



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Coastal Pelagics Management Board

FROM: Cobia Technical Committee

DATE: October 9, 2024

SUBJECT: TC Initial Input on Addendum II Confidence Interval Approach

The Cobia Technical Committee (TC) met via webinar on September 13 and September 25, 2024 to discuss the Addendum II confidence interval approach as tasked by the Board in August 2024. The Board asked for TC discussion on the potential application of the confidence interval approach to the regional allocation framework, and to consider other confidence interval levels in addition to the 95% confidence intervals specified in Addendum II.

TC Members in Attendance: Angela Giuliano (Chair, MD), Nichole Ares (RI), Zach Schuller (NY), Jamie Darrow (NJ), Brooke Lowman (VA), Melinda Lambert (NC), Justin Yost (SC), Chris Kalinowsky (GA), Michael Larkin (NOAA)

ASMFC Staff: Emilie Franke

Others in Attendance: Chris Batsavage (NC, Board Proxy), Alan Bianchi (NC), CJ Schlick (SC), Jesse Hornstein (NY), Shanna Madsen (VA), Will Poston

Rolling Average Approach for Harvest Target Evaluations (Current Approach)

Recreational landings for each region are evaluated against that region's target as an average of annual landings. The timeframe for this average only includes years with the same recreational management measures (i.e., measures have not changed from year to year). If the same recreational management measures have been in place for at least five years, the timeframe includes the five most recent years under these regulations (a rolling 5-year average). If the same management measures have been in place for less than five years, the timeframe includes all years under the same regulations. If a region's averaged recreational landings exceed its annual recreational harvest target, that region is required to adjust its recreational management measures to reduce harvest, such that future annual landings are expected to achieve the regional recreational harvest target. If a region reports a consistent (i.e., consecutive) under-harvest during an evaluation time period for a minimum of 2 years, the region may present a plan to adjust management measures, if desired, to allow increased harvests that do not exceed the harvest target.

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Confidence Interval Approach

Per Addendum II, the Board can decide (via Board vote) to switch from a rolling average approach to a confidence interval approach for harvest target evaluation.

For this approach, when a region's harvest is evaluated against the region's harvest target to determine if a change is needed, the Cobia Technical Committee considers the 95% confidence intervals associated with MRIP harvest point estimates for the evaluation timeframe. If the same recreational management measures have been in place for at least five years, the timeframe will include the most recent five years under these regulations. If the same management measures have been in place for less than five years, the timeframe will include all years under these regulations.

If the regional harvest estimate's lower bound confidence interval is above the harvest target for a majority of the years within the evaluation timeframe, this indicates harvest has been above the target, and the region must adjust its management measures to reduce harvest to achieve the target. If the harvest target falls within the regional harvest estimate's confidence interval for a majority of the years within the evaluation timeframe, status quo measures may be maintained. If the regional harvest estimate's upper bound confidence interval is below the harvest target for a majority of the years within the evaluation timeframe, this indicates harvest has been below the target, and the region may adjust its management measures to liberalize harvest such that the target level of harvest is achieved, but not exceeded. To calculate the reduction or liberalization needed, the average landings over the evaluation time period is used relative to the target.

A majority of years within the evaluation timeframe means three out of five years or two out of three years. In the event of one out of two years or two out of four years, the Technical Committee will make a recommendation for Board consideration of a reduction or maintaining status quo measures.

To address years with particularly large confidence intervals (i.e., high uncertainty), years that have harvest estimates with a PSE greater than 50 are not included in the evaluation. Years that have harvest estimates with PSEs between 30 and 50 are subject to review by the Cobia Technical Committee to recommend whether they are appropriate to include in the evaluation. This aligns with MRIP's guidance to use caution for estimates with a PSE greater than 30, and not support the use of estimates with a PSE greater than 50.

Initial TC Discussion on Confidence Interval Approach

The TC discussed the potential application of the confidence interval approach to the regional framework, and reviewed what the CI approach would have looked like if applied to the current regional harvest target evaluation of 2021-2023 and the previous evaluation of 2017-2019 (assuming regional targets instead of state targets) (Table 1). The TC also reviewed the approach using different confidence intervals other than the specified 95%. The TC considered 90%, 85%, 80%, and 50% for range (Figure 1). Based on this information, the TC discussed observations and initial input for the Board. The TC noted the 95% confidence intervals are large, owing to the uncertainties in cobia removals data. Use of the 95% CI approach would likely result in less frequent management changes (i.e., more status quo determinations).

Although the current rolling average approach does not account for the uncertainties in the data, it allows the Board to respond more quickly to year-to-year changes in harvest. For example, applying the 95% confidence intervals to the current evaluation of 2021-2023 for the northern region would result in a management outcome of status quo while the rolling average approach indicates a reduction is required. Of the confidence intervals reviewed, a reduction was only required for the northern region using the 50% confidence interval¹.

The TC also noted that Board consideration of management goals for harvest evaluations and how responsive to be could depend on other factors like the frequency of stock assessments. For example, if harvests have been on average above the harvest target and the time between stock assessments is long, the Board may want to be more responsive to year-to-year harvest changes given the infrequent updates on stock status.

