, a U36O70, or a U37O80 fish. There are many combinations of reverse slot limits and Monday or Thursday closures at or below the catch allocation associated with the Status Quo TCEY (Tables 13c & 14c).



As indicated in section 2.6, the results of the two scenarios in section 2.5 illustrate the uncertainty in these calculations. In this section, we use a single approach that incorporates the two harvest scenarios into a single projection to aid in the decision making process. Still, the projections are highly sensitive to the proportion of second fish retained, and we lack the history with this management measure to say with reasonable certainty how many more anglers would retain a second fish. We also lack information to evaluate the level to which anglers may attempt to high-grade under such restrictions, which may result in substantial differences between predicted versus observed average weights. Our recommendation is to view this as one plausible scenario, while considering the results in section 2.5. Furthermore, it is important that the Council considers the potential that the maximum effect of day of the week closures may not be achieved as there is a substantial amount of latent capacity in Area 3A and anglers may be able to rebook on alternative days of the week (Marrinan and Fey 2017).

## **2.8 One-Fish Bag Limit, No Size Limit**

### ***2.8.1 Approach***

This measure would combine a one fish bag limit, with no size limit, with all other status quo regulations.

The biggest challenge is estimation of the average weight under such a regulation. When the Area 2C charter fishery went from a two-fish bag limit with a maximum size limit on one fish (32 inches) to a one-fish bag limit with no size limit in 2009, the average weight increased 20% from the previous year, and increased another 13% in 2010 under the same regulation. The total increase in average weight over those two years was 36%. Under a one-fish bag limit, it is expected that anglers will high-grade to get the largest fish possible; the resulting increase in average weight will offset the decrease in the number of fish harvested to an unknown degree.

There are no empirical data from a fishery under a one-fish bag limit in Area 3A to use to predict the degree anglers may high-grade. It is also questionable whether the data from Area 2C is applicable to Area 3A, but the increase in average weight seen in 2009 and 2010 may be indicative of what is possible. There are many plausible approaches to predict average weight, with no clear way to decide which is the most accurate. The analysis looked at the average weight of all sizes of fish in 2019 and the average weight of O28 fish in 2019. Three average weight scenarios were considered. The first scenario used the average weight of O28 fish in 2019. The second used the average weight of O28 fish and an inflation factor of 20% due to high grading. A 20% increase was considered plausible based on the experience from Area 2C. The final scenario looked at the average weight of all sizes of fish from 2019 and included a 36% inflation factor due to high grading. Again, this was considered plausible based on observed changes in average weight relative to all sizes of fish in 2C when the bag limit was reduced to one fish.

It is not possible to tell from biological sampling data which fish were “first” fish, much less which fish were caught by which angler. Length data are obtained from fish or their filleted carcasses, where the fish from different anglers are mixed and the anglers are not present or can’t tell which fish belong to whom. Because there is a size limit on one fish of 28 inches, it was assumed that all fish over 28 inches were “first” fish and might emulate conditions under a one fish bag limit. This assumption is an approximation, as there may have been charter trips where some anglers two fish under the size limit. Under a one fish bag limit, there may be additional incentive to high grade, still there will be anglers who harvest a smaller (less than 28-inch) fish. As a method to estimate average weight, this method seems as good as any for generating a plausible estimate.

For all scenarios, the projected harvest was based on the status quo harvest forecast under a two-fish bag limit (Webster and Powers 2019), reduced by the 2020 forecast of the proportion of second fish in the harvest. It is assumed that a one fish bag limit will not affect effort in Area 3A. The average weight of fish under 28 inches was 5.3 lbs (net weight) in 2019; it is unlikely that the inability to harvest a fish of that size will incentivize an increase in days fished to harvest the same numbers of fish or lead to a

reduction in angler effort due to the more restrictive bag limits. Most likely, any changes due to angler behavior will be offset and result in similar levels of harvest to the status quo forecast.

Harvest projections were multiplied by each average weight option to obtain the projected yield under each scenario, and yields were inflated by 2% to account for release mortality. As with the inflation factor for a reverse slot limit, this number was selected arbitrarily, as there were not data upon which to base an estimate. 3A has never had a one fish bag limit, but release mortality would be assumed to be higher than status quo given the high grading expected under a one fish bag.

### **2.8.2 Results**

The forecast proportions of second fish varied by subarea, with an overall average of 36%. After removing the second fish, the harvest forecast was 84,166 fish. The projections of charter removals under the three scenarios ranged from 1.815 Mlb to 2.211 Mlb (Table 15), all above the Reference TCEY catch allocation and the Status Quo TCEY catch allocation. Use of the O28 average weight from 2019 and the average weight of all sizes of fish from 2019 with a 36% inflation for high grading resulted in similar projections of removals.

As with the reverse slot combined with a maximum size limit on one fish management measure, it was not possible to identify the most accurate projection for this measure. The projections are highly sensitive to the average weight, and average weight cannot be predicted under this measure because it is not possible to predict angler behavior or the degree of high grading that will occur. Therefore, these options are presented not as a choice, but to illustrate the range of uncertainty associated with this management measure.

## **2.9 One-Fish Bag Limit with Reverse Slot Limit Combine with Tuesday Closures**

### **2.9.1 Approach**

This measure would combine a one fish bag limit, with a size limit, under a range of Tuesday closures with all other status quo regulations.

The projected harvest was based on the status quo harvest forecast under a two-fish bag limit (Webster and Powers 2019), reduced by the 2020 forecast of the proportion of second fish in the harvest (see section 2.8.1). It is assumed that a one fish bag limit would not affect effort in Area 3A. The average weight of fish under 28 inches was 5.3 lbs (net weight) in 2019; it is unlikely that the inability to harvest a fish of that size will incentivize an increase in days fished to harvest the same numbers of fish or lead to a reduction in angler effort due to the more restrictive bag limits. However, the addition of a reverse slot limit may have an impact on angler behavior that we are unable to account for in this analysis. There may be anglers who decide not to fish or to fish fewer days under such restrictive limits. There may be anglers who decide to fish additional days to increase the poundage they are able to retain.

Effects of Tuesday closures were applied to harvest following the methods outlined in Webster and Powers (2019). It was assumed that the proportional reduction of harvest from closing Tuesdays would be consistent regardless of whether the bag limit was one or two fish.

The average weight of the fish was projected exactly as was done for the reverse slot limit in Area 2C, but using length data from 2013, the last year without a size limit in Area 3A (Webster and Powers 2019). Projections were made for lower size limits ranging from 35-60 inches (U35-U60) and upper limits ranging from 60-80 inches (O60-O80). The lack of experience with this measure created another problem, namely there were no empirical mean weight data to correct the predictions to current conditions, as was done with the status quo measures (Webster and Powers 2019). However, imposition of a U60-O60 size limit would be the functional equivalent of one fish of any size. To correct mean weight, the projections were adjusted by a single correction factor to make the projected yield under a U60-O60 reverse slot limit match the projected yield under a one fish bag limit with no size restrictions. The yield projections under average weight of O28 fish in 2019 with a one fish bag limit (section 2.8.1) was used to obtain this

correction factor. Correcting the yield was the functional equivalent of correcting mean weight because the harvest (number of fish) projections were the same.

The yield projections were inflated by a factor of 4% to account for release mortality.

### **2.9.2 Results**

Implementation of a one fish bag limit with a reverse slot limit combined with Tuesday closures could be used to bring the removals below either allocation scenario (Appendix Table A5a-o). Under the Reference TCEY, there are workable options with a minimum of seven closed Tuesdays with lower limits from 35 – 38 inches and upper limits from 62 – 80 inches (Table 16b). Under the Status Quo TCEY, any number of closed Tuesdays could be used with combinations of lower slot limits ranging from 40 – 60 inches and upper slot limits ranging from 60 – 80 inches (Table 16c).

## **2.10 Status Quo with All Days of the Week Open and a Seasonal Closure Prior to May 16 or June 1 and After July 31**

### **2.10.1 Approach**

This analysis looked at changing the halibut season for the charter sector in 3A from the status quo (February 1 – December 31) to an opening date of either May 16 or June 1 and a closing date of July 31. This management measure would allow for harvest on all days of the week throughout the open season (status quo includes Wednesday closures for the entire year and 5 Tuesday closures). These projections incorporate all other status quo measures.

The analysis followed the same harvest projection procedures as the analysis for opening all days of the week (Webster and Powers, 2019; Section 4.4). Status quo regulations in Area 3A included a year-round closure of the charter fishery on Wednesdays, as well as five Tuesdays closed (three in July and two in August). The analysis for opening all days relied on complete logbook data for 2014, the last year in which the fishery did not have any daily closures. The analysis proceeded by estimating the proportional effect of closed days in 2014 and applying those proportional effects to the harvest forecast for 2020. Estimated harvest for the entire year with all days opened was 167,980 halibut; this was used as the base harvest to estimate seasonal closures.

The analysis then assumed that the proportions of harvest in past years occurring before and after the open season dates would be eliminated if those days were closed in 2020. The proportion of harvest occurring between May 16 and July 31 has been between 64.7% and 69.5% since 2010 while the proportion of harvest occurring between June 1 and July 31 has been between 58.5% and 64.6%. Reasons for past variability are unclear but may include changes in halibut regulations (i.e. day of week closures, annual limits), changes in other fishery regulations (i.e. salmon, lingcod, rockfish), and changes to the tourism industry. Therefore, we provide three possible scenarios for this analysis. These are not provided as a choice, but rather to bracket the range of plausible outcomes if this management measure were implemented. The first scenario uses the proportion of harvest in 2014; this year had the highest proportion of harvest during the proposed open seasons and was the most recent year with no closure days. The second scenario uses the 2016 proportion of harvest during the open season; this year had the lowest proportion of harvest during the proposed open seasons. Finally, 2018 proportions were used for projections as this is the most recent year with complete logbook data and may mimic current conditions.

Average weight under each size limit was calculated and corrected as described in section 2.1.1 and a 1.1% release mortality inflation factor was added to estimate removals.

### **2.10.2 Results**

The potential reduction in harvest relative to status quo from opening all days of the week and implementing a shorter season ranged from 11.9 – 17.9% for an open season from May 16 – July 31 and 18.0 – 25.9% for an open season from June 1 – July 31, depending on the harvest scenario. The projected removals associated with the three scenarios for a season with all days of the week open from May 16 –

July 31 and all other status quo management measures ranged from 1.596 to 1.711 Mlb. Depending on the actual harvest, the removals may remain under the Status Quo TCEY catch allocation for these season dates. The projected removals for a season with all days of the week open from June 1 – July 31 ranged from 1.442 to 1.592 Mlb (Table 17). Under all three scenarios, projected removal is below the Status Quo TCEY catch allocation. Neither set of dates and none of the scenarios result in projections that are below the Reference TCEY catch allocation.

### **3. Implementation Considerations**

#### **3.1 Size Limits**

There are no anticipated problems associated with implementation of a reverse slot limit or maximum size limit in Area 3A. Size limits have been used successfully in 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 discarded thereby increasing removals associated with discard mortality. Not only do these size limits generate additional regulatory (versus voluntary) discards, 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 in the catch. 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 higher under size limits, it is included in the estimates of removals, and is accounted for in the charter sector allocation.

Projections of charter removals associated with combination reverse slot limit and a maximum size limit in Area 3A were highly uncertain. Section 2.5 bracketed harvest between two plausible scenarios, while subsequent sections used a more moderate approach to aid in the decision making process. In addition, this measure combined with various status quo measures such as trip limits, annual limits, and daily closures, could make for a highly complex and difficult to understand regulatory package. Once implemented in concert with other measures, it could be difficult to separate the relative effects of each measure. This could potentially impair future analyses of regulatory measures in Area 3A.

#### **3.2 Annual Limits**

Annual limits were implemented in Area 3A in 2015 (5 fish) and 2016 – 2019 (4 fish). If annual limits are recommended for the charter fishery, it is crucial for enforcement purposes to ensure that the regulation be accompanied by a recording requirement similar to that implemented in recent years. Specifically, immediately upon retaining a halibut, charter anglers must record, in ink, the date, location (IPHC area), and species (halibut) on their harvest record. The harvest record is located on the back of the State of Alaska fishing license. For anglers not required to have an annual license, a harvest card can be obtained from the ADF&G website<sup>1</sup> or from local offices. 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 annual limit and recording requirement as these harvests accrue toward the IFQ fishery allocation. Under the CSP, GAF must be recorded in the logbook immediately upon retention. When checking anglers at sea or dockside, enforcement personnel should be able to deduct GAF from fish that count toward an angler's annual limit.

The license or harvest card is not submitted at the end of the year. Halibut harvest accounting by individual anglers would continue to be implemented through ADF&G charter logbooks. Logbooks require reporting of the number of halibut kept and released by individual anglers, as well as the angler's name and fishing license number. For anglers fishing under the authority of an ADF&G Permanent Identification (PID) or Disabled American Veteran (DAV) card, the PID or DAV number must be

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<sup>1</sup> [http://www.adfg.alaska.gov/static/license/sportlicense/pdf/sf\\_harvest\\_record\\_card.pdf](http://www.adfg.alaska.gov/static/license/sportlicense/pdf/sf_harvest_record_card.pdf)

recorded. No number can be recorded for youth anglers 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.

Concerns have been expressed in previous years regarding effective enforcement and compliance with halibut annual limits. A chief concern is that unscrupulous anglers will obtain duplicate or multiple licenses. Once a harvest record is full, these anglers could print another copy of their license and thereby comply with the reporting requirement yet still violate the annual limit. However, ADF&G can merge licensing and logbook data to examine the number of fish harvested by individual anglers, regardless of the number of licenses, duplicates, PIDs, or DAVs they may have held. Although ADF&G is not responsible for enforcement of the annual limit, this capability allows us to evaluate and report on compliance with halibut annual limits to the Council or to enforcement agencies.

The 5-fish annual limit in 2015 was implemented without a recording requirement. Beginning in 2016, the annual limit was decreased to 4 fish and a recording requirement was implemented. Since 2015, 0.2% - 1.0% of licensed anglers have exceeded the annual limit, accounting for 0.2% - 0.6% of harvest by licensed anglers. In 2018, 65,587 licensed anglers harvested 128,830 halibut in 3A. Of those, 201 (0.3%) violated the annual limit and harvested 296 fish in excess of the annual limit which represented 0.2% of the total harvest by licensed anglers. Anglers in Lower Cook Inlet accounted for the majority of the fish over their annual limit (171), followed by Central Cook Inlet (49).

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 a 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 have made up only 5.2-5.8% of angler-trips in Areas 3A in recent years. As stated earlier, all unlicensed youth anglers would be required to report each halibut on a harvest record. Youth typically fish on charter boats with parents or other adults, who, along with the guide or deck hand, would be expected to remind them of recording requirements. It is likely the proportion of youth that violate annual limits is small.

### **3.3 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). This analysis could only estimate the maximum potential reduction in halibut harvest but cannot predict possible changes in angler behavior, such as anglers booking alternate days. In 3A, with Wednesdays closed all year and five Tuesdays closed during the peak season, closure of additional 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.

Another impact of daily closures is the potential increase in the harvest of state-managed 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 will likely intensify conservation concerns for these stocks.

Another consideration for daily closures is the potential effect on estimation of the current year's halibut harvest. Daily closures for a portion of the year may alter the distribution of harvest within the year. The preliminary estimates of harvest for the current year are based on logbook data for trips through July 31. The harvest through that date is expanded using the proportion of harvest through that date in prior years, around 67 – 75% in 3A. If daily closures are selected that reduce harvest in a manner that is not proportional to harvest over the season, future preliminary harvest estimates could be biased. We

recommend that if additional daily closures are implemented in 3A, that they be structured around the dates listed in Table 22 of Webster and Powers 2019, and Tables 2 and 4 of this report.

### **3.4 One-fish Bag Limit**

As shown in Section 2.8, the projections of charter removals under a one-fish bag limit are sensitive to the average weight, but there is not enough experience or empirical data to indicate what average weight would be under this measure in Area 3A. If implemented, one consideration is that this measure could cause a shift in the distribution of effort and harvest from Cook Inlet and the North Gulf (Seward) to other parts of Area 3A with larger fish, such as Yakutat, Valdez, and Kodiak.

### **3.5 Seasonal Closures**

The projections of charter removals under a shorter season are sensitive to the proportion of fish harvested during the proposed open and closed season in past years. If implemented, one consideration is that this measure could cause a shift in the distribution of effort and harvest into the open season. As with daily closures, the effect cannot be accurately predicted or evaluated. A shorter season is expected to reduce effort. This analysis could only estimate the maximum potential reduction in halibut harvest but cannot predict possible changes in angler behavior, such as anglers booking alternate days. With a shorter season, there would likely be less available space to rebook on alternative dates or with alternative businesses.

The analysis assumed that the proportions of harvest occurring before and after the seasonal closure dates for past years would be eliminated if those days were closed in 2020. There is some variability in these proportions over past years and results are sensitive to this variability. Reasons for past variability are unclear but may include changes in halibut regulations (i.e. day of week closures, annual limits), changes in other fishery regulations (i.e. salmon, lingcod, rockfish), and changes to the tourism industry. We provided three possible scenarios for this analysis. These are not provided as a choice, but rather to bracket the range of plausible outcomes if this management measure were implemented.

Another impact of a shorter season is the potential increase in the harvest of alternative species such as salmon, rockfishes, sablefish, Pacific cod, and lingcod. Some charter businesses are able to book anglers to catch other species, particularly salmon. Increases in harvest will likely intensify conservation concerns for these stocks.

## **4.0 References**

- Marrinan, S. and M. Fey. 2017. Charter Halibut Permit Latency Discussion Paper. Unpublished discussion paper presented to the North Pacific Fishery Management Council in December 2017.  
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- Webster, S. and R. Powers 2019. Analysis of management options for the Area 2C and 3A charter halibut fisheries for 2020: A report to the North Pacific Fishery Management Council, December 2019. Alaska Department of Fish and Game. Unpublished.  
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Table 1. Area 3A projected harvest (upper table) and removals (lower table) for 2020 under a **range of maximum size limits on one fish in the bag limit and Tuesday closures ranging from zero to thirteen days or a Tuesday closure for the entire season**. Status quo is five Tuesday closures and a 28-inch maximum size limit on one fish. 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, 4-fish annual limit**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight.

**Projected Harvest (number of fish)**

	Number of Tuesday Closures														All
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
Harvest	142,407	140,593	138,359	136,591	134,563	132,453	130,399	128,616	127,179	125,953	124,505	124,226	122,981	122,370	119,851

**Projected Charter Removals (Mlb)**

Size limit	Number of Tuesday Closures														All
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
26	2.014	1.988	1.955	1.929	1.902	1.874	1.846	1.821	1.799	1.783	1.761	1.757	1.738	1.732	1.696
27	2.041	2.015	1.982	1.955	1.928	1.899	1.871	1.845	1.823	1.807	1.784	1.780	1.762	1.755	1.719
28	2.083	2.057	2.023	1.995	1.967	1.938	1.909	1.883	1.861	1.844	1.821	1.817	1.798	1.791	1.754
29	2.110	2.083	2.049	2.021	1.993	1.964	1.934	1.908	1.885	1.869	1.845	1.841	1.822	1.815	1.777
30	2.152	2.125	2.090	2.062	2.033	2.003	1.972	1.946	1.923	1.906	1.882	1.878	1.858	1.851	1.813

Table 2. Projected harvest and removals associated with status quo management measures **with all Tuesdays closed throughout the year combined with Monday closures** during June through August of 2020 or for the entire year. Status quo management measures include a **two fish bag limit with one fish any size, 28-inch maximum on the second fish, a 4-fish annual limit, vessel and permit trip limits and a Wednesday closure**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The most liberal option below the Status Quo TCEY allocation is highlighted in dark grey; no options were below the Reference TCEY allocation.

Number of Closed Mondays	Beginning and Ending Dates	Percentage change in harvest relative to status quo	Projected Harvest (no. Fish)	Projected Removals (Mlb)
0		-9.5%	119,851	1.754
1	July 27	-11.1%	117,743	1.724
2	July 27 – August 03	-12.5%	115,950	1.698
3	July 20 – August 03	-13.6%	114,447	1.675
4	July 13 – August 03	-15.3%	112,195	1.643
5	July 13 – August 10	-16.6%	110,424	1.617
6	July 06 - August 10	-18.0%	108,623	1.590
7	June 29 - August 10	-19.5%	106,681	1.562
8	June 29 - August 17	-19.8%	106,198	1.555
9	June 22 - August 17	-20.6%	105,113	1.539
10	June 15 - August 17	-21.7%	103,744	1.520
11	June 15 - August 24	-22.2%	103,106	1.510
12	June 08 - August 24	-23.0%	102,031	1.494
13	June 01 - August 24	-23.5%	101,382	1.486
48 (all season)	February 01 - December 31	-25.1%	99,269	1.453



Table 3. Area 3A projected harvest (upper table) and removals (lower table) for 2020 under a **range of maximum size limits on one fish** in the bag limit and with **Tuesday closed all year and Monday closures ranging from zero to thirteen days or a Monday closure for the entire season**. 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, 4-fish annual limit**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The most liberal options below the Status Quo TCEY allocation are highlighted in dark grey; no options were below the Reference TCEY allocation.

**Projected Harvest (number of fish)**

	Number of Monday Closures														All
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
Harvest	119,851	117,743	115,950	114,447	112,195	110,424	108,623	106,681	106,198	105,113	103,744	103,106	102,031	101,382	99,269

**Projected Charter Removals (Mlb)**

Size limit	Number of Monday Closures														All
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
26	1.695	1.667	1.641	1.619	1.588	1.563	1.537	1.510	1.503	1.488	1.469	1.460	1.444	1.437	1.405
27	1.718	1.689	1.663	1.641	1.610	1.584	1.558	1.530	1.524	1.508	1.489	1.480	1.464	1.456	1.423
28	1.754	1.724	1.698	1.675	1.643	1.617	1.590	1.562	1.555	1.539	1.520	1.510	1.494	1.486	1.453
29	1.777	1.747	1.720	1.697	1.664	1.638	1.611	1.582	1.575	1.559	1.540	1.530	1.514	1.505	1.472
30	1.812	1.781	1.754	1.731	1.697	1.670	1.643	1.614	1.607	1.590	1.570	1.560	1.544	1.535	1.501

Table 4. Projected harvest and removals associated with status quo management measures with **all Tuesdays closed throughout the year combined with Thursday closures** during June through August of 2020 or for the entire year. Status quo management measures include a **two fish bag limit with one fish any size, 28-inch maximum on the second fish, a 4-fish annual limit, vessel and permit trip limits and a Wednesday closure**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The most liberal option below the Status Quo TCEY allocation is highlighted in dark grey; no options were below the Reference TCEY allocation.

Number of Closed Thursdays	Beginning and Ending Dates	Percentage change in harvest relative to status quo	Projected Harvest (no. Fish)	Projected Removals (Mlb)
0		-9.5%	119,851	1.754
1	July 30	-11.1%	117,755	1.724
2	July 30 – August 06	-12.7%	115,651	1.693
3	July 23 – August 06	-13.7%	114,256	1.674
4	July 16 – August 06	-15.4%	112,116	1.642
5	July 16 – August 13	-16.7%	110,348	1.618
6	July 09 - August 13	-18.1%	108,440	1.589
7	July 02 - August 13	-18.9%	107,462	1.577
8	July 02 - August 20	-20.0%	105,929	1.555
9	June 25 - August 20	-21.2%	104,329	1.530
10	June 18 - August 20	-22.4%	102,810	1.508
11	June 18 - August 27	-22.8%	102,210	1.500
12	June 11 - August 27	-23.6%	101,215	1.486
13	June 04 - August 27	-24.1%	100,515	1.477
48 (all season)	February 01 - December 31	-26.3%	97,627	1.434

Table 5. Area 3A projected harvest (upper table) and removals (lower table) for 2020 under a **range of maximum size limits on one fish in the bag limit and with Tuesday closed all year and Thursday closures ranging from zero to thirteen days or a Thursday closure for the entire season**. 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, 4-fish annual limit**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The most liberal options below the Status Quo TCEY allocation are highlighted in dark grey; no options were below the Reference TCEY allocation.

**Projected Harvest (number of fish)**

	Number of Thursday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
Harvest	119,851	117,755	115,651	114,256	112,116	110,348	108,440	107,462	105,929	104,329	102,810	102,210	101,215	100,515	97,627

**Projected Charter Removals (Mlb)**

Size limit	Number of Thursday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.695	1.666	1.637	1.618	1.588	1.564	1.537	1.524	1.503	1.479	1.458	1.450	1.436	1.428	1.386
27	1.718	1.689	1.659	1.640	1.609	1.585	1.557	1.545	1.523	1.499	1.478	1.470	1.456	1.447	1.405
28	1.754	1.724	1.693	1.674	1.642	1.618	1.589	1.577	1.555	1.530	1.508	1.500	1.486	1.477	1.434
29	1.777	1.746	1.716	1.696	1.664	1.639	1.610	1.597	1.575	1.550	1.528	1.520	1.505	1.496	1.453
30	1.812	1.781	1.749	1.730	1.697	1.671	1.642	1.629	1.606	1.581	1.558	1.550	1.535	1.525	1.481

Table 6. Estimated effects of **annual limits of two and three halibut** on Area 3A anglers and projected harvest for 2020 under a **28-inch maximum size limit on one of two fish in the bag limit, vessel trip limit, permit trip limit, Wednesday closure, and Tuesday closure on five days** in July and August. The percent of affected anglers is the portion of individual anglers that harvested more than each specified annual limit in 2018.

Annual Limit	Subarea								Area 3A
	CCI	EPWS	GlacBay	Yak	LCI	NGulf	Kod	WPWS	
<b>Estimated percent of anglers affected by an annual limit:</b>									
2	13.9%	6.2%	12.9%	17.5%	12.2%	6.5%	29.2%	4.6%	11.6%
3	9.6%	2.7%	2.3%	6.3%	9.2%	2.5%	13.7%	0.9%	7.0%
<b>Estimated percent change in harvest relative to no annual limit:</b>									
2	-11.2%	-5.8%	-9.5%	-14.2%	-10.3%	-5.6%	-20.8%	-3.9%	-9.7%
3	-4.6%	-1.8%	-1.4%	-3.8%	-4.4%	-1.6%	-6.6%	-0.6%	-3.6%
<b>Projected harvest (number of halibut):</b>									
2	22,887	4,534	1,444	3,426	48,322	28,407	5,589	5,052	119,660
3	24,595	4,726	1,573	3,842	51,488	29,620	6,589	5,223	127,656
4 (status quo)	25,773	4,811	1,596	3,992	53,872	30,095	7,058	5,256	132,453

Table 7. Area 3A projected harvest (upper table) and removals (lower table) for 2020 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, Wednesday closure all year, five closed Tuesdays**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight.

<b>Projected Harvest (number of fish)</b>			
Year	Annual Limit (number of halibut)		
	2	3	4 (status quo)
2020	119,660	127,656	132,453

  

<b>Projected Charter Removals (Mlb)</b>			
Size Limit (in)	Annual Limit (number of halibut)		
	2	3	4 (status quo)
26	1.700	1.814	1.874
27	1.722	1.838	1.899
28	1.758	1.876	1.938
29	1.781	1.900	1.964
30	1.816	1.938	2.003

Table 8. Area 3A projected harvest (upper table) and removals (lower table) for 2020 under an **annual limit of three fish** with a **range of maximum size limits on one fish in the bag limit and Tuesday closures** ranging from zero to thirteen days or a Tuesday closure for the entire season. 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, and Wednesday closure all year**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The one option below the Status Quo TCEY allocation is highlighted in dark grey; no options were below the Reference TCEY allocation.

**Projected Harvest (number of fish)**

	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
Harvest	137,249	135,498	133,343	131,637	129,685	127,656	125,677	123,961	122,574	121,397	119,997	119,731	118,529	117,945	115,524

**Projected Charter Removals (Mlb)**

Size limit	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.949	1.924	1.893	1.867	1.841	1.814	1.787	1.762	1.742	1.726	1.704	1.701	1.683	1.676	1.642
27	1.975	1.950	1.918	1.892	1.866	1.838	1.811	1.786	1.765	1.749	1.727	1.723	1.705	1.699	1.664
28	2.016	1.990	1.958	1.931	1.904	1.876	1.848	1.823	1.801	1.785	1.763	1.759	1.741	1.734	1.698
29	2.042	2.016	1.983	1.956	1.929	1.900	1.872	1.846	1.825	1.808	1.786	1.782	1.763	1.756	1.720
30	2.083	2.056	2.022	1.995	1.967	1.938	1.909	1.883	1.861	1.844	1.821	1.817	1.798	1.791	1.754

Table 9. Area 3A projected harvest (upper table) and removals (lower table) for 2020 under an **annual limit of two fish** with a **range of maximum size limits on one fish in the bag limit and Tuesday closures** ranging from zero to thirteen days or a Tuesday closure for the entire season. 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, and Wednesday closure all year**. Projections include corrections for errors in estimation of average weight and an additional 1.1% release mortality by weight. The one option below the Status Quo TCEY allocation is highlighted in dark grey; no options were below the Reference TCEY allocation.

**Projected Harvest (number of fish)**

	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
Harvest	128,646	127,004	124,985	123,385	121,557	119,660	117,804	116,197	114,895	113,794	112,480	112,235	111,106	110,560	108,304

**Projected Charter Removals (Mlb)**

Size limit	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
26	1.827	1.803	1.773	1.749	1.725	1.700	1.674	1.651	1.632	1.618	1.597	1.594	1.577	1.571	1.539
27	1.851	1.827	1.797	1.773	1.748	1.722	1.697	1.673	1.654	1.639	1.618	1.615	1.598	1.592	1.559
28	1.889	1.865	1.835	1.810	1.784	1.758	1.732	1.708	1.688	1.673	1.652	1.648	1.631	1.625	1.592
29	1.914	1.890	1.859	1.833	1.808	1.781	1.754	1.730	1.710	1.695	1.674	1.670	1.653	1.646	1.613
30	1.952	1.927	1.895	1.870	1.844	1.816	1.789	1.765	1.744	1.728	1.707	1.703	1.685	1.679	1.644

Table 10. Projected charter removals (Mlb) for Area 3A in 2020 under **reverse slot limits on one fish ranging from U35O60 to U60O80, and a maximum size limit on the other fish of 28-inches with all other status quo management measures**. Projections are provided for two scenarios: a low harvest scenario (a) is based on proportions of second fish in the harvest and HPUE projected for 2020 under status quo regulations and average weight of second fish in 2019, and a high harvest scenario (b) is based on the proportions and average weight of second fish in the harvest and HPUE from 2013 (before size limits in Area 3A). Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Dark shaded values in the low harvest scenario represent values that are below the Status Quo TCEY allocation; no values in the low harvest scenario are below the Reference TCEY catch allocation. No values in the high harvest scenario are below the Status Quo or Reference catch allocation.

