

***Atlantic States Marine Fisheries Commission***

**ADDENDUM II TO AMENDMENT 1  
TO THE INTERSTATE FISHERY MANAGEMENT PLAN  
FOR ATLANTIC MIGRATORY GROUP COBIA**

***Recreational Allocation, Recreational Harvest Target Evaluations,  
and Measures Setting Timeline***



**August 2024**



*Sustainable and Cooperative Management of Atlantic Coastal Fisheries*

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## 1.0 INTRODUCTION

The Atlantic States Marine Fisheries Commission (Commission) is responsible for managing Atlantic cobia (*Rachycentron canadum*) from Rhode Island through Georgia in state waters (0-3 miles from shore) under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, and has done so through the Interstate Fishery Management Plan for Atlantic Migratory Group Cobia (FMP) since 2017. Atlantic cobia are currently managed under Amendment 1 (2019) to the FMP and Addendum I to Amendment 1 (2020). The states of Rhode Island through Florida, except Connecticut, have a declared interest in the fishery and are responsible for implementing management measures consistent with the Interstate FMP as members of the Coastal Pelagics Management Board. Although Florida has a declared interest in the fishery, their cobia fisheries are managed as part of the Gulf of Mexico Migratory Group Cobia, which is not managed by the Commission, due to the cobia stock boundary at the Georgia-Florida border.

In October 2023, the Board initiated this addendum to address reallocation of recreational cobia quota based on more recent harvest data, recognizing that the distribution of Atlantic cobia harvest has changed since the terminal year in current allocation calculations (2015). In addition, the Board expressed interest in considering alternatives to the current state-by-state allocation system as noted in the approved Board motion from October 2023:

*Move to initiate an addendum addressing recreational Atlantic cobia quota reallocation. The Board recommends that the Plan Development Team explore options outside of the current state-by-state quota allocation system, specifically a coastwide soft target with regional management measures designed to meet the coastwide soft target while considering the need for fishing opportunity based on the seasonality of the species in various regions.*

In January 2024, the Board provided additional guidance on the scope of the addendum. The Board supported adding options to consider the process for updating allocations in the future, and adding options to consider accounting for uncertainty around harvest estimates. For allocation data timeframes, the Board supported considering 2018-2023 as an option with the exclusion of 2020 due to COVID-19 impacts on data collection. The Board also requested an option to consider a timeline of five years when setting recreational measures.

The final approved addendum modifies the recreational allocation framework, allows the Board to update allocations quickly if the underlying data are revised, expands the range of data used in harvest evaluations (up to five years of harvest data under the same management measures), and allows the Board to set management measures for a longer period of time (up to five years). For the allocation framework, Addendum II implements a new regional allocation framework based on data from 2014-2023. Data from 2016 and 2017 are excluded due to fishery closures during those years, and data from 2020 are excluded due to COVID-19 impacts on recreational data collection.

## 2.0 OVERVIEW

### 2.1 Statement of the Problem

The Interstate FMP established state-by-state allocations of the coastwide recreational harvest quota based on harvest data from 2006-2015. At the time of the FMP's approval in 2017, these were the most recent data available to inform allocations. The allocation timeframe did not extend beyond 2015 due to cobia fishery closures in federal waters in 2016-2017 which impacted states' recreational harvests. In 2019, Amendment 1 to the FMP set aside one percent of the recreational harvest quota to account for harvest in *de minimis* states, and each state's allocation percentage was adjusted accordingly to account for that one percent set-aside. It has been several years since state-by-state allocations were updated. Furthermore, the distribution of cobia landings has changed in recent years and is markedly different from the distribution of state landings observed during the initial allocation data timeframe of 2006-2015. Over the last several years, recreational landings have increased in some Mid-Atlantic states while remaining relatively stable in southern states, indicating a possible range expansion as opposed to a stock shift. Additionally, two states have recently declared into the Atlantic cobia fishery (Rhode Island and New York) due to increasing presence of cobia in state waters. Updating the allocation data timeframe would account for these recent changes in landings and the extent of the fishery. If reallocation is not considered, it is likely that some Mid-Atlantic and *de minimis* states at the northern end of the range will continue to exceed their soft targets resulting in restrictive cobia measures that may not reflect the status of the stock.

In addition to concerns about the outdated allocation data timeframe, there are concerns about continuing to use a state-by-state allocation framework. The Interstate FMP originally implemented the state-by-state allocation framework to provide states with flexibility to adjust management to ensure state access when cobia were available and to suit their specific state needs, while still adhering to the federal catch limits at the time. Due to the high level of uncertainty associated with state-level recreational harvest estimates, there are concerns about continuing to use the state-by-state allocation framework (i.e., performance and management changes based on comparing state harvest estimates to state targets). Cobia harvest estimates from the Marine Recreational Information Program (MRIP) tend to have high percent standard errors (PSEs), which indicates lower precision and higher uncertainty. This is common for species like cobia which is a pulse/rare event fishery with highly variable landings year-to-year resulting from inconsistent interactions with cobia anglers. One way to reduce uncertainty is to increase the sample size, which could be accomplished by considering a regional allocation framework or coastwide allocation framework.