Finally, the TC noted that this approach would require numerous TC decisions throughout the process since most years have a PSE between 30-50 (Table 2). For each year with a PSE between 30-50, the TC would evaluate whether to include that year in the analysis.

The TC notes that more time to consider this approach would be beneficial, including discussion by the Board of how the rolling average and confidence interval approaches would align with their management goals.

¹ If the Board wants to consider a confidence interval different from 95%, that change would need to be made through the next addendum/amendment to the FMP.

Table 1. Outcome of applying the rolling average approach and the confidence interval approach to evaluation of 2021-2023 regional harvest against regional targets, and evaluation of 2017-2019 regional harvest against hypothetical regional targets. Note: The confidence interval outcomes include all evaluation years in the analysis; however, some years have PSEs from 30-50 which could be eliminated at TC discretion.

	2021-2023 Northern Region	2021-2023 Southern Region	2017-2019 Northern Region*	2017-2019 Southern Region*
Rolling Average	Reduction	Status Quo	Reduction	Liberalization
95% CI	Status Quo	Status Quo	Status Quo	Status Quo
90% CI	Status Quo	Status Quo	Reduction	Liberalization
85% CI	Status Quo	Status Quo	Reduction	Liberalization
80% CI	Status Quo	Status Quo	Reduction	Liberalization
50% CI	Reduction	Status Quo	Reduction	Liberalization

*The 2017-2019 evaluation took place during the previous state-by-state framework. For this exercise, the state harvest and state targets in 2017-2019 were combined into regions.

Table 2. PSE for regional recreational harvest estimates. Yellow indicates a PSE from 30-50. Source: MRIP.

Year	Northern Region RI-VA	Southern Region NC-GA
2014	42.5	30.1
2015	49.3	22.6
2016	18.8	38.6
2017	42.3	46.1
2018	35.2	27.7
2019	22.6	33.8
2020	24.4	27.1
2021	21.2	23.6
2022	23.7	32.7
2023	34.0	42.6