**a. Low Harvest Scenario: 132,453**

	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.559	1.540	1.517	1.498	1.488	1.482	1.477	1.474	1.471	1.467	1.461
36	1.600	1.580	1.557	1.538	1.528	1.523	1.518	1.515	1.512	1.508	1.502
37	1.620	1.600	1.578	1.559	1.549	1.543	1.538	1.535	1.532	1.528	1.522
38	1.647	1.628	1.605	1.586	1.576	1.571	1.566	1.563	1.559	1.556	1.550
39	1.671	1.652	1.629	1.610	1.600	1.595	1.590	1.587	1.584	1.580	1.574
40	1.689	1.670	1.647	1.629	1.619	1.613	1.608	1.605	1.602	1.598	1.593
41	1.707	1.688	1.665	1.647	1.637	1.631	1.626	1.623	1.620	1.617	1.611
42	1.720	1.701	1.679	1.660	1.650	1.645	1.640	1.637	1.634	1.630	1.625
43	1.742	1.723	1.700	1.682	1.672	1.667	1.662	1.659	1.656	1.652	1.646
44	1.753	1.734	1.712	1.693	1.683	1.678	1.673	1.670	1.667	1.663	1.658
45	1.767	1.748	1.726	1.708	1.698	1.693	1.688	1.685	1.682	1.678	1.672
46	1.777	1.758	1.736	1.718	1.708	1.702	1.697	1.694	1.691	1.688	1.682
47	1.794	1.775	1.753	1.735	1.725	1.720	1.715	1.712	1.709	1.705	1.700
48	1.805	1.786	1.764	1.746	1.737	1.731	1.726	1.723	1.720	1.717	1.711
49	1.825	1.806	1.785	1.767	1.757	1.752	1.747	1.744	1.741	1.737	1.731
50	1.841	1.823	1.802	1.784	1.774	1.769	1.764	1.761	1.758	1.754	1.749
51	1.857	1.839	1.817	1.800	1.790	1.784	1.780	1.777	1.774	1.770	1.765
52	1.874	1.856	1.835	1.817	1.807	1.802	1.797	1.794	1.791	1.788	1.782
53	1.885	1.867	1.846	1.828	1.818	1.813	1.808	1.805	1.802	1.799	1.793
54	1.905	1.887	1.866	1.848	1.839	1.833	1.828	1.825	1.823	1.819	1.814
55	1.914	1.896	1.875	1.857	1.848	1.842	1.838	1.835	1.832	1.828	1.823
56	1.929	1.912	1.891	1.873	1.864	1.858	1.853	1.851	1.848	1.844	1.839
57	1.946	1.928	1.907	1.890	1.880	1.875	1.870	1.867	1.865	1.861	1.856
58	1.961	1.944	1.923	1.906	1.896	1.891	1.886	1.883	1.880	1.877	1.872
59	1.976	1.959	1.938	1.921	1.912	1.906	1.902	1.899	1.896	1.892	1.887
60	1.994	1.977	1.956	1.939	1.930	1.925	1.920	1.917	1.914	1.910	1.905



**b. High Harvest Scenario: 174,415**

	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.992	1.973	1.949	1.930	1.919	1.912	1.907	1.904	1.901	1.897	1.891
36	2.036	2.017	1.992	1.974	1.962	1.956	1.951	1.948	1.944	1.941	1.935
37	2.057	2.038	2.014	1.995	1.984	1.978	1.973	1.969	1.966	1.962	1.956
38	2.086	2.067	2.043	2.025	2.013	2.007	2.002	1.999	1.995	1.992	1.986
39	2.112	2.093	2.069	2.050	2.039	2.033	2.028	2.025	2.021	2.018	2.012
40	2.131	2.112	2.088	2.070	2.059	2.053	2.047	2.044	2.041	2.037	2.031
41	2.150	2.131	2.107	2.089	2.078	2.072	2.066	2.063	2.060	2.056	2.050
42	2.164	2.145	2.121	2.103	2.092	2.086	2.081	2.078	2.074	2.071	2.065
43	2.186	2.168	2.144	2.126	2.115	2.109	2.104	2.100	2.097	2.093	2.088
44	2.198	2.180	2.156	2.138	2.127	2.121	2.116	2.113	2.109	2.106	2.100
45	2.213	2.195	2.171	2.153	2.142	2.136	2.131	2.128	2.125	2.121	2.115
46	2.224	2.206	2.182	2.164	2.153	2.147	2.142	2.138	2.135	2.132	2.126
47	2.242	2.224	2.201	2.183	2.172	2.166	2.161	2.157	2.154	2.151	2.145
48	2.253	2.236	2.212	2.194	2.183	2.177	2.172	2.169	2.166	2.162	2.156
49	2.275	2.257	2.234	2.216	2.205	2.199	2.194	2.191	2.188	2.184	2.178
50	2.293	2.275	2.252	2.234	2.223	2.217	2.212	2.209	2.206	2.202	2.196
51	2.310	2.292	2.269	2.252	2.241	2.234	2.230	2.226	2.223	2.220	2.214
52	2.327	2.310	2.287	2.270	2.259	2.253	2.248	2.245	2.242	2.238	2.232
53	2.340	2.322	2.299	2.282	2.271	2.265	2.260	2.257	2.254	2.250	2.245
54	2.361	2.344	2.321	2.304	2.293	2.287	2.282	2.279	2.276	2.272	2.266
55	2.370	2.353	2.330	2.313	2.302	2.296	2.291	2.288	2.285	2.282	2.276
56	2.386	2.369	2.347	2.330	2.319	2.313	2.308	2.305	2.302	2.298	2.293
57	2.404	2.387	2.365	2.348	2.337	2.331	2.326	2.323	2.320	2.316	2.311
58	2.420	2.404	2.381	2.364	2.353	2.347	2.343	2.339	2.337	2.333	2.327
59	2.437	2.420	2.398	2.381	2.370	2.364	2.359	2.356	2.353	2.350	2.344
60	2.456	2.439	2.417	2.400	2.390	2.384	2.379	2.376	2.373	2.369	2.364

Lower Length Limit (in)

Table 11. Projected harvest (top) under combinations of **closed Tuesdays with a reverse slot limit on one fish and a maximum size of 28-inches (status quo) on the second fish**. Combinations of closed Tuesdays, lower reverse slot limits, and upper reverse slot limits with projected removals below the Status Quo TCEY catch allocation (bottom table) under a two fish bag limit. No projections were below the Reference TCEY catch allocation. Numbers in cells indicate number of closed Tuesdays. Cells with the most liberal combinations of closures and size limits are highlighted with a blue – yellow scale indicating 0 to all closed days. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**.

**a. Estimated harvest under reverse slot and variable closed Tuesdays**

Harvest	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
	170,602	168,406	165,716	163,576	161,171	158,674	156,237	154,112	152,368	150,937	149,178	148,843	147,353	146,658	143,622

**b. Combinations below Status Quo TCEY catch allocation (1.66 Milb)**

Lower Length Limit (in)	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	All	All	12	10	10	10	9	9	9	9	8
36	Over	Over	All	All	13	12	12	12	12	12	11
37	Over	Over	Over	All	All	All	All	All	All	13	13
38	Over	Over	Over	Over	Over	Over	All	All	All	All	All
39	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
40	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
41	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
42	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
43	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
44	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
45	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
46	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
47	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
48	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
49	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
50	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
51	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
52	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
53	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
54	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
55	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
56	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
57	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
58	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
59	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
60	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over

Table 12. Projected harvest (top) under combinations of **closed Tuesdays with a reverse slot limit on one fish and a maximum size of 26-inches on the second fish**. Combinations of closed Tuesdays, lower reverse slot limits, and upper reverse slot limits with projected removals below the Status Quo TCEY catch allocation (bottom table) under a two fish bag limit. No projections were below the Reference TCEY catch allocation. Numbers in cells indicate number of closed Tuesdays. Cells with the most liberal combinations of closures and size limits are highlighted with a blue – yellow scale indicating 0 to all closed days. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**.

**Combinations below Status Quo TCEY catch allocation (1.66 Mlb)**

		Upper Length Limit (in)										
		60	62	64	66	68	70	72	74	76	78	80
Lower Length Limit (in)	35	8	7	6	5	5	5	4	4	4	4	4
	36	10	9	8	7	6	6	6	6	6	6	5
	37	12	10	9	8	7	7	7	7	7	6	6
	38	All	12	10	9	9	8	8	8	8	8	7
	39	Over	All	12	10	10	10	9	9	9	9	8
	40	Over	Over	All	12	12	11	10	10	10	10	10
	41	Over	Over	All	All	13	12	12	12	12	12	10
	42	Over	Over	Over	Over	All	All	13	13	12	12	12
	43	Over	Over	Over	Over	Over	All	All	All	All	All	All
	44	Over	Over	Over	Over	Over	Over	Over	Over	Over	All	All
	45	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	46	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	47	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	48	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	49	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	50	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	51	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	52	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	53	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
	54	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
55	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	
56	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	
57	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	
58	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	
59	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	
60	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	

Table 13. Projected harvest (Table 13a) under combinations of **closed Mondays with all Tuesdays closed, a reverse slot limit on one fish, and a maximum size of 26-inches on the second fish**. Combinations of closed Mondays, lower reverse slot limits, and upper reverse slot limits with projected removals below the Reference TCEY catch allocation (Table 13b) and the Status Quo TCEY catch allocation (Table 13c). Cells with the most liberal combinations of closures and size limits are highlighted with a blue – yellow scale indicating 0 to all closed days. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**.

**a. Estimated harvest under reverse slot and variable closed Mondays**

Harvest	Number of Monday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
	143,622	141,106	138,952	137,124	134,440	132,306	130,152	127,835	127,260	125,968	124,348	123,585	122,303	121,555	118,989

**b. Combinations below Reference TCEY catch allocation (1.24 Mlb)**

	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	Over	Over	Over	All	All	All	All	All	All	All	13
36	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
37	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
38	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
39	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
40	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
41	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
42	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
43	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
44	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
45	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
46	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
47	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
48	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
49	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
50	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
51	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
52	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
53	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
54	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
55	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
56	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
57	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
58	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
59	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
60	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over

c. Combinations below Status Quo TCEY catch allocation (1.66 Mlb)

	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0
40	1	0	0	0	0	0	0	0	0	0	0
41	1	1	0	0	0	0	0	0	0	0	0
42	2	1	0	0	0	0	0	0	0	0	0
43	2	2	1	1	0	0	0	0	0	0	0
44	3	2	1	1	1	0	0	0	0	0	0
45	3	3	2	1	1	1	1	1	1	0	0
46	4	3	2	2	1	1	1	1	1	1	1
47	4	4	3	2	2	2	2	1	1	1	1
48	4	4	3	3	2	2	2	2	2	2	1
49	5	4	4	3	3	3	3	3	2	2	2
50	6	5	4	4	4	4	3	3	3	3	3
51	6	6	5	4	4	4	4	4	4	4	3
52	7	6	5	5	5	4	4	4	4	4	4
53	7	6	6	5	5	5	5	4	4	4	4
54	7	7	6	6	6	5	5	5	5	5	5
55	8	7	7	7	6	6	5	5	5	5	5
56	9	8	7	7	6	6	6	6	6	6	6
57	10	9	7	7	7	7	6	6	6	6	6
58	10	10	9	7	7	7	7	7	7	7	7
59	11	10	10	9	8	7	7	7	7	7	7
60	12	11	10	10	9	9	9	9	8	8	7

Table 14. Projected harvest (Table 14a) under combinations of **closed Thursdays with all Tuesdays closed, a reverse slot limit on one fish, and a maximum size of 26-inches on the second fish**. Combinations of closed Thursdays, lower reverse slot limits, and upper reverse slot limits with projected removals below the Reference TCEY catch allocation (Table 14b) and the Status Quo TCEY catch allocation (Table 14c). Cells with the most liberal combinations of closures and size limits are highlighted with a blue – yellow scale indicating 0 to all closed days. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**.

**a. Estimated harvest under reverse slot and variable closed Thursdays**

Harvest	Number of Thursday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
	143,622	141,113	138,588	136,950	134,381	132,267	129,982	128,854	127,016	125,076	123,273	122,556	121,372	120,552	117,081

**b. Combinations below Reference TCEY catch allocation (1.24 Mlb)**

Lower Length Limit (in)	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	Over	Over	All	All	All	All	13	13	13	12	12
36	Over	Over	Over	Over	Over	All	All	All	All	All	All
37	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	All
38	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
39	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
40	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
41	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
42	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
43	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
44	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
45	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
46	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
47	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
48	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
49	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
50	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
51	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
52	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
53	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
54	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
55	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
56	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
57	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
58	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
59	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
60	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over

c. Combinations below Status Quo TCEY catch allocation (1.66 Mlb)

Lower Length Limit (in)	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0
40	1	0	0	0	0	0	0	0	0	0	0
41	1	1	0	0	0	0	0	0	0	0	0
42	2	1	0	0	0	0	0	0	0	0	0
43	2	2	1	1	0	0	0	0	0	0	0
44	3	2	1	1	1	0	0	0	0	0	0
45	3	3	2	1	1	1	1	1	1	0	0
46	4	3	2	2	1	1	1	1	1	1	1
47	4	4	3	2	2	2	2	1	1	1	1
48	4	4	3	2	2	2	2	2	2	2	1
49	5	4	4	3	3	3	2	2	2	2	2
50	6	5	4	4	4	3	3	3	3	3	3
51	6	6	5	4	4	4	4	4	4	4	3
52	7	6	5	5	5	4	4	4	4	4	4
53	7	6	6	5	5	5	5	4	4	4	4
54	8	7	6	6	6	5	5	5	5	5	5
55	8	8	7	6	6	6	6	5	5	5	5
56	9	8	8	7	6	6	6	6	6	6	6
57	9	9	8	7	7	7	6	6	6	6	6
58	10	9	9	8	8	8	7	7	7	7	6
59	10	10	9	9	8	8	8	8	8	8	7
60	11	10	10	9	9	9	9	8	8	8	8

Table 15. Projected average weights and charter removals under three possible scenarios for average weight in Area 3A under a **one-fish bag limit with no size limit**. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, five Tuesday closures, and a 4-fish annual limit.**

Mean wt Scenario	Average wt(lb)	Removals (Mlb)	SE (Mlb)
Average weight of O28 fish in 2019	21.46	1.842	0.122
Average weight of O28 fish in 2019 + 20%	25.75	2.211	0.147
Average weight of all fish in 2019 + 36%	21.14	1.815	0.104



Table 16. Projected harvest (Table 16a) under combinations of **closed Tuesdays with a reverse slot limit on one fish and a one fish bag limit**. Combinations of closed Tuesdays, lower reverse slot limits, and upper reverse slot limits with projected removals below the Reference TCEY catch allocation (Table 16b) and the Status Quo TCEY catch allocation (Table 16c) under a one fish bag limit. Numbers in cells indicate number of closed Tuesdays. Cells with the most liberal combinations of closures and size limits are highlighted with a blue – yellow scale indicating 0 to all closed days. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**.

**a. Estimated harvest under reverse slot and variable closed Tuesdays and one fish bag limit**

Harvest	Number of Tuesday Closures														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
	90,492	89,323	87,894	86,755	85,485	84,166	82,880	81,754	80,823	80,069	79,129	78,948	78,157	77,795	76,174

**b. Combinations below Reference TCEY catch allocation (1.24 Mlb)**

Lower Length Limit (in)	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	Over	All	12	10	9	8	8	8	7	7	7
36	Over	Over	Over	All	All	13	12	12	12	10	10
37	Over	Over	Over	Over	All	All	All	All	All	All	13
38	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	All
39	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
40	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
41	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
42	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
43	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
44	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
45	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
46	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
47	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
48	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
49	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
50	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
51	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
52	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
53	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
54	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
55	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
56	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
57	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
58	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
59	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over
60	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over	Over

**c. Combinations below Status Quo TCEY catch allocation (1.66 Mlb)**

	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0
41	1	0	0	0	0	0	0	0	0	0	0
42	1	0	0	0	0	0	0	0	0	0	0
43	2	2	0	0	0	0	0	0	0	0	0
44	3	2	1	0	0	0	0	0	0	0	0
45	4	3	2	1	0	0	0	0	0	0	0
46	4	3	2	1	1	0	0	0	0	0	0
47	5	4	3	2	2	1	1	1	1	1	0
48	6	5	4	3	2	2	2	2	1	1	1
49	6	6	5	4	3	3	3	2	2	2	2
50	7	6	5	5	4	4	4	3	3	3	3
51	8	7	6	5	5	5	4	4	4	4	4
52	9	8	7	6	6	5	5	5	5	5	4
53	10	9	7	7	6	6	6	6	5	5	5
54	12	10	9	8	7	7	7	6	6	6	6
55	12	10	9	8	8	7	7	7	7	7	6
56	All	12	10	9	8	8	8	8	8	7	7
57	All	All	12	10	10	9	9	9	9	8	8
58	Over	All	All	12	10	10	10	10	10	9	9
59	Over	Over	All	13	12	12	12	11	10	10	10
60	Over	Over	Over	All	All	All	13	13	12	12	12

Table 17. Projected harvest and removals under three possible scenarios for proportion of fish harvested in season in Area 3A under **an open halibut season with all days of the week open**. Two options for halibut seasons were analyzed, May 16 – July 31 (top table) and June 1 – July 31 (bottom table).

Projected removals include all other status quo management measures: **bag limit of two fish, maximum size of 28-inches on one fish, a limit of one trip per vessel and one trip per permit per day, and a 4-fish annual limit**. Dark shaded values represent values that are below the Status Quo TCEY allocation; the low harvest and recent harvest scenarios for an open season from May 16 – July 31 and all scenarios for a season from June 1 – July 31 are below the Status Quo TCEY allocation. No values are below the Reference TCEY catch allocation for any scenario or either proposed season dates.

**Season dates May 16 – July 31**

Base Year for Proportion of Harvest	Harvest	Removals (Mlb)
2014 (High Harvest)	116,744	1.711
2016 (Low Harvest)	108,763	1.596
2018 (Most Recent Harvest)	112,676	1.628

**Season dates June 1 – July 31**

Base Year for Proportion of Harvest	Harvest	Removals (Mlb)
2014 (High Harvest)	108,644	1.592
2016 (Low Harvest)	98,147	1.442
2018 (Most Recent Harvest)	103,786	1.503

**APPENDIX I**

Table A1. Projected charter removals (Mlb) for Area 3A in 2020 under a **two fish bag limit and reverse slot limits ranging from U35O60 to U60O80 with a range of Tuesday closures** throughout the season. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, a 28-inch size limit on one fish, Wednesday closure all year, and a 4-fish annual limit.** Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Harvest forecast under status quo closed Tuesdays (5) with a reverse slot on one fish is 158,674 fish. Dark shaded cells represent projections for the most liberal Tuesday closures, upper size limits, and lower size limits that do not exceed the 1.66 Mlb allocation associated with the Status Quo TCEY scenario.

**a. No Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.962	1.941	1.917	1.896	1.885	1.879	1.874	1.870	1.867	1.863	1.857
36	2.005	1.985	1.960	1.940	1.929	1.923	1.918	1.914	1.911	1.907	1.901
37	2.027	2.006	1.982	1.962	1.951	1.945	1.939	1.936	1.933	1.929	1.923
38	2.056	2.036	2.011	1.991	1.980	1.974	1.969	1.966	1.962	1.958	1.952
39	2.082	2.061	2.037	2.017	2.006	2.000	1.995	1.992	1.988	1.984	1.978
40	2.101	2.081	2.057	2.037	2.026	2.020	2.015	2.011	2.008	2.004	1.998
41	2.120	2.100	2.076	2.056	2.045	2.039	2.034	2.031	2.028	2.024	2.018
42	2.135	2.114	2.091	2.071	2.060	2.054	2.049	2.046	2.042	2.038	2.032
43	2.158	2.137	2.114	2.094	2.083	2.077	2.072	2.069	2.066	2.062	2.056
44	2.169	2.149	2.126	2.106	2.095	2.089	2.084	2.081	2.078	2.074	2.068
45	2.185	2.165	2.141	2.122	2.111	2.105	2.100	2.097	2.093	2.090	2.084
46	2.195	2.175	2.152	2.132	2.121	2.116	2.110	2.107	2.104	2.100	2.094
47	2.214	2.194	2.170	2.151	2.140	2.135	2.129	2.126	2.123	2.119	2.113
48	2.225	2.206	2.182	2.163	2.152	2.146	2.141	2.138	2.135	2.131	2.125
49	2.247	2.227	2.204	2.185	2.174	2.168	2.163	2.160	2.157	2.153	2.147
50	2.265	2.245	2.222	2.203	2.192	2.187	2.181	2.178	2.175	2.171	2.165
51	2.281	2.262	2.239	2.220	2.209	2.204	2.198	2.195	2.192	2.188	2.182
52	2.300	2.280	2.258	2.239	2.228	2.222	2.217	2.214	2.211	2.207	2.201
53	2.311	2.292	2.269	2.250	2.240	2.234	2.229	2.226	2.223	2.219	2.213
54	2.332	2.313	2.291	2.272	2.262	2.256	2.251	2.248	2.245	2.241	2.235
55	2.342	2.323	2.301	2.282	2.271	2.266	2.261	2.257	2.254	2.251	2.245
56	2.359	2.340	2.318	2.299	2.288	2.283	2.278	2.274	2.271	2.268	2.262
57	2.376	2.358	2.335	2.317	2.306	2.301	2.296	2.292	2.289	2.286	2.280
58	2.393	2.375	2.352	2.334	2.323	2.318	2.313	2.309	2.306	2.303	2.297
59	2.409	2.391	2.369	2.350	2.340	2.334	2.329	2.326	2.323	2.319	2.313
60	2.428	2.410	2.388	2.369	2.359	2.354	2.349	2.345	2.342	2.339	2.333

**b. One Closed Tuesday, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.937	1.916	1.892	1.872	1.861	1.855	1.850	1.847	1.843	1.839	1.833
36	1.980	1.959	1.935	1.915	1.904	1.899	1.893	1.890	1.887	1.883	1.877
37	2.001	1.981	1.957	1.937	1.926	1.920	1.915	1.911	1.908	1.904	1.898
38	2.030	2.010	1.986	1.966	1.955	1.949	1.944	1.941	1.937	1.934	1.927
39	2.055	2.035	2.011	1.991	1.981	1.975	1.969	1.966	1.963	1.959	1.953
40	2.075	2.054	2.031	2.011	2.000	1.994	1.989	1.986	1.983	1.979	1.973
41	2.093	2.073	2.050	2.030	2.019	2.014	2.008	2.005	2.002	1.998	1.992
42	2.108	2.088	2.064	2.044	2.034	2.028	2.023	2.020	2.016	2.012	2.006
43	2.130	2.110	2.087	2.067	2.057	2.051	2.046	2.042	2.039	2.035	2.029
44	2.142	2.122	2.099	2.079	2.069	2.063	2.058	2.054	2.051	2.047	2.041
45	2.157	2.138	2.114	2.095	2.084	2.079	2.073	2.070	2.067	2.063	2.057
46	2.167	2.148	2.124	2.105	2.094	2.089	2.083	2.080	2.077	2.073	2.067
47	2.186	2.166	2.143	2.124	2.113	2.107	2.102	2.099	2.096	2.092	2.086
48	2.197	2.178	2.155	2.135	2.125	2.119	2.114	2.111	2.108	2.104	2.098
49	2.218	2.199	2.176	2.157	2.147	2.141	2.136	2.132	2.129	2.125	2.120
50	2.236	2.217	2.194	2.175	2.165	2.159	2.154	2.151	2.147	2.144	2.138
51	2.252	2.233	2.211	2.192	2.181	2.176	2.171	2.167	2.164	2.160	2.155
52	2.271	2.252	2.229	2.210	2.200	2.194	2.189	2.186	2.183	2.179	2.173
53	2.282	2.263	2.241	2.222	2.212	2.206	2.201	2.198	2.195	2.191	2.185
54	2.303	2.284	2.262	2.243	2.233	2.227	2.222	2.219	2.216	2.212	2.207
55	2.312	2.294	2.272	2.253	2.243	2.237	2.232	2.229	2.226	2.222	2.216
56	2.329	2.310	2.288	2.270	2.260	2.254	2.249	2.246	2.243	2.239	2.233
57	2.346	2.328	2.306	2.287	2.277	2.272	2.267	2.263	2.260	2.257	2.251
58	2.363	2.345	2.323	2.304	2.294	2.288	2.283	2.280	2.277	2.273	2.268
59	2.379	2.360	2.339	2.320	2.310	2.305	2.300	2.296	2.293	2.290	2.284
60	2.397	2.379	2.358	2.339	2.329	2.324	2.319	2.316	2.313	2.309	2.303

**c. Two Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.906	1.885	1.862	1.842	1.831	1.825	1.820	1.817	1.814	1.810	1.804
36	1.948	1.928	1.904	1.884	1.874	1.868	1.863	1.859	1.856	1.852	1.846
37	1.969	1.949	1.925	1.905	1.895	1.889	1.884	1.881	1.877	1.873	1.867
38	1.997	1.977	1.954	1.934	1.924	1.918	1.913	1.909	1.906	1.902	1.896
39	2.022	2.002	1.979	1.959	1.949	1.943	1.938	1.935	1.931	1.927	1.922
40	2.041	2.021	1.998	1.978	1.968	1.962	1.957	1.954	1.951	1.947	1.941
41	2.060	2.040	2.017	1.997	1.987	1.981	1.976	1.973	1.969	1.966	1.960
42	2.074	2.054	2.031	2.011	2.001	1.995	1.990	1.987	1.984	1.980	1.974
43	2.096	2.076	2.053	2.034	2.023	2.018	2.013	2.009	2.006	2.003	1.997
44	2.107	2.088	2.065	2.046	2.035	2.030	2.024	2.021	2.018	2.014	2.008
45	2.122	2.103	2.080	2.061	2.051	2.045	2.040	2.037	2.033	2.030	2.024
46	2.132	2.113	2.090	2.071	2.061	2.055	2.050	2.047	2.044	2.040	2.034
47	2.150	2.131	2.108	2.089	2.079	2.073	2.068	2.065	2.062	2.058	2.052
48	2.161	2.142	2.120	2.101	2.090	2.085	2.080	2.077	2.074	2.070	2.064
49	2.182	2.163	2.141	2.122	2.112	2.106	2.101	2.098	2.095	2.091	2.085
50	2.200	2.181	2.158	2.140	2.129	2.124	2.119	2.116	2.113	2.109	2.103
51	2.216	2.197	2.175	2.156	2.146	2.140	2.135	2.132	2.129	2.125	2.120
52	2.234	2.215	2.193	2.174	2.164	2.159	2.154	2.150	2.147	2.144	2.138
53	2.245	2.226	2.204	2.186	2.176	2.170	2.165	2.162	2.159	2.155	2.150
54	2.265	2.247	2.225	2.207	2.197	2.191	2.186	2.183	2.180	2.176	2.171
55	2.275	2.256	2.235	2.216	2.206	2.201	2.196	2.193	2.190	2.186	2.180
56	2.291	2.273	2.251	2.233	2.223	2.217	2.212	2.209	2.206	2.202	2.197
57	2.308	2.290	2.268	2.250	2.240	2.235	2.230	2.227	2.224	2.220	2.214
58	2.324	2.306	2.285	2.267	2.257	2.251	2.246	2.243	2.240	2.236	2.231
59	2.340	2.322	2.300	2.283	2.273	2.267	2.262	2.259	2.256	2.252	2.247
60	2.358	2.341	2.319	2.301	2.292	2.286	2.281	2.278	2.275	2.271	2.266

**d. Three Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.881	1.861	1.837	1.818	1.807	1.802	1.796	1.793	1.790	1.786	1.780
36	1.922	1.902	1.879	1.860	1.849	1.844	1.838	1.835	1.832	1.828	1.822
37	1.943	1.923	1.900	1.880	1.870	1.864	1.859	1.856	1.853	1.849	1.843
38	1.971	1.951	1.928	1.909	1.899	1.893	1.888	1.885	1.881	1.878	1.872
39	1.996	1.976	1.953	1.934	1.923	1.918	1.912	1.909	1.906	1.902	1.896
40	2.014	1.995	1.972	1.952	1.942	1.937	1.931	1.928	1.925	1.921	1.915
41	2.033	2.013	1.990	1.971	1.961	1.955	1.950	1.947	1.944	1.940	1.934
42	2.046	2.027	2.004	1.985	1.975	1.969	1.964	1.961	1.958	1.954	1.948
43	2.068	2.049	2.026	2.007	1.997	1.991	1.986	1.983	1.980	1.976	1.971
44	2.080	2.060	2.038	2.019	2.009	2.003	1.998	1.995	1.992	1.988	1.982
45	2.094	2.075	2.053	2.034	2.024	2.018	2.013	2.010	2.007	2.003	1.997
46	2.104	2.085	2.063	2.044	2.034	2.028	2.023	2.020	2.017	2.013	2.007
47	2.122	2.103	2.081	2.062	2.052	2.046	2.041	2.038	2.035	2.031	2.026
48	2.133	2.114	2.092	2.073	2.063	2.058	2.052	2.049	2.046	2.043	2.037
49	2.154	2.135	2.113	2.094	2.084	2.079	2.073	2.070	2.067	2.064	2.058
50	2.171	2.152	2.130	2.112	2.102	2.096	2.091	2.088	2.085	2.081	2.076
51	2.187	2.168	2.146	2.128	2.118	2.112	2.107	2.104	2.101	2.098	2.092
52	2.204	2.186	2.164	2.146	2.136	2.130	2.125	2.122	2.119	2.116	2.110
53	2.215	2.197	2.175	2.157	2.147	2.142	2.137	2.133	2.131	2.127	2.121
54	2.235	2.217	2.196	2.178	2.168	2.162	2.157	2.154	2.151	2.148	2.142
55	2.245	2.227	2.205	2.187	2.177	2.172	2.167	2.164	2.161	2.157	2.152
56	2.261	2.243	2.221	2.203	2.193	2.188	2.183	2.180	2.177	2.173	2.168
57	2.278	2.260	2.238	2.221	2.211	2.205	2.200	2.197	2.194	2.191	2.185
58	2.293	2.276	2.255	2.237	2.227	2.222	2.217	2.214	2.211	2.207	2.202
59	2.309	2.291	2.270	2.252	2.243	2.237	2.232	2.229	2.226	2.223	2.217
60	2.327	2.310	2.289	2.271	2.261	2.256	2.251	2.248	2.245	2.241	2.236

**e. Four Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.854	1.834	1.810	1.791	1.781	1.775	1.770	1.767	1.764	1.760	1.754
36	1.895	1.875	1.852	1.833	1.822	1.817	1.812	1.808	1.805	1.802	1.796
37	1.915	1.895	1.872	1.853	1.843	1.837	1.832	1.829	1.826	1.822	1.816
38	1.943	1.923	1.900	1.881	1.871	1.865	1.860	1.857	1.854	1.850	1.844
39	1.967	1.947	1.925	1.905	1.895	1.890	1.885	1.882	1.878	1.875	1.869
40	1.985	1.966	1.943	1.924	1.914	1.908	1.903	1.900	1.897	1.893	1.888
41	2.003	1.984	1.961	1.942	1.932	1.927	1.922	1.919	1.916	1.912	1.906
42	2.017	1.998	1.975	1.956	1.946	1.941	1.936	1.932	1.929	1.926	1.920
43	2.039	2.019	1.997	1.978	1.968	1.963	1.958	1.954	1.951	1.948	1.942
44	2.050	2.031	2.008	1.990	1.980	1.974	1.969	1.966	1.963	1.959	1.953
45	2.064	2.045	2.023	2.005	1.995	1.989	1.984	1.981	1.978	1.974	1.968
46	2.074	2.055	2.033	2.014	2.004	1.999	1.994	1.991	1.988	1.984	1.978
47	2.092	2.073	2.051	2.032	2.022	2.017	2.012	2.009	2.006	2.002	1.996
48	2.102	2.084	2.062	2.043	2.033	2.028	2.023	2.020	2.017	2.013	2.008
49	2.123	2.104	2.082	2.064	2.054	2.049	2.044	2.041	2.038	2.034	2.028
50	2.140	2.121	2.099	2.081	2.071	2.066	2.061	2.058	2.055	2.051	2.046
51	2.155	2.137	2.115	2.097	2.087	2.082	2.077	2.074	2.071	2.067	2.062
52	2.173	2.155	2.133	2.115	2.105	2.100	2.095	2.092	2.089	2.085	2.080
53	2.184	2.166	2.144	2.126	2.116	2.111	2.106	2.103	2.100	2.096	2.091
54	2.204	2.186	2.164	2.147	2.137	2.131	2.126	2.123	2.121	2.117	2.111
55	2.213	2.195	2.174	2.156	2.146	2.141	2.136	2.133	2.130	2.126	2.121
56	2.229	2.211	2.190	2.172	2.162	2.157	2.152	2.149	2.146	2.142	2.137
57	2.245	2.228	2.207	2.189	2.179	2.174	2.169	2.166	2.163	2.159	2.154
58	2.261	2.244	2.223	2.205	2.195	2.190	2.185	2.182	2.179	2.176	2.170
59	2.276	2.259	2.238	2.220	2.211	2.206	2.201	2.198	2.195	2.191	2.186
60	2.294	2.277	2.256	2.239	2.229	2.224	2.219	2.216	2.213	2.210	2.204

**f. Five Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.825	1.806	1.783	1.764	1.753	1.748	1.743	1.740	1.737	1.733	1.727
36	1.866	1.846	1.823	1.804	1.794	1.789	1.784	1.781	1.778	1.774	1.768
37	1.886	1.866	1.843	1.825	1.815	1.809	1.804	1.801	1.798	1.794	1.788
38	1.913	1.894	1.871	1.852	1.842	1.837	1.832	1.829	1.825	1.822	1.816
39	1.937	1.918	1.895	1.876	1.866	1.861	1.856	1.853	1.850	1.846	1.840
40	1.955	1.936	1.913	1.895	1.885	1.879	1.874	1.871	1.868	1.864	1.859
41	1.973	1.954	1.931	1.913	1.903	1.897	1.892	1.889	1.886	1.882	1.877
42	1.986	1.967	1.945	1.926	1.916	1.911	1.906	1.903	1.900	1.896	1.890
43	2.007	1.989	1.966	1.948	1.938	1.933	1.928	1.925	1.922	1.918	1.912
44	2.019	2.000	1.978	1.959	1.949	1.944	1.939	1.936	1.933	1.929	1.924
45	2.033	2.014	1.992	1.974	1.964	1.959	1.954	1.951	1.948	1.944	1.938
46	2.043	2.024	2.002	1.984	1.974	1.968	1.963	1.960	1.957	1.954	1.948
47	2.060	2.041	2.019	2.001	1.991	1.986	1.981	1.978	1.975	1.971	1.966
48	2.071	2.052	2.030	2.012	2.002	1.997	1.992	1.989	1.986	1.982	1.977
49	2.091	2.072	2.051	2.033	2.023	2.017	2.013	2.010	2.007	2.003	1.997
50	2.107	2.089	2.068	2.050	2.040	2.035	2.030	2.027	2.024	2.020	2.015
51	2.123	2.105	2.083	2.065	2.056	2.050	2.045	2.042	2.040	2.036	2.031
52	2.140	2.122	2.101	2.083	2.073	2.068	2.063	2.060	2.057	2.054	2.048
53	2.151	2.133	2.112	2.094	2.084	2.079	2.074	2.071	2.068	2.065	2.059
54	2.170	2.153	2.132	2.114	2.104	2.099	2.094	2.091	2.088	2.085	2.079
55	2.180	2.162	2.141	2.123	2.114	2.108	2.104	2.101	2.098	2.094	2.089
56	2.195	2.178	2.157	2.139	2.130	2.124	2.119	2.116	2.114	2.110	2.105
57	2.212	2.194	2.173	2.156	2.146	2.141	2.136	2.133	2.130	2.127	2.122
58	2.227	2.210	2.189	2.172	2.162	2.157	2.152	2.149	2.146	2.143	2.137
59	2.242	2.225	2.204	2.187	2.178	2.172	2.167	2.165	2.162	2.158	2.153
60	2.260	2.243	2.222	2.205	2.196	2.190	2.186	2.183	2.180	2.176	2.171