Uncertainty could also be addressed by considering the number of data years included in a rolling average, whether the use of point estimates is appropriate, and/or whether a state or region's performance should be considered on its own or considered relative to other state or region performance (i.e., if one region exceeds their target, and another region is below their target, consider whether that result informs the need for management action).

If cobia harvest continues to increase at the northern end of their range, states that currently have *de minimis* status may exceed that *de minimis* threshold over the next several years. When a state loses its *de minimis* status, it must be factored into the allocation calculations to have its own harvest target. The allocation percentage calculations may also need to change if the allocation source data are updated as part of MRIP's effort to evaluate potential bias in the Fishing Effort Survey (FES) estimates. If these changes to the allocation percentages must be done through the addendum process, that process could take several months. Those changes could be accomplished more quickly if the Board had the ability to make those specific updates to the allocations via Board action, which could be specified in this addendum.

Finally, there is concern about changing management measures too frequently under Amendment 1's specification process which limits specification setting to up to three years at a time. To avoid management 'whiplash', specifications could be set for a longer period of time.

## **2.2 Background**

### **2.2.1 Status of the Stock**

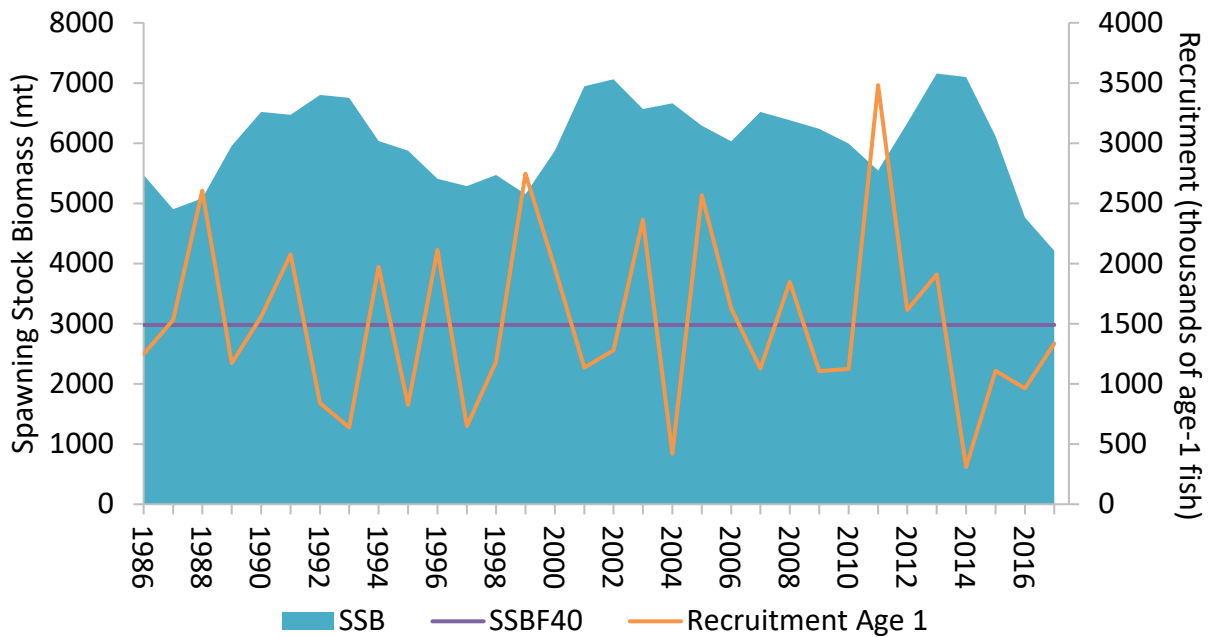
In 2020, the Board approved the SEDAR 58 Atlantic Cobia benchmark assessment for management use. This assessment continued to use the Beaufort Assessment Model (BAM), a forward-projecting statistical catch-at-age model used in the prior assessment, SEDAR 28 (SEDAR, 2013). SEDAR 58, with a terminal year of 2017, provided new reference points (F40% and 75% of SSBF40%). These reference points were selected as they represent the fishing rate and spawning stock biomass (SSB) that allows the population to reach 40% of the maximum spawning potential. These reference points also serve as proxies for maximum sustainable yield-derived relationships due to insufficient data for cobia. Based on those reference points, the stock is not overfished and overfishing is not occurring.

The stock assessment primarily used fishery-dependent data (i.e., data from the recreational and commercial fisheries) as well as information on Atlantic cobia biology, life history, and movement to determine stock condition. The largest changes in SEDAR 58 since the previous assessment included updating data sources with new years of data, updating the natural mortality information, and using newly recalibrated recreational catch and effort data from MRIP.