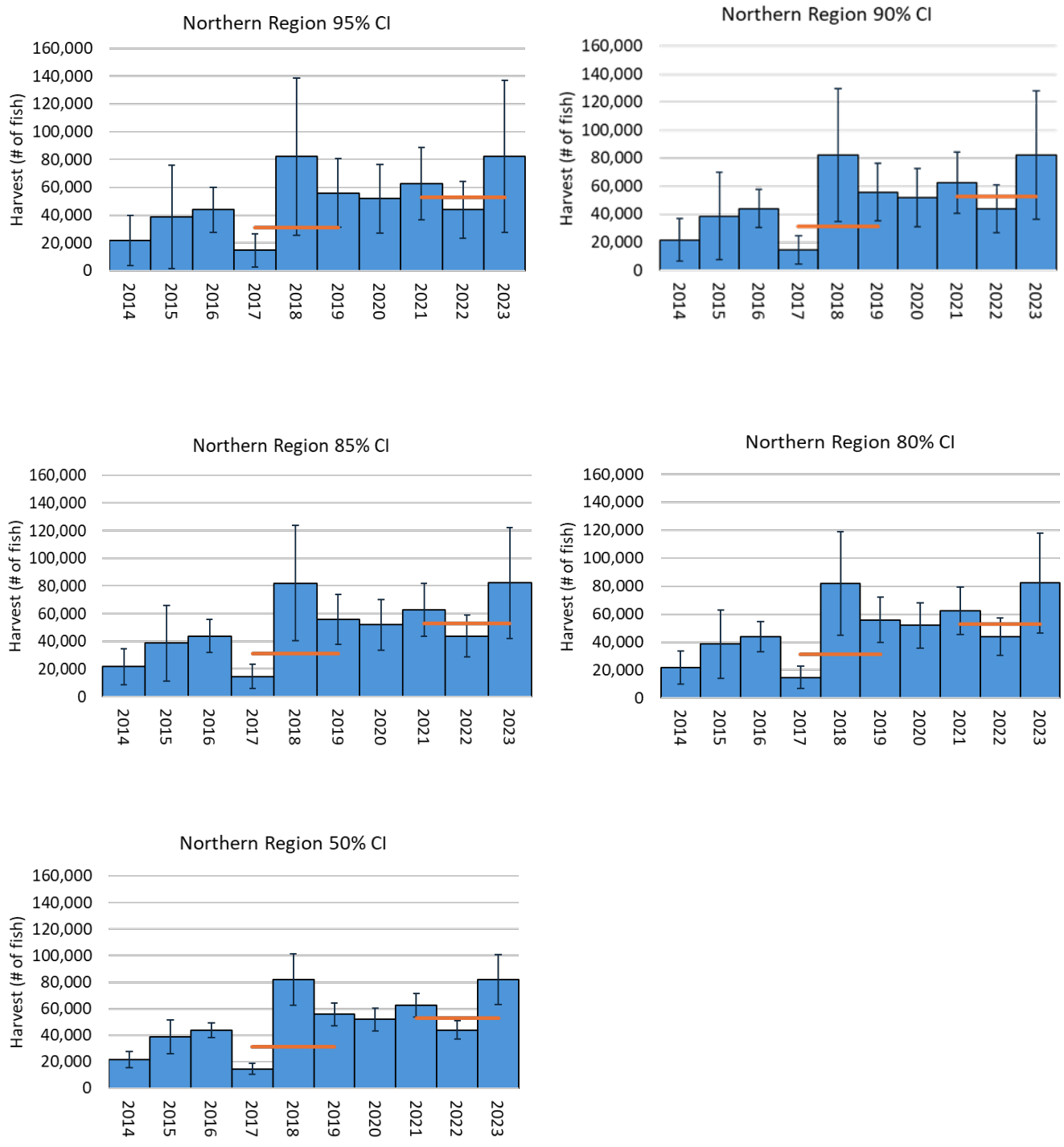


Figure 1. Northern region harvest with 95, 90, 85, 80, and 50 percent confidence intervals and regional harvest targets for the evaluation years considered.

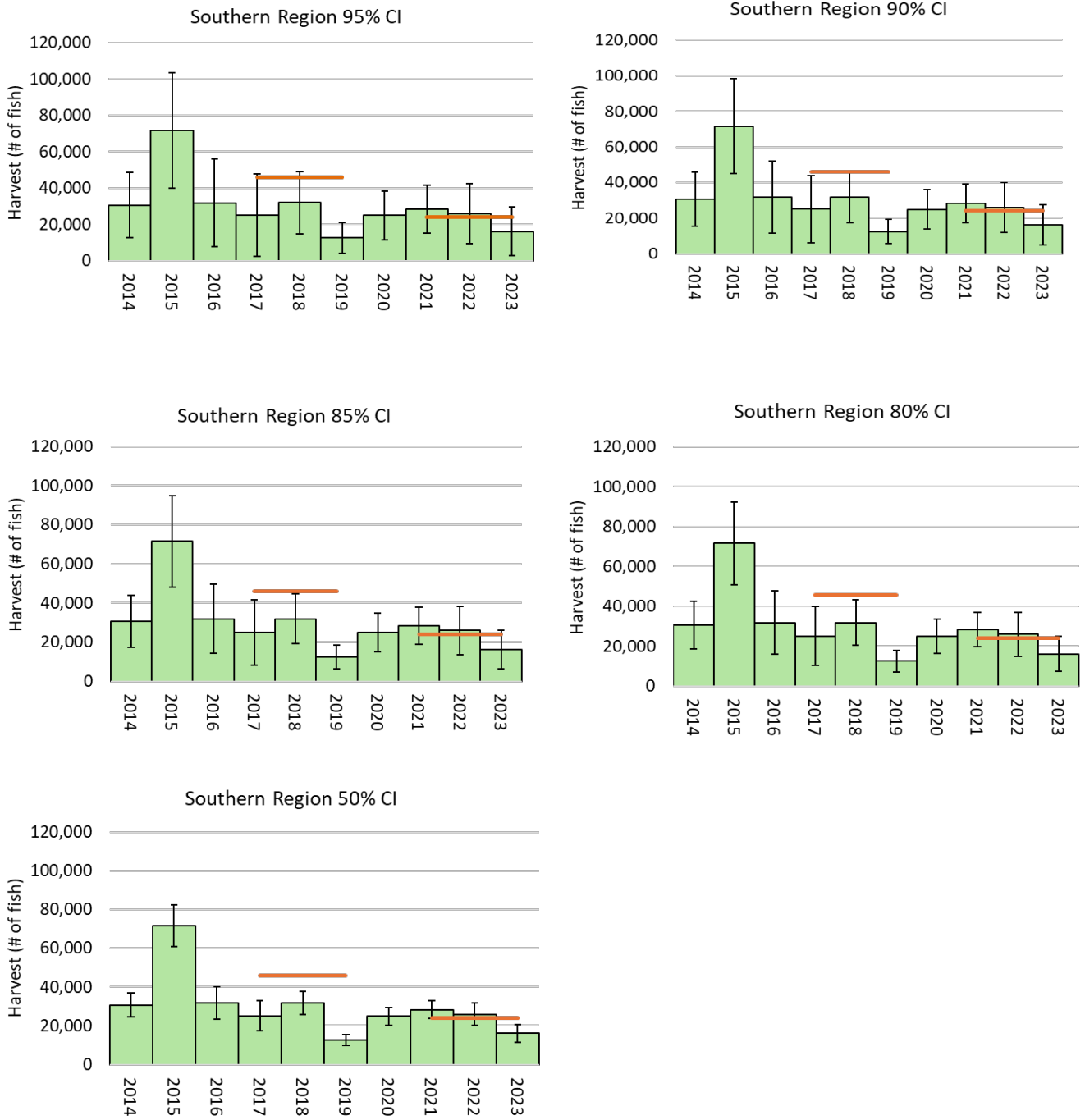


Figure 2. Southern region harvest with 95, 90, 85, 80, and 50 percent confidence intervals and regional harvest targets for the evaluation years considered.