**g. Six Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.798	1.778	1.756	1.737	1.727	1.721	1.716	1.713	1.710	1.706	1.701
36	1.837	1.818	1.796	1.777	1.767	1.761	1.756	1.753	1.750	1.747	1.741
37	1.857	1.838	1.815	1.797	1.787	1.781	1.776	1.773	1.770	1.767	1.761
38	1.884	1.865	1.843	1.824	1.814	1.809	1.804	1.801	1.798	1.794	1.788
39	1.908	1.888	1.866	1.848	1.838	1.832	1.827	1.824	1.821	1.818	1.812
40	1.925	1.906	1.884	1.866	1.856	1.850	1.846	1.843	1.840	1.836	1.830
41	1.943	1.924	1.902	1.884	1.874	1.868	1.863	1.860	1.857	1.854	1.848
42	1.956	1.937	1.915	1.897	1.887	1.882	1.877	1.874	1.871	1.867	1.862
43	1.977	1.958	1.937	1.918	1.909	1.903	1.898	1.895	1.892	1.889	1.883
44	1.988	1.969	1.948	1.929	1.920	1.914	1.909	1.906	1.903	1.900	1.894
45	2.002	1.984	1.962	1.944	1.934	1.929	1.924	1.921	1.918	1.914	1.909
46	2.012	1.993	1.971	1.953	1.944	1.938	1.933	1.930	1.928	1.924	1.918
47	2.029	2.010	1.989	1.971	1.961	1.956	1.951	1.948	1.945	1.941	1.936
48	2.039	2.021	2.000	1.982	1.972	1.967	1.962	1.959	1.956	1.952	1.947
49	2.059	2.041	2.020	2.002	1.992	1.987	1.982	1.979	1.976	1.973	1.967
50	2.076	2.058	2.036	2.019	2.009	2.004	1.999	1.996	1.993	1.989	1.984
51	2.091	2.073	2.052	2.034	2.025	2.019	2.015	2.012	2.009	2.005	2.000
52	2.108	2.090	2.069	2.052	2.042	2.037	2.032	2.029	2.026	2.023	2.017
53	2.118	2.101	2.080	2.062	2.053	2.048	2.043	2.040	2.037	2.033	2.028
54	2.138	2.120	2.100	2.082	2.073	2.068	2.063	2.060	2.057	2.053	2.048
55	2.147	2.129	2.109	2.091	2.082	2.077	2.072	2.069	2.066	2.062	2.057
56	2.162	2.145	2.124	2.107	2.097	2.092	2.087	2.085	2.082	2.078	2.073
57	2.178	2.161	2.141	2.123	2.114	2.109	2.104	2.101	2.098	2.095	2.089
58	2.194	2.177	2.156	2.139	2.130	2.124	2.120	2.117	2.114	2.110	2.105
59	2.208	2.191	2.171	2.154	2.145	2.140	2.135	2.132	2.129	2.126	2.120
60	2.226	2.209	2.189	2.172	2.163	2.157	2.153	2.150	2.147	2.143	2.138

**h. Seven Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.773	1.754	1.731	1.713	1.703	1.698	1.693	1.690	1.687	1.683	1.677
36	1.812	1.793	1.771	1.752	1.743	1.737	1.732	1.729	1.726	1.723	1.717
37	1.832	1.813	1.790	1.772	1.762	1.757	1.752	1.749	1.746	1.742	1.737
38	1.858	1.839	1.817	1.799	1.789	1.784	1.779	1.776	1.773	1.769	1.764
39	1.881	1.862	1.840	1.822	1.813	1.807	1.802	1.799	1.796	1.793	1.787
40	1.899	1.880	1.858	1.840	1.830	1.825	1.820	1.817	1.814	1.811	1.805
41	1.916	1.897	1.876	1.858	1.848	1.843	1.838	1.835	1.832	1.828	1.823
42	1.929	1.911	1.889	1.871	1.861	1.856	1.851	1.848	1.845	1.842	1.836
43	1.950	1.931	1.910	1.892	1.882	1.877	1.872	1.869	1.866	1.863	1.857
44	1.961	1.942	1.921	1.903	1.893	1.888	1.883	1.880	1.877	1.874	1.868
45	1.975	1.956	1.935	1.917	1.908	1.902	1.897	1.895	1.892	1.888	1.883
46	1.984	1.966	1.944	1.927	1.917	1.912	1.907	1.904	1.901	1.897	1.892
47	2.001	1.983	1.961	1.944	1.934	1.929	1.924	1.921	1.918	1.915	1.909
48	2.011	1.993	1.972	1.954	1.945	1.940	1.935	1.932	1.929	1.926	1.920
49	2.031	2.013	1.992	1.974	1.965	1.960	1.955	1.952	1.949	1.945	1.940
50	2.047	2.029	2.008	1.991	1.981	1.976	1.971	1.968	1.966	1.962	1.957
51	2.062	2.044	2.024	2.006	1.997	1.992	1.987	1.984	1.981	1.978	1.972
52	2.079	2.061	2.040	2.023	2.014	2.009	2.004	2.001	1.998	1.995	1.989
53	2.089	2.072	2.051	2.034	2.024	2.019	2.015	2.012	2.009	2.005	2.000
54	2.108	2.091	2.071	2.054	2.044	2.039	2.034	2.031	2.029	2.025	2.020
55	2.117	2.100	2.079	2.062	2.053	2.048	2.043	2.040	2.038	2.034	2.029
56	2.132	2.115	2.095	2.078	2.068	2.063	2.059	2.056	2.053	2.050	2.044
57	2.148	2.131	2.111	2.094	2.085	2.080	2.075	2.072	2.069	2.066	2.061
58	2.163	2.147	2.126	2.110	2.100	2.095	2.090	2.088	2.085	2.081	2.076
59	2.178	2.161	2.141	2.124	2.115	2.110	2.105	2.103	2.100	2.096	2.091
60	2.195	2.179	2.159	2.142	2.133	2.128	2.123	2.120	2.118	2.114	2.109

**i. Eight Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.753	1.734	1.712	1.693	1.684	1.678	1.674	1.671	1.668	1.664	1.658
36	1.792	1.773	1.751	1.733	1.723	1.718	1.713	1.710	1.707	1.703	1.698
37	1.811	1.792	1.770	1.752	1.742	1.737	1.732	1.729	1.726	1.723	1.717
38	1.837	1.818	1.797	1.779	1.769	1.764	1.759	1.756	1.753	1.749	1.744
39	1.860	1.841	1.820	1.802	1.792	1.787	1.782	1.779	1.776	1.773	1.767
40	1.877	1.859	1.837	1.819	1.810	1.804	1.800	1.797	1.794	1.790	1.785
41	1.894	1.876	1.855	1.837	1.827	1.822	1.817	1.814	1.811	1.808	1.802
42	1.907	1.889	1.868	1.850	1.840	1.835	1.830	1.827	1.824	1.821	1.815
43	1.928	1.910	1.888	1.871	1.861	1.856	1.851	1.848	1.845	1.842	1.836
44	1.938	1.920	1.899	1.881	1.872	1.867	1.862	1.859	1.856	1.853	1.847
45	1.952	1.934	1.913	1.895	1.886	1.881	1.876	1.873	1.870	1.867	1.861
46	1.961	1.943	1.922	1.905	1.895	1.890	1.885	1.882	1.879	1.876	1.871
47	1.978	1.960	1.939	1.922	1.912	1.907	1.902	1.899	1.897	1.893	1.888
48	1.988	1.971	1.950	1.932	1.923	1.918	1.913	1.910	1.907	1.904	1.898
49	2.008	1.990	1.969	1.952	1.942	1.937	1.933	1.930	1.927	1.923	1.918
50	2.024	2.006	1.985	1.968	1.959	1.954	1.949	1.946	1.943	1.940	1.935
51	2.039	2.021	2.001	1.983	1.974	1.969	1.964	1.961	1.959	1.955	1.950
52	2.055	2.038	2.017	2.000	1.991	1.986	1.981	1.978	1.975	1.972	1.967
53	2.065	2.048	2.028	2.011	2.001	1.996	1.992	1.989	1.986	1.983	1.977
54	2.084	2.067	2.047	2.030	2.021	2.016	2.011	2.008	2.005	2.002	1.997
55	2.093	2.076	2.056	2.039	2.030	2.025	2.020	2.017	2.014	2.011	2.006
56	2.108	2.091	2.071	2.054	2.045	2.040	2.035	2.032	2.030	2.026	2.021
57	2.124	2.107	2.087	2.070	2.061	2.056	2.051	2.048	2.046	2.042	2.037
58	2.139	2.122	2.102	2.085	2.076	2.071	2.067	2.064	2.061	2.058	2.052
59	2.153	2.136	2.117	2.100	2.091	2.086	2.081	2.078	2.076	2.072	2.067
60	2.170	2.154	2.134	2.117	2.108	2.103	2.099	2.096	2.093	2.090	2.085



**j. Nine Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.736	1.717	1.696	1.677	1.668	1.663	1.658	1.655	1.652	1.648	1.643
36	1.775	1.756	1.734	1.716	1.707	1.701	1.697	1.694	1.691	1.687	1.682
37	1.794	1.775	1.753	1.735	1.726	1.721	1.716	1.713	1.710	1.707	1.701
38	1.820	1.801	1.780	1.762	1.752	1.747	1.742	1.739	1.736	1.733	1.727
39	1.842	1.824	1.802	1.785	1.775	1.770	1.765	1.762	1.759	1.756	1.750
40	1.859	1.841	1.820	1.802	1.793	1.787	1.783	1.780	1.777	1.773	1.768
41	1.876	1.858	1.837	1.819	1.810	1.805	1.800	1.797	1.794	1.791	1.785
42	1.889	1.871	1.850	1.832	1.823	1.818	1.813	1.810	1.807	1.804	1.798
43	1.909	1.891	1.870	1.853	1.843	1.838	1.833	1.831	1.828	1.824	1.819
44	1.920	1.902	1.881	1.864	1.854	1.849	1.844	1.841	1.838	1.835	1.830
45	1.934	1.916	1.895	1.878	1.868	1.863	1.858	1.855	1.853	1.849	1.844
46	1.943	1.925	1.904	1.887	1.877	1.872	1.867	1.865	1.862	1.858	1.853
47	1.959	1.942	1.921	1.904	1.894	1.889	1.884	1.881	1.879	1.875	1.870
48	1.970	1.952	1.931	1.914	1.905	1.900	1.895	1.892	1.889	1.886	1.881
49	1.989	1.971	1.951	1.933	1.924	1.919	1.914	1.911	1.909	1.905	1.900
50	2.004	1.987	1.967	1.950	1.940	1.935	1.931	1.928	1.925	1.922	1.916
51	2.019	2.002	1.982	1.965	1.955	1.950	1.946	1.943	1.940	1.937	1.932
52	2.036	2.018	1.998	1.981	1.972	1.967	1.962	1.960	1.957	1.953	1.948
53	2.046	2.029	2.008	1.992	1.983	1.977	1.973	1.970	1.967	1.964	1.959
54	2.065	2.048	2.028	2.011	2.002	1.997	1.992	1.989	1.987	1.983	1.978
55	2.073	2.056	2.036	2.020	2.010	2.005	2.001	1.998	1.995	1.992	1.987
56	2.088	2.071	2.051	2.035	2.026	2.021	2.016	2.013	2.010	2.007	2.002
57	2.104	2.087	2.067	2.051	2.042	2.037	2.032	2.029	2.027	2.023	2.018
58	2.118	2.102	2.082	2.066	2.057	2.052	2.047	2.044	2.042	2.038	2.033
59	2.133	2.116	2.097	2.080	2.071	2.066	2.062	2.059	2.056	2.053	2.048
60	2.150	2.133	2.114	2.098	2.088	2.084	2.079	2.076	2.074	2.070	2.065

**k. Ten Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.715	1.697	1.675	1.657	1.648	1.643	1.638	1.635	1.632	1.629	1.623
36	1.753	1.735	1.713	1.696	1.686	1.681	1.676	1.673	1.671	1.667	1.662
37	1.772	1.754	1.732	1.715	1.705	1.700	1.695	1.693	1.690	1.686	1.681
38	1.798	1.779	1.758	1.741	1.731	1.726	1.721	1.718	1.716	1.712	1.707
39	1.820	1.802	1.781	1.763	1.754	1.749	1.744	1.741	1.738	1.735	1.730
40	1.837	1.819	1.798	1.780	1.771	1.766	1.761	1.758	1.756	1.752	1.747
41	1.854	1.836	1.815	1.797	1.788	1.783	1.778	1.775	1.773	1.769	1.764
42	1.866	1.848	1.828	1.810	1.801	1.796	1.791	1.788	1.786	1.782	1.777
43	1.886	1.869	1.848	1.831	1.821	1.816	1.811	1.809	1.806	1.802	1.797
44	1.897	1.879	1.858	1.841	1.832	1.827	1.822	1.819	1.816	1.813	1.808
45	1.910	1.893	1.872	1.855	1.846	1.841	1.836	1.833	1.830	1.827	1.822
46	1.919	1.902	1.881	1.864	1.855	1.850	1.845	1.842	1.839	1.836	1.831
47	1.935	1.918	1.898	1.881	1.871	1.866	1.862	1.859	1.856	1.853	1.848
48	1.946	1.928	1.908	1.891	1.882	1.877	1.872	1.869	1.867	1.863	1.858
49	1.964	1.947	1.927	1.910	1.901	1.896	1.891	1.888	1.886	1.882	1.877
50	1.980	1.963	1.943	1.926	1.917	1.912	1.907	1.904	1.902	1.898	1.893
51	1.995	1.978	1.957	1.941	1.932	1.927	1.922	1.919	1.917	1.913	1.908
52	2.011	1.994	1.974	1.957	1.948	1.943	1.939	1.936	1.933	1.930	1.925
53	2.021	2.004	1.984	1.967	1.958	1.953	1.949	1.946	1.943	1.940	1.935
54	2.039	2.023	2.003	1.986	1.977	1.972	1.968	1.965	1.962	1.959	1.954
55	2.048	2.031	2.011	1.995	1.986	1.981	1.976	1.974	1.971	1.968	1.963
56	2.062	2.046	2.026	2.010	2.001	1.996	1.991	1.989	1.986	1.983	1.978
57	2.078	2.061	2.042	2.025	2.017	2.012	2.007	2.004	2.002	1.998	1.993
58	2.092	2.076	2.056	2.040	2.031	2.026	2.022	2.019	2.017	2.013	2.008
59	2.106	2.090	2.071	2.055	2.046	2.041	2.036	2.034	2.031	2.028	2.023
60	2.123	2.107	2.088	2.072	2.063	2.058	2.053	2.051	2.048	2.045	2.040

**I. Eleven Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.711	1.693	1.672	1.654	1.644	1.639	1.634	1.631	1.629	1.625	1.620
36	1.749	1.731	1.710	1.692	1.683	1.677	1.673	1.670	1.667	1.663	1.658
37	1.768	1.750	1.729	1.711	1.701	1.696	1.692	1.689	1.686	1.682	1.677
38	1.794	1.775	1.754	1.737	1.727	1.722	1.717	1.715	1.712	1.708	1.703
39	1.816	1.798	1.777	1.759	1.750	1.745	1.740	1.737	1.734	1.731	1.726
40	1.833	1.815	1.794	1.776	1.767	1.762	1.757	1.755	1.752	1.748	1.743
41	1.849	1.832	1.811	1.793	1.784	1.779	1.774	1.772	1.769	1.765	1.760
42	1.862	1.844	1.824	1.806	1.797	1.792	1.787	1.784	1.782	1.778	1.773
43	1.882	1.864	1.844	1.826	1.817	1.812	1.807	1.805	1.802	1.798	1.793
44	1.892	1.875	1.854	1.837	1.828	1.823	1.818	1.815	1.812	1.809	1.804
45	1.906	1.888	1.868	1.851	1.842	1.836	1.832	1.829	1.826	1.823	1.818
46	1.915	1.897	1.877	1.860	1.851	1.845	1.841	1.838	1.835	1.832	1.827
47	1.931	1.914	1.893	1.876	1.867	1.862	1.857	1.855	1.852	1.849	1.843
48	1.941	1.924	1.903	1.887	1.877	1.872	1.868	1.865	1.862	1.859	1.854
49	1.960	1.943	1.922	1.906	1.897	1.892	1.887	1.884	1.881	1.878	1.873
50	1.975	1.958	1.938	1.922	1.913	1.908	1.903	1.900	1.897	1.894	1.889
51	1.990	1.973	1.953	1.936	1.927	1.922	1.918	1.915	1.912	1.909	1.904
52	2.006	1.989	1.969	1.953	1.944	1.939	1.934	1.931	1.929	1.925	1.920
53	2.016	1.999	1.979	1.963	1.954	1.949	1.944	1.942	1.939	1.936	1.931
54	2.034	2.018	1.998	1.982	1.973	1.968	1.963	1.961	1.958	1.955	1.950
55	2.043	2.026	2.007	1.990	1.981	1.976	1.972	1.969	1.967	1.963	1.958
56	2.057	2.041	2.021	2.005	1.996	1.991	1.987	1.984	1.981	1.978	1.973
57	2.073	2.057	2.037	2.021	2.012	2.007	2.002	2.000	1.997	1.994	1.989
58	2.087	2.071	2.052	2.036	2.027	2.022	2.017	2.015	2.012	2.009	2.004
59	2.101	2.085	2.066	2.050	2.041	2.036	2.032	2.029	2.026	2.023	2.018
60	2.118	2.102	2.083	2.067	2.058	2.053	2.049	2.046	2.043	2.040	2.035

**m. Twelve Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.694	1.675	1.654	1.637	1.627	1.622	1.618	1.615	1.612	1.609	1.603
36	1.731	1.713	1.692	1.675	1.665	1.660	1.656	1.653	1.650	1.647	1.641
37	1.750	1.732	1.711	1.693	1.684	1.679	1.674	1.671	1.669	1.665	1.660
38	1.775	1.757	1.736	1.719	1.710	1.705	1.700	1.697	1.694	1.691	1.686
39	1.797	1.779	1.759	1.741	1.732	1.727	1.722	1.720	1.717	1.713	1.708
40	1.814	1.796	1.775	1.758	1.749	1.744	1.739	1.737	1.734	1.730	1.725
41	1.830	1.813	1.792	1.775	1.766	1.761	1.756	1.753	1.751	1.747	1.742
42	1.843	1.825	1.805	1.788	1.778	1.773	1.769	1.766	1.763	1.760	1.755
43	1.863	1.845	1.825	1.808	1.799	1.793	1.789	1.786	1.783	1.780	1.775
44	1.873	1.855	1.835	1.818	1.809	1.804	1.799	1.797	1.794	1.790	1.785
45	1.886	1.869	1.849	1.832	1.823	1.818	1.813	1.810	1.808	1.804	1.799
46	1.895	1.878	1.857	1.841	1.832	1.827	1.822	1.819	1.817	1.813	1.808
47	1.911	1.894	1.874	1.857	1.848	1.843	1.838	1.836	1.833	1.830	1.825
48	1.921	1.904	1.884	1.867	1.858	1.853	1.849	1.846	1.843	1.840	1.835
49	1.940	1.923	1.903	1.886	1.877	1.872	1.868	1.865	1.862	1.859	1.854
50	1.955	1.938	1.918	1.902	1.893	1.888	1.883	1.881	1.878	1.875	1.870
51	1.969	1.953	1.933	1.916	1.907	1.903	1.898	1.895	1.893	1.889	1.884
52	1.985	1.969	1.949	1.933	1.924	1.919	1.914	1.911	1.909	1.906	1.901
53	1.995	1.979	1.959	1.943	1.934	1.929	1.924	1.922	1.919	1.916	1.911
54	2.013	1.997	1.977	1.961	1.952	1.948	1.943	1.940	1.938	1.934	1.930
55	2.022	2.005	1.986	1.970	1.961	1.956	1.952	1.949	1.946	1.943	1.938
56	2.036	2.020	2.000	1.984	1.976	1.971	1.966	1.963	1.961	1.958	1.953
57	2.051	2.035	2.016	2.000	1.991	1.986	1.982	1.979	1.977	1.973	1.968
58	2.066	2.050	2.030	2.015	2.006	2.001	1.996	1.994	1.991	1.988	1.983
59	2.079	2.064	2.045	2.029	2.020	2.015	2.011	2.008	2.005	2.002	1.997
60	2.096	2.080	2.061	2.045	2.037	2.032	2.027	2.025	2.022	2.019	2.014

**n. Thirteen Closed Tuesdays, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.686	1.668	1.647	1.629	1.620	1.615	1.610	1.607	1.604	1.601	1.596
36	1.723	1.705	1.684	1.667	1.658	1.652	1.648	1.645	1.642	1.639	1.634
37	1.742	1.724	1.703	1.685	1.676	1.671	1.666	1.664	1.661	1.658	1.652
38	1.767	1.749	1.728	1.711	1.702	1.697	1.692	1.689	1.686	1.683	1.678
39	1.789	1.771	1.750	1.733	1.724	1.719	1.714	1.712	1.709	1.705	1.700
40	1.806	1.788	1.767	1.750	1.741	1.736	1.731	1.728	1.726	1.722	1.717
41	1.822	1.804	1.784	1.767	1.758	1.753	1.748	1.745	1.743	1.739	1.734
42	1.834	1.817	1.796	1.779	1.770	1.765	1.761	1.758	1.755	1.752	1.747
43	1.854	1.837	1.816	1.799	1.790	1.785	1.781	1.778	1.775	1.772	1.767
44	1.864	1.847	1.827	1.810	1.801	1.796	1.791	1.788	1.786	1.782	1.777
45	1.878	1.860	1.840	1.823	1.814	1.809	1.805	1.802	1.799	1.796	1.791
46	1.886	1.869	1.849	1.832	1.823	1.818	1.814	1.811	1.808	1.805	1.800
47	1.902	1.885	1.865	1.849	1.839	1.834	1.830	1.827	1.825	1.821	1.816
48	1.912	1.895	1.875	1.859	1.850	1.845	1.840	1.837	1.835	1.831	1.826
49	1.931	1.914	1.894	1.877	1.868	1.864	1.859	1.856	1.854	1.850	1.845
50	1.946	1.929	1.910	1.893	1.884	1.879	1.875	1.872	1.869	1.866	1.861
51	1.960	1.944	1.924	1.908	1.899	1.894	1.889	1.887	1.884	1.881	1.876
52	1.976	1.960	1.940	1.924	1.915	1.910	1.906	1.903	1.900	1.897	1.892
53	1.986	1.970	1.950	1.934	1.925	1.920	1.916	1.913	1.910	1.907	1.902
54	2.004	1.988	1.969	1.952	1.944	1.939	1.934	1.932	1.929	1.926	1.921
55	2.013	1.996	1.977	1.961	1.952	1.947	1.943	1.940	1.937	1.934	1.929
56	2.027	2.011	1.992	1.976	1.967	1.962	1.957	1.955	1.952	1.949	1.944
57	2.042	2.026	2.007	1.991	1.982	1.977	1.973	1.970	1.968	1.964	1.960
58	2.056	2.041	2.021	2.006	1.997	1.992	1.987	1.985	1.982	1.979	1.974
59	2.070	2.055	2.035	2.020	2.011	2.006	2.002	1.999	1.996	1.993	1.988
60	2.087	2.071	2.052	2.036	2.028	2.023	2.018	2.016	2.013	2.010	2.005

**o. All Tuesdays Closed, 28-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.651	1.633	1.613	1.596	1.586	1.581	1.577	1.574	1.571	1.568	1.563
36	1.687	1.670	1.649	1.632	1.623	1.618	1.614	1.611	1.608	1.605	1.600
37	1.705	1.688	1.668	1.651	1.642	1.637	1.632	1.629	1.627	1.623	1.618
38	1.730	1.713	1.692	1.676	1.666	1.661	1.657	1.654	1.652	1.648	1.643
39	1.751	1.734	1.714	1.697	1.688	1.683	1.679	1.676	1.673	1.670	1.665
40	1.768	1.751	1.731	1.714	1.705	1.700	1.695	1.693	1.690	1.687	1.682
41	1.784	1.767	1.747	1.730	1.721	1.716	1.712	1.709	1.706	1.703	1.698
42	1.796	1.779	1.759	1.742	1.733	1.729	1.724	1.721	1.719	1.715	1.710
43	1.815	1.798	1.778	1.762	1.753	1.748	1.744	1.741	1.738	1.735	1.730
44	1.825	1.808	1.789	1.772	1.763	1.758	1.754	1.751	1.748	1.745	1.740
45	1.838	1.822	1.802	1.785	1.776	1.772	1.767	1.764	1.762	1.758	1.753
46	1.847	1.830	1.810	1.794	1.785	1.780	1.776	1.773	1.770	1.767	1.762
47	1.862	1.846	1.826	1.810	1.801	1.796	1.792	1.789	1.786	1.783	1.778
48	1.872	1.856	1.836	1.820	1.811	1.806	1.802	1.799	1.796	1.793	1.788
49	1.890	1.874	1.854	1.838	1.829	1.825	1.820	1.817	1.815	1.812	1.807
50	1.905	1.889	1.870	1.854	1.845	1.840	1.836	1.833	1.830	1.827	1.822
51	1.919	1.903	1.884	1.868	1.859	1.854	1.850	1.847	1.845	1.841	1.837
52	1.935	1.919	1.899	1.884	1.875	1.870	1.866	1.863	1.860	1.857	1.852
53	1.944	1.928	1.909	1.893	1.885	1.880	1.875	1.873	1.870	1.867	1.862
54	1.962	1.946	1.927	1.912	1.903	1.898	1.894	1.891	1.889	1.885	1.881
55	1.970	1.954	1.935	1.920	1.911	1.906	1.902	1.899	1.897	1.894	1.889
56	1.984	1.969	1.950	1.934	1.925	1.921	1.916	1.914	1.911	1.908	1.903
57	1.999	1.984	1.965	1.949	1.940	1.936	1.931	1.929	1.926	1.923	1.918
58	2.013	1.997	1.979	1.963	1.955	1.950	1.946	1.943	1.940	1.937	1.933
59	2.026	2.011	1.992	1.977	1.968	1.964	1.959	1.957	1.954	1.951	1.946
60	2.042	2.027	2.009	1.993	1.985	1.980	1.976	1.973	1.971	1.967	1.963

Table A2. Projected charter removals (Mlb) for Area 3A in 2020 under a **two fish bag limit and with a reverse slot limit on one fish ranging from U35O60 to U60O80 and a size limit of 26-inches on the second fish with a range of Tuesday closures throughout the season.** Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit.** Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Harvest forecast under status quo closed Tuesdays (5) with a reverse slot on one fish is 158,674 fish. Dark shaded cells represent projections for the most liberal Tuesday closures, upper size limits, and lower size limits that do not exceed the 1.66 Mlb allocation associated with the Status Quo TCEY scenario.

**a. No Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.843	1.822	1.797	1.777	1.766	1.760	1.754	1.751	1.748	1.744	1.737
36	1.886	1.865	1.841	1.820	1.809	1.804	1.798	1.795	1.791	1.788	1.781
37	1.907	1.887	1.862	1.842	1.831	1.825	1.820	1.817	1.813	1.809	1.803
38	1.937	1.916	1.892	1.872	1.861	1.855	1.849	1.846	1.843	1.839	1.833
39	1.962	1.942	1.918	1.897	1.887	1.881	1.875	1.872	1.869	1.865	1.859
40	1.982	1.961	1.937	1.917	1.906	1.900	1.895	1.892	1.889	1.885	1.879
41	2.001	1.980	1.957	1.937	1.926	1.920	1.915	1.911	1.908	1.904	1.898
42	2.015	1.995	1.971	1.951	1.940	1.935	1.929	1.926	1.923	1.919	1.913
43	2.038	2.018	1.994	1.974	1.964	1.958	1.952	1.949	1.946	1.942	1.936
44	2.050	2.030	2.006	1.986	1.976	1.970	1.965	1.961	1.958	1.954	1.948
45	2.065	2.045	2.022	2.002	1.992	1.986	1.980	1.977	1.974	1.970	1.964
46	2.076	2.056	2.032	2.012	2.002	1.996	1.991	1.988	1.984	1.980	1.974
47	2.094	2.074	2.051	2.031	2.021	2.015	2.010	2.007	2.003	1.999	1.993
48	2.106	2.086	2.063	2.043	2.033	2.027	2.022	2.018	2.015	2.011	2.005
49	2.127	2.108	2.084	2.065	2.055	2.049	2.043	2.040	2.037	2.033	2.027
50	2.145	2.126	2.103	2.083	2.073	2.067	2.062	2.059	2.056	2.052	2.046
51	2.162	2.143	2.119	2.100	2.090	2.084	2.079	2.076	2.073	2.069	2.063
52	2.180	2.161	2.138	2.119	2.109	2.103	2.098	2.094	2.091	2.088	2.082
53	2.192	2.173	2.150	2.131	2.120	2.115	2.109	2.106	2.103	2.099	2.094
54	2.213	2.194	2.171	2.152	2.142	2.136	2.131	2.128	2.125	2.121	2.115
55	2.222	2.204	2.181	2.162	2.152	2.146	2.141	2.138	2.135	2.131	2.125
56	2.239	2.220	2.198	2.179	2.169	2.163	2.158	2.155	2.152	2.148	2.142
57	2.257	2.238	2.216	2.197	2.187	2.181	2.176	2.173	2.170	2.166	2.160
58	2.273	2.255	2.233	2.214	2.204	2.198	2.193	2.190	2.187	2.183	2.177
59	2.289	2.271	2.249	2.231	2.220	2.215	2.210	2.206	2.203	2.200	2.194
60	2.308	2.290	2.268	2.250	2.240	2.234	2.229	2.226	2.223	2.219	2.213

**b. One Closed Tuesday, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.819	1.798	1.774	1.754	1.743	1.737	1.732	1.729	1.725	1.721	1.715
36	1.862	1.841	1.817	1.797	1.786	1.781	1.775	1.772	1.769	1.765	1.759
37	1.883	1.863	1.839	1.819	1.808	1.802	1.797	1.793	1.790	1.786	1.780
38	1.912	1.892	1.868	1.848	1.837	1.831	1.826	1.823	1.819	1.816	1.809
39	1.937	1.917	1.893	1.873	1.863	1.857	1.851	1.848	1.845	1.841	1.835
40	1.957	1.936	1.913	1.893	1.882	1.876	1.871	1.868	1.865	1.861	1.855
41	1.975	1.955	1.932	1.912	1.901	1.896	1.890	1.887	1.884	1.880	1.874
42	1.990	1.970	1.946	1.926	1.916	1.910	1.905	1.902	1.898	1.894	1.888
43	2.012	1.992	1.969	1.949	1.939	1.933	1.928	1.924	1.921	1.917	1.911
44	2.024	2.004	1.981	1.961	1.951	1.945	1.940	1.936	1.933	1.929	1.923
45	2.039	2.020	1.996	1.977	1.966	1.961	1.955	1.952	1.949	1.945	1.939
46	2.049	2.030	2.006	1.987	1.976	1.971	1.965	1.962	1.959	1.955	1.949
47	2.068	2.048	2.025	2.006	1.995	1.989	1.984	1.981	1.978	1.974	1.968
48	2.079	2.060	2.037	2.017	2.007	2.001	1.996	1.993	1.990	1.986	1.980
49	2.100	2.081	2.058	2.039	2.028	2.023	2.018	2.014	2.011	2.007	2.002
50	2.118	2.099	2.076	2.057	2.047	2.041	2.036	2.033	2.029	2.026	2.020
51	2.134	2.115	2.093	2.074	2.063	2.058	2.053	2.049	2.046	2.042	2.037
52	2.152	2.134	2.111	2.092	2.082	2.076	2.071	2.068	2.065	2.061	2.055
53	2.164	2.145	2.123	2.104	2.094	2.088	2.083	2.080	2.077	2.073	2.067
54	2.185	2.166	2.144	2.125	2.115	2.109	2.104	2.101	2.098	2.094	2.088
55	2.194	2.176	2.154	2.135	2.125	2.119	2.114	2.111	2.108	2.104	2.098
56	2.211	2.192	2.170	2.152	2.142	2.136	2.131	2.128	2.125	2.121	2.115
57	2.228	2.210	2.188	2.169	2.159	2.154	2.149	2.145	2.142	2.139	2.133
58	2.245	2.227	2.205	2.186	2.176	2.170	2.165	2.162	2.159	2.155	2.150
59	2.261	2.242	2.221	2.202	2.192	2.187	2.182	2.178	2.175	2.172	2.166
60	2.279	2.261	2.240	2.221	2.211	2.206	2.201	2.198	2.195	2.191	2.185

**c. Two Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.790	1.769	1.745	1.726	1.715	1.709	1.704	1.701	1.697	1.694	1.688
36	1.832	1.811	1.788	1.768	1.758	1.752	1.746	1.743	1.740	1.736	1.730
37	1.853	1.832	1.809	1.789	1.779	1.773	1.768	1.764	1.761	1.757	1.751
38	1.881	1.861	1.838	1.818	1.807	1.802	1.796	1.793	1.790	1.786	1.780
39	1.906	1.886	1.863	1.843	1.833	1.827	1.822	1.818	1.815	1.811	1.805
40	1.925	1.905	1.882	1.862	1.852	1.846	1.841	1.838	1.834	1.831	1.825
41	1.943	1.924	1.900	1.881	1.871	1.865	1.860	1.857	1.853	1.850	1.844
42	1.957	1.938	1.915	1.895	1.885	1.879	1.874	1.871	1.868	1.864	1.858
43	1.980	1.960	1.937	1.918	1.907	1.902	1.896	1.893	1.890	1.886	1.881
44	1.991	1.972	1.949	1.929	1.919	1.913	1.908	1.905	1.902	1.898	1.892
45	2.006	1.987	1.964	1.945	1.934	1.929	1.924	1.920	1.917	1.914	1.908
46	2.016	1.997	1.974	1.955	1.944	1.939	1.934	1.931	1.927	1.924	1.918
47	2.034	2.015	1.992	1.973	1.963	1.957	1.952	1.949	1.946	1.942	1.936
48	2.045	2.026	2.003	1.985	1.974	1.969	1.964	1.960	1.957	1.954	1.948
49	2.066	2.047	2.025	2.006	1.996	1.990	1.985	1.982	1.979	1.975	1.969
50	2.083	2.065	2.042	2.024	2.013	2.008	2.003	2.000	1.996	1.993	1.987
51	2.100	2.081	2.059	2.040	2.030	2.024	2.019	2.016	2.013	2.009	2.004
52	2.117	2.099	2.077	2.058	2.048	2.043	2.037	2.034	2.031	2.028	2.022
53	2.129	2.110	2.088	2.070	2.060	2.054	2.049	2.046	2.043	2.039	2.033
54	2.149	2.131	2.109	2.091	2.081	2.075	2.070	2.067	2.064	2.060	2.055
55	2.159	2.140	2.118	2.100	2.090	2.085	2.080	2.076	2.074	2.070	2.064
56	2.175	2.157	2.135	2.117	2.107	2.101	2.096	2.093	2.090	2.086	2.081
57	2.192	2.174	2.152	2.134	2.124	2.119	2.114	2.111	2.108	2.104	2.098
58	2.208	2.190	2.169	2.151	2.141	2.135	2.130	2.127	2.124	2.120	2.115
59	2.224	2.206	2.184	2.166	2.157	2.151	2.146	2.143	2.140	2.136	2.131
60	2.242	2.225	2.203	2.185	2.175	2.170	2.165	2.162	2.159	2.155	2.150