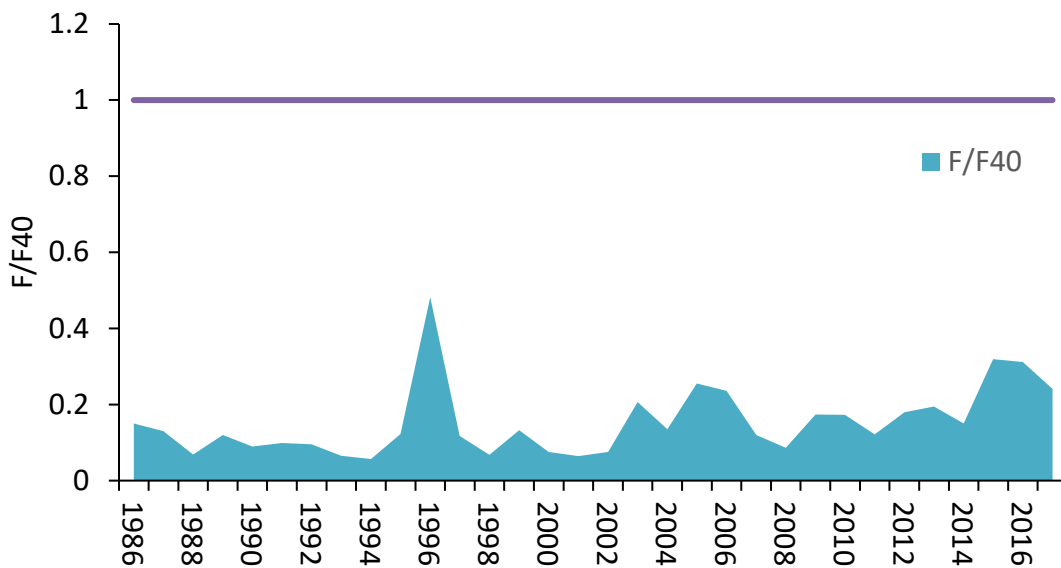
SEDAR 58 estimated the last strong cobia year class entered the fishery in 2010 (age 1 in 2011) with the four most recent year classes at low levels of recruitment (age 1 in 2014-2017) (SEDAR, 2020). While the SSB remains above the overfished threshold, below-average recruitment led to a decreasing trend in SSB since 2014 (Figure 1). The fishing mortality rate has increased since the late 2000s but has not exceeded the overfishing threshold (Figure 2).

The next stock assessment for Atlantic Migratory Group Cobia (SEDAR 95) is a benchmark assessment currently underway with an estimated completion date of late 2025 or early 2026. The frequency of future stock assessments for Atlantic cobia is uncertain, and the assessment model and methods may change significantly as part of the current assessment, SEDAR 95. The

time between completion of the previous stock assessment and the current assessment will be approximately 5-6 years.



**Figure 1.** Atlantic Cobia spawning stock biomass (SSB) and recruitment of year 1 fish. (SEDAR, 2020)



**Figure 2.** Atlantic Cobia fishing mortality (F) relative to the F40 reference point from 1986-2017. (SEDAR, 2020)

### 2.2.2 Status of Management

In 2019, Amendment 1 to the Interstate FMP transitioned management of Atlantic cobia from complementary management with the South Atlantic Fishery Management Council to sole management by the Commission. Amendment 1 allows the Board to specify a limited set of management measures for up to three years. This harvest specification process allows managers to specify regulations controlling future harvest through a Board vote, allowing managers to respond quickly to changes in the fishery or react following a stock assessment. Through the harvest specification process, the Board may set the coastwide total harvest quota (combined commercial and recreational harvest), vessel limits, possession or bag limits, minimum size limits, and the commercial closure triggering mechanism for up to three years.

In October 2020, the Board approved Addendum I to Amendment 1, which included modification of the allocation between the commercial and recreational sectors. Addendum I allocates 96% of the coastwide total harvest quota to the recreational sector and 4% of the quota to the commercial sector.

The recreational portion of the total harvest quota is further allocated to non-*de minimis* states as soft harvest targets with a 1% set-aside for harvest in *de minimis* states. Amendment 1 defines the process by which the recreational quota is allocated to non-*de minimis* states where allocations are based on states' percentages of the coastwide historical landings in numbers of fish, derived as 50% of the 10-year average landings from 2006-2015 and 50% of the 5-year average landings from 2011-2015. A 'soft' harvest target means that management measures are adjusted to reduce harvest to the target, but any overage does not need to be paid back. 'Hard' harvest targets (which would have required overage payback) were considered as part of the original Interstate FMP, but soft targets were selected as the management approach.

For the 2024-2026 fishing seasons, the total harvest quota for both sectors combined is 80,112 fish, which is the same harvest quota that has been in place since 2020. The coastwide recreational harvest quota (96% of the total harvest quota) is 76,908 fish. The current management program manages the recreational fishery with a 1 fish bag limit and a minimum size limit of 36 inches fork length (FL) or 40 inches total length (TL) for non-*de minimis* states. Season restrictions and vessel limits are determined by individual states, but may not exceed 6 fish per vessel. Recreational regulations for each state are provided in Appendix A.

Within the coastwide recreational harvest quota, Georgia, South Carolina, North Carolina, and Virginia have the following state recreational harvest targets based on the state-by-state-allocations defined in Amendment 1 to the FMP:

- Georgia – 7,229 fish
- South Carolina – 9,306 fish
- North Carolina – 29,302 fish
- Virginia – 30,302 fish

Recreational harvest of state-specific allocations are evaluated over three-year time periods (or when the total harvest quota changes). Each non-*de minimis* state evaluates recent harvest as an average of years with the same recreational management measures against the state-specific soft targets. If a state's averaged recreational harvest exceeds its harvest target, the state must adjust its management measures to reduce harvest to achieve the target, unless otherwise specified by the Board. If a state's harvest is below their target for at least two consecutive years, the state may liberalize management measures, if desired, to achieve its target. Changes to management measures for states with overages or states that wish to liberalize must be reviewed by the Cobia Technical Committee and approved by the Board prior to implementation.