**d. Three Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.766	1.746	1.723	1.703	1.693	1.687	1.682	1.679	1.675	1.671	1.666
36	1.808	1.788	1.764	1.745	1.735	1.729	1.724	1.721	1.717	1.714	1.708
37	1.828	1.808	1.785	1.766	1.755	1.750	1.745	1.741	1.738	1.734	1.729
38	1.857	1.837	1.814	1.794	1.784	1.778	1.773	1.770	1.767	1.763	1.757
39	1.881	1.861	1.838	1.819	1.809	1.803	1.798	1.795	1.792	1.788	1.782
40	1.900	1.880	1.857	1.838	1.828	1.822	1.817	1.814	1.810	1.807	1.801
41	1.918	1.898	1.875	1.856	1.846	1.841	1.835	1.832	1.829	1.825	1.820
42	1.932	1.912	1.889	1.870	1.860	1.855	1.849	1.846	1.843	1.839	1.834
43	1.954	1.934	1.912	1.893	1.882	1.877	1.872	1.869	1.866	1.862	1.856
44	1.965	1.946	1.923	1.904	1.894	1.888	1.883	1.880	1.877	1.873	1.868
45	1.980	1.961	1.938	1.919	1.909	1.904	1.898	1.895	1.892	1.888	1.883
46	1.990	1.970	1.948	1.929	1.919	1.913	1.908	1.905	1.902	1.898	1.893
47	2.007	1.988	1.966	1.947	1.937	1.932	1.927	1.923	1.920	1.917	1.911
48	2.018	1.999	1.977	1.959	1.948	1.943	1.938	1.935	1.932	1.928	1.922
49	2.039	2.020	1.998	1.979	1.969	1.964	1.959	1.956	1.953	1.949	1.943
50	2.056	2.037	2.015	1.997	1.987	1.981	1.976	1.973	1.970	1.967	1.961
51	2.072	2.054	2.032	2.013	2.003	1.998	1.993	1.990	1.987	1.983	1.977
52	2.090	2.071	2.049	2.031	2.021	2.016	2.011	2.008	2.005	2.001	1.995
53	2.101	2.082	2.060	2.042	2.032	2.027	2.022	2.019	2.016	2.012	2.007
54	2.121	2.103	2.081	2.063	2.053	2.048	2.043	2.040	2.037	2.033	2.028
55	2.130	2.112	2.090	2.072	2.063	2.057	2.052	2.049	2.046	2.042	2.037
56	2.146	2.128	2.107	2.089	2.079	2.073	2.068	2.065	2.063	2.059	2.053
57	2.163	2.145	2.124	2.106	2.096	2.091	2.086	2.083	2.080	2.076	2.071
58	2.179	2.161	2.140	2.122	2.112	2.107	2.102	2.099	2.096	2.092	2.087
59	2.194	2.177	2.155	2.138	2.128	2.123	2.118	2.115	2.112	2.108	2.103
60	2.212	2.195	2.174	2.156	2.147	2.141	2.136	2.133	2.130	2.127	2.121

**e. Four Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.741	1.721	1.698	1.678	1.668	1.662	1.657	1.654	1.651	1.647	1.641
36	1.782	1.762	1.739	1.720	1.709	1.704	1.699	1.696	1.692	1.689	1.683
37	1.802	1.782	1.759	1.740	1.730	1.724	1.719	1.716	1.713	1.709	1.703
38	1.830	1.810	1.787	1.768	1.758	1.752	1.747	1.744	1.741	1.737	1.731
39	1.854	1.834	1.812	1.793	1.782	1.777	1.772	1.769	1.766	1.762	1.756
40	1.872	1.853	1.830	1.811	1.801	1.795	1.790	1.787	1.784	1.780	1.775
41	1.890	1.871	1.848	1.830	1.819	1.814	1.809	1.806	1.803	1.799	1.793
42	1.904	1.885	1.862	1.843	1.833	1.828	1.823	1.820	1.816	1.813	1.807
43	1.926	1.906	1.884	1.865	1.855	1.850	1.845	1.842	1.838	1.835	1.829
44	1.937	1.918	1.895	1.877	1.867	1.861	1.856	1.853	1.850	1.846	1.841
45	1.952	1.933	1.910	1.892	1.882	1.876	1.871	1.868	1.865	1.861	1.856
46	1.961	1.942	1.920	1.901	1.891	1.886	1.881	1.878	1.875	1.871	1.865
47	1.979	1.960	1.938	1.919	1.909	1.904	1.899	1.896	1.893	1.889	1.883
48	1.990	1.971	1.949	1.930	1.920	1.915	1.910	1.907	1.904	1.900	1.895
49	2.010	1.991	1.969	1.951	1.941	1.936	1.931	1.928	1.925	1.921	1.915
50	2.027	2.008	1.986	1.968	1.958	1.953	1.948	1.945	1.942	1.938	1.933
51	2.043	2.024	2.002	1.984	1.975	1.969	1.964	1.961	1.958	1.954	1.949
52	2.060	2.042	2.020	2.002	1.992	1.987	1.982	1.979	1.976	1.972	1.967
53	2.071	2.053	2.031	2.013	2.003	1.998	1.993	1.990	1.987	1.983	1.978
54	2.091	2.073	2.051	2.034	2.024	2.019	2.014	2.011	2.008	2.004	1.999
55	2.100	2.082	2.061	2.043	2.033	2.028	2.023	2.020	2.017	2.013	2.008
56	2.116	2.098	2.077	2.059	2.049	2.044	2.039	2.036	2.033	2.029	2.024
57	2.133	2.115	2.094	2.076	2.066	2.061	2.056	2.053	2.050	2.047	2.041
58	2.148	2.131	2.110	2.092	2.082	2.077	2.072	2.069	2.066	2.063	2.057
59	2.163	2.146	2.125	2.108	2.098	2.093	2.088	2.085	2.082	2.078	2.073
60	2.181	2.164	2.143	2.126	2.116	2.111	2.106	2.103	2.100	2.097	2.091

**f. Five Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.714	1.694	1.672	1.652	1.642	1.637	1.632	1.629	1.625	1.622	1.616
36	1.755	1.735	1.712	1.693	1.683	1.678	1.673	1.669	1.666	1.663	1.657
37	1.775	1.755	1.732	1.713	1.703	1.698	1.693	1.690	1.687	1.683	1.677
38	1.802	1.782	1.760	1.741	1.731	1.725	1.720	1.717	1.714	1.711	1.705
39	1.826	1.806	1.784	1.765	1.755	1.750	1.745	1.742	1.738	1.735	1.729
40	1.844	1.825	1.802	1.783	1.773	1.768	1.763	1.760	1.757	1.753	1.747
41	1.862	1.842	1.820	1.802	1.792	1.786	1.781	1.778	1.775	1.771	1.766
42	1.875	1.856	1.834	1.815	1.805	1.800	1.795	1.792	1.789	1.785	1.779
43	1.896	1.877	1.855	1.837	1.827	1.821	1.816	1.813	1.810	1.807	1.801
44	1.907	1.889	1.866	1.848	1.838	1.833	1.828	1.825	1.822	1.818	1.812
45	1.922	1.903	1.881	1.863	1.853	1.847	1.842	1.839	1.836	1.833	1.827
46	1.931	1.913	1.891	1.872	1.863	1.857	1.852	1.849	1.846	1.842	1.837
47	1.949	1.930	1.908	1.890	1.880	1.875	1.870	1.867	1.864	1.860	1.855
48	1.959	1.941	1.919	1.901	1.891	1.886	1.881	1.878	1.875	1.871	1.866
49	1.980	1.961	1.939	1.921	1.912	1.906	1.901	1.898	1.895	1.892	1.886
50	1.996	1.978	1.956	1.939	1.929	1.923	1.918	1.915	1.913	1.909	1.903
51	2.012	1.994	1.972	1.954	1.945	1.939	1.934	1.931	1.928	1.925	1.919
52	2.029	2.011	1.990	1.972	1.962	1.957	1.952	1.949	1.946	1.942	1.937
53	2.040	2.022	2.000	1.983	1.973	1.968	1.963	1.960	1.957	1.953	1.948
54	2.059	2.042	2.021	2.003	1.993	1.988	1.983	1.980	1.977	1.974	1.968
55	2.068	2.051	2.030	2.012	2.003	1.997	1.992	1.989	1.987	1.983	1.978
56	2.084	2.066	2.045	2.028	2.018	2.013	2.008	2.005	2.002	1.999	1.993
57	2.101	2.083	2.062	2.045	2.035	2.030	2.025	2.022	2.019	2.016	2.010
58	2.116	2.099	2.078	2.061	2.051	2.046	2.041	2.038	2.035	2.032	2.026
59	2.131	2.114	2.093	2.076	2.066	2.061	2.056	2.053	2.051	2.047	2.042
60	2.149	2.132	2.111	2.094	2.084	2.079	2.074	2.072	2.069	2.065	2.060

**g. Six Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.688	1.669	1.646	1.627	1.617	1.612	1.607	1.604	1.601	1.597	1.591
36	1.728	1.709	1.686	1.667	1.658	1.652	1.647	1.644	1.641	1.637	1.632
37	1.748	1.728	1.706	1.687	1.677	1.672	1.667	1.664	1.661	1.657	1.652
38	1.775	1.755	1.733	1.715	1.705	1.699	1.694	1.691	1.688	1.685	1.679
39	1.798	1.779	1.757	1.738	1.728	1.723	1.718	1.715	1.712	1.708	1.703
40	1.816	1.797	1.775	1.756	1.746	1.741	1.736	1.733	1.730	1.726	1.721
41	1.833	1.815	1.793	1.774	1.764	1.759	1.754	1.751	1.748	1.744	1.739
42	1.847	1.828	1.806	1.788	1.778	1.772	1.767	1.764	1.761	1.758	1.752
43	1.868	1.849	1.827	1.809	1.799	1.794	1.789	1.786	1.783	1.779	1.774
44	1.879	1.860	1.838	1.820	1.810	1.805	1.800	1.797	1.794	1.790	1.785
45	1.893	1.874	1.853	1.835	1.825	1.819	1.815	1.812	1.809	1.805	1.799
46	1.902	1.884	1.862	1.844	1.834	1.829	1.824	1.821	1.818	1.815	1.809
47	1.919	1.901	1.879	1.861	1.852	1.846	1.842	1.839	1.836	1.832	1.827
48	1.930	1.912	1.890	1.872	1.863	1.857	1.852	1.850	1.847	1.843	1.838
49	1.950	1.932	1.910	1.892	1.883	1.877	1.873	1.870	1.867	1.863	1.858
50	1.966	1.948	1.927	1.909	1.900	1.894	1.889	1.887	1.884	1.880	1.875
51	1.981	1.964	1.942	1.925	1.915	1.910	1.905	1.902	1.899	1.896	1.890
52	1.998	1.981	1.960	1.942	1.933	1.927	1.922	1.920	1.917	1.913	1.908
53	2.009	1.991	1.970	1.953	1.943	1.938	1.933	1.930	1.928	1.924	1.919
54	2.028	2.011	1.990	1.973	1.963	1.958	1.953	1.950	1.948	1.944	1.939
55	2.037	2.020	1.999	1.982	1.972	1.967	1.962	1.959	1.957	1.953	1.948
56	2.053	2.035	2.015	1.997	1.988	1.983	1.978	1.975	1.972	1.969	1.963
57	2.069	2.052	2.031	2.014	2.005	1.999	1.995	1.992	1.989	1.985	1.980
58	2.084	2.067	2.047	2.030	2.020	2.015	2.010	2.007	2.005	2.001	1.996
59	2.099	2.082	2.062	2.045	2.035	2.030	2.025	2.022	2.020	2.016	2.011
60	2.117	2.100	2.079	2.063	2.053	2.048	2.043	2.040	2.038	2.034	2.029

**h. Seven Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.665	1.646	1.623	1.605	1.595	1.590	1.585	1.582	1.579	1.575	1.569
36	1.704	1.685	1.663	1.645	1.635	1.629	1.624	1.621	1.618	1.615	1.609
37	1.724	1.705	1.683	1.664	1.654	1.649	1.644	1.641	1.638	1.635	1.629
38	1.750	1.731	1.709	1.691	1.681	1.676	1.671	1.668	1.665	1.661	1.656
39	1.773	1.754	1.733	1.714	1.705	1.699	1.694	1.691	1.688	1.685	1.679
40	1.791	1.772	1.750	1.732	1.722	1.717	1.712	1.709	1.706	1.703	1.697
41	1.808	1.790	1.768	1.750	1.740	1.735	1.730	1.727	1.724	1.720	1.715
42	1.821	1.803	1.781	1.763	1.753	1.748	1.743	1.740	1.737	1.734	1.728
43	1.842	1.823	1.802	1.784	1.774	1.769	1.764	1.761	1.758	1.755	1.749
44	1.853	1.834	1.813	1.795	1.785	1.780	1.775	1.772	1.769	1.766	1.760
45	1.867	1.849	1.827	1.809	1.800	1.794	1.790	1.787	1.784	1.780	1.775
46	1.876	1.858	1.836	1.819	1.809	1.804	1.799	1.796	1.793	1.790	1.784
47	1.893	1.875	1.853	1.836	1.826	1.821	1.816	1.813	1.810	1.807	1.801
48	1.903	1.885	1.864	1.847	1.837	1.832	1.827	1.824	1.821	1.818	1.812
49	1.923	1.905	1.884	1.866	1.857	1.852	1.847	1.844	1.841	1.838	1.832
50	1.939	1.921	1.900	1.883	1.873	1.868	1.863	1.861	1.858	1.854	1.849
51	1.954	1.937	1.916	1.898	1.889	1.884	1.879	1.876	1.873	1.870	1.864
52	1.971	1.953	1.933	1.915	1.906	1.901	1.896	1.893	1.890	1.887	1.882
53	1.981	1.964	1.943	1.926	1.917	1.911	1.907	1.904	1.901	1.897	1.892
54	2.000	1.983	1.963	1.946	1.936	1.931	1.926	1.923	1.921	1.917	1.912
55	2.009	1.992	1.972	1.955	1.945	1.940	1.935	1.932	1.930	1.926	1.921
56	2.024	2.007	1.987	1.970	1.961	1.955	1.951	1.948	1.945	1.942	1.936
57	2.040	2.023	2.003	1.986	1.977	1.972	1.967	1.964	1.962	1.958	1.953
58	2.055	2.039	2.018	2.002	1.992	1.987	1.983	1.980	1.977	1.973	1.968
59	2.070	2.053	2.033	2.016	2.007	2.002	1.997	1.995	1.992	1.988	1.983
60	2.087	2.071	2.051	2.034	2.025	2.020	2.015	2.012	2.010	2.006	2.001

**i. Eight Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.646	1.627	1.605	1.587	1.577	1.572	1.567	1.564	1.561	1.557	1.552
36	1.685	1.666	1.644	1.626	1.616	1.611	1.606	1.603	1.600	1.597	1.591
37	1.704	1.685	1.663	1.645	1.636	1.630	1.625	1.623	1.620	1.616	1.611
38	1.730	1.712	1.690	1.672	1.662	1.657	1.652	1.649	1.646	1.643	1.637
39	1.753	1.735	1.713	1.695	1.685	1.680	1.675	1.672	1.669	1.666	1.660
40	1.771	1.752	1.730	1.713	1.703	1.698	1.693	1.690	1.687	1.683	1.678
41	1.788	1.769	1.748	1.730	1.720	1.715	1.710	1.707	1.704	1.701	1.695
42	1.801	1.782	1.761	1.743	1.733	1.728	1.723	1.721	1.718	1.714	1.709
43	1.821	1.803	1.781	1.764	1.754	1.749	1.744	1.741	1.738	1.735	1.730
44	1.832	1.813	1.792	1.775	1.765	1.760	1.755	1.752	1.749	1.746	1.740
45	1.846	1.828	1.806	1.789	1.779	1.774	1.769	1.766	1.764	1.760	1.755
46	1.855	1.837	1.816	1.798	1.788	1.783	1.779	1.776	1.773	1.769	1.764
47	1.871	1.853	1.832	1.815	1.806	1.800	1.796	1.793	1.790	1.786	1.781
48	1.882	1.864	1.843	1.826	1.816	1.811	1.806	1.803	1.801	1.797	1.792
49	1.901	1.883	1.862	1.845	1.836	1.831	1.826	1.823	1.820	1.817	1.811
50	1.917	1.899	1.879	1.862	1.852	1.847	1.842	1.839	1.837	1.833	1.828
51	1.932	1.914	1.894	1.877	1.867	1.862	1.857	1.855	1.852	1.848	1.843
52	1.948	1.931	1.911	1.894	1.884	1.879	1.874	1.872	1.869	1.865	1.860
53	1.959	1.941	1.921	1.904	1.895	1.890	1.885	1.882	1.879	1.876	1.871
54	1.978	1.961	1.940	1.923	1.914	1.909	1.904	1.901	1.899	1.895	1.890
55	1.986	1.969	1.949	1.932	1.923	1.918	1.913	1.910	1.908	1.904	1.899
56	2.001	1.984	1.964	1.947	1.938	1.933	1.928	1.926	1.923	1.919	1.914
57	2.017	2.000	1.980	1.963	1.954	1.949	1.945	1.942	1.939	1.936	1.930
58	2.032	2.015	1.995	1.979	1.970	1.965	1.960	1.957	1.954	1.951	1.946
59	2.046	2.030	2.010	1.993	1.984	1.979	1.975	1.972	1.969	1.966	1.961
60	2.063	2.047	2.027	2.011	2.002	1.997	1.992	1.989	1.987	1.983	1.978



**j. Nine Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.631	1.612	1.590	1.572	1.562	1.557	1.552	1.549	1.546	1.543	1.537
36	1.669	1.650	1.629	1.611	1.601	1.596	1.591	1.588	1.585	1.582	1.576
37	1.688	1.669	1.648	1.630	1.620	1.615	1.610	1.607	1.604	1.601	1.595
38	1.714	1.695	1.674	1.656	1.646	1.641	1.636	1.634	1.631	1.627	1.622
39	1.737	1.718	1.697	1.679	1.669	1.664	1.659	1.657	1.654	1.650	1.645
40	1.754	1.735	1.714	1.696	1.687	1.682	1.677	1.674	1.671	1.668	1.662
41	1.771	1.753	1.731	1.714	1.704	1.699	1.694	1.691	1.688	1.685	1.680
42	1.784	1.765	1.744	1.727	1.717	1.712	1.707	1.704	1.701	1.698	1.693
43	1.804	1.786	1.765	1.747	1.738	1.732	1.728	1.725	1.722	1.719	1.713
44	1.814	1.796	1.775	1.758	1.748	1.743	1.738	1.736	1.733	1.729	1.724
45	1.828	1.810	1.789	1.772	1.762	1.757	1.753	1.750	1.747	1.743	1.738
46	1.837	1.819	1.798	1.781	1.772	1.766	1.762	1.759	1.756	1.753	1.747
47	1.854	1.836	1.815	1.798	1.788	1.783	1.779	1.776	1.773	1.770	1.764
48	1.864	1.846	1.826	1.808	1.799	1.794	1.789	1.786	1.784	1.780	1.775
49	1.883	1.865	1.845	1.828	1.818	1.813	1.809	1.806	1.803	1.800	1.794
50	1.899	1.881	1.861	1.844	1.835	1.830	1.825	1.822	1.819	1.816	1.811
51	1.914	1.896	1.876	1.859	1.850	1.845	1.840	1.837	1.834	1.831	1.826
52	1.930	1.913	1.892	1.876	1.866	1.861	1.857	1.854	1.851	1.848	1.843
53	1.940	1.923	1.903	1.886	1.877	1.872	1.867	1.864	1.862	1.858	1.853
54	1.959	1.942	1.922	1.905	1.896	1.891	1.886	1.884	1.881	1.877	1.872
55	1.967	1.951	1.931	1.914	1.905	1.900	1.895	1.892	1.890	1.886	1.881
56	1.982	1.966	1.946	1.929	1.920	1.915	1.910	1.907	1.905	1.901	1.896
57	1.998	1.981	1.961	1.945	1.936	1.931	1.926	1.923	1.921	1.917	1.912
58	2.013	1.996	1.976	1.960	1.951	1.946	1.941	1.939	1.936	1.932	1.927
59	2.027	2.011	1.991	1.975	1.966	1.961	1.956	1.953	1.951	1.947	1.942
60	2.044	2.028	2.008	1.992	1.983	1.978	1.973	1.970	1.968	1.964	1.959

**k. Ten Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.611	1.592	1.571	1.553	1.543	1.538	1.533	1.531	1.528	1.524	1.519
36	1.649	1.630	1.609	1.591	1.582	1.577	1.572	1.569	1.566	1.563	1.557
37	1.667	1.649	1.628	1.610	1.601	1.596	1.591	1.588	1.585	1.582	1.576
38	1.693	1.675	1.654	1.636	1.627	1.622	1.617	1.614	1.611	1.608	1.602
39	1.716	1.697	1.676	1.659	1.649	1.644	1.640	1.637	1.634	1.630	1.625
40	1.732	1.714	1.693	1.676	1.667	1.661	1.657	1.654	1.651	1.648	1.642
41	1.749	1.731	1.710	1.693	1.684	1.679	1.674	1.671	1.668	1.665	1.660
42	1.762	1.744	1.723	1.706	1.696	1.691	1.687	1.684	1.681	1.678	1.672
43	1.782	1.764	1.743	1.726	1.717	1.712	1.707	1.704	1.701	1.698	1.693
44	1.792	1.774	1.754	1.737	1.727	1.722	1.718	1.715	1.712	1.709	1.703
45	1.806	1.788	1.768	1.750	1.741	1.736	1.731	1.729	1.726	1.722	1.717
46	1.815	1.797	1.777	1.759	1.750	1.745	1.740	1.738	1.735	1.731	1.726
47	1.831	1.814	1.793	1.776	1.767	1.762	1.757	1.754	1.752	1.748	1.743
48	1.841	1.824	1.803	1.786	1.777	1.772	1.768	1.765	1.762	1.759	1.754
49	1.860	1.843	1.822	1.806	1.796	1.791	1.787	1.784	1.781	1.778	1.773
50	1.875	1.858	1.838	1.821	1.812	1.807	1.803	1.800	1.797	1.794	1.789
51	1.890	1.873	1.853	1.836	1.827	1.822	1.818	1.815	1.812	1.809	1.804
52	1.906	1.889	1.869	1.853	1.844	1.839	1.834	1.831	1.829	1.825	1.820
53	1.916	1.899	1.879	1.863	1.854	1.849	1.844	1.842	1.839	1.835	1.831
54	1.935	1.918	1.898	1.882	1.873	1.868	1.863	1.860	1.858	1.854	1.850
55	1.943	1.927	1.907	1.890	1.881	1.876	1.872	1.869	1.867	1.863	1.858
56	1.958	1.941	1.922	1.905	1.896	1.891	1.887	1.884	1.881	1.878	1.873
57	1.973	1.957	1.937	1.921	1.912	1.907	1.903	1.900	1.897	1.894	1.889
58	1.988	1.971	1.952	1.936	1.927	1.922	1.917	1.915	1.912	1.909	1.904
59	2.002	1.986	1.966	1.950	1.941	1.936	1.932	1.929	1.927	1.923	1.918
60	2.018	2.003	1.983	1.967	1.958	1.953	1.949	1.946	1.944	1.940	1.935

**I. Eleven Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.607	1.589	1.567	1.549	1.540	1.535	1.530	1.527	1.524	1.521	1.516
36	1.645	1.627	1.605	1.588	1.578	1.573	1.568	1.566	1.563	1.559	1.554
37	1.664	1.645	1.624	1.607	1.597	1.592	1.587	1.584	1.582	1.578	1.573
38	1.689	1.671	1.650	1.632	1.623	1.618	1.613	1.610	1.608	1.604	1.599
39	1.712	1.694	1.673	1.655	1.646	1.641	1.636	1.633	1.630	1.627	1.622
40	1.729	1.711	1.690	1.672	1.663	1.658	1.653	1.650	1.647	1.644	1.639
41	1.745	1.727	1.707	1.689	1.680	1.675	1.670	1.667	1.664	1.661	1.656
42	1.758	1.740	1.719	1.702	1.693	1.688	1.683	1.680	1.677	1.674	1.669
43	1.778	1.760	1.739	1.722	1.713	1.708	1.703	1.700	1.698	1.694	1.689
44	1.788	1.770	1.750	1.733	1.723	1.718	1.714	1.711	1.708	1.705	1.700
45	1.802	1.784	1.764	1.747	1.737	1.732	1.728	1.725	1.722	1.719	1.713
46	1.811	1.793	1.773	1.755	1.746	1.741	1.737	1.734	1.731	1.728	1.722
47	1.827	1.809	1.789	1.772	1.763	1.758	1.753	1.750	1.748	1.744	1.739
48	1.837	1.820	1.799	1.782	1.773	1.768	1.764	1.761	1.758	1.755	1.750
49	1.856	1.838	1.818	1.801	1.792	1.787	1.783	1.780	1.777	1.774	1.769
50	1.871	1.854	1.834	1.817	1.808	1.803	1.799	1.796	1.793	1.790	1.785
51	1.886	1.869	1.849	1.832	1.823	1.818	1.813	1.811	1.808	1.805	1.800
52	1.902	1.885	1.865	1.848	1.839	1.834	1.830	1.827	1.824	1.821	1.816
53	1.912	1.895	1.875	1.859	1.850	1.845	1.840	1.837	1.835	1.831	1.826
54	1.930	1.914	1.894	1.878	1.869	1.864	1.859	1.856	1.854	1.850	1.845
55	1.939	1.922	1.902	1.886	1.877	1.872	1.868	1.865	1.862	1.859	1.854
56	1.953	1.937	1.917	1.901	1.892	1.887	1.882	1.880	1.877	1.874	1.869
57	1.969	1.952	1.933	1.917	1.908	1.903	1.898	1.895	1.893	1.889	1.885
58	1.983	1.967	1.947	1.931	1.922	1.918	1.913	1.910	1.908	1.904	1.899
59	1.997	1.981	1.962	1.946	1.937	1.932	1.927	1.925	1.922	1.919	1.914
60	2.014	1.998	1.979	1.963	1.954	1.949	1.944	1.942	1.939	1.936	1.931

**m. Twelve Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.591	1.572	1.551	1.534	1.524	1.519	1.514	1.512	1.509	1.505	1.500
36	1.628	1.610	1.589	1.571	1.562	1.557	1.552	1.549	1.547	1.543	1.538
37	1.647	1.628	1.608	1.590	1.581	1.576	1.571	1.568	1.565	1.562	1.557
38	1.672	1.654	1.633	1.616	1.606	1.601	1.597	1.594	1.591	1.588	1.583
39	1.694	1.676	1.655	1.638	1.629	1.624	1.619	1.616	1.614	1.610	1.605
40	1.711	1.693	1.672	1.655	1.646	1.641	1.636	1.633	1.631	1.627	1.622
41	1.727	1.710	1.689	1.672	1.663	1.658	1.653	1.650	1.647	1.644	1.639
42	1.740	1.722	1.702	1.684	1.675	1.670	1.666	1.663	1.660	1.657	1.652
43	1.759	1.742	1.721	1.704	1.695	1.690	1.686	1.683	1.680	1.677	1.672
44	1.770	1.752	1.732	1.715	1.706	1.701	1.696	1.693	1.691	1.687	1.682
45	1.783	1.766	1.745	1.729	1.719	1.714	1.710	1.707	1.704	1.701	1.696
46	1.792	1.775	1.754	1.737	1.728	1.723	1.719	1.716	1.713	1.710	1.705
47	1.808	1.791	1.771	1.754	1.745	1.740	1.735	1.732	1.730	1.726	1.721
48	1.818	1.801	1.781	1.764	1.755	1.750	1.745	1.743	1.740	1.737	1.732
49	1.836	1.819	1.799	1.783	1.774	1.769	1.764	1.762	1.759	1.756	1.751
50	1.852	1.835	1.815	1.799	1.790	1.785	1.780	1.777	1.775	1.771	1.766
51	1.866	1.849	1.830	1.813	1.804	1.799	1.795	1.792	1.789	1.786	1.781
52	1.882	1.865	1.846	1.829	1.820	1.816	1.811	1.808	1.806	1.802	1.797
53	1.892	1.875	1.856	1.839	1.831	1.826	1.821	1.818	1.816	1.812	1.808
54	1.910	1.894	1.874	1.858	1.849	1.844	1.840	1.837	1.835	1.831	1.826
55	1.918	1.902	1.883	1.867	1.858	1.853	1.848	1.846	1.843	1.840	1.835
56	1.933	1.917	1.897	1.881	1.872	1.867	1.863	1.860	1.858	1.854	1.850
57	1.948	1.932	1.913	1.897	1.888	1.883	1.879	1.876	1.873	1.870	1.865
58	1.962	1.946	1.927	1.911	1.902	1.898	1.893	1.890	1.888	1.885	1.880
59	1.976	1.960	1.941	1.925	1.917	1.912	1.907	1.905	1.902	1.899	1.894
60	1.993	1.977	1.958	1.942	1.933	1.929	1.924	1.922	1.919	1.916	1.911

**n. Thirteen Closed Tuesdays, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.583	1.565	1.544	1.526	1.517	1.512	1.507	1.505	1.502	1.498	1.493
36	1.621	1.602	1.582	1.564	1.555	1.550	1.545	1.542	1.540	1.536	1.531
37	1.639	1.621	1.600	1.583	1.573	1.568	1.564	1.561	1.558	1.555	1.550
38	1.664	1.646	1.626	1.608	1.599	1.594	1.589	1.587	1.584	1.580	1.575
39	1.686	1.668	1.648	1.631	1.621	1.616	1.612	1.609	1.606	1.603	1.598
40	1.703	1.685	1.665	1.647	1.638	1.633	1.629	1.626	1.623	1.620	1.615
41	1.719	1.702	1.681	1.664	1.655	1.650	1.645	1.643	1.640	1.636	1.631
42	1.732	1.714	1.694	1.677	1.668	1.662	1.658	1.655	1.652	1.649	1.644
43	1.751	1.734	1.713	1.697	1.687	1.682	1.678	1.675	1.672	1.669	1.664
44	1.762	1.744	1.724	1.707	1.698	1.693	1.688	1.686	1.683	1.679	1.674
45	1.775	1.758	1.737	1.721	1.711	1.707	1.702	1.699	1.697	1.693	1.688
46	1.784	1.766	1.746	1.729	1.720	1.715	1.711	1.708	1.705	1.702	1.697
47	1.800	1.783	1.762	1.746	1.737	1.732	1.727	1.724	1.722	1.718	1.714
48	1.810	1.793	1.773	1.756	1.747	1.742	1.737	1.735	1.732	1.729	1.724
49	1.828	1.811	1.791	1.775	1.766	1.761	1.756	1.754	1.751	1.748	1.743
50	1.843	1.827	1.807	1.790	1.781	1.777	1.772	1.769	1.767	1.763	1.758
51	1.858	1.841	1.821	1.805	1.796	1.791	1.787	1.784	1.781	1.778	1.773
52	1.874	1.857	1.837	1.821	1.812	1.807	1.803	1.800	1.798	1.794	1.789
53	1.883	1.867	1.847	1.831	1.822	1.817	1.813	1.810	1.808	1.804	1.799
54	1.902	1.885	1.866	1.850	1.841	1.836	1.832	1.829	1.826	1.823	1.818
55	1.910	1.894	1.874	1.858	1.849	1.844	1.840	1.837	1.835	1.831	1.827
56	1.924	1.908	1.889	1.873	1.864	1.859	1.855	1.852	1.849	1.846	1.841
57	1.939	1.923	1.904	1.888	1.879	1.875	1.870	1.867	1.865	1.862	1.857
58	1.954	1.938	1.919	1.903	1.894	1.889	1.885	1.882	1.880	1.876	1.872
59	1.968	1.952	1.933	1.917	1.908	1.903	1.899	1.896	1.894	1.890	1.886
60	1.984	1.968	1.949	1.934	1.925	1.920	1.916	1.913	1.911	1.907	1.903

**o. All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.550	1.533	1.512	1.495	1.486	1.481	1.476	1.474	1.471	1.467	1.462
36	1.587	1.569	1.549	1.532	1.523	1.518	1.513	1.510	1.508	1.504	1.499
37	1.605	1.587	1.567	1.550	1.541	1.536	1.531	1.529	1.526	1.523	1.518
38	1.629	1.612	1.592	1.575	1.566	1.561	1.556	1.554	1.551	1.548	1.543
39	1.651	1.634	1.613	1.597	1.588	1.583	1.578	1.575	1.573	1.569	1.564
40	1.667	1.650	1.630	1.613	1.604	1.599	1.595	1.592	1.589	1.586	1.581
41	1.683	1.666	1.646	1.630	1.621	1.616	1.611	1.608	1.606	1.602	1.597
42	1.695	1.678	1.658	1.642	1.633	1.628	1.623	1.621	1.618	1.615	1.610
43	1.715	1.698	1.678	1.661	1.652	1.647	1.643	1.640	1.638	1.634	1.629
44	1.725	1.708	1.688	1.671	1.663	1.658	1.653	1.650	1.648	1.645	1.640
45	1.738	1.721	1.701	1.685	1.676	1.671	1.666	1.664	1.661	1.658	1.653
46	1.746	1.730	1.710	1.693	1.685	1.680	1.675	1.672	1.670	1.667	1.662
47	1.762	1.745	1.726	1.709	1.700	1.696	1.691	1.688	1.686	1.683	1.678
48	1.771	1.755	1.735	1.719	1.710	1.706	1.701	1.698	1.696	1.693	1.688
49	1.790	1.773	1.754	1.738	1.729	1.724	1.720	1.717	1.714	1.711	1.706
50	1.805	1.788	1.769	1.753	1.744	1.739	1.735	1.732	1.730	1.726	1.722
51	1.819	1.803	1.783	1.767	1.758	1.754	1.749	1.747	1.744	1.741	1.736
52	1.834	1.818	1.799	1.783	1.774	1.769	1.765	1.762	1.760	1.757	1.752
53	1.844	1.828	1.809	1.793	1.784	1.779	1.775	1.772	1.770	1.766	1.762
54	1.861	1.846	1.827	1.811	1.802	1.797	1.793	1.790	1.788	1.785	1.780
55	1.869	1.854	1.835	1.819	1.811	1.806	1.801	1.799	1.796	1.793	1.788
56	1.883	1.868	1.849	1.833	1.825	1.820	1.816	1.813	1.811	1.807	1.803
57	1.898	1.883	1.864	1.849	1.840	1.835	1.831	1.828	1.826	1.822	1.818
58	1.912	1.897	1.878	1.863	1.854	1.849	1.845	1.842	1.840	1.837	1.832
59	1.926	1.911	1.892	1.876	1.868	1.863	1.859	1.856	1.854	1.851	1.846
60	1.942	1.927	1.908	1.893	1.884	1.880	1.875	1.873	1.870	1.867	1.862

Table A3. Projected charter removals (Mlb) for Area 3A in 2020 under a **two fish bag limit with all Tuesdays closed, a reverse slot limit on one fish ranging from U35O60 to U60O80, a size limit of 26-inches on the second fish and a range of Monday closures** throughout the season. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**. Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Light shaded cells represent projections for the most liberal Monday closures, upper size limits, and lower size limits that do not exceed the 1.24 Mlb allocation associated with the Reference TCEY scenario. Dark shaded cells represent projections for the most liberal Monday closures, upper size limits, and lower size limits that do not exceed the 1.66 Mlb allocation associated with the Status Quo TCEY scenario.

**a. No Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.550	1.533	1.512	1.495	1.486	1.481	1.476	1.474	1.471	1.467	1.462
36	1.587	1.569	1.549	1.532	1.523	1.518	1.513	1.510	1.508	1.504	1.499
37	1.605	1.587	1.567	1.550	1.541	1.536	1.531	1.529	1.526	1.523	1.518
38	1.629	1.612	1.592	1.575	1.566	1.561	1.556	1.554	1.551	1.548	1.543
39	1.651	1.634	1.613	1.597	1.588	1.583	1.578	1.575	1.573	1.569	1.564
40	1.667	1.650	1.630	1.613	1.604	1.599	1.595	1.592	1.589	1.586	1.581
41	1.683	1.666	1.646	1.630	1.621	1.616	1.611	1.608	1.606	1.602	1.597
42	1.695	1.678	1.658	1.642	1.633	1.628	1.623	1.621	1.618	1.615	1.610
43	1.715	1.698	1.678	1.661	1.652	1.647	1.643	1.640	1.638	1.634	1.629
44	1.725	1.708	1.688	1.671	1.663	1.658	1.653	1.650	1.648	1.645	1.640
45	1.738	1.721	1.701	1.685	1.676	1.671	1.666	1.664	1.661	1.658	1.653
46	1.746	1.730	1.710	1.693	1.685	1.680	1.675	1.672	1.670	1.667	1.662
47	1.762	1.745	1.726	1.709	1.700	1.696	1.691	1.688	1.686	1.683	1.678
48	1.771	1.755	1.735	1.719	1.710	1.706	1.701	1.698	1.696	1.693	1.688
49	1.790	1.773	1.754	1.738	1.729	1.724	1.720	1.717	1.714	1.711	1.706
50	1.805	1.788	1.769	1.753	1.744	1.739	1.735	1.732	1.730	1.726	1.722
51	1.819	1.803	1.783	1.767	1.758	1.754	1.749	1.747	1.744	1.741	1.736
52	1.834	1.818	1.799	1.783	1.774	1.769	1.765	1.762	1.760	1.757	1.752
53	1.844	1.828	1.809	1.793	1.784	1.779	1.775	1.772	1.770	1.766	1.762
54	1.861	1.846	1.827	1.811	1.802	1.797	1.793	1.790	1.788	1.785	1.780
55	1.869	1.854	1.835	1.819	1.811	1.806	1.801	1.799	1.796	1.793	1.788
56	1.883	1.868	1.849	1.833	1.825	1.820	1.816	1.813	1.811	1.807	1.803
57	1.898	1.883	1.864	1.849	1.840	1.835	1.831	1.828	1.826	1.822	1.818
58	1.912	1.897	1.878	1.863	1.854	1.849	1.845	1.842	1.840	1.837	1.832
59	1.926	1.911	1.892	1.876	1.868	1.863	1.859	1.856	1.854	1.851	1.846
60	1.942	1.927	1.908	1.893	1.884	1.880	1.875	1.873	1.870	1.867	1.862

**b. One Closed Monday, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.523	1.506	1.486	1.469	1.460	1.455	1.450	1.448	1.445	1.442	1.437
36	1.559	1.542	1.522	1.505	1.496	1.491	1.487	1.484	1.481	1.478	1.473
37	1.577	1.560	1.540	1.523	1.514	1.509	1.505	1.502	1.499	1.496	1.491
38	1.601	1.584	1.564	1.547	1.539	1.534	1.529	1.526	1.524	1.521	1.516
39	1.622	1.605	1.585	1.569	1.560	1.555	1.551	1.548	1.545	1.542	1.537
40	1.638	1.621	1.602	1.585	1.576	1.571	1.567	1.564	1.562	1.558	1.553
41	1.654	1.637	1.618	1.601	1.592	1.587	1.583	1.580	1.578	1.574	1.570
42	1.666	1.649	1.630	1.613	1.604	1.600	1.595	1.592	1.590	1.587	1.582
43	1.685	1.668	1.649	1.632	1.624	1.619	1.614	1.612	1.609	1.606	1.601
44	1.695	1.678	1.659	1.642	1.634	1.629	1.624	1.622	1.619	1.616	1.611
45	1.708	1.691	1.672	1.655	1.647	1.642	1.637	1.635	1.632	1.629	1.624
46	1.716	1.700	1.680	1.664	1.655	1.650	1.646	1.643	1.641	1.638	1.633
47	1.731	1.715	1.696	1.680	1.671	1.666	1.662	1.659	1.657	1.653	1.649
48	1.741	1.725	1.705	1.689	1.681	1.676	1.672	1.669	1.666	1.663	1.658
49	1.759	1.743	1.723	1.707	1.699	1.694	1.690	1.687	1.685	1.681	1.677
50	1.773	1.757	1.738	1.723	1.714	1.709	1.705	1.702	1.700	1.696	1.692
51	1.787	1.771	1.752	1.737	1.728	1.723	1.719	1.716	1.714	1.711	1.706
52	1.802	1.787	1.768	1.752	1.743	1.739	1.734	1.732	1.729	1.726	1.721
53	1.812	1.796	1.777	1.762	1.753	1.748	1.744	1.742	1.739	1.736	1.731
54	1.829	1.814	1.795	1.780	1.771	1.766	1.762	1.760	1.757	1.754	1.749
55	1.837	1.822	1.803	1.788	1.779	1.775	1.770	1.768	1.765	1.762	1.757
56	1.851	1.836	1.817	1.802	1.793	1.789	1.784	1.782	1.779	1.776	1.771
57	1.866	1.851	1.832	1.817	1.808	1.804	1.799	1.797	1.794	1.791	1.786
58	1.879	1.864	1.846	1.831	1.822	1.817	1.813	1.811	1.808	1.805	1.800
59	1.893	1.878	1.859	1.844	1.836	1.831	1.827	1.824	1.822	1.819	1.814
60	1.909	1.894	1.875	1.860	1.852	1.847	1.843	1.840	1.838	1.835	1.830

**c. Two Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.500	1.483	1.463	1.446	1.437	1.433	1.428	1.426	1.423	1.420	1.415
36	1.535	1.518	1.498	1.482	1.473	1.468	1.464	1.461	1.459	1.455	1.451
37	1.553	1.536	1.516	1.500	1.491	1.486	1.482	1.479	1.476	1.473	1.468
38	1.577	1.560	1.540	1.524	1.515	1.510	1.506	1.503	1.501	1.497	1.492
39	1.597	1.581	1.561	1.545	1.536	1.531	1.527	1.524	1.522	1.518	1.514
40	1.613	1.597	1.577	1.561	1.552	1.547	1.543	1.540	1.538	1.535	1.530
41	1.629	1.612	1.593	1.577	1.568	1.563	1.559	1.556	1.554	1.550	1.546
42	1.641	1.624	1.605	1.589	1.580	1.575	1.571	1.568	1.566	1.562	1.558
43	1.659	1.643	1.623	1.607	1.599	1.594	1.590	1.587	1.584	1.581	1.576
44	1.669	1.652	1.633	1.617	1.609	1.604	1.599	1.597	1.594	1.591	1.586
45	1.681	1.665	1.646	1.630	1.621	1.617	1.612	1.610	1.607	1.604	1.599
46	1.690	1.673	1.654	1.638	1.630	1.625	1.621	1.618	1.616	1.613	1.608
47	1.705	1.689	1.670	1.654	1.645	1.641	1.636	1.634	1.631	1.628	1.623
48	1.714	1.698	1.679	1.664	1.655	1.650	1.646	1.643	1.641	1.638	1.633
49	1.732	1.716	1.697	1.681	1.673	1.668	1.664	1.661	1.659	1.656	1.651
50	1.746	1.731	1.712	1.696	1.688	1.683	1.679	1.676	1.674	1.671	1.666
51	1.760	1.744	1.725	1.710	1.702	1.697	1.693	1.690	1.688	1.684	1.680
52	1.775	1.759	1.741	1.725	1.717	1.712	1.708	1.705	1.703	1.700	1.695
53	1.784	1.769	1.750	1.735	1.726	1.722	1.717	1.715	1.712	1.709	1.705
54	1.801	1.786	1.768	1.752	1.744	1.739	1.735	1.733	1.730	1.727	1.722
55	1.809	1.794	1.776	1.760	1.752	1.747	1.743	1.741	1.738	1.735	1.730
56	1.823	1.808	1.789	1.774	1.766	1.761	1.757	1.754	1.752	1.749	1.744
57	1.837	1.822	1.804	1.789	1.780	1.776	1.772	1.769	1.767	1.764	1.759
58	1.851	1.836	1.818	1.803	1.794	1.790	1.785	1.783	1.781	1.777	1.773
59	1.864	1.849	1.831	1.816	1.808	1.803	1.799	1.796	1.794	1.791	1.786
60	1.879	1.865	1.847	1.832	1.823	1.819	1.815	1.812	1.810	1.807	1.802

**d. Three Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.480	1.463	1.444	1.427	1.418	1.414	1.409	1.407	1.404	1.401	1.396
36	1.515	1.498	1.479	1.462	1.454	1.449	1.445	1.442	1.439	1.436	1.432
37	1.532	1.515	1.496	1.480	1.471	1.466	1.462	1.459	1.457	1.454	1.449
38	1.556	1.539	1.520	1.504	1.495	1.490	1.486	1.483	1.481	1.478	1.473
39	1.576	1.560	1.540	1.524	1.516	1.511	1.507	1.504	1.502	1.498	1.494
40	1.592	1.575	1.556	1.540	1.532	1.527	1.523	1.520	1.517	1.514	1.510
41	1.607	1.591	1.572	1.556	1.547	1.543	1.538	1.536	1.533	1.530	1.525
42	1.619	1.603	1.583	1.568	1.559	1.554	1.550	1.547	1.545	1.542	1.537
43	1.637	1.621	1.602	1.586	1.578	1.573	1.569	1.566	1.564	1.560	1.556
44	1.647	1.631	1.612	1.596	1.587	1.583	1.578	1.576	1.573	1.570	1.566
45	1.659	1.643	1.624	1.609	1.600	1.595	1.591	1.589	1.586	1.583	1.578
46	1.667	1.651	1.633	1.617	1.608	1.604	1.599	1.597	1.594	1.591	1.587
47	1.682	1.666	1.648	1.632	1.624	1.619	1.615	1.612	1.610	1.607	1.602
48	1.691	1.676	1.657	1.642	1.633	1.628	1.624	1.622	1.619	1.616	1.612
49	1.709	1.693	1.675	1.659	1.651	1.646	1.642	1.639	1.637	1.634	1.629
50	1.723	1.708	1.689	1.674	1.665	1.661	1.657	1.654	1.652	1.648	1.644
51	1.737	1.721	1.703	1.687	1.679	1.674	1.670	1.668	1.665	1.662	1.658
52	1.751	1.736	1.718	1.702	1.694	1.689	1.685	1.683	1.680	1.677	1.673
53	1.760	1.745	1.727	1.712	1.703	1.699	1.695	1.692	1.690	1.687	1.682
54	1.777	1.762	1.744	1.729	1.721	1.716	1.712	1.710	1.707	1.704	1.700
55	1.785	1.770	1.752	1.737	1.729	1.724	1.720	1.717	1.715	1.712	1.708
56	1.798	1.784	1.766	1.751	1.742	1.738	1.734	1.731	1.729	1.726	1.721
57	1.813	1.798	1.780	1.765	1.757	1.752	1.748	1.746	1.743	1.740	1.736
58	1.826	1.811	1.793	1.779	1.770	1.766	1.762	1.759	1.757	1.754	1.749
59	1.839	1.824	1.806	1.792	1.783	1.779	1.775	1.772	1.770	1.767	1.763
60	1.854	1.840	1.822	1.807	1.799	1.795	1.791	1.788	1.786	1.783	1.778

**e. Four Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.451	1.435	1.415	1.399	1.391	1.386	1.382	1.379	1.377	1.374	1.369
36	1.485	1.469	1.450	1.434	1.425	1.421	1.416	1.414	1.411	1.408	1.404
37	1.502	1.486	1.467	1.451	1.442	1.438	1.434	1.431	1.428	1.425	1.421
38	1.525	1.509	1.490	1.474	1.466	1.461	1.457	1.454	1.452	1.449	1.444
39	1.546	1.529	1.511	1.495	1.486	1.482	1.477	1.475	1.472	1.469	1.465
40	1.561	1.545	1.526	1.510	1.502	1.497	1.493	1.490	1.488	1.485	1.480
41	1.576	1.560	1.541	1.526	1.517	1.513	1.508	1.506	1.503	1.500	1.496
42	1.587	1.571	1.553	1.537	1.529	1.524	1.520	1.517	1.515	1.512	1.507
43	1.605	1.589	1.571	1.555	1.547	1.542	1.538	1.536	1.533	1.530	1.526
44	1.615	1.599	1.580	1.565	1.556	1.552	1.548	1.545	1.543	1.540	1.535
45	1.627	1.611	1.593	1.577	1.569	1.564	1.560	1.558	1.555	1.552	1.548
46	1.635	1.619	1.601	1.585	1.577	1.573	1.568	1.566	1.563	1.560	1.556
47	1.650	1.634	1.616	1.600	1.592	1.588	1.583	1.581	1.578	1.575	1.571
48	1.659	1.643	1.625	1.610	1.601	1.597	1.593	1.590	1.588	1.585	1.580
49	1.676	1.660	1.642	1.627	1.619	1.614	1.610	1.607	1.605	1.602	1.598
50	1.690	1.674	1.656	1.641	1.633	1.629	1.624	1.622	1.620	1.616	1.612
51	1.703	1.688	1.670	1.655	1.646	1.642	1.638	1.635	1.633	1.630	1.625
52	1.717	1.702	1.684	1.669	1.661	1.657	1.653	1.650	1.648	1.645	1.640
53	1.726	1.711	1.693	1.679	1.670	1.666	1.662	1.659	1.657	1.654	1.650
54	1.743	1.728	1.710	1.696	1.687	1.683	1.679	1.676	1.674	1.671	1.667
55	1.751	1.736	1.718	1.703	1.695	1.691	1.687	1.684	1.682	1.679	1.675
56	1.764	1.749	1.731	1.717	1.709	1.704	1.700	1.698	1.695	1.692	1.688
57	1.778	1.763	1.745	1.731	1.723	1.718	1.714	1.712	1.710	1.706	1.702
58	1.791	1.776	1.759	1.744	1.736	1.732	1.728	1.725	1.723	1.720	1.716
59	1.803	1.789	1.771	1.757	1.749	1.745	1.741	1.738	1.736	1.733	1.729
60	1.818	1.804	1.787	1.772	1.764	1.760	1.756	1.753	1.751	1.748	1.744

**f. Five Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.429	1.412	1.393	1.377	1.369	1.364	1.360	1.358	1.355	1.352	1.347
36	1.462	1.446	1.427	1.411	1.403	1.398	1.394	1.392	1.389	1.386	1.381
37	1.479	1.463	1.444	1.428	1.420	1.415	1.411	1.408	1.406	1.403	1.398
38	1.502	1.485	1.467	1.451	1.443	1.438	1.434	1.432	1.429	1.426	1.421
39	1.521	1.505	1.487	1.471	1.463	1.458	1.454	1.452	1.449	1.446	1.442
40	1.537	1.521	1.502	1.486	1.478	1.474	1.469	1.467	1.465	1.461	1.457
41	1.551	1.536	1.517	1.502	1.493	1.489	1.485	1.482	1.480	1.477	1.472
42	1.563	1.547	1.528	1.513	1.505	1.500	1.496	1.494	1.491	1.488	1.483
43	1.580	1.565	1.546	1.531	1.523	1.518	1.514	1.512	1.509	1.506	1.502
44	1.589	1.574	1.556	1.540	1.532	1.528	1.523	1.521	1.519	1.516	1.511
45	1.602	1.586	1.568	1.553	1.544	1.540	1.536	1.533	1.531	1.528	1.523
46	1.609	1.594	1.576	1.561	1.552	1.548	1.544	1.541	1.539	1.536	1.531
47	1.624	1.609	1.590	1.575	1.567	1.563	1.559	1.556	1.554	1.551	1.546
48	1.633	1.618	1.599	1.584	1.576	1.572	1.568	1.565	1.563	1.560	1.555
49	1.649	1.634	1.616	1.601	1.593	1.589	1.585	1.582	1.580	1.577	1.572
50	1.663	1.648	1.630	1.616	1.607	1.603	1.599	1.596	1.594	1.591	1.587
51	1.676	1.661	1.643	1.629	1.621	1.616	1.612	1.610	1.607	1.604	1.600
52	1.690	1.676	1.658	1.643	1.635	1.631	1.627	1.624	1.622	1.619	1.615
53	1.699	1.685	1.667	1.652	1.644	1.640	1.636	1.633	1.631	1.628	1.624
54	1.716	1.701	1.684	1.669	1.661	1.657	1.653	1.650	1.648	1.645	1.641
55	1.723	1.709	1.691	1.677	1.669	1.664	1.660	1.658	1.656	1.653	1.648
56	1.736	1.722	1.704	1.690	1.682	1.678	1.674	1.671	1.669	1.666	1.661
57	1.750	1.736	1.718	1.704	1.696	1.691	1.687	1.685	1.683	1.680	1.675
58	1.763	1.748	1.731	1.717	1.709	1.705	1.701	1.698	1.696	1.693	1.689
59	1.775	1.761	1.744	1.730	1.722	1.717	1.713	1.711	1.709	1.706	1.701
60	1.790	1.776	1.759	1.745	1.737	1.732	1.728	1.726	1.724	1.721	1.717

**g. Six Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.405	1.389	1.370	1.355	1.346	1.342	1.338	1.335	1.333	1.330	1.325
36	1.438	1.422	1.404	1.388	1.380	1.375	1.371	1.369	1.366	1.363	1.359
37	1.455	1.439	1.420	1.405	1.396	1.392	1.388	1.385	1.383	1.380	1.375
38	1.477	1.461	1.443	1.427	1.419	1.415	1.410	1.408	1.406	1.403	1.398
39	1.497	1.481	1.462	1.447	1.439	1.434	1.430	1.428	1.425	1.422	1.418
40	1.511	1.496	1.477	1.462	1.454	1.449	1.445	1.443	1.441	1.438	1.433
41	1.526	1.510	1.492	1.477	1.469	1.464	1.460	1.458	1.455	1.452	1.448
42	1.537	1.521	1.503	1.488	1.480	1.476	1.471	1.469	1.467	1.464	1.459
43	1.554	1.539	1.521	1.506	1.498	1.493	1.489	1.487	1.484	1.481	1.477
44	1.563	1.548	1.530	1.515	1.507	1.502	1.498	1.496	1.494	1.491	1.486
45	1.575	1.560	1.542	1.527	1.519	1.515	1.511	1.508	1.506	1.503	1.498
46	1.583	1.568	1.550	1.535	1.527	1.523	1.518	1.516	1.514	1.511	1.506
47	1.597	1.582	1.564	1.549	1.541	1.537	1.533	1.531	1.528	1.525	1.521
48	1.606	1.591	1.573	1.558	1.550	1.546	1.542	1.540	1.537	1.534	1.530
49	1.622	1.608	1.590	1.575	1.567	1.563	1.559	1.556	1.554	1.551	1.547
50	1.636	1.621	1.604	1.589	1.581	1.577	1.573	1.570	1.568	1.565	1.561
51	1.649	1.634	1.617	1.602	1.594	1.590	1.586	1.583	1.581	1.578	1.574
52	1.663	1.648	1.631	1.616	1.608	1.604	1.600	1.598	1.595	1.592	1.588
53	1.672	1.657	1.640	1.625	1.617	1.613	1.609	1.607	1.604	1.601	1.597
54	1.688	1.673	1.656	1.642	1.634	1.629	1.625	1.623	1.621	1.618	1.614
55	1.695	1.681	1.663	1.649	1.641	1.637	1.633	1.631	1.628	1.625	1.621
56	1.708	1.694	1.676	1.662	1.654	1.650	1.646	1.644	1.641	1.639	1.634
57	1.721	1.707	1.690	1.676	1.668	1.664	1.660	1.657	1.655	1.652	1.648
58	1.734	1.720	1.703	1.689	1.681	1.677	1.673	1.670	1.668	1.665	1.661
59	1.746	1.732	1.715	1.701	1.693	1.689	1.685	1.683	1.681	1.678	1.674
60	1.761	1.747	1.730	1.716	1.708	1.704	1.700	1.698	1.696	1.693	1.689

**h. Seven Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.380	1.365	1.346	1.331	1.323	1.318	1.314	1.312	1.309	1.306	1.302
36	1.413	1.397	1.379	1.364	1.356	1.351	1.347	1.345	1.342	1.339	1.335
37	1.429	1.413	1.395	1.380	1.372	1.367	1.363	1.361	1.359	1.356	1.351
38	1.451	1.435	1.417	1.402	1.394	1.390	1.386	1.383	1.381	1.378	1.373
39	1.470	1.455	1.437	1.422	1.414	1.409	1.405	1.403	1.400	1.397	1.393
40	1.485	1.469	1.451	1.436	1.428	1.424	1.420	1.418	1.415	1.412	1.408
41	1.499	1.484	1.466	1.451	1.443	1.439	1.435	1.432	1.430	1.427	1.422
42	1.510	1.495	1.477	1.462	1.454	1.450	1.446	1.443	1.441	1.438	1.433
43	1.527	1.512	1.494	1.479	1.471	1.467	1.463	1.461	1.458	1.455	1.451
44	1.536	1.521	1.503	1.488	1.480	1.476	1.472	1.470	1.467	1.464	1.460
45	1.548	1.533	1.515	1.500	1.492	1.488	1.484	1.482	1.479	1.476	1.472
46	1.555	1.540	1.523	1.508	1.500	1.496	1.492	1.489	1.487	1.484	1.480
47	1.569	1.554	1.537	1.522	1.514	1.510	1.506	1.504	1.501	1.498	1.494
48	1.578	1.563	1.546	1.531	1.523	1.519	1.515	1.513	1.510	1.507	1.503
49	1.594	1.579	1.562	1.548	1.540	1.535	1.531	1.529	1.527	1.524	1.520
50	1.608	1.593	1.576	1.561	1.553	1.549	1.545	1.543	1.541	1.538	1.533
51	1.620	1.605	1.588	1.574	1.566	1.562	1.558	1.555	1.553	1.550	1.546
52	1.634	1.619	1.602	1.588	1.580	1.576	1.572	1.570	1.567	1.565	1.560
53	1.642	1.628	1.611	1.597	1.589	1.585	1.581	1.578	1.576	1.573	1.569
54	1.658	1.644	1.627	1.613	1.605	1.601	1.597	1.595	1.592	1.590	1.585
55	1.665	1.651	1.634	1.620	1.613	1.608	1.604	1.602	1.600	1.597	1.593
56	1.678	1.664	1.647	1.633	1.625	1.621	1.617	1.615	1.613	1.610	1.606
57	1.691	1.677	1.660	1.646	1.639	1.635	1.631	1.628	1.626	1.623	1.619
58	1.704	1.690	1.673	1.659	1.652	1.647	1.643	1.641	1.639	1.636	1.632
59	1.716	1.702	1.685	1.671	1.664	1.660	1.656	1.653	1.651	1.648	1.644
60	1.730	1.716	1.700	1.686	1.678	1.674	1.670	1.668	1.666	1.663	1.659

**i. Eight Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.374	1.359	1.340	1.325	1.317	1.312	1.308	1.306	1.304	1.301	1.296
36	1.407	1.391	1.373	1.358	1.350	1.345	1.341	1.339	1.336	1.333	1.329
37	1.423	1.407	1.389	1.374	1.366	1.361	1.357	1.355	1.353	1.350	1.345
38	1.445	1.429	1.411	1.396	1.388	1.384	1.380	1.377	1.375	1.372	1.367
39	1.464	1.448	1.430	1.415	1.407	1.403	1.399	1.397	1.394	1.391	1.387
40	1.478	1.463	1.445	1.430	1.422	1.418	1.414	1.411	1.409	1.406	1.402
41	1.493	1.477	1.459	1.445	1.437	1.432	1.428	1.426	1.423	1.421	1.416
42	1.503	1.488	1.470	1.456	1.448	1.443	1.439	1.437	1.434	1.432	1.427
43	1.520	1.505	1.488	1.473	1.465	1.461	1.457	1.454	1.452	1.449	1.445
44	1.529	1.514	1.497	1.482	1.474	1.470	1.466	1.463	1.461	1.458	1.454
45	1.541	1.526	1.508	1.494	1.486	1.481	1.477	1.475	1.473	1.470	1.466
46	1.548	1.534	1.516	1.501	1.494	1.489	1.485	1.483	1.481	1.478	1.473
47	1.562	1.548	1.530	1.516	1.508	1.503	1.499	1.497	1.495	1.492	1.488
48	1.571	1.556	1.539	1.524	1.517	1.512	1.508	1.506	1.504	1.501	1.496
49	1.587	1.572	1.555	1.541	1.533	1.529	1.525	1.522	1.520	1.517	1.513
50	1.600	1.586	1.569	1.554	1.547	1.542	1.538	1.536	1.534	1.531	1.527
51	1.613	1.598	1.581	1.567	1.559	1.555	1.551	1.549	1.546	1.544	1.539
52	1.627	1.612	1.595	1.581	1.573	1.569	1.565	1.563	1.560	1.558	1.553
53	1.635	1.621	1.604	1.590	1.582	1.578	1.574	1.571	1.569	1.566	1.562
54	1.651	1.637	1.620	1.606	1.598	1.594	1.590	1.588	1.585	1.583	1.578
55	1.658	1.644	1.627	1.613	1.605	1.601	1.597	1.595	1.593	1.590	1.586
56	1.670	1.657	1.640	1.626	1.618	1.614	1.610	1.608	1.606	1.603	1.599
57	1.684	1.670	1.653	1.639	1.632	1.627	1.623	1.621	1.619	1.616	1.612
58	1.696	1.682	1.666	1.652	1.644	1.640	1.636	1.634	1.632	1.629	1.625
59	1.708	1.694	1.678	1.664	1.656	1.652	1.648	1.646	1.644	1.641	1.637
60	1.722	1.709	1.692	1.679	1.671	1.667	1.663	1.661	1.659	1.656	1.652



**j. Nine Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.360	1.345	1.327	1.312	1.304	1.299	1.295	1.293	1.290	1.288	1.283
36	1.392	1.377	1.359	1.344	1.336	1.332	1.328	1.325	1.323	1.320	1.316
37	1.408	1.393	1.375	1.360	1.352	1.348	1.344	1.341	1.339	1.336	1.332
38	1.430	1.415	1.397	1.382	1.374	1.370	1.366	1.363	1.361	1.358	1.354
39	1.449	1.434	1.416	1.401	1.393	1.389	1.385	1.382	1.380	1.377	1.373
40	1.463	1.448	1.430	1.416	1.408	1.403	1.399	1.397	1.395	1.392	1.387
41	1.477	1.462	1.445	1.430	1.422	1.418	1.414	1.411	1.409	1.406	1.402
42	1.488	1.473	1.455	1.441	1.433	1.429	1.425	1.422	1.420	1.417	1.413
43	1.505	1.490	1.472	1.458	1.450	1.446	1.442	1.439	1.437	1.434	1.430
44	1.514	1.499	1.481	1.467	1.459	1.455	1.451	1.448	1.446	1.443	1.439
45	1.525	1.510	1.493	1.478	1.471	1.466	1.462	1.460	1.458	1.455	1.451
46	1.533	1.518	1.501	1.486	1.478	1.474	1.470	1.468	1.465	1.463	1.458
47	1.546	1.532	1.514	1.500	1.492	1.488	1.484	1.482	1.480	1.477	1.472
48	1.555	1.540	1.523	1.509	1.501	1.497	1.493	1.491	1.488	1.485	1.481
49	1.571	1.556	1.539	1.525	1.517	1.513	1.509	1.507	1.505	1.502	1.497
50	1.584	1.570	1.553	1.538	1.531	1.527	1.523	1.520	1.518	1.515	1.511
51	1.596	1.582	1.565	1.551	1.543	1.539	1.535	1.533	1.531	1.528	1.524
52	1.610	1.596	1.579	1.565	1.557	1.553	1.549	1.547	1.545	1.542	1.538
53	1.618	1.604	1.587	1.573	1.566	1.562	1.558	1.555	1.553	1.550	1.546
54	1.634	1.620	1.603	1.589	1.582	1.578	1.574	1.571	1.569	1.566	1.562
55	1.641	1.627	1.610	1.597	1.589	1.585	1.581	1.579	1.577	1.574	1.570
56	1.653	1.640	1.623	1.609	1.602	1.597	1.594	1.591	1.589	1.586	1.582
57	1.666	1.653	1.636	1.622	1.615	1.611	1.607	1.605	1.602	1.600	1.595
58	1.678	1.665	1.649	1.635	1.627	1.623	1.619	1.617	1.615	1.612	1.608
59	1.690	1.677	1.661	1.647	1.639	1.635	1.632	1.629	1.627	1.624	1.620
60	1.705	1.691	1.675	1.661	1.654	1.650	1.646	1.644	1.642	1.639	1.635

**k. Ten Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.343	1.327	1.310	1.295	1.287	1.282	1.278	1.276	1.274	1.271	1.267
36	1.374	1.359	1.341	1.327	1.319	1.314	1.310	1.308	1.306	1.303	1.299
37	1.390	1.375	1.357	1.342	1.335	1.330	1.326	1.324	1.322	1.319	1.314
38	1.412	1.396	1.379	1.364	1.356	1.352	1.348	1.346	1.343	1.340	1.336
39	1.430	1.415	1.398	1.383	1.375	1.371	1.367	1.365	1.362	1.359	1.355
40	1.444	1.429	1.412	1.397	1.390	1.385	1.381	1.379	1.377	1.374	1.370
41	1.458	1.443	1.426	1.411	1.404	1.399	1.396	1.393	1.391	1.388	1.384
42	1.469	1.454	1.437	1.422	1.414	1.410	1.406	1.404	1.402	1.399	1.394
43	1.486	1.471	1.453	1.439	1.431	1.427	1.423	1.421	1.419	1.416	1.412
44	1.494	1.480	1.462	1.448	1.440	1.436	1.432	1.430	1.427	1.425	1.420
45	1.506	1.491	1.474	1.459	1.452	1.448	1.444	1.441	1.439	1.436	1.432
46	1.513	1.498	1.481	1.467	1.459	1.455	1.451	1.449	1.447	1.444	1.440
47	1.527	1.512	1.495	1.481	1.473	1.469	1.465	1.463	1.461	1.458	1.453
48	1.535	1.521	1.504	1.489	1.482	1.478	1.474	1.471	1.469	1.466	1.462
49	1.551	1.536	1.519	1.505	1.498	1.494	1.490	1.487	1.485	1.482	1.478
50	1.564	1.550	1.533	1.519	1.511	1.507	1.503	1.501	1.499	1.496	1.492
51	1.576	1.562	1.545	1.531	1.524	1.519	1.516	1.513	1.511	1.508	1.504
52	1.589	1.575	1.559	1.545	1.537	1.533	1.529	1.527	1.525	1.522	1.518
53	1.598	1.584	1.567	1.553	1.546	1.542	1.538	1.536	1.533	1.531	1.526
54	1.613	1.599	1.583	1.569	1.562	1.557	1.554	1.551	1.549	1.546	1.542
55	1.620	1.606	1.590	1.576	1.569	1.565	1.561	1.559	1.556	1.554	1.550
56	1.632	1.619	1.602	1.589	1.581	1.577	1.573	1.571	1.569	1.566	1.562
57	1.645	1.632	1.615	1.602	1.594	1.590	1.586	1.584	1.582	1.579	1.575
58	1.657	1.644	1.628	1.614	1.607	1.602	1.599	1.596	1.594	1.592	1.588
59	1.669	1.656	1.639	1.626	1.619	1.614	1.611	1.608	1.606	1.604	1.600
60	1.683	1.670	1.654	1.640	1.633	1.629	1.625	1.623	1.621	1.618	1.614