*De minimis* states collectively have a 1% set-aside of the coastwide recreational quota (769 fish) and are exempt from completing harvest target evaluations. The FMP allows states to request recreational *de minimis* status if their recreational landings in two of the previous three years are less than 1% of annual coastwide recreational landings during that time period. A recreational *de minimis* state may choose to match the recreational management measures implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or limit its recreational fishery to 1 fish per vessel per trip with a minimum size of 33 inches FL (or 37 inches TL).

The commercial fishery has an annual coastwide commercial quota of 73,116 pounds (4% of total harvest quota) for the 2024-2026 fishing seasons, which is the same quota that has been in place since 2020. The current management measures for the commercial fishery include a 33 inches FL (or 37 inches TL) minimum size limit and 2 fish per person limit, with a 6 fish maximum vessel limit. Non-*de minimis* states are required to monitor commercial cobia landings in-season and submit regular landings updates to the Commission. The commercial Atlantic cobia fishery will close once the commercial quota is projected to be reached as determined by the updated Addendum I methodology to calculate the commercial trigger for in-season closures. Commercial regulations for each state are listed in Appendix A.

### **2.2.3 Status of the Fishery**

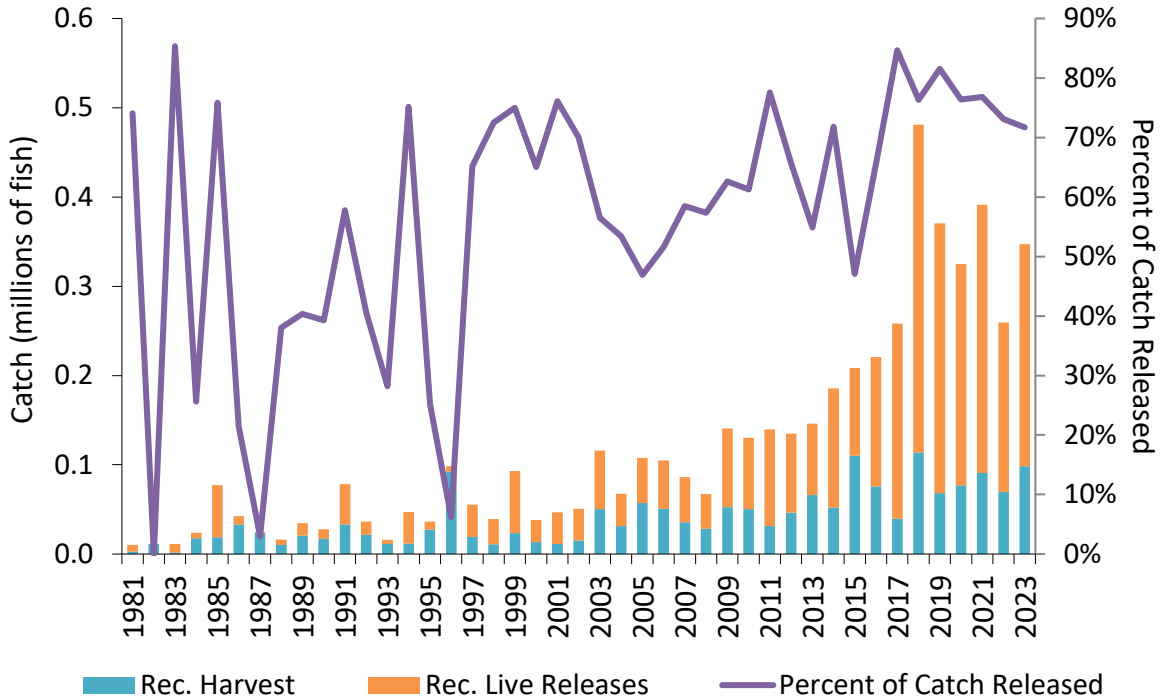
*Note: Since this addendum primarily considers management of the recreational fishery, the following information focuses on Atlantic cobia recreational fisheries. For information on the commercial fishery, see the [Review of the FMP for Atlantic Cobia: 2023 Fishing Year](#) (ASMFC 2024).*

Recreational harvest has fluctuated throughout the time series, often in rapid increases or declines. Average recreational harvest over the entire time series (1981-2023) is 1.1 million pounds, or about 40,557 fish (Figure 3). More recently, recreational harvest has increased to the series high of 113,939 fish coastwide in 2018, before decreasing to an average of 86,326 fish from 2018-2023.

Recreational releases of live fish have generally increased throughout the time series (Figure 3). In 2023, 248,890 recreationally-caught fish were released, a 31% increase from 2022. This



coincides with the increase in recreational landings in 2023 from 2022. From 2018-2023, an average 76% of cobia caught recreationally were released alive each year. This is higher than the average 65% released alive during the period of 2013-2017.



**Figure 3.** Recreational catch (harvest and live releases) of Atlantic cobia (numbers) and the proportion of catch that is released. Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).