**I. Eleven Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.334	1.319	1.301	1.287	1.279	1.275	1.271	1.268	1.266	1.263	1.259
36	1.366	1.351	1.333	1.318	1.311	1.306	1.302	1.300	1.298	1.295	1.291
37	1.381	1.366	1.349	1.334	1.326	1.322	1.318	1.316	1.313	1.311	1.306
38	1.403	1.388	1.370	1.356	1.348	1.343	1.340	1.337	1.335	1.332	1.328
39	1.421	1.406	1.389	1.374	1.367	1.362	1.358	1.356	1.354	1.351	1.347
40	1.435	1.420	1.403	1.389	1.381	1.377	1.373	1.370	1.368	1.365	1.361
41	1.449	1.434	1.417	1.403	1.395	1.391	1.387	1.385	1.382	1.379	1.375
42	1.460	1.445	1.428	1.413	1.406	1.401	1.397	1.395	1.393	1.390	1.386
43	1.476	1.461	1.444	1.430	1.422	1.418	1.414	1.412	1.410	1.407	1.403
44	1.485	1.470	1.453	1.439	1.431	1.427	1.423	1.421	1.419	1.416	1.411
45	1.496	1.482	1.464	1.450	1.443	1.438	1.435	1.432	1.430	1.427	1.423
46	1.503	1.489	1.472	1.458	1.450	1.446	1.442	1.440	1.438	1.435	1.430
47	1.517	1.502	1.486	1.471	1.464	1.460	1.456	1.454	1.451	1.449	1.444
48	1.525	1.511	1.494	1.480	1.472	1.468	1.464	1.462	1.460	1.457	1.453
49	1.541	1.527	1.510	1.496	1.488	1.484	1.480	1.478	1.476	1.473	1.469
50	1.554	1.540	1.523	1.509	1.502	1.497	1.494	1.491	1.489	1.486	1.482
51	1.566	1.552	1.535	1.521	1.514	1.510	1.506	1.504	1.501	1.499	1.495
52	1.579	1.565	1.549	1.535	1.527	1.523	1.520	1.517	1.515	1.512	1.508
53	1.587	1.574	1.557	1.543	1.536	1.532	1.528	1.526	1.524	1.521	1.517
54	1.603	1.589	1.573	1.559	1.552	1.547	1.544	1.541	1.539	1.537	1.532
55	1.610	1.596	1.580	1.566	1.559	1.555	1.551	1.549	1.546	1.544	1.540
56	1.622	1.608	1.592	1.578	1.571	1.567	1.563	1.561	1.559	1.556	1.552
57	1.634	1.621	1.605	1.591	1.584	1.580	1.576	1.574	1.572	1.569	1.565
58	1.646	1.633	1.617	1.604	1.596	1.592	1.588	1.586	1.584	1.581	1.577
59	1.658	1.645	1.629	1.615	1.608	1.604	1.600	1.598	1.596	1.593	1.589
60	1.672	1.659	1.643	1.630	1.622	1.618	1.614	1.612	1.610	1.607	1.603

**m. Twelve Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.320	1.305	1.288	1.273	1.265	1.261	1.257	1.255	1.253	1.250	1.245
36	1.351	1.336	1.319	1.304	1.297	1.292	1.289	1.286	1.284	1.281	1.277
37	1.367	1.352	1.334	1.320	1.312	1.308	1.304	1.302	1.300	1.297	1.292
38	1.388	1.373	1.356	1.341	1.333	1.329	1.325	1.323	1.321	1.318	1.314
39	1.406	1.391	1.374	1.360	1.352	1.348	1.344	1.342	1.339	1.337	1.332
40	1.420	1.405	1.388	1.374	1.366	1.362	1.358	1.356	1.354	1.351	1.347
41	1.434	1.419	1.402	1.388	1.380	1.376	1.372	1.370	1.368	1.365	1.361
42	1.444	1.429	1.412	1.398	1.391	1.386	1.383	1.380	1.378	1.375	1.371
43	1.460	1.446	1.429	1.415	1.407	1.403	1.399	1.397	1.395	1.392	1.388
44	1.469	1.454	1.438	1.423	1.416	1.412	1.408	1.406	1.403	1.401	1.397
45	1.480	1.466	1.449	1.435	1.427	1.423	1.419	1.417	1.415	1.412	1.408
46	1.487	1.473	1.456	1.442	1.435	1.431	1.427	1.424	1.422	1.419	1.415
47	1.501	1.486	1.470	1.456	1.448	1.444	1.440	1.438	1.436	1.433	1.429
48	1.509	1.495	1.478	1.464	1.457	1.453	1.449	1.447	1.444	1.442	1.438
49	1.524	1.510	1.494	1.480	1.472	1.468	1.465	1.462	1.460	1.457	1.453
50	1.537	1.523	1.507	1.493	1.486	1.481	1.478	1.475	1.473	1.470	1.466
51	1.549	1.535	1.519	1.505	1.498	1.494	1.490	1.488	1.485	1.483	1.479
52	1.562	1.548	1.532	1.519	1.511	1.507	1.503	1.501	1.499	1.496	1.492
53	1.570	1.557	1.540	1.527	1.519	1.515	1.512	1.509	1.507	1.505	1.501
54	1.585	1.572	1.556	1.542	1.535	1.531	1.527	1.525	1.523	1.520	1.516
55	1.592	1.579	1.563	1.549	1.542	1.538	1.534	1.532	1.530	1.527	1.523
56	1.604	1.591	1.575	1.561	1.554	1.550	1.546	1.544	1.542	1.539	1.535
57	1.617	1.604	1.588	1.574	1.567	1.563	1.559	1.557	1.555	1.552	1.548
58	1.629	1.616	1.600	1.586	1.579	1.575	1.571	1.569	1.567	1.564	1.560
59	1.640	1.627	1.611	1.598	1.591	1.587	1.583	1.581	1.579	1.576	1.572
60	1.654	1.641	1.625	1.612	1.605	1.601	1.597	1.595	1.593	1.590	1.586

**n. Thirteen Closed Mondays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.312	1.297	1.280	1.265	1.258	1.253	1.249	1.247	1.245	1.242	1.238
36	1.343	1.328	1.311	1.296	1.289	1.285	1.281	1.278	1.276	1.273	1.269
37	1.358	1.343	1.326	1.312	1.304	1.300	1.296	1.294	1.292	1.289	1.285
38	1.379	1.364	1.347	1.333	1.325	1.321	1.317	1.315	1.313	1.310	1.306
39	1.397	1.383	1.366	1.351	1.344	1.340	1.336	1.333	1.331	1.328	1.324
40	1.411	1.397	1.380	1.365	1.358	1.354	1.350	1.348	1.345	1.343	1.338
41	1.425	1.410	1.393	1.379	1.372	1.367	1.364	1.361	1.359	1.356	1.352
42	1.435	1.421	1.404	1.390	1.382	1.378	1.374	1.372	1.370	1.367	1.363
43	1.451	1.437	1.420	1.406	1.399	1.394	1.391	1.388	1.386	1.383	1.379
44	1.460	1.446	1.429	1.415	1.407	1.403	1.399	1.397	1.395	1.392	1.388
45	1.471	1.457	1.440	1.426	1.419	1.414	1.411	1.408	1.406	1.403	1.399
46	1.478	1.464	1.447	1.433	1.426	1.422	1.418	1.416	1.414	1.411	1.407
47	1.491	1.477	1.461	1.447	1.439	1.435	1.432	1.429	1.427	1.424	1.420
48	1.500	1.486	1.469	1.455	1.448	1.444	1.440	1.438	1.436	1.433	1.429
49	1.515	1.501	1.485	1.471	1.463	1.459	1.456	1.453	1.451	1.448	1.444
50	1.528	1.514	1.498	1.484	1.477	1.472	1.469	1.466	1.464	1.462	1.458
51	1.540	1.526	1.510	1.496	1.489	1.485	1.481	1.479	1.476	1.474	1.470
52	1.553	1.539	1.523	1.509	1.502	1.498	1.494	1.492	1.490	1.487	1.483
53	1.561	1.547	1.531	1.518	1.510	1.506	1.503	1.500	1.498	1.496	1.492
54	1.576	1.563	1.546	1.533	1.526	1.522	1.518	1.516	1.514	1.511	1.507
55	1.583	1.570	1.553	1.540	1.533	1.529	1.525	1.523	1.521	1.518	1.514
56	1.595	1.581	1.565	1.552	1.545	1.541	1.537	1.535	1.533	1.530	1.526
57	1.607	1.594	1.578	1.565	1.558	1.554	1.550	1.548	1.546	1.543	1.539
58	1.619	1.606	1.590	1.577	1.570	1.566	1.562	1.560	1.558	1.555	1.551
59	1.631	1.618	1.602	1.589	1.581	1.578	1.574	1.572	1.570	1.567	1.563
60	1.644	1.631	1.616	1.603	1.595	1.591	1.588	1.586	1.584	1.581	1.577

**o. All Mondays Closed, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.284	1.269	1.252	1.238	1.231	1.226	1.223	1.220	1.218	1.215	1.211
36	1.314	1.300	1.283	1.269	1.261	1.257	1.253	1.251	1.249	1.246	1.242
37	1.329	1.314	1.298	1.284	1.276	1.272	1.268	1.266	1.264	1.261	1.257
38	1.349	1.335	1.318	1.304	1.297	1.293	1.289	1.287	1.285	1.282	1.278
39	1.367	1.353	1.336	1.322	1.315	1.311	1.307	1.305	1.303	1.300	1.296
40	1.380	1.366	1.350	1.336	1.329	1.324	1.321	1.319	1.316	1.314	1.309
41	1.394	1.380	1.363	1.350	1.342	1.338	1.334	1.332	1.330	1.327	1.323
42	1.404	1.390	1.373	1.360	1.352	1.348	1.344	1.342	1.340	1.337	1.333
43	1.420	1.406	1.389	1.376	1.368	1.364	1.361	1.358	1.356	1.354	1.349
44	1.428	1.414	1.398	1.384	1.377	1.373	1.369	1.367	1.365	1.362	1.358
45	1.439	1.425	1.409	1.395	1.388	1.384	1.380	1.378	1.376	1.373	1.369
46	1.446	1.432	1.416	1.402	1.395	1.391	1.387	1.385	1.383	1.380	1.376
47	1.459	1.445	1.429	1.415	1.408	1.404	1.400	1.398	1.396	1.393	1.389
48	1.467	1.453	1.437	1.424	1.416	1.412	1.409	1.406	1.404	1.402	1.398
49	1.482	1.468	1.452	1.439	1.432	1.428	1.424	1.422	1.420	1.417	1.413
50	1.494	1.481	1.465	1.452	1.444	1.440	1.437	1.434	1.432	1.430	1.426
51	1.506	1.492	1.477	1.463	1.456	1.452	1.449	1.446	1.444	1.442	1.438
52	1.518	1.505	1.489	1.476	1.469	1.465	1.461	1.459	1.457	1.455	1.451
53	1.526	1.513	1.498	1.485	1.477	1.473	1.470	1.468	1.465	1.463	1.459
54	1.541	1.528	1.512	1.500	1.492	1.488	1.485	1.483	1.481	1.478	1.474
55	1.548	1.535	1.519	1.506	1.499	1.495	1.492	1.489	1.487	1.485	1.481
56	1.559	1.547	1.531	1.518	1.511	1.507	1.503	1.501	1.499	1.496	1.493
57	1.572	1.559	1.543	1.531	1.523	1.519	1.516	1.514	1.512	1.509	1.505
58	1.583	1.570	1.555	1.542	1.535	1.531	1.528	1.525	1.523	1.521	1.517
59	1.594	1.582	1.566	1.554	1.547	1.543	1.539	1.537	1.535	1.532	1.528
60	1.607	1.595	1.580	1.567	1.560	1.556	1.553	1.550	1.548	1.546	1.542

Table A4. Projected charter removals (Mlb) for Area 3A in 2020 under a **two fish bag limit with all Tuesdays closed, a reverse slot limit on one fish ranging from U35O60 to U60O80, a size limit of 26-inches on the second fish and a range of Thursday closures** throughout the season. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**. Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Light shaded cells represent projections for the most liberal Thursday closures, upper size limits, and lower size limits that do not exceed the 1.24 Mlb allocation associated with the Reference TCEY scenario. Dark shaded cells represent projections for the most liberal Thursday closures, upper size limits, and lower size limits that do not exceed the 1.66 Mlb allocation associated with the Status Quo TCEY scenario.

**a. No Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.550	1.533	1.512	1.495	1.486	1.481	1.476	1.474	1.471	1.467	1.462
36	1.587	1.569	1.549	1.532	1.523	1.518	1.513	1.510	1.508	1.504	1.499
37	1.605	1.587	1.567	1.550	1.541	1.536	1.531	1.529	1.526	1.523	1.518
38	1.629	1.612	1.592	1.575	1.566	1.561	1.556	1.554	1.551	1.548	1.543
39	1.651	1.634	1.613	1.597	1.588	1.583	1.578	1.575	1.573	1.569	1.564
40	1.667	1.650	1.630	1.613	1.604	1.599	1.595	1.592	1.589	1.586	1.581
41	1.683	1.666	1.646	1.630	1.621	1.616	1.611	1.608	1.606	1.602	1.597
42	1.695	1.678	1.658	1.642	1.633	1.628	1.623	1.621	1.618	1.615	1.610
43	1.715	1.698	1.678	1.661	1.652	1.647	1.643	1.640	1.638	1.634	1.629
44	1.725	1.708	1.688	1.671	1.663	1.658	1.653	1.650	1.648	1.645	1.640
45	1.738	1.721	1.701	1.685	1.676	1.671	1.666	1.664	1.661	1.658	1.653
46	1.746	1.730	1.710	1.693	1.685	1.680	1.675	1.672	1.670	1.667	1.662
47	1.762	1.745	1.726	1.709	1.700	1.696	1.691	1.688	1.686	1.683	1.678
48	1.771	1.755	1.735	1.719	1.710	1.706	1.701	1.698	1.696	1.693	1.688
49	1.790	1.773	1.754	1.738	1.729	1.724	1.720	1.717	1.714	1.711	1.706
50	1.805	1.788	1.769	1.753	1.744	1.739	1.735	1.732	1.730	1.726	1.722
51	1.819	1.803	1.783	1.767	1.758	1.754	1.749	1.747	1.744	1.741	1.736
52	1.834	1.818	1.799	1.783	1.774	1.769	1.765	1.762	1.760	1.757	1.752
53	1.844	1.828	1.809	1.793	1.784	1.779	1.775	1.772	1.770	1.766	1.762
54	1.861	1.846	1.827	1.811	1.802	1.797	1.793	1.790	1.788	1.785	1.780
55	1.869	1.854	1.835	1.819	1.811	1.806	1.801	1.799	1.796	1.793	1.788
56	1.883	1.868	1.849	1.833	1.825	1.820	1.816	1.813	1.811	1.807	1.803
57	1.898	1.883	1.864	1.849	1.840	1.835	1.831	1.828	1.826	1.822	1.818
58	1.912	1.897	1.878	1.863	1.854	1.849	1.845	1.842	1.840	1.837	1.832
59	1.926	1.911	1.892	1.876	1.868	1.863	1.859	1.856	1.854	1.851	1.846
60	1.942	1.927	1.908	1.893	1.884	1.880	1.875	1.873	1.870	1.867	1.862

**b. One Closed Thursday, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.523	1.506	1.486	1.469	1.460	1.455	1.451	1.448	1.445	1.442	1.437
36	1.559	1.542	1.522	1.505	1.496	1.491	1.487	1.484	1.481	1.478	1.473
37	1.577	1.560	1.540	1.523	1.514	1.509	1.505	1.502	1.499	1.496	1.491
38	1.601	1.584	1.564	1.548	1.539	1.534	1.529	1.527	1.524	1.521	1.516
39	1.622	1.605	1.586	1.569	1.560	1.555	1.551	1.548	1.545	1.542	1.537
40	1.638	1.622	1.602	1.585	1.576	1.572	1.567	1.564	1.562	1.559	1.554
41	1.654	1.637	1.618	1.601	1.592	1.588	1.583	1.581	1.578	1.575	1.570
42	1.666	1.649	1.630	1.613	1.605	1.600	1.595	1.593	1.590	1.587	1.582
43	1.685	1.668	1.649	1.633	1.624	1.619	1.615	1.612	1.609	1.606	1.601
44	1.695	1.678	1.659	1.643	1.634	1.629	1.625	1.622	1.619	1.616	1.611
45	1.708	1.691	1.672	1.656	1.647	1.642	1.638	1.635	1.632	1.629	1.624
46	1.716	1.700	1.680	1.664	1.655	1.651	1.646	1.644	1.641	1.638	1.633
47	1.731	1.715	1.696	1.680	1.671	1.666	1.662	1.659	1.657	1.654	1.649
48	1.741	1.725	1.706	1.690	1.681	1.676	1.672	1.669	1.667	1.663	1.659
49	1.759	1.743	1.724	1.708	1.699	1.694	1.690	1.687	1.685	1.681	1.677
50	1.774	1.758	1.739	1.723	1.714	1.709	1.705	1.702	1.700	1.697	1.692
51	1.787	1.772	1.753	1.737	1.728	1.723	1.719	1.717	1.714	1.711	1.706
52	1.803	1.787	1.768	1.752	1.744	1.739	1.735	1.732	1.730	1.726	1.722
53	1.812	1.796	1.778	1.762	1.753	1.749	1.744	1.742	1.739	1.736	1.731
54	1.830	1.814	1.795	1.780	1.771	1.767	1.762	1.760	1.757	1.754	1.749
55	1.837	1.822	1.803	1.788	1.779	1.775	1.770	1.768	1.765	1.762	1.757
56	1.851	1.836	1.817	1.802	1.793	1.789	1.784	1.782	1.779	1.776	1.772
57	1.866	1.851	1.832	1.817	1.808	1.804	1.799	1.797	1.794	1.791	1.786
58	1.879	1.864	1.846	1.831	1.822	1.818	1.813	1.811	1.808	1.805	1.800
59	1.893	1.878	1.859	1.844	1.836	1.831	1.827	1.824	1.822	1.819	1.814
60	1.909	1.894	1.875	1.860	1.852	1.847	1.843	1.841	1.838	1.835	1.830

**c. Two Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.497	1.480	1.460	1.443	1.434	1.429	1.425	1.422	1.420	1.416	1.411
36	1.532	1.515	1.495	1.479	1.470	1.465	1.461	1.458	1.455	1.452	1.447
37	1.549	1.532	1.513	1.496	1.488	1.483	1.478	1.476	1.473	1.470	1.465
38	1.573	1.556	1.537	1.520	1.512	1.507	1.502	1.500	1.497	1.494	1.489
39	1.594	1.577	1.558	1.541	1.533	1.528	1.524	1.521	1.518	1.515	1.510
40	1.610	1.593	1.574	1.557	1.549	1.544	1.540	1.537	1.534	1.531	1.526
41	1.625	1.609	1.589	1.573	1.565	1.560	1.555	1.553	1.550	1.547	1.542
42	1.637	1.621	1.601	1.585	1.576	1.572	1.567	1.565	1.562	1.559	1.554
43	1.656	1.639	1.620	1.604	1.595	1.591	1.586	1.584	1.581	1.578	1.573
44	1.665	1.649	1.630	1.614	1.605	1.600	1.596	1.594	1.591	1.588	1.583
45	1.678	1.662	1.643	1.627	1.618	1.613	1.609	1.606	1.604	1.601	1.596
46	1.686	1.670	1.651	1.635	1.626	1.622	1.617	1.615	1.612	1.609	1.604
47	1.701	1.685	1.666	1.650	1.642	1.637	1.633	1.630	1.628	1.625	1.620
48	1.711	1.695	1.676	1.660	1.652	1.647	1.643	1.640	1.637	1.634	1.629
49	1.728	1.712	1.694	1.678	1.669	1.665	1.660	1.658	1.655	1.652	1.647
50	1.743	1.727	1.708	1.693	1.684	1.680	1.675	1.673	1.670	1.667	1.662
51	1.756	1.741	1.722	1.707	1.698	1.693	1.689	1.687	1.684	1.681	1.676
52	1.771	1.756	1.737	1.722	1.713	1.709	1.704	1.702	1.699	1.696	1.692
53	1.781	1.765	1.747	1.731	1.723	1.718	1.714	1.711	1.709	1.706	1.701
54	1.798	1.783	1.764	1.749	1.740	1.736	1.732	1.729	1.727	1.723	1.719
55	1.806	1.790	1.772	1.757	1.748	1.744	1.740	1.737	1.735	1.731	1.727
56	1.819	1.804	1.786	1.771	1.762	1.758	1.753	1.751	1.748	1.745	1.741
57	1.834	1.819	1.800	1.785	1.777	1.772	1.768	1.766	1.763	1.760	1.755
58	1.847	1.832	1.814	1.799	1.791	1.786	1.782	1.779	1.777	1.774	1.769
59	1.860	1.845	1.827	1.812	1.804	1.800	1.795	1.793	1.790	1.787	1.783
60	1.876	1.861	1.843	1.828	1.820	1.815	1.811	1.809	1.806	1.803	1.799

**d. Three Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.479	1.462	1.442	1.426	1.417	1.413	1.408	1.406	1.403	1.400	1.395
36	1.514	1.497	1.477	1.461	1.453	1.448	1.443	1.441	1.438	1.435	1.430
37	1.531	1.514	1.495	1.479	1.470	1.465	1.461	1.458	1.456	1.452	1.448
38	1.555	1.538	1.519	1.502	1.494	1.489	1.485	1.482	1.479	1.476	1.471
39	1.575	1.559	1.539	1.523	1.515	1.510	1.505	1.503	1.500	1.497	1.492
40	1.591	1.574	1.555	1.539	1.530	1.526	1.521	1.519	1.516	1.513	1.508
41	1.606	1.590	1.571	1.555	1.546	1.541	1.537	1.534	1.532	1.529	1.524
42	1.618	1.601	1.582	1.566	1.558	1.553	1.549	1.546	1.544	1.541	1.536
43	1.636	1.620	1.601	1.585	1.576	1.572	1.567	1.565	1.562	1.559	1.554
44	1.646	1.629	1.610	1.595	1.586	1.581	1.577	1.575	1.572	1.569	1.564
45	1.658	1.642	1.623	1.607	1.599	1.594	1.590	1.587	1.585	1.582	1.577
46	1.666	1.650	1.631	1.616	1.607	1.602	1.598	1.596	1.593	1.590	1.585
47	1.681	1.665	1.647	1.631	1.622	1.618	1.614	1.611	1.608	1.605	1.601
48	1.690	1.675	1.656	1.640	1.632	1.627	1.623	1.621	1.618	1.615	1.610
49	1.708	1.692	1.673	1.658	1.650	1.645	1.641	1.638	1.636	1.633	1.628
50	1.722	1.707	1.688	1.673	1.664	1.660	1.655	1.653	1.650	1.647	1.643
51	1.736	1.720	1.702	1.686	1.678	1.673	1.669	1.667	1.664	1.661	1.656
52	1.750	1.735	1.717	1.701	1.693	1.688	1.684	1.682	1.679	1.676	1.672
53	1.759	1.744	1.726	1.711	1.702	1.698	1.694	1.691	1.689	1.686	1.681
54	1.776	1.761	1.743	1.728	1.720	1.715	1.711	1.709	1.706	1.703	1.699
55	1.784	1.769	1.751	1.736	1.728	1.723	1.719	1.716	1.714	1.711	1.706
56	1.798	1.783	1.765	1.750	1.741	1.737	1.733	1.730	1.728	1.725	1.720
57	1.812	1.797	1.779	1.764	1.756	1.751	1.747	1.745	1.742	1.739	1.735
58	1.825	1.810	1.792	1.778	1.769	1.765	1.761	1.758	1.756	1.753	1.748
59	1.838	1.823	1.806	1.791	1.783	1.778	1.774	1.771	1.769	1.766	1.762
60	1.853	1.839	1.821	1.806	1.798	1.794	1.790	1.787	1.785	1.782	1.777

**e. Four Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.451	1.434	1.415	1.399	1.391	1.386	1.382	1.379	1.376	1.373	1.369
36	1.485	1.469	1.450	1.434	1.425	1.420	1.416	1.414	1.411	1.408	1.403
37	1.502	1.486	1.467	1.451	1.442	1.437	1.433	1.431	1.428	1.425	1.420
38	1.525	1.509	1.490	1.474	1.466	1.461	1.457	1.454	1.452	1.448	1.444
39	1.545	1.529	1.510	1.494	1.486	1.481	1.477	1.475	1.472	1.469	1.464
40	1.561	1.545	1.526	1.510	1.502	1.497	1.493	1.490	1.488	1.485	1.480
41	1.576	1.560	1.541	1.525	1.517	1.512	1.508	1.505	1.503	1.500	1.495
42	1.587	1.571	1.552	1.537	1.528	1.524	1.520	1.517	1.515	1.511	1.507
43	1.605	1.589	1.571	1.555	1.547	1.542	1.538	1.535	1.533	1.530	1.525
44	1.615	1.599	1.580	1.565	1.556	1.552	1.547	1.545	1.542	1.539	1.535
45	1.627	1.611	1.593	1.577	1.569	1.564	1.560	1.557	1.555	1.552	1.547
46	1.635	1.619	1.601	1.585	1.577	1.572	1.568	1.566	1.563	1.560	1.555
47	1.649	1.634	1.615	1.600	1.592	1.587	1.583	1.581	1.578	1.575	1.571
48	1.659	1.643	1.625	1.609	1.601	1.597	1.592	1.590	1.588	1.584	1.580
49	1.676	1.660	1.642	1.627	1.618	1.614	1.610	1.607	1.605	1.602	1.597
50	1.690	1.674	1.656	1.641	1.633	1.628	1.624	1.622	1.619	1.616	1.612
51	1.703	1.688	1.670	1.655	1.646	1.642	1.638	1.635	1.633	1.630	1.625
52	1.717	1.702	1.684	1.669	1.661	1.657	1.652	1.650	1.648	1.645	1.640
53	1.726	1.711	1.693	1.678	1.670	1.666	1.662	1.659	1.657	1.654	1.649
54	1.743	1.728	1.710	1.695	1.687	1.683	1.679	1.676	1.674	1.671	1.667
55	1.751	1.736	1.718	1.703	1.695	1.691	1.687	1.684	1.682	1.679	1.674
56	1.764	1.749	1.731	1.717	1.708	1.704	1.700	1.697	1.695	1.692	1.688
57	1.778	1.763	1.745	1.731	1.723	1.718	1.714	1.712	1.709	1.706	1.702
58	1.791	1.776	1.759	1.744	1.736	1.732	1.727	1.725	1.723	1.720	1.715
59	1.803	1.789	1.771	1.757	1.749	1.745	1.740	1.738	1.736	1.733	1.728
60	1.818	1.804	1.787	1.772	1.764	1.760	1.756	1.753	1.751	1.748	1.744

**f. Five Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.429	1.412	1.393	1.377	1.369	1.364	1.360	1.358	1.355	1.352	1.347
36	1.462	1.446	1.427	1.411	1.403	1.398	1.394	1.392	1.389	1.386	1.381
37	1.479	1.463	1.444	1.428	1.420	1.415	1.411	1.409	1.406	1.403	1.398
38	1.502	1.486	1.467	1.451	1.443	1.438	1.434	1.432	1.429	1.426	1.421
39	1.522	1.506	1.487	1.471	1.463	1.458	1.454	1.452	1.449	1.446	1.442
40	1.537	1.521	1.502	1.487	1.478	1.474	1.470	1.467	1.465	1.462	1.457
41	1.552	1.536	1.517	1.502	1.493	1.489	1.485	1.482	1.480	1.477	1.472
42	1.563	1.547	1.529	1.513	1.505	1.500	1.496	1.494	1.491	1.488	1.484
43	1.581	1.565	1.546	1.531	1.523	1.518	1.514	1.512	1.509	1.506	1.502
44	1.590	1.574	1.556	1.541	1.532	1.528	1.524	1.521	1.519	1.516	1.511
45	1.602	1.586	1.568	1.553	1.545	1.540	1.536	1.534	1.531	1.528	1.523
46	1.610	1.594	1.576	1.561	1.553	1.548	1.544	1.542	1.539	1.536	1.532
47	1.624	1.609	1.591	1.576	1.567	1.563	1.559	1.556	1.554	1.551	1.546
48	1.633	1.618	1.600	1.585	1.577	1.572	1.568	1.566	1.563	1.560	1.556
49	1.650	1.635	1.617	1.602	1.594	1.589	1.585	1.583	1.580	1.577	1.573
50	1.664	1.649	1.631	1.616	1.608	1.603	1.599	1.597	1.594	1.592	1.587
51	1.677	1.662	1.644	1.629	1.621	1.617	1.613	1.610	1.608	1.605	1.600
52	1.691	1.676	1.658	1.644	1.636	1.631	1.627	1.625	1.622	1.619	1.615
53	1.700	1.685	1.668	1.653	1.645	1.640	1.636	1.634	1.632	1.629	1.624
54	1.716	1.702	1.684	1.670	1.662	1.657	1.653	1.651	1.648	1.645	1.641
55	1.724	1.709	1.692	1.677	1.669	1.665	1.661	1.658	1.656	1.653	1.649
56	1.737	1.722	1.705	1.690	1.682	1.678	1.674	1.672	1.669	1.666	1.662
57	1.751	1.736	1.719	1.704	1.696	1.692	1.688	1.686	1.683	1.680	1.676
58	1.763	1.749	1.732	1.717	1.709	1.705	1.701	1.699	1.696	1.693	1.689
59	1.776	1.762	1.745	1.730	1.722	1.718	1.714	1.712	1.709	1.706	1.702
60	1.791	1.777	1.760	1.745	1.737	1.733	1.729	1.727	1.724	1.721	1.717

**g. Six Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.404	1.388	1.369	1.354	1.346	1.341	1.337	1.334	1.332	1.329	1.324
36	1.437	1.421	1.403	1.387	1.379	1.374	1.370	1.368	1.365	1.362	1.358
37	1.454	1.438	1.419	1.404	1.396	1.391	1.387	1.384	1.382	1.379	1.374
38	1.476	1.460	1.442	1.426	1.418	1.414	1.410	1.407	1.405	1.402	1.397
39	1.496	1.480	1.462	1.446	1.438	1.433	1.429	1.427	1.424	1.421	1.417
40	1.511	1.495	1.477	1.461	1.453	1.449	1.444	1.442	1.440	1.437	1.432
41	1.525	1.510	1.491	1.476	1.468	1.463	1.459	1.457	1.454	1.451	1.447
42	1.536	1.521	1.502	1.487	1.479	1.475	1.471	1.468	1.466	1.463	1.458
43	1.554	1.538	1.520	1.505	1.497	1.492	1.488	1.486	1.483	1.480	1.476
44	1.563	1.547	1.529	1.514	1.506	1.502	1.498	1.495	1.493	1.490	1.485
45	1.575	1.559	1.541	1.526	1.518	1.514	1.510	1.507	1.505	1.502	1.497
46	1.582	1.567	1.549	1.534	1.526	1.522	1.518	1.515	1.513	1.510	1.505
47	1.597	1.581	1.564	1.549	1.541	1.536	1.532	1.530	1.527	1.524	1.520
48	1.605	1.590	1.573	1.558	1.550	1.545	1.541	1.539	1.536	1.533	1.529
49	1.622	1.607	1.589	1.574	1.566	1.562	1.558	1.556	1.553	1.550	1.546
50	1.636	1.621	1.603	1.588	1.580	1.576	1.572	1.570	1.567	1.564	1.560
51	1.648	1.634	1.616	1.601	1.593	1.589	1.585	1.583	1.580	1.577	1.573
52	1.662	1.648	1.630	1.616	1.608	1.603	1.599	1.597	1.595	1.592	1.587
53	1.671	1.656	1.639	1.625	1.617	1.612	1.608	1.606	1.604	1.601	1.596
54	1.687	1.673	1.655	1.641	1.633	1.629	1.625	1.623	1.620	1.617	1.613
55	1.695	1.680	1.663	1.649	1.641	1.636	1.632	1.630	1.628	1.625	1.620
56	1.707	1.693	1.676	1.662	1.654	1.649	1.645	1.643	1.641	1.638	1.633
57	1.721	1.707	1.689	1.675	1.667	1.663	1.659	1.657	1.654	1.652	1.647
58	1.733	1.719	1.702	1.688	1.680	1.676	1.672	1.670	1.667	1.665	1.660
59	1.746	1.732	1.715	1.701	1.693	1.689	1.685	1.682	1.680	1.677	1.673
60	1.760	1.746	1.730	1.716	1.708	1.704	1.700	1.697	1.695	1.692	1.688

**h. Seven Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.392	1.376	1.357	1.342	1.334	1.329	1.325	1.323	1.320	1.317	1.313
36	1.425	1.409	1.390	1.375	1.367	1.362	1.358	1.356	1.353	1.350	1.346
37	1.441	1.425	1.407	1.391	1.383	1.379	1.375	1.372	1.370	1.367	1.362
38	1.463	1.447	1.429	1.414	1.406	1.401	1.397	1.395	1.392	1.389	1.385
39	1.482	1.467	1.449	1.433	1.425	1.421	1.417	1.414	1.412	1.409	1.404
40	1.497	1.482	1.463	1.448	1.440	1.436	1.432	1.429	1.427	1.424	1.419
41	1.512	1.496	1.478	1.463	1.455	1.450	1.446	1.444	1.442	1.439	1.434
42	1.522	1.507	1.489	1.474	1.466	1.462	1.457	1.455	1.453	1.450	1.445
43	1.540	1.524	1.506	1.492	1.484	1.479	1.475	1.473	1.470	1.467	1.463
44	1.549	1.534	1.516	1.501	1.493	1.488	1.484	1.482	1.479	1.477	1.472
45	1.561	1.545	1.528	1.513	1.505	1.500	1.496	1.494	1.492	1.489	1.484
46	1.568	1.553	1.535	1.521	1.513	1.508	1.504	1.502	1.499	1.496	1.492
47	1.582	1.567	1.550	1.535	1.527	1.523	1.519	1.516	1.514	1.511	1.507
48	1.591	1.576	1.559	1.544	1.536	1.532	1.528	1.525	1.523	1.520	1.516
49	1.607	1.593	1.575	1.560	1.553	1.548	1.544	1.542	1.539	1.537	1.532
50	1.621	1.606	1.589	1.574	1.566	1.562	1.558	1.556	1.553	1.551	1.546
51	1.634	1.619	1.602	1.587	1.579	1.575	1.571	1.569	1.566	1.563	1.559
52	1.647	1.633	1.616	1.601	1.593	1.589	1.585	1.583	1.581	1.578	1.573
53	1.656	1.642	1.624	1.610	1.602	1.598	1.594	1.592	1.589	1.587	1.582
54	1.672	1.658	1.641	1.627	1.619	1.614	1.611	1.608	1.606	1.603	1.599
55	1.679	1.665	1.648	1.634	1.626	1.622	1.618	1.616	1.613	1.610	1.606
56	1.692	1.678	1.661	1.647	1.639	1.635	1.631	1.629	1.626	1.623	1.619
57	1.705	1.691	1.674	1.660	1.653	1.648	1.644	1.642	1.640	1.637	1.633
58	1.718	1.704	1.687	1.673	1.665	1.661	1.657	1.655	1.653	1.650	1.646
59	1.730	1.716	1.700	1.686	1.678	1.674	1.670	1.667	1.665	1.662	1.658
60	1.745	1.731	1.714	1.700	1.693	1.688	1.685	1.682	1.680	1.677	1.673

**i. Eight Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.372	1.357	1.338	1.323	1.315	1.310	1.306	1.304	1.302	1.299	1.294
36	1.405	1.389	1.371	1.356	1.348	1.343	1.339	1.337	1.334	1.331	1.327
37	1.421	1.405	1.387	1.372	1.364	1.359	1.355	1.353	1.350	1.348	1.343
38	1.443	1.427	1.409	1.394	1.386	1.381	1.377	1.375	1.373	1.370	1.365
39	1.462	1.446	1.428	1.413	1.405	1.401	1.397	1.394	1.392	1.389	1.385
40	1.476	1.461	1.443	1.428	1.420	1.416	1.412	1.409	1.407	1.404	1.399
41	1.490	1.475	1.457	1.442	1.434	1.430	1.426	1.424	1.421	1.418	1.414
42	1.501	1.486	1.468	1.453	1.445	1.441	1.437	1.435	1.432	1.429	1.425
43	1.518	1.503	1.485	1.471	1.463	1.458	1.454	1.452	1.450	1.447	1.442
44	1.527	1.512	1.494	1.480	1.472	1.467	1.463	1.461	1.459	1.456	1.451
45	1.539	1.524	1.506	1.492	1.484	1.479	1.475	1.473	1.471	1.468	1.463
46	1.546	1.531	1.514	1.499	1.491	1.487	1.483	1.481	1.478	1.475	1.471
47	1.560	1.545	1.528	1.513	1.506	1.501	1.497	1.495	1.493	1.490	1.485
48	1.569	1.554	1.537	1.522	1.514	1.510	1.506	1.504	1.502	1.499	1.494
49	1.585	1.570	1.553	1.539	1.531	1.527	1.523	1.520	1.518	1.515	1.511
50	1.598	1.584	1.567	1.552	1.545	1.540	1.536	1.534	1.532	1.529	1.525
51	1.611	1.596	1.579	1.565	1.557	1.553	1.549	1.547	1.544	1.542	1.537
52	1.625	1.610	1.593	1.579	1.571	1.567	1.563	1.561	1.559	1.556	1.551
53	1.633	1.619	1.602	1.588	1.580	1.576	1.572	1.570	1.567	1.564	1.560
54	1.649	1.635	1.618	1.604	1.596	1.592	1.588	1.586	1.584	1.581	1.576
55	1.656	1.642	1.625	1.611	1.604	1.599	1.595	1.593	1.591	1.588	1.584
56	1.669	1.655	1.638	1.624	1.616	1.612	1.608	1.606	1.604	1.601	1.597
57	1.682	1.668	1.651	1.637	1.630	1.625	1.622	1.619	1.617	1.614	1.610
58	1.694	1.680	1.664	1.650	1.642	1.638	1.634	1.632	1.630	1.627	1.623
59	1.706	1.693	1.676	1.662	1.655	1.650	1.647	1.644	1.642	1.639	1.635
60	1.721	1.707	1.691	1.677	1.669	1.665	1.661	1.659	1.657	1.654	1.650



**j. Nine Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.351	1.335	1.317	1.302	1.295	1.290	1.286	1.284	1.281	1.279	1.274
36	1.383	1.367	1.350	1.335	1.327	1.322	1.318	1.316	1.314	1.311	1.306
37	1.398	1.383	1.365	1.350	1.343	1.338	1.334	1.332	1.330	1.327	1.322
38	1.420	1.405	1.387	1.372	1.364	1.360	1.356	1.354	1.351	1.348	1.344
39	1.439	1.424	1.406	1.391	1.383	1.379	1.375	1.373	1.370	1.368	1.363
40	1.453	1.438	1.420	1.406	1.398	1.394	1.390	1.387	1.385	1.382	1.378
41	1.467	1.452	1.435	1.420	1.412	1.408	1.404	1.402	1.399	1.396	1.392
42	1.478	1.463	1.445	1.431	1.423	1.419	1.415	1.412	1.410	1.407	1.403
43	1.495	1.480	1.462	1.448	1.440	1.436	1.432	1.429	1.427	1.424	1.420
44	1.503	1.488	1.471	1.457	1.449	1.445	1.441	1.438	1.436	1.433	1.429
45	1.515	1.500	1.483	1.468	1.461	1.456	1.452	1.450	1.448	1.445	1.441
46	1.522	1.508	1.490	1.476	1.468	1.464	1.460	1.458	1.455	1.453	1.448
47	1.536	1.521	1.504	1.490	1.482	1.478	1.474	1.472	1.469	1.467	1.462
48	1.544	1.530	1.513	1.499	1.491	1.487	1.483	1.480	1.478	1.475	1.471
49	1.560	1.546	1.529	1.515	1.507	1.503	1.499	1.497	1.494	1.491	1.487
50	1.573	1.559	1.542	1.528	1.520	1.516	1.512	1.510	1.508	1.505	1.501
51	1.586	1.571	1.555	1.541	1.533	1.529	1.525	1.523	1.520	1.517	1.513
52	1.599	1.585	1.568	1.554	1.547	1.542	1.539	1.536	1.534	1.531	1.527
53	1.607	1.594	1.577	1.563	1.555	1.551	1.547	1.545	1.543	1.540	1.536
54	1.623	1.609	1.593	1.579	1.571	1.567	1.563	1.561	1.559	1.556	1.552
55	1.630	1.616	1.600	1.586	1.578	1.574	1.570	1.568	1.566	1.563	1.559
56	1.642	1.629	1.612	1.598	1.591	1.587	1.583	1.581	1.579	1.576	1.572
57	1.655	1.642	1.625	1.612	1.604	1.600	1.596	1.594	1.592	1.589	1.585
58	1.667	1.654	1.638	1.624	1.617	1.612	1.609	1.606	1.604	1.601	1.597
59	1.679	1.666	1.650	1.636	1.629	1.625	1.621	1.618	1.616	1.614	1.609
60	1.693	1.680	1.664	1.650	1.643	1.639	1.635	1.633	1.631	1.628	1.624

**k. Ten Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.331	1.316	1.298	1.284	1.276	1.271	1.268	1.265	1.263	1.260	1.256
36	1.363	1.348	1.330	1.315	1.308	1.303	1.299	1.297	1.295	1.292	1.287
37	1.378	1.363	1.346	1.331	1.323	1.319	1.315	1.313	1.310	1.307	1.303
38	1.400	1.385	1.367	1.352	1.345	1.340	1.336	1.334	1.332	1.329	1.325
39	1.418	1.403	1.386	1.371	1.363	1.359	1.355	1.353	1.351	1.348	1.343
40	1.432	1.417	1.400	1.385	1.378	1.373	1.370	1.367	1.365	1.362	1.358
41	1.446	1.431	1.414	1.400	1.392	1.388	1.384	1.381	1.379	1.376	1.372
42	1.456	1.442	1.424	1.410	1.402	1.398	1.394	1.392	1.390	1.387	1.383
43	1.473	1.458	1.441	1.427	1.419	1.415	1.411	1.409	1.407	1.404	1.399
44	1.482	1.467	1.450	1.436	1.428	1.424	1.420	1.418	1.415	1.413	1.408
45	1.493	1.478	1.461	1.447	1.439	1.435	1.431	1.429	1.427	1.424	1.420
46	1.500	1.486	1.469	1.455	1.447	1.443	1.439	1.437	1.434	1.432	1.427
47	1.514	1.499	1.482	1.468	1.461	1.457	1.453	1.450	1.448	1.445	1.441
48	1.522	1.508	1.491	1.477	1.469	1.465	1.461	1.459	1.457	1.454	1.450
49	1.538	1.524	1.507	1.493	1.485	1.481	1.477	1.475	1.473	1.470	1.466
50	1.551	1.537	1.520	1.506	1.498	1.494	1.491	1.488	1.486	1.483	1.479
51	1.563	1.549	1.532	1.518	1.511	1.507	1.503	1.501	1.498	1.496	1.491
52	1.576	1.562	1.546	1.532	1.524	1.520	1.516	1.514	1.512	1.509	1.505
53	1.584	1.571	1.554	1.540	1.533	1.529	1.525	1.523	1.521	1.518	1.514
54	1.600	1.586	1.570	1.556	1.549	1.544	1.541	1.538	1.536	1.534	1.529
55	1.607	1.593	1.577	1.563	1.556	1.552	1.548	1.546	1.543	1.541	1.537
56	1.619	1.605	1.589	1.576	1.568	1.564	1.560	1.558	1.556	1.553	1.549
57	1.632	1.618	1.602	1.588	1.581	1.577	1.573	1.571	1.569	1.566	1.562
58	1.644	1.630	1.614	1.601	1.593	1.589	1.586	1.583	1.581	1.578	1.574
59	1.655	1.642	1.626	1.613	1.605	1.601	1.597	1.595	1.593	1.590	1.586
60	1.669	1.656	1.640	1.627	1.619	1.615	1.612	1.609	1.607	1.605	1.601

**I. Eleven Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.324	1.308	1.291	1.276	1.268	1.264	1.260	1.258	1.256	1.253	1.248
36	1.355	1.340	1.322	1.308	1.300	1.296	1.292	1.289	1.287	1.284	1.280
37	1.370	1.355	1.338	1.323	1.315	1.311	1.307	1.305	1.303	1.300	1.296
38	1.391	1.376	1.359	1.345	1.337	1.333	1.329	1.326	1.324	1.321	1.317
39	1.410	1.395	1.378	1.363	1.355	1.351	1.347	1.345	1.343	1.340	1.336
40	1.424	1.409	1.392	1.377	1.370	1.365	1.362	1.359	1.357	1.354	1.350
41	1.438	1.423	1.406	1.391	1.384	1.379	1.376	1.373	1.371	1.368	1.364
42	1.448	1.433	1.416	1.402	1.394	1.390	1.386	1.384	1.382	1.379	1.375
43	1.464	1.450	1.433	1.419	1.411	1.407	1.403	1.401	1.398	1.396	1.391
44	1.473	1.458	1.441	1.427	1.420	1.415	1.412	1.409	1.407	1.404	1.400
45	1.484	1.470	1.453	1.439	1.431	1.427	1.423	1.421	1.419	1.416	1.412
46	1.491	1.477	1.460	1.446	1.439	1.434	1.431	1.428	1.426	1.423	1.419
47	1.505	1.491	1.474	1.460	1.452	1.448	1.444	1.442	1.440	1.437	1.433
48	1.513	1.499	1.482	1.468	1.461	1.457	1.453	1.451	1.448	1.446	1.441
49	1.529	1.515	1.498	1.484	1.477	1.472	1.469	1.466	1.464	1.461	1.457
50	1.542	1.528	1.511	1.497	1.490	1.486	1.482	1.480	1.477	1.475	1.471
51	1.554	1.540	1.523	1.509	1.502	1.498	1.494	1.492	1.490	1.487	1.483
52	1.567	1.553	1.537	1.523	1.515	1.511	1.508	1.505	1.503	1.500	1.496
53	1.575	1.561	1.545	1.531	1.524	1.520	1.516	1.514	1.512	1.509	1.505
54	1.590	1.577	1.560	1.547	1.540	1.535	1.532	1.529	1.527	1.525	1.521
55	1.597	1.584	1.568	1.554	1.547	1.543	1.539	1.537	1.534	1.532	1.528
56	1.609	1.596	1.580	1.566	1.559	1.555	1.551	1.549	1.547	1.544	1.540
57	1.622	1.609	1.593	1.579	1.572	1.568	1.564	1.562	1.560	1.557	1.553
58	1.634	1.621	1.605	1.591	1.584	1.580	1.576	1.574	1.572	1.569	1.565
59	1.646	1.632	1.616	1.603	1.596	1.592	1.588	1.586	1.584	1.581	1.577
60	1.659	1.646	1.630	1.617	1.610	1.606	1.602	1.600	1.598	1.595	1.591

**m. Twelve Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.311	1.296	1.278	1.264	1.256	1.252	1.248	1.245	1.243	1.240	1.236
36	1.342	1.327	1.309	1.295	1.287	1.283	1.279	1.277	1.274	1.272	1.267
37	1.357	1.342	1.325	1.310	1.303	1.298	1.294	1.292	1.290	1.287	1.283
38	1.378	1.363	1.346	1.331	1.324	1.319	1.316	1.313	1.311	1.308	1.304
39	1.396	1.381	1.364	1.350	1.342	1.338	1.334	1.332	1.330	1.327	1.323
40	1.410	1.395	1.378	1.364	1.356	1.352	1.348	1.346	1.344	1.341	1.337
41	1.423	1.409	1.392	1.378	1.370	1.366	1.362	1.360	1.358	1.355	1.351
42	1.434	1.419	1.402	1.388	1.380	1.376	1.373	1.370	1.368	1.365	1.361
43	1.450	1.436	1.419	1.405	1.397	1.393	1.389	1.387	1.385	1.382	1.378
44	1.458	1.444	1.427	1.413	1.406	1.401	1.398	1.395	1.393	1.391	1.386
45	1.470	1.455	1.438	1.425	1.417	1.413	1.409	1.407	1.405	1.402	1.398
46	1.477	1.463	1.446	1.432	1.424	1.420	1.416	1.414	1.412	1.409	1.405
47	1.490	1.476	1.459	1.445	1.438	1.434	1.430	1.428	1.426	1.423	1.419
48	1.498	1.484	1.468	1.454	1.446	1.442	1.438	1.436	1.434	1.431	1.427
49	1.514	1.500	1.483	1.469	1.462	1.458	1.454	1.452	1.450	1.447	1.443
50	1.526	1.513	1.496	1.482	1.475	1.471	1.467	1.465	1.463	1.460	1.456
51	1.538	1.525	1.508	1.495	1.487	1.483	1.479	1.477	1.475	1.472	1.468
52	1.551	1.538	1.521	1.508	1.501	1.496	1.493	1.491	1.488	1.486	1.482
53	1.560	1.546	1.530	1.516	1.509	1.505	1.501	1.499	1.497	1.494	1.490
54	1.575	1.561	1.545	1.532	1.524	1.520	1.517	1.514	1.512	1.510	1.506
55	1.582	1.568	1.552	1.539	1.531	1.527	1.524	1.521	1.519	1.517	1.513
56	1.593	1.580	1.564	1.551	1.544	1.540	1.536	1.534	1.532	1.529	1.525
57	1.606	1.593	1.577	1.564	1.556	1.552	1.549	1.546	1.544	1.542	1.538
58	1.618	1.605	1.589	1.576	1.568	1.564	1.561	1.558	1.556	1.554	1.550
59	1.629	1.616	1.600	1.587	1.580	1.576	1.572	1.570	1.568	1.566	1.562
60	1.643	1.630	1.614	1.601	1.594	1.590	1.586	1.584	1.582	1.579	1.576

**n. Thirteen Closed Thursdays, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.302	1.287	1.270	1.255	1.248	1.243	1.239	1.237	1.235	1.232	1.228
36	1.333	1.318	1.301	1.286	1.279	1.274	1.271	1.268	1.266	1.263	1.259
37	1.348	1.333	1.316	1.301	1.294	1.290	1.286	1.284	1.281	1.279	1.274
38	1.369	1.354	1.337	1.323	1.315	1.311	1.307	1.305	1.302	1.300	1.295
39	1.387	1.372	1.355	1.341	1.333	1.329	1.325	1.323	1.321	1.318	1.314
40	1.400	1.386	1.369	1.355	1.347	1.343	1.339	1.337	1.335	1.332	1.328
41	1.414	1.400	1.383	1.369	1.361	1.357	1.353	1.351	1.349	1.346	1.342
42	1.424	1.410	1.393	1.379	1.371	1.367	1.363	1.361	1.359	1.356	1.352
43	1.440	1.426	1.409	1.395	1.388	1.384	1.380	1.378	1.375	1.373	1.369
44	1.449	1.435	1.418	1.404	1.396	1.392	1.388	1.386	1.384	1.381	1.377
45	1.460	1.446	1.429	1.415	1.408	1.403	1.400	1.397	1.395	1.393	1.388
46	1.467	1.453	1.436	1.422	1.415	1.411	1.407	1.405	1.403	1.400	1.396
47	1.480	1.466	1.450	1.436	1.428	1.424	1.421	1.418	1.416	1.413	1.409
48	1.488	1.475	1.458	1.444	1.437	1.433	1.429	1.427	1.425	1.422	1.418
49	1.504	1.490	1.473	1.460	1.452	1.448	1.445	1.442	1.440	1.437	1.433
50	1.516	1.503	1.486	1.473	1.465	1.461	1.458	1.455	1.453	1.451	1.447
51	1.528	1.515	1.498	1.485	1.477	1.473	1.470	1.467	1.465	1.463	1.459
52	1.541	1.528	1.511	1.498	1.491	1.487	1.483	1.481	1.479	1.476	1.472
53	1.549	1.536	1.520	1.506	1.499	1.495	1.491	1.489	1.487	1.484	1.480
54	1.564	1.551	1.535	1.522	1.514	1.510	1.507	1.505	1.502	1.500	1.496
55	1.571	1.558	1.542	1.529	1.521	1.517	1.514	1.512	1.509	1.507	1.503
56	1.583	1.570	1.554	1.541	1.533	1.529	1.526	1.524	1.522	1.519	1.515
57	1.596	1.582	1.567	1.553	1.546	1.542	1.538	1.536	1.534	1.532	1.528
58	1.607	1.594	1.578	1.565	1.558	1.554	1.550	1.548	1.546	1.544	1.540
59	1.619	1.606	1.590	1.577	1.570	1.566	1.562	1.560	1.558	1.555	1.551
60	1.632	1.620	1.604	1.591	1.584	1.580	1.576	1.574	1.572	1.569	1.565

**o. All Thursdays Closed, All Tuesdays Closed, 26-Inch Second Fish**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.264	1.250	1.233	1.219	1.212	1.208	1.204	1.202	1.199	1.197	1.193
36	1.294	1.280	1.263	1.249	1.242	1.238	1.234	1.232	1.230	1.227	1.223
37	1.309	1.294	1.278	1.264	1.257	1.252	1.249	1.247	1.244	1.242	1.238
38	1.329	1.315	1.298	1.284	1.277	1.273	1.269	1.267	1.265	1.262	1.258
39	1.346	1.332	1.316	1.302	1.295	1.291	1.287	1.285	1.283	1.280	1.276
40	1.360	1.346	1.329	1.316	1.308	1.304	1.301	1.298	1.296	1.294	1.289
41	1.373	1.359	1.343	1.329	1.322	1.318	1.314	1.312	1.310	1.307	1.303
42	1.383	1.369	1.353	1.339	1.332	1.328	1.324	1.322	1.320	1.317	1.313
43	1.398	1.385	1.368	1.355	1.348	1.344	1.340	1.338	1.336	1.333	1.329
44	1.406	1.393	1.377	1.363	1.356	1.352	1.348	1.346	1.344	1.341	1.337
45	1.417	1.404	1.387	1.374	1.367	1.363	1.359	1.357	1.355	1.352	1.348
46	1.424	1.411	1.395	1.381	1.374	1.370	1.366	1.364	1.362	1.359	1.355
47	1.437	1.424	1.407	1.394	1.387	1.383	1.379	1.377	1.375	1.372	1.368
48	1.445	1.432	1.416	1.402	1.395	1.391	1.388	1.385	1.383	1.381	1.377
49	1.460	1.446	1.431	1.417	1.410	1.406	1.403	1.400	1.398	1.396	1.392
50	1.472	1.459	1.443	1.430	1.423	1.419	1.415	1.413	1.411	1.408	1.404
51	1.484	1.470	1.455	1.442	1.434	1.431	1.427	1.425	1.423	1.420	1.416
52	1.496	1.483	1.467	1.454	1.447	1.443	1.440	1.438	1.436	1.433	1.429
53	1.504	1.491	1.475	1.463	1.455	1.451	1.448	1.446	1.444	1.441	1.437
54	1.519	1.506	1.490	1.477	1.470	1.466	1.463	1.461	1.459	1.456	1.452
55	1.525	1.513	1.497	1.484	1.477	1.473	1.470	1.468	1.466	1.463	1.459
56	1.537	1.524	1.509	1.496	1.489	1.485	1.481	1.479	1.477	1.475	1.471
57	1.549	1.536	1.521	1.508	1.501	1.497	1.494	1.492	1.489	1.487	1.483
58	1.560	1.548	1.532	1.520	1.513	1.509	1.505	1.503	1.501	1.498	1.495
59	1.571	1.559	1.544	1.531	1.524	1.520	1.517	1.515	1.513	1.510	1.506
60	1.584	1.572	1.557	1.544	1.537	1.534	1.530	1.528	1.526	1.523	1.519

Table A5. Projected charter removals (Mlb) for Area 3A in 2020 under a **one fish bag limit and reverse slot limits ranging from U35O60 to U60O80 with a range of Tuesday closures** throughout the season. Projected removals include all other status quo management measures: **a limit of one trip per vessel and one trip per permit per day, Wednesday closure all year, and a 4-fish annual limit**. Projections also include a 4% inflation factor for release mortality and a correction factor to tune mean weight values to current conditions. Light shaded cells represent projections for the most liberal Tuesday closures, upper size limits, and lower size limits that do not exceed the 1.24 Mlb allocation associated with the Reference TCEY scenario. Dark shaded cells represent projections for the most liberal Tuesday closures, upper size limits, and lower size limits that do not exceed the 0.80 Mlb allocation associated with the Status Quo TCEY scenario.

**a. No Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.482	1.458	1.429	1.406	1.393	1.386	1.380	1.376	1.372	1.368	1.361
36	1.532	1.508	1.480	1.456	1.444	1.437	1.431	1.427	1.423	1.419	1.411
37	1.557	1.533	1.505	1.481	1.469	1.462	1.456	1.452	1.448	1.444	1.436
38	1.590	1.567	1.539	1.515	1.503	1.496	1.490	1.486	1.482	1.478	1.471
39	1.620	1.596	1.568	1.545	1.533	1.526	1.520	1.516	1.512	1.508	1.501
40	1.642	1.619	1.591	1.568	1.555	1.549	1.542	1.539	1.535	1.530	1.523
41	1.664	1.641	1.613	1.590	1.578	1.571	1.565	1.561	1.557	1.553	1.546
42	1.681	1.657	1.630	1.607	1.595	1.588	1.582	1.578	1.574	1.570	1.563
43	1.707	1.684	1.657	1.634	1.621	1.615	1.609	1.605	1.601	1.597	1.590
44	1.721	1.698	1.670	1.648	1.635	1.629	1.622	1.619	1.615	1.611	1.604
45	1.739	1.716	1.689	1.666	1.654	1.647	1.641	1.637	1.633	1.629	1.622
46	1.750	1.727	1.700	1.678	1.666	1.659	1.653	1.649	1.645	1.641	1.634
47	1.772	1.749	1.722	1.700	1.687	1.681	1.675	1.671	1.667	1.663	1.656
48	1.785	1.762	1.736	1.713	1.701	1.694	1.688	1.685	1.681	1.676	1.670
49	1.810	1.787	1.761	1.738	1.726	1.720	1.713	1.710	1.706	1.702	1.695
50	1.830	1.808	1.782	1.759	1.747	1.741	1.735	1.731	1.727	1.723	1.716
51	1.850	1.828	1.801	1.779	1.767	1.760	1.754	1.751	1.747	1.743	1.736
52	1.871	1.849	1.822	1.801	1.789	1.782	1.776	1.772	1.769	1.764	1.757
53	1.884	1.862	1.836	1.814	1.802	1.796	1.789	1.786	1.782	1.778	1.771
54	1.909	1.887	1.861	1.839	1.827	1.821	1.815	1.811	1.807	1.803	1.796
55	1.920	1.898	1.872	1.850	1.838	1.832	1.826	1.822	1.819	1.814	1.808
56	1.939	1.917	1.891	1.870	1.858	1.852	1.846	1.842	1.838	1.834	1.827
57	1.959	1.938	1.912	1.891	1.879	1.872	1.866	1.863	1.859	1.855	1.848
58	1.978	1.957	1.931	1.910	1.898	1.892	1.886	1.882	1.879	1.874	1.868
59	1.997	1.976	1.950	1.929	1.917	1.911	1.905	1.901	1.898	1.893	1.887
60	2.019	1.998	1.973	1.951	1.940	1.933	1.927	1.924	1.920	1.916	1.909

**b. One Closed Tuesday, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.462	1.438	1.411	1.387	1.375	1.368	1.362	1.358	1.354	1.350	1.343
36	1.512	1.488	1.460	1.437	1.425	1.418	1.412	1.408	1.404	1.400	1.393
37	1.536	1.512	1.485	1.462	1.449	1.443	1.436	1.433	1.429	1.424	1.417
38	1.570	1.546	1.518	1.495	1.483	1.476	1.470	1.466	1.463	1.458	1.451
39	1.599	1.575	1.548	1.525	1.513	1.506	1.500	1.496	1.492	1.488	1.481
40	1.621	1.597	1.570	1.547	1.535	1.528	1.522	1.518	1.515	1.510	1.503
41	1.642	1.619	1.592	1.569	1.557	1.550	1.544	1.541	1.537	1.532	1.525
42	1.659	1.636	1.609	1.586	1.574	1.567	1.561	1.557	1.554	1.549	1.542
43	1.685	1.662	1.635	1.612	1.600	1.593	1.587	1.584	1.580	1.576	1.569
44	1.698	1.675	1.648	1.626	1.614	1.607	1.601	1.597	1.594	1.589	1.582
45	1.716	1.693	1.666	1.644	1.632	1.625	1.619	1.615	1.612	1.607	1.600
46	1.728	1.705	1.678	1.656	1.644	1.637	1.631	1.627	1.624	1.619	1.612
47	1.749	1.726	1.699	1.677	1.665	1.659	1.653	1.649	1.645	1.641	1.634
48	1.762	1.739	1.713	1.691	1.679	1.672	1.666	1.662	1.659	1.654	1.647
49	1.786	1.764	1.738	1.715	1.704	1.697	1.691	1.687	1.684	1.679	1.672
50	1.807	1.784	1.758	1.736	1.724	1.718	1.712	1.708	1.705	1.700	1.693
51	1.826	1.804	1.777	1.756	1.744	1.737	1.731	1.728	1.724	1.720	1.713
52	1.846	1.825	1.799	1.777	1.765	1.759	1.753	1.749	1.745	1.741	1.734
53	1.859	1.838	1.812	1.790	1.778	1.772	1.766	1.762	1.759	1.754	1.748
54	1.884	1.862	1.836	1.815	1.803	1.797	1.791	1.787	1.784	1.779	1.773
55	1.895	1.873	1.848	1.826	1.814	1.808	1.802	1.798	1.795	1.790	1.784
56	1.913	1.892	1.867	1.845	1.834	1.827	1.821	1.818	1.814	1.810	1.803
57	1.934	1.913	1.887	1.866	1.854	1.848	1.842	1.838	1.835	1.830	1.824
58	1.952	1.932	1.906	1.885	1.873	1.867	1.861	1.858	1.854	1.850	1.843
59	1.971	1.950	1.925	1.904	1.892	1.886	1.880	1.876	1.873	1.868	1.862
60	1.992	1.972	1.947	1.926	1.914	1.908	1.902	1.898	1.895	1.891	1.884

**c. Two Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.439	1.415	1.388	1.365	1.353	1.346	1.340	1.336	1.332	1.328	1.321
36	1.487	1.464	1.437	1.414	1.402	1.395	1.389	1.385	1.382	1.377	1.370
37	1.511	1.488	1.461	1.438	1.426	1.419	1.413	1.410	1.406	1.401	1.395
38	1.544	1.521	1.494	1.471	1.459	1.452	1.446	1.443	1.439	1.435	1.428
39	1.573	1.550	1.523	1.500	1.488	1.481	1.475	1.472	1.468	1.464	1.457
40	1.594	1.571	1.545	1.522	1.510	1.504	1.497	1.494	1.490	1.486	1.479
41	1.616	1.593	1.566	1.544	1.532	1.525	1.519	1.516	1.512	1.508	1.501
42	1.632	1.609	1.582	1.560	1.548	1.542	1.536	1.532	1.528	1.524	1.517
43	1.657	1.635	1.608	1.586	1.574	1.568	1.562	1.558	1.554	1.550	1.543
44	1.671	1.648	1.622	1.600	1.588	1.581	1.575	1.572	1.568	1.564	1.557
45	1.688	1.666	1.639	1.617	1.605	1.599	1.593	1.589	1.586	1.581	1.575
46	1.699	1.677	1.651	1.629	1.617	1.610	1.604	1.601	1.597	1.593	1.586
47	1.720	1.698	1.672	1.650	1.638	1.632	1.626	1.622	1.619	1.614	1.608
48	1.733	1.711	1.685	1.663	1.651	1.645	1.639	1.635	1.632	1.627	1.621
49	1.757	1.735	1.709	1.688	1.676	1.669	1.663	1.660	1.656	1.652	1.645
50	1.777	1.755	1.730	1.708	1.696	1.690	1.684	1.680	1.677	1.673	1.666
51	1.796	1.774	1.748	1.727	1.715	1.709	1.703	1.700	1.696	1.692	1.685
52	1.816	1.795	1.769	1.748	1.736	1.730	1.724	1.721	1.717	1.713	1.706
53	1.829	1.808	1.782	1.761	1.750	1.743	1.737	1.734	1.730	1.726	1.719
54	1.853	1.832	1.806	1.785	1.774	1.767	1.762	1.758	1.755	1.750	1.744
55	1.864	1.843	1.817	1.796	1.785	1.778	1.773	1.769	1.766	1.761	1.755
56	1.882	1.861	1.836	1.815	1.804	1.798	1.792	1.788	1.785	1.780	1.774
57	1.902	1.881	1.856	1.835	1.824	1.818	1.812	1.808	1.805	1.801	1.794
58	1.921	1.900	1.875	1.854	1.843	1.837	1.831	1.827	1.824	1.820	1.813
59	1.939	1.918	1.893	1.873	1.861	1.855	1.849	1.846	1.842	1.838	1.832
60	1.960	1.940	1.915	1.894	1.883	1.877	1.871	1.867	1.864	1.860	1.853