From 2018-2023, Virginia has harvested the majority of the coastwide recreational cobia, with an average of 70.1% of the total fish by count (average of 60,894 fish/year) (Table 1, Figure 4). North Carolina has the second highest recreational harvest with an average of 14.5% of the total fish by count (average of 12,403 fish) for the same timeframe. South Carolina and Georgia have averaged 7.1% and 5.6% of the total coastwide harvest annually for the same timeframe (6,058 and 4,838 fish respectively), and the *de minimis* states made up the remainder (2.6% on average annually, 2,134 fish). Over the last several years, recreational landings have increased in some Mid-Atlantic states while remaining relatively stable in southern states, indicating a possible range expansion as opposed to a stock shift (Figure 4). Recent [research](#) to project future distributions of Atlantic cobia and their suitable habitat indicates similar trends, with cobia habitat during the summer projected to increase north of Virginia in the future (Crear et al. 2020).

Virginia has harvested above its state recreational target each year since the current state-by-state targets were implemented in 2020 (Table 1). Georgia harvested above their state target in 2021 and 2023. South Carolina has been harvesting just at or under their target each year, while North Carolina has been under their harvest target each year.

From 2018-2023 the *de minimis* states (currently north of Virginia) have exceeded their 1% set-aside in 4 of the past 6 years. The highest harvest by the *de minimis* states for the time period occurred in 2021, with a total of 5,334 fish or 694% of the *de minimis* allocation. This equates to 6% of coastwide landings that year. States north of Virginia currently have recreational *de minimis* status as each of those states’ recreational harvest in two of the previous three years was less than 1% of annual coastwide landings. Florida also has recreational *de minimis* status since its fishery targets Gulf of Mexico Migratory Group Cobia (not Atlantic Migratory Group Cobia).

The percent standard errors (PSEs) associated with recreational cobia harvest estimates from MRIP can be quite high due to the pulse/rare event nature of the cobia fishery. Table 2 summarizes the PSEs for each state’s recreational cobia harvest estimates over the last six years.

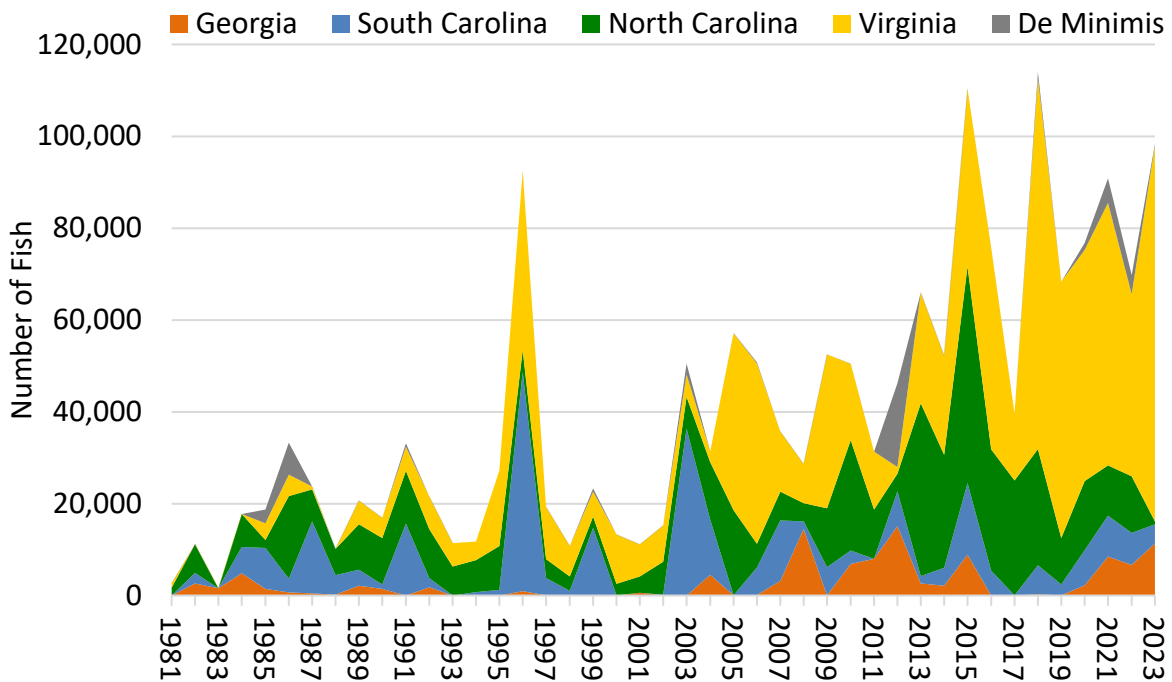
**Table 1.** Cobia recreational harvest by state in number of fish from 2018-2023 . Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).

Year	RI	CT	NY	NJ	DE	MD	VA	NC	SC	GA	Total Rec. Harvest
2018		569			581	206	80,679	25,331	6,340	233	<b>113,939</b>
2019							55,770	10,090	2,381	72	<b>68,313</b>
2020		219				1,360	50,287	15,067	7,650	2,203	<b>76,786</b>
2021				250		5,084	57,135	10,970	8,858	8,510	<b>90,807</b>
2022			3,462	711			39,668	12,330	6,988	6,641	<b>69,800</b>
2023	361						81,824	629 <sup>+</sup>	4,129	11,368	<b>98,311</b>
Soft Target for 2020-24	769 <i>de minimis</i> set-aside						30,302	29,302	9,306	7,229	<b>76,908</b>

\*Note: North Carolina Division of Marine Fisheries (NCDMF) staff looked into the very low harvest estimate for 2023 and found that windy weather limited the number of fishable days, and cobia were available for about a week. Data showed that MRIP intercepts in North Carolina were considerably lower in 2023 (38) compared to 2019 (85), 2021 (60), and 2022 (78). NCDMF staff noted that the low harvest estimate is also likely influenced by high percent standard error (PSE) because cobia is a rare event species and a pulse fishery.