**d. Three Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.420	1.396	1.369	1.347	1.335	1.328	1.322	1.318	1.315	1.310	1.303
36	1.467	1.444	1.417	1.395	1.383	1.377	1.370	1.367	1.363	1.359	1.352
37	1.491	1.468	1.441	1.419	1.407	1.401	1.394	1.391	1.387	1.383	1.376
38	1.523	1.501	1.474	1.452	1.440	1.433	1.427	1.424	1.420	1.416	1.409
39	1.552	1.529	1.502	1.480	1.468	1.462	1.456	1.452	1.449	1.444	1.437
40	1.573	1.550	1.524	1.502	1.490	1.484	1.478	1.474	1.470	1.466	1.459
41	1.594	1.572	1.545	1.523	1.512	1.505	1.499	1.496	1.492	1.488	1.481
42	1.610	1.588	1.561	1.539	1.528	1.521	1.515	1.512	1.508	1.504	1.497
43	1.635	1.613	1.587	1.565	1.553	1.547	1.541	1.537	1.534	1.529	1.523
44	1.648	1.626	1.600	1.578	1.567	1.560	1.554	1.551	1.547	1.543	1.536
45	1.666	1.643	1.617	1.596	1.584	1.578	1.572	1.568	1.565	1.560	1.554
46	1.677	1.655	1.629	1.607	1.595	1.589	1.583	1.580	1.576	1.572	1.565
47	1.697	1.675	1.650	1.628	1.616	1.610	1.604	1.601	1.597	1.593	1.586
48	1.710	1.688	1.662	1.641	1.629	1.623	1.617	1.614	1.610	1.606	1.599
49	1.734	1.712	1.686	1.665	1.654	1.647	1.641	1.638	1.634	1.630	1.623
50	1.753	1.732	1.706	1.685	1.674	1.667	1.661	1.658	1.654	1.650	1.644
51	1.772	1.750	1.725	1.704	1.692	1.686	1.680	1.677	1.673	1.669	1.663
52	1.792	1.771	1.746	1.725	1.713	1.707	1.701	1.697	1.694	1.690	1.683
53	1.804	1.783	1.758	1.737	1.726	1.720	1.714	1.710	1.707	1.703	1.696
54	1.828	1.807	1.782	1.761	1.750	1.744	1.738	1.734	1.731	1.727	1.720
55	1.839	1.818	1.793	1.772	1.761	1.755	1.749	1.745	1.742	1.738	1.731
56	1.857	1.836	1.812	1.791	1.780	1.773	1.768	1.764	1.761	1.756	1.750
57	1.877	1.856	1.831	1.811	1.799	1.793	1.788	1.784	1.781	1.776	1.770
58	1.895	1.874	1.850	1.829	1.818	1.812	1.806	1.803	1.799	1.795	1.789
59	1.912	1.892	1.868	1.847	1.836	1.830	1.824	1.821	1.818	1.813	1.807
60	1.933	1.913	1.889	1.869	1.858	1.851	1.846	1.842	1.839	1.835	1.828

**e. Four Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.399	1.376	1.349	1.327	1.315	1.309	1.303	1.299	1.296	1.291	1.285
36	1.446	1.423	1.397	1.375	1.363	1.357	1.351	1.347	1.343	1.339	1.332
37	1.470	1.447	1.421	1.398	1.387	1.380	1.374	1.371	1.367	1.363	1.356
38	1.502	1.479	1.453	1.431	1.419	1.413	1.407	1.403	1.399	1.395	1.388
39	1.530	1.507	1.481	1.459	1.447	1.441	1.435	1.431	1.428	1.423	1.417
40	1.551	1.528	1.502	1.480	1.469	1.462	1.456	1.453	1.449	1.445	1.438
41	1.571	1.549	1.523	1.501	1.490	1.483	1.477	1.474	1.470	1.466	1.459
42	1.587	1.565	1.539	1.517	1.506	1.499	1.493	1.490	1.486	1.482	1.475
43	1.612	1.590	1.564	1.543	1.531	1.525	1.519	1.515	1.512	1.507	1.501
44	1.625	1.603	1.577	1.556	1.544	1.538	1.532	1.528	1.525	1.521	1.514
45	1.642	1.620	1.594	1.573	1.561	1.555	1.549	1.546	1.542	1.538	1.531
46	1.653	1.631	1.605	1.584	1.573	1.566	1.560	1.557	1.553	1.549	1.543
47	1.673	1.652	1.626	1.605	1.593	1.587	1.581	1.578	1.574	1.570	1.563
48	1.686	1.664	1.639	1.618	1.606	1.600	1.594	1.591	1.587	1.583	1.576
49	1.709	1.688	1.662	1.641	1.630	1.624	1.618	1.614	1.611	1.607	1.600
50	1.729	1.707	1.682	1.661	1.650	1.644	1.638	1.634	1.631	1.627	1.620
51	1.747	1.726	1.701	1.680	1.668	1.662	1.656	1.653	1.650	1.645	1.639
52	1.767	1.746	1.721	1.700	1.689	1.683	1.677	1.673	1.670	1.666	1.659
53	1.779	1.758	1.734	1.713	1.702	1.695	1.690	1.686	1.683	1.679	1.672
54	1.802	1.782	1.757	1.737	1.725	1.719	1.713	1.710	1.707	1.702	1.696
55	1.813	1.792	1.768	1.747	1.736	1.730	1.724	1.721	1.717	1.713	1.707
56	1.831	1.811	1.786	1.766	1.755	1.748	1.743	1.739	1.736	1.732	1.725
57	1.850	1.830	1.806	1.785	1.774	1.768	1.762	1.759	1.756	1.751	1.745
58	1.868	1.848	1.824	1.804	1.793	1.787	1.781	1.777	1.774	1.770	1.764
59	1.886	1.866	1.842	1.822	1.810	1.804	1.799	1.795	1.792	1.788	1.782
60	1.907	1.887	1.863	1.843	1.832	1.826	1.820	1.816	1.813	1.809	1.803

**f. Five Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.378	1.355	1.329	1.307	1.295	1.289	1.283	1.280	1.276	1.272	1.265
36	1.425	1.402	1.376	1.354	1.342	1.336	1.330	1.327	1.323	1.319	1.312
37	1.448	1.425	1.399	1.377	1.366	1.359	1.353	1.350	1.346	1.342	1.335
38	1.479	1.457	1.431	1.409	1.397	1.391	1.385	1.382	1.378	1.374	1.367
39	1.507	1.484	1.458	1.437	1.425	1.419	1.413	1.410	1.406	1.402	1.395
40	1.527	1.505	1.479	1.458	1.446	1.440	1.434	1.431	1.427	1.423	1.416
41	1.548	1.526	1.500	1.479	1.467	1.461	1.455	1.452	1.448	1.444	1.437
42	1.563	1.541	1.516	1.494	1.483	1.477	1.471	1.467	1.464	1.460	1.453
43	1.588	1.566	1.541	1.519	1.508	1.502	1.496	1.492	1.489	1.485	1.478
44	1.601	1.579	1.553	1.532	1.521	1.515	1.509	1.505	1.502	1.498	1.491
45	1.617	1.596	1.570	1.549	1.538	1.532	1.526	1.522	1.519	1.515	1.508
46	1.628	1.607	1.581	1.560	1.549	1.543	1.537	1.534	1.530	1.526	1.519
47	1.648	1.627	1.602	1.581	1.569	1.563	1.557	1.554	1.551	1.546	1.540
48	1.661	1.639	1.614	1.593	1.582	1.576	1.570	1.567	1.563	1.559	1.553
49	1.684	1.663	1.638	1.617	1.606	1.599	1.594	1.590	1.587	1.583	1.576
50	1.703	1.682	1.657	1.637	1.625	1.619	1.613	1.610	1.607	1.602	1.596
51	1.721	1.700	1.675	1.655	1.644	1.637	1.632	1.628	1.625	1.621	1.614
52	1.741	1.720	1.695	1.675	1.664	1.658	1.652	1.649	1.645	1.641	1.635
53	1.753	1.732	1.708	1.687	1.676	1.670	1.665	1.661	1.658	1.654	1.647
54	1.776	1.755	1.731	1.711	1.700	1.694	1.688	1.685	1.681	1.677	1.671
55	1.786	1.766	1.741	1.721	1.710	1.704	1.699	1.695	1.692	1.688	1.682
56	1.804	1.784	1.760	1.740	1.729	1.722	1.717	1.713	1.710	1.706	1.700
57	1.823	1.803	1.779	1.759	1.748	1.742	1.736	1.733	1.730	1.725	1.719
58	1.841	1.821	1.797	1.777	1.766	1.760	1.755	1.751	1.748	1.744	1.738
59	1.858	1.838	1.815	1.795	1.784	1.778	1.772	1.769	1.766	1.761	1.755
60	1.879	1.859	1.835	1.816	1.805	1.799	1.793	1.790	1.787	1.782	1.776

**g. Six Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.357	1.335	1.309	1.287	1.276	1.269	1.264	1.260	1.257	1.252	1.246
36	1.403	1.381	1.355	1.334	1.322	1.316	1.310	1.307	1.303	1.299	1.292
37	1.426	1.404	1.378	1.356	1.345	1.339	1.333	1.330	1.326	1.322	1.315
38	1.457	1.435	1.409	1.388	1.376	1.370	1.364	1.361	1.357	1.353	1.347
39	1.484	1.462	1.436	1.415	1.404	1.397	1.392	1.388	1.385	1.381	1.374
40	1.504	1.483	1.457	1.436	1.425	1.418	1.413	1.409	1.406	1.401	1.395
41	1.525	1.503	1.478	1.456	1.445	1.439	1.433	1.430	1.426	1.422	1.416
42	1.540	1.518	1.493	1.472	1.461	1.454	1.449	1.445	1.442	1.438	1.431
43	1.564	1.543	1.517	1.496	1.485	1.479	1.473	1.470	1.466	1.462	1.456
44	1.577	1.555	1.530	1.509	1.498	1.492	1.486	1.483	1.479	1.475	1.469
45	1.593	1.572	1.547	1.526	1.515	1.509	1.503	1.499	1.496	1.492	1.486
46	1.604	1.583	1.558	1.537	1.526	1.519	1.514	1.510	1.507	1.503	1.496
47	1.624	1.602	1.578	1.557	1.546	1.540	1.534	1.531	1.527	1.523	1.517
48	1.636	1.615	1.590	1.569	1.558	1.552	1.547	1.543	1.540	1.536	1.529
49	1.659	1.638	1.613	1.593	1.582	1.575	1.570	1.566	1.563	1.559	1.553
50	1.678	1.657	1.632	1.612	1.601	1.595	1.589	1.586	1.582	1.578	1.572
51	1.695	1.675	1.650	1.630	1.619	1.613	1.607	1.604	1.601	1.596	1.590
52	1.715	1.694	1.670	1.650	1.639	1.633	1.627	1.624	1.621	1.616	1.610
53	1.727	1.706	1.682	1.662	1.651	1.645	1.640	1.636	1.633	1.629	1.623
54	1.749	1.729	1.705	1.685	1.674	1.668	1.663	1.659	1.656	1.652	1.646
55	1.759	1.739	1.715	1.696	1.685	1.679	1.673	1.670	1.667	1.662	1.656
56	1.777	1.757	1.733	1.714	1.703	1.697	1.691	1.688	1.685	1.680	1.674
57	1.796	1.776	1.752	1.733	1.722	1.716	1.710	1.707	1.704	1.700	1.694
58	1.813	1.794	1.770	1.751	1.740	1.734	1.728	1.725	1.722	1.718	1.712
59	1.831	1.811	1.788	1.768	1.757	1.751	1.746	1.742	1.739	1.735	1.729
60	1.851	1.831	1.808	1.789	1.778	1.772	1.766	1.763	1.760	1.756	1.750

**h. Seven Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.339	1.317	1.291	1.270	1.259	1.252	1.247	1.243	1.240	1.236	1.229
36	1.384	1.362	1.337	1.316	1.304	1.298	1.292	1.289	1.286	1.281	1.275
37	1.407	1.385	1.359	1.338	1.327	1.321	1.315	1.312	1.308	1.304	1.298
38	1.437	1.416	1.390	1.369	1.358	1.352	1.346	1.343	1.339	1.335	1.329
39	1.464	1.442	1.417	1.396	1.385	1.379	1.373	1.370	1.366	1.362	1.356
40	1.484	1.463	1.437	1.417	1.405	1.399	1.394	1.390	1.387	1.383	1.376
41	1.504	1.483	1.458	1.437	1.426	1.420	1.414	1.411	1.407	1.403	1.397
42	1.519	1.498	1.473	1.452	1.441	1.435	1.429	1.426	1.422	1.418	1.412
43	1.543	1.522	1.497	1.476	1.465	1.459	1.453	1.450	1.447	1.443	1.436
44	1.555	1.534	1.509	1.489	1.478	1.472	1.466	1.463	1.459	1.455	1.449
45	1.572	1.551	1.526	1.505	1.494	1.488	1.483	1.479	1.476	1.472	1.466
46	1.582	1.561	1.537	1.516	1.505	1.499	1.493	1.490	1.487	1.483	1.476
47	1.602	1.581	1.556	1.536	1.525	1.519	1.513	1.510	1.507	1.503	1.496
48	1.614	1.593	1.569	1.548	1.537	1.531	1.526	1.522	1.519	1.515	1.509
49	1.636	1.616	1.591	1.571	1.560	1.554	1.549	1.545	1.542	1.538	1.532
50	1.655	1.635	1.610	1.590	1.579	1.573	1.568	1.565	1.561	1.557	1.551
51	1.672	1.652	1.628	1.608	1.597	1.591	1.586	1.582	1.579	1.575	1.569
52	1.692	1.671	1.647	1.628	1.617	1.611	1.605	1.602	1.599	1.595	1.589
53	1.704	1.684	1.660	1.640	1.629	1.623	1.618	1.614	1.611	1.607	1.601
54	1.726	1.706	1.682	1.663	1.652	1.646	1.640	1.637	1.634	1.630	1.624
55	1.736	1.716	1.692	1.673	1.662	1.656	1.651	1.647	1.644	1.640	1.634
56	1.753	1.734	1.710	1.691	1.680	1.674	1.668	1.665	1.662	1.658	1.652
57	1.772	1.752	1.729	1.709	1.699	1.693	1.687	1.684	1.681	1.677	1.671
58	1.789	1.770	1.746	1.727	1.716	1.711	1.705	1.702	1.699	1.695	1.689
59	1.806	1.787	1.763	1.744	1.734	1.728	1.722	1.719	1.716	1.712	1.706
60	1.826	1.807	1.784	1.765	1.754	1.748	1.743	1.739	1.736	1.732	1.726

**i. Eight Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.324	1.302	1.276	1.255	1.244	1.238	1.232	1.229	1.225	1.221	1.215
36	1.368	1.346	1.321	1.300	1.289	1.283	1.277	1.274	1.271	1.266	1.260
37	1.390	1.369	1.344	1.323	1.311	1.305	1.300	1.296	1.293	1.289	1.283
38	1.421	1.399	1.374	1.353	1.342	1.336	1.330	1.327	1.324	1.319	1.313
39	1.447	1.425	1.401	1.380	1.369	1.363	1.357	1.354	1.350	1.346	1.340
40	1.467	1.445	1.421	1.400	1.389	1.383	1.377	1.374	1.371	1.367	1.360
41	1.487	1.465	1.441	1.420	1.409	1.403	1.397	1.394	1.391	1.387	1.380
42	1.501	1.480	1.456	1.435	1.424	1.418	1.412	1.409	1.406	1.402	1.395
43	1.525	1.504	1.479	1.459	1.448	1.442	1.436	1.433	1.430	1.426	1.420
44	1.537	1.516	1.492	1.472	1.461	1.455	1.449	1.446	1.442	1.438	1.432
45	1.553	1.532	1.508	1.488	1.477	1.471	1.465	1.462	1.459	1.455	1.448
46	1.564	1.543	1.519	1.498	1.488	1.482	1.476	1.473	1.469	1.465	1.459
47	1.583	1.562	1.538	1.518	1.507	1.501	1.496	1.492	1.489	1.485	1.479
48	1.595	1.574	1.550	1.530	1.519	1.513	1.508	1.505	1.501	1.497	1.491
49	1.617	1.597	1.573	1.553	1.542	1.536	1.531	1.527	1.524	1.520	1.514
50	1.635	1.615	1.591	1.572	1.561	1.555	1.549	1.546	1.543	1.539	1.533
51	1.653	1.633	1.609	1.589	1.578	1.572	1.567	1.564	1.561	1.556	1.550
52	1.672	1.652	1.628	1.608	1.598	1.592	1.586	1.583	1.580	1.576	1.570
53	1.683	1.664	1.640	1.621	1.610	1.604	1.599	1.595	1.592	1.588	1.582
54	1.705	1.686	1.662	1.643	1.632	1.626	1.621	1.618	1.615	1.611	1.605
55	1.715	1.696	1.672	1.653	1.642	1.637	1.631	1.628	1.625	1.621	1.615
56	1.732	1.713	1.690	1.670	1.660	1.654	1.649	1.645	1.642	1.638	1.632
57	1.751	1.731	1.708	1.689	1.678	1.673	1.667	1.664	1.661	1.657	1.651
58	1.768	1.749	1.726	1.707	1.696	1.690	1.685	1.682	1.679	1.675	1.669
59	1.784	1.765	1.742	1.723	1.713	1.707	1.702	1.699	1.696	1.691	1.686
60	1.804	1.785	1.762	1.744	1.733	1.727	1.722	1.719	1.716	1.712	1.706



**j. Nine Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.312	1.290	1.265	1.244	1.233	1.227	1.221	1.218	1.214	1.210	1.204
36	1.356	1.334	1.310	1.289	1.278	1.272	1.266	1.263	1.259	1.255	1.249
37	1.378	1.356	1.332	1.311	1.300	1.294	1.288	1.285	1.282	1.278	1.271
38	1.408	1.387	1.362	1.341	1.330	1.324	1.319	1.315	1.312	1.308	1.302
39	1.434	1.413	1.388	1.368	1.357	1.351	1.345	1.342	1.338	1.334	1.328
40	1.454	1.433	1.408	1.388	1.377	1.371	1.365	1.362	1.358	1.354	1.348
41	1.473	1.452	1.428	1.407	1.397	1.391	1.385	1.382	1.378	1.374	1.368
42	1.488	1.467	1.443	1.422	1.411	1.405	1.400	1.397	1.393	1.389	1.383
43	1.511	1.491	1.466	1.446	1.435	1.429	1.424	1.420	1.417	1.413	1.407
44	1.524	1.503	1.479	1.458	1.448	1.442	1.436	1.433	1.430	1.426	1.420
45	1.539	1.519	1.495	1.475	1.464	1.458	1.452	1.449	1.446	1.442	1.436
46	1.550	1.529	1.505	1.485	1.474	1.468	1.463	1.460	1.456	1.452	1.446
47	1.569	1.548	1.524	1.505	1.494	1.488	1.482	1.479	1.476	1.472	1.466
48	1.581	1.560	1.537	1.517	1.506	1.500	1.495	1.491	1.488	1.484	1.478
49	1.603	1.583	1.559	1.539	1.528	1.522	1.517	1.514	1.511	1.507	1.501
50	1.621	1.601	1.577	1.558	1.547	1.541	1.536	1.532	1.529	1.525	1.519
51	1.638	1.618	1.595	1.575	1.564	1.559	1.553	1.550	1.547	1.543	1.537
52	1.657	1.637	1.614	1.594	1.584	1.578	1.572	1.569	1.566	1.562	1.556
53	1.668	1.649	1.626	1.606	1.596	1.590	1.584	1.581	1.578	1.574	1.568
54	1.690	1.671	1.648	1.628	1.618	1.612	1.607	1.603	1.600	1.596	1.591
55	1.700	1.681	1.658	1.638	1.628	1.622	1.617	1.614	1.610	1.606	1.601
56	1.717	1.698	1.675	1.656	1.645	1.640	1.634	1.631	1.628	1.624	1.618
57	1.735	1.716	1.693	1.674	1.664	1.658	1.653	1.649	1.646	1.642	1.637
58	1.752	1.733	1.710	1.692	1.681	1.675	1.670	1.667	1.664	1.660	1.654
59	1.769	1.750	1.727	1.708	1.698	1.692	1.687	1.684	1.681	1.677	1.671
60	1.788	1.770	1.747	1.728	1.718	1.712	1.707	1.704	1.701	1.697	1.691

**k. Ten Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.296	1.274	1.250	1.229	1.218	1.212	1.206	1.203	1.200	1.196	1.190
36	1.339	1.318	1.294	1.273	1.262	1.256	1.251	1.247	1.244	1.240	1.234
37	1.361	1.340	1.315	1.295	1.284	1.278	1.273	1.269	1.266	1.262	1.256
38	1.391	1.370	1.345	1.325	1.314	1.308	1.303	1.299	1.296	1.292	1.286
39	1.416	1.396	1.371	1.351	1.340	1.334	1.329	1.326	1.322	1.318	1.312
40	1.436	1.415	1.391	1.371	1.360	1.354	1.349	1.345	1.342	1.338	1.332
41	1.455	1.435	1.410	1.390	1.380	1.374	1.368	1.365	1.362	1.358	1.352
42	1.470	1.449	1.425	1.405	1.394	1.389	1.383	1.380	1.377	1.373	1.367
43	1.493	1.472	1.448	1.429	1.418	1.412	1.407	1.403	1.400	1.396	1.390
44	1.505	1.484	1.460	1.441	1.430	1.424	1.419	1.415	1.412	1.408	1.402
45	1.520	1.500	1.476	1.457	1.446	1.440	1.435	1.432	1.428	1.424	1.418
46	1.531	1.510	1.487	1.467	1.456	1.451	1.445	1.442	1.439	1.435	1.429
47	1.549	1.529	1.506	1.486	1.476	1.470	1.464	1.461	1.458	1.454	1.448
48	1.561	1.541	1.518	1.498	1.487	1.482	1.476	1.473	1.470	1.466	1.460
49	1.583	1.563	1.540	1.520	1.510	1.504	1.498	1.495	1.492	1.488	1.482
50	1.601	1.581	1.558	1.539	1.528	1.522	1.517	1.514	1.511	1.507	1.501
51	1.618	1.598	1.575	1.556	1.545	1.539	1.534	1.531	1.528	1.524	1.518
52	1.636	1.617	1.594	1.575	1.564	1.558	1.553	1.550	1.547	1.543	1.537
53	1.648	1.628	1.605	1.586	1.576	1.570	1.565	1.562	1.559	1.555	1.549
54	1.669	1.650	1.627	1.608	1.598	1.592	1.587	1.583	1.580	1.577	1.571
55	1.679	1.660	1.637	1.618	1.608	1.602	1.597	1.593	1.590	1.587	1.581
56	1.695	1.677	1.654	1.635	1.625	1.619	1.614	1.611	1.608	1.604	1.598
57	1.713	1.695	1.672	1.653	1.643	1.637	1.632	1.629	1.626	1.622	1.616
58	1.730	1.711	1.689	1.670	1.660	1.654	1.649	1.646	1.643	1.639	1.633
59	1.746	1.728	1.705	1.687	1.677	1.671	1.666	1.663	1.660	1.656	1.650
60	1.766	1.747	1.725	1.706	1.696	1.691	1.685	1.682	1.679	1.675	1.670

**I. Eleven Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.293	1.271	1.247	1.226	1.215	1.209	1.204	1.201	1.197	1.193	1.187
36	1.336	1.315	1.291	1.270	1.259	1.254	1.248	1.245	1.241	1.238	1.231
37	1.358	1.337	1.312	1.292	1.281	1.275	1.270	1.267	1.263	1.259	1.253
38	1.387	1.367	1.342	1.322	1.311	1.305	1.300	1.297	1.293	1.289	1.283
39	1.413	1.392	1.368	1.348	1.337	1.331	1.326	1.323	1.319	1.315	1.309
40	1.433	1.412	1.388	1.368	1.357	1.351	1.346	1.342	1.339	1.335	1.329
41	1.452	1.431	1.407	1.387	1.377	1.371	1.365	1.362	1.359	1.355	1.349
42	1.466	1.446	1.422	1.402	1.391	1.385	1.380	1.377	1.374	1.370	1.364
43	1.489	1.469	1.445	1.425	1.415	1.409	1.403	1.400	1.397	1.393	1.387
44	1.501	1.481	1.457	1.438	1.427	1.421	1.416	1.412	1.409	1.405	1.399
45	1.517	1.497	1.473	1.453	1.443	1.437	1.432	1.428	1.425	1.421	1.415
46	1.527	1.507	1.483	1.464	1.453	1.447	1.442	1.439	1.436	1.432	1.426
47	1.546	1.526	1.502	1.483	1.472	1.466	1.461	1.458	1.455	1.451	1.445
48	1.557	1.538	1.514	1.495	1.484	1.478	1.473	1.470	1.467	1.463	1.457
49	1.579	1.559	1.536	1.517	1.506	1.500	1.495	1.492	1.489	1.485	1.479
50	1.597	1.578	1.554	1.535	1.525	1.519	1.514	1.510	1.507	1.503	1.498
51	1.614	1.594	1.571	1.552	1.542	1.536	1.531	1.527	1.524	1.520	1.515
52	1.632	1.613	1.590	1.571	1.561	1.555	1.550	1.546	1.543	1.539	1.534
53	1.644	1.625	1.602	1.583	1.572	1.567	1.561	1.558	1.555	1.551	1.545
54	1.665	1.646	1.623	1.604	1.594	1.588	1.583	1.580	1.577	1.573	1.567
55	1.675	1.656	1.633	1.614	1.604	1.598	1.593	1.590	1.587	1.583	1.577
56	1.691	1.673	1.650	1.631	1.621	1.615	1.610	1.607	1.604	1.600	1.594
57	1.709	1.691	1.668	1.649	1.639	1.634	1.628	1.625	1.622	1.618	1.613
58	1.726	1.707	1.685	1.666	1.656	1.651	1.645	1.642	1.639	1.635	1.630
59	1.742	1.724	1.701	1.683	1.673	1.667	1.662	1.659	1.656	1.652	1.646
60	1.761	1.743	1.721	1.703	1.692	1.687	1.682	1.678	1.675	1.672	1.666

**m. Twelve Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.280	1.259	1.234	1.214	1.203	1.197	1.192	1.189	1.185	1.181	1.175
36	1.323	1.302	1.278	1.258	1.247	1.241	1.235	1.232	1.229	1.225	1.219
37	1.344	1.323	1.299	1.279	1.268	1.263	1.257	1.254	1.251	1.247	1.241
38	1.373	1.353	1.329	1.309	1.298	1.292	1.287	1.283	1.280	1.276	1.270
39	1.399	1.378	1.354	1.334	1.324	1.318	1.313	1.309	1.306	1.302	1.296
40	1.418	1.398	1.374	1.354	1.343	1.338	1.332	1.329	1.326	1.322	1.316
41	1.437	1.417	1.393	1.373	1.363	1.357	1.352	1.348	1.345	1.341	1.335
42	1.452	1.431	1.408	1.388	1.377	1.371	1.366	1.363	1.360	1.356	1.350
43	1.474	1.454	1.430	1.411	1.400	1.395	1.389	1.386	1.383	1.379	1.373
44	1.486	1.466	1.442	1.423	1.412	1.407	1.401	1.398	1.395	1.391	1.385
45	1.502	1.482	1.458	1.439	1.428	1.422	1.417	1.414	1.411	1.407	1.401
46	1.512	1.492	1.468	1.449	1.438	1.433	1.427	1.424	1.421	1.417	1.411
47	1.530	1.510	1.487	1.468	1.457	1.452	1.446	1.443	1.440	1.436	1.430
48	1.542	1.522	1.499	1.480	1.469	1.463	1.458	1.455	1.452	1.448	1.442
49	1.563	1.544	1.520	1.501	1.491	1.485	1.480	1.477	1.474	1.470	1.464
50	1.581	1.562	1.539	1.520	1.509	1.503	1.498	1.495	1.492	1.488	1.482
51	1.597	1.578	1.555	1.536	1.526	1.520	1.515	1.512	1.509	1.505	1.499
52	1.616	1.597	1.574	1.555	1.545	1.539	1.534	1.531	1.528	1.524	1.518
53	1.627	1.608	1.585	1.567	1.556	1.551	1.545	1.542	1.539	1.535	1.530
54	1.648	1.629	1.607	1.588	1.578	1.572	1.567	1.564	1.561	1.557	1.552
55	1.658	1.639	1.616	1.598	1.588	1.582	1.577	1.574	1.571	1.567	1.561
56	1.674	1.656	1.633	1.615	1.605	1.599	1.594	1.591	1.588	1.584	1.578
57	1.692	1.673	1.651	1.633	1.622	1.617	1.612	1.609	1.606	1.602	1.596
58	1.708	1.690	1.668	1.649	1.639	1.634	1.629	1.625	1.623	1.619	1.613
59	1.724	1.706	1.684	1.666	1.656	1.650	1.645	1.642	1.639	1.635	1.630
60	1.743	1.725	1.703	1.685	1.675	1.670	1.664	1.661	1.658	1.655	1.649

**n. Thirteen Closed Tuesdays, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.274	1.253	1.229	1.209	1.198	1.192	1.187	1.184	1.180	1.177	1.171
36	1.317	1.297	1.272	1.252	1.242	1.236	1.230	1.227	1.224	1.220	1.214
37	1.339	1.318	1.294	1.274	1.263	1.257	1.252	1.249	1.246	1.242	1.236
38	1.368	1.347	1.323	1.303	1.293	1.287	1.281	1.278	1.275	1.271	1.265
39	1.393	1.373	1.349	1.329	1.318	1.312	1.307	1.304	1.301	1.297	1.291
40	1.412	1.392	1.368	1.348	1.338	1.332	1.327	1.323	1.320	1.316	1.311
41	1.431	1.411	1.387	1.368	1.357	1.351	1.346	1.343	1.340	1.336	1.330
42	1.446	1.426	1.402	1.382	1.372	1.366	1.361	1.357	1.354	1.350	1.345
43	1.468	1.448	1.425	1.405	1.395	1.389	1.384	1.380	1.377	1.373	1.368
44	1.480	1.460	1.437	1.417	1.407	1.401	1.396	1.392	1.389	1.385	1.380
45	1.496	1.476	1.452	1.433	1.422	1.417	1.411	1.408	1.405	1.401	1.395
46	1.506	1.486	1.462	1.443	1.433	1.427	1.422	1.418	1.415	1.411	1.406
47	1.524	1.504	1.481	1.462	1.452	1.446	1.441	1.437	1.434	1.430	1.425
48	1.536	1.516	1.493	1.474	1.463	1.458	1.452	1.449	1.446	1.442	1.437
49	1.557	1.537	1.514	1.495	1.485	1.479	1.474	1.471	1.468	1.464	1.458
50	1.575	1.555	1.532	1.513	1.503	1.497	1.492	1.489	1.486	1.482	1.477
51	1.591	1.572	1.549	1.530	1.520	1.514	1.509	1.506	1.503	1.499	1.493
52	1.609	1.590	1.568	1.549	1.539	1.533	1.528	1.525	1.522	1.518	1.512
53	1.621	1.602	1.579	1.560	1.550	1.545	1.539	1.536	1.533	1.529	1.524
54	1.642	1.623	1.600	1.582	1.572	1.566	1.561	1.558	1.555	1.551	1.545
55	1.651	1.633	1.610	1.592	1.581	1.576	1.571	1.568	1.565	1.561	1.555
56	1.668	1.649	1.627	1.609	1.598	1.593	1.588	1.584	1.582	1.578	1.572
57	1.685	1.667	1.645	1.626	1.616	1.611	1.605	1.602	1.599	1.596	1.590
58	1.702	1.684	1.661	1.643	1.633	1.627	1.622	1.619	1.616	1.612	1.607
59	1.718	1.700	1.678	1.659	1.649	1.644	1.639	1.635	1.633	1.629	1.623
60	1.737	1.719	1.697	1.679	1.669	1.663	1.658	1.655	1.652	1.648	1.643

**o. All Tuesdays Closed, One Fish Bag Limit**

Lower Length Limit	Upper Length Limit (in)										
	60	62	64	66	68	70	72	74	76	78	80
35	1.248	1.228	1.204	1.184	1.174	1.168	1.163	1.159	1.156	1.152	1.147
36	1.290	1.270	1.246	1.227	1.216	1.210	1.205	1.202	1.199	1.195	1.189
37	1.311	1.291	1.267	1.248	1.237	1.231	1.226	1.223	1.220	1.216	1.210
38	1.339	1.319	1.296	1.276	1.266	1.260	1.255	1.252	1.249	1.245	1.239
39	1.364	1.344	1.321	1.302	1.291	1.285	1.280	1.277	1.274	1.270	1.264
40	1.383	1.363	1.340	1.321	1.310	1.305	1.299	1.296	1.293	1.289	1.284
41	1.401	1.382	1.359	1.340	1.329	1.323	1.318	1.315	1.312	1.308	1.302
42	1.416	1.396	1.373	1.354	1.343	1.338	1.332	1.329	1.326	1.322	1.317
43	1.438	1.418	1.395	1.376	1.366	1.360	1.355	1.352	1.349	1.345	1.339
44	1.449	1.430	1.407	1.388	1.378	1.372	1.367	1.364	1.361	1.357	1.351
45	1.464	1.445	1.422	1.403	1.393	1.387	1.382	1.379	1.376	1.372	1.366
46	1.474	1.455	1.432	1.413	1.403	1.397	1.392	1.389	1.386	1.382	1.377
47	1.492	1.473	1.450	1.432	1.421	1.416	1.411	1.408	1.404	1.401	1.395
48	1.503	1.484	1.462	1.443	1.433	1.427	1.422	1.419	1.416	1.412	1.407
49	1.524	1.505	1.483	1.464	1.454	1.448	1.443	1.440	1.437	1.434	1.428
50	1.541	1.523	1.500	1.482	1.472	1.466	1.461	1.458	1.455	1.451	1.446
51	1.558	1.539	1.517	1.498	1.488	1.483	1.478	1.475	1.472	1.468	1.462
52	1.575	1.557	1.535	1.517	1.506	1.501	1.496	1.493	1.490	1.486	1.481
53	1.587	1.568	1.546	1.528	1.518	1.512	1.507	1.504	1.501	1.498	1.492
54	1.607	1.589	1.567	1.549	1.539	1.533	1.528	1.525	1.522	1.519	1.513
55	1.616	1.598	1.576	1.558	1.548	1.543	1.538	1.535	1.532	1.528	1.523
56	1.632	1.615	1.593	1.575	1.565	1.559	1.554	1.551	1.548	1.545	1.539
57	1.650	1.632	1.610	1.592	1.582	1.577	1.572	1.569	1.566	1.562	1.557
58	1.666	1.648	1.626	1.609	1.599	1.593	1.588	1.585	1.582	1.578	1.573
59	1.681	1.664	1.642	1.624	1.615	1.609	1.604	1.601	1.598	1.595	1.589
60	1.700	1.682	1.661	1.643	1.633	1.628	1.623	1.620	1.617	1.613	1.608