**Table 2.** Percent standard error (PSE) for each state’s recreational cobia harvest estimate in number of fish from 2018-2023. Red indicates a PSE greater than 50 (MRIP does not support use of the estimate). Yellow indicates a PSE between 30 and 50 (MRIP cautions use of the estimate in fisheries management). Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).

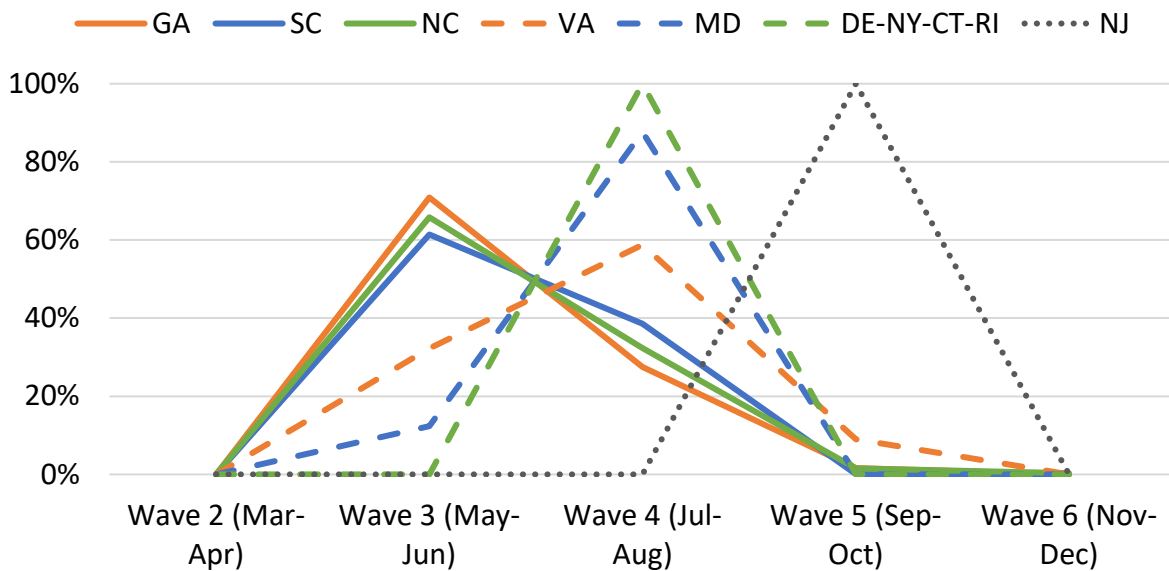
Year	RI	CT	NY	NJ	DE	MD	VA	NC	SC	GA
2018		100.4			98.1	66.7	35.8	33.2	42.2	53.9
2019							22.6	38.6	70.6	56.9
2020		102.7				69.5	25.0	37.9	39.1	92.4
2021				92.4		43.8	22.9	39.1	41.9	41.4
2022			82.3	102.2			25.1	47	55.9	72.4
2023	71.9						34.2	53.1	61.9	56.0



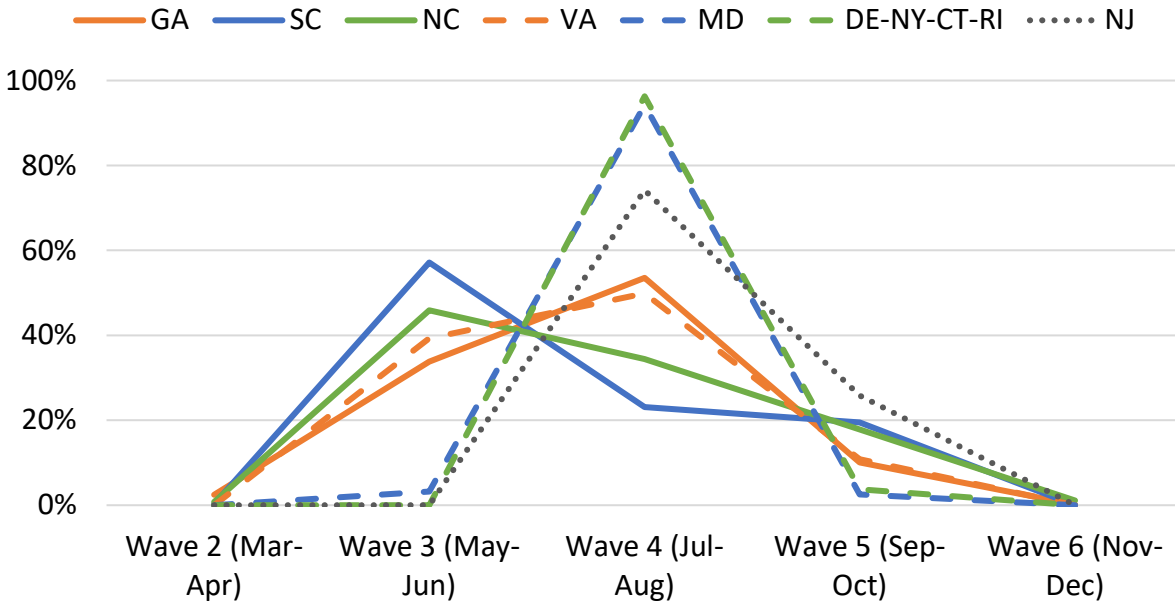
**Figure 4.** Cobia recreational harvest by state in number of fish. *De minimis* states are states north of Virginia. Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).

The availability of cobia, and therefore harvest timing, differs along the coast. From 2018-2023 (excluding 2020), the percent of recreational harvest peaked in wave 3 for Georgia, South Carolina, and North Carolina at approximately 70% of their total recreational harvest (Figure 5). Total recreational harvest peaked in wave 4 for Virginia (~60% of its recreational harvest). For states north of Virginia, all of which are *de minimis* states, harvest has not been observed every year. When harvest has been observed during this time period, most of Maryland’s recreational harvest and all recreational harvest in Delaware, New York, Connecticut, and Rhode Island occurred during Wave 4, while all recreational harvest has occurred during wave 5 for New Jersey during the same time period.

The distribution of total catch throughout the year is slightly different than the distribution of harvest for some states. For Georgia, South Carolina, and North Carolina, total catch in 2018-2023 (excluding 2020) was more spread out among Waves 3, 4, and 5, as compared to consistent peaks in Wave 3 for harvest (Figure 6). Virginia’s total catch is more evenly spread between Waves 3 and 4, as compared to a sharper harvest peak in Wave 4. For states north of Virginia, most catch has been observed during Wave 4, with New Jersey seeing catch only in Wave 5 in the most recent years.



**Figure 5.** Percent of harvest of Atlantic cobia in numbers per wave from 2018-2023 (excluding 2020). Note: MRIP sampling does not occur in any state during Wave 1 (Jan-Feb) except for North Carolina. North Carolina’s estimated cobia harvest during Wave 1 for this time period was 0 fish. Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).



**Figure 6.** Percent of catch of Atlantic cobia in numbers per wave from 2018-2023 (excluding 2020). Note: MRIP sampling does not occur in any state during Wave 1 (Jan-Feb) except for North Carolina. North Carolina’s estimated cobia harvest during Wave 1 for this time period was 0 fish. Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP Query April 2024).

### 2.2.3.1 MRIP Study of Fishing Effort Survey Bias

In August 2023, NOAA Fisheries released findings of a pilot study it conducted to evaluate potential sources of bias in the recreational Fishing Effort Survey (FES) questionnaire design. This study found switching the sequence of questions in the survey resulted in fewer reporting errors and fishing effort estimates that were generally 30 to 40% lower for shore and private boat modes compared to estimates produced from the current design. However, results varied by state and fishing mode, and impacts on a pulse fishery such as cobia are unknown. These results are based on a pilot study that had a limited time frame (six months) and geographic scope (only four states included). Additional extensive work needs to be done to determine the true impacts of the survey design. NOAA Fisheries is conducting a larger-scale follow-up study over the course of the next few years. At this time, the potential impacts to recreational catch estimates and stock assessments are unknown.

Recent landings information suggests that Atlantic cobia are extending their range northward. Specifically, *de minimis* states have exceeded the 1% *de minimis* set-aside every year between 2020 and 2022, and landings in Mid-Atlantic states have increased over the timeseries. Given these trends in landings, unknown impacts of the FES follow-up study, and lack of updated cobia stock assessment projections, this Addendum was considered *prior to* potential updates to MRIP catch estimates. A new benchmark stock assessment for Atlantic cobia will be completed by 2026 and could explore how a possible overestimation of recreational catch may

impact cobia biomass. Additionally, this Addendum allows allocations to be quickly updated under certain circumstances, such as potential updated MRIP catch estimates from this study.

### **2.2.3.2 Summary of Non-De Minimis State Fisheries**

**Virginia:** Virginia's recreational cobia fishery has grown substantially since 2016. Two of the main fishing methods are sight-casting and pier fishing. Sight-casting from custom towers on the top of boats has become more popular than the traditional method of bottom fishing. This shift could be tied to an increase in effectiveness of targeting cobia via sight-casting because of their feeding habits and tendency to swim in schools on the surface of the water. There is also a shore-specific fishery for cobia from the four large piers found within coastal Virginia. While cobia are available, effort will increase on piers as the fish are moving through different parts of the Chesapeake Bay and oceanfront. Anglers will target cobia when they are accessible from the piers, but effort will decrease to almost zero once the fish have migrated to other areas.

While other states may experience pulses of abundance in cobia as they migrate up and down the Atlantic coast, cobia can be found in Virginia waters from mid-May through mid-October. This continuous season in Virginia attracts anglers traveling from out of state to target cobia, contributing to the already large yearly catches from residents. Even with the continuous season, catch peaks from May-June when the fish enter the Bay, and again in August-September as they leave the Bay.

From 2016-2022, Virginia operated the Recreational Cobia Mandatory Reporting Program (RCMRP), a monitoring program to survey recreational cobia anglers. The RCMRP required a free cobia permit for all captains or operators of vessels, as well as those who fished without a vessel (i.e. from a shore, pier, etc.). All permittees were responsible for reporting their cobia activity during the recreational season. Recreational reporting for cobia harvest and releases was mandatory, but revocation of permits was not enforced during the beginning stages of development. Due to low reporting rates, in 2019, reporting became mandatory with revocation to increase reporting rate. That is, permittees who did not report their participation in the recreational cobia fishery within 21 days after the close of the season were ineligible for the following year's recreational cobia permit. At the peak of the program in 2020, there were 8,256 permit holders submitting 12,307 trips total, with a catch of 24,020 cobia (includes kept and released fish). Ultimately the RCMRP was ended in 2022 due to unnecessary burden on recreational anglers. Since the data were not statistically sound enough for any stock assessment use, the program changed to voluntary reporting to try to fill the gap for recreational release data.

**North Carolina:** In North Carolina, the recreational cobia fishery is seasonal, with cobia primarily available in state waters from late spring through early fall. Cobia are landed mostly in the spring and summer months corresponding with their spring spawning migration (Smith, 1995). Peak landings occur during the latter part of May into June and quickly diminish thereafter. However, recreational landings of cobia can occur through October. Historically, recreational fisherman targeted cobia from a vessel by anchoring and fishing with dead, live, or

a mixture of both bait types near inlets and deep water sloughs inshore (Manooch, 1984). In the early 2000s, fishermen began outfitting their vessels with towers to gain a higher vantage point to spot and target free-swimming cobia along tidelines and around bait aggregations. This method of fishing actively targets cobia in the nearshore coastal zone and has become the primary mode of fishing in most parts of the state.

Despite increased fishing pressure due to a growing number of charter and recreational boats, North Carolina recreational cobia landings have been lower the last couple years relative to previous years. Weather conditions, including persistent winds, have hindered fishing efforts by reducing the number of fishable days. The North Carolina cobia fishery is a pulse fishery, with the primary wave of fish historically arriving in early June and being available for about 6 weeks. In recent years, anecdotal observations suggest the cobia are migrating to Chesapeake Bay much earlier, in April and May, and are residing in North Carolina for a shorter period of time, possibly influenced by temperatures and/or currents.

**South Carolina:** South Carolina's recreational cobia fishery occurs in both nearshore waters and around natural and artificial reefs offshore. Historically, the majority of cobia landings have occurred in state waters in and around spawning aggregations from April through May. However, due to intense fishing pressure in the inshore zone, annual landings of cobia have fallen drastically since 2009, such that the majority of recreationally caught cobia in South Carolina now come from offshore (federal) waters. Legislative action was taken in 2016 to help protect the inshore fishery by putting a no take of cobia during the month of May, their peak spawning period inshore, within state waters south of Edisto Island. This has also helped shift fishing effort offshore. Due to the size increase from 33 inches FL to 36 inches FL in 2018, most of the captured cobia are under the size limit and are released. Anglers begin targeting cobia in late April-early May with the peak of the season typically occurring May into early June. Late season catches can occur on nearshore reefs through October depending on water temperatures. Additionally, anglers have seen an increase in shark predation over the past few years.

**Georgia:** A large recreational fishery exists for cobia in Georgia. Most of this fishery occurs in nearshore waters around natural and artificial reefs. While there are some instances of cobia being caught inshore and on beach front piers in Georgia, most landings come from federal waters. Georgia anglers generally begin targeting cobia in late April with peak harvest occurring in May/June. Anglers continue to catch cobia off Georgia through August, and data from MRIP shows that catch of cobia off Georgia peaks during Wave 4 (July-August). There are anecdotal reports of late season (October-December) catch that sometimes occurs on nearshore reefs depending on water temperatures. These are likely migratory fish that are moving back through waters off Georgia as they head south from areas north of Georgia. However, these fall runs are sporadic and may not be observed in MRIP data.

Some evidence suggests there may be two distinct groups of cobia that occur in waters off Georgia. One, a north/south migrating group of fish that appears in early spring as part of their northward migration. This group of fish may account for the peak in landings that occurs in

May/June in Georgia’s cobia fishery. And the second, a group of east/west migrating fish that are present off Georgia through the summer months that then retreat to deeper offshore waters to overwinter along the edge of the continental shelf. This theory is supported by the persistence of fish off Georgia well into the summer months (July/August) and after the northward migrating group of cobia has moved out of Georgia waters and into regions north of Georgia.

### 3.0 MANAGEMENT PROGRAM

#### 3.1 Recreational Allocation Framework and Seasons

*This section replaces section 4.3.4 in Amendment 1*

Management of the coastwide recreational quota is accomplished by regional allocations to two regions. The northern region is comprised of states from Rhode Island through Virginia. The southern region is comprised of states from North Carolina through Georgia.

Percentage allocations are based on each region’s percentages of coastwide historical landings in numbers of fish, derived as 50% of the 2014-2023 average (excluding 2016, 2017, 2020) and 50% of 2018-2023 average (excluding 2020). Table 3 shows each region’s allocation percentage of the coastwide recreational quota.

Landings from 2016, 2017, and 2020 are excluded from the allocation calculations. Cobia closures in federal waters and some states’ waters during 2016 and 2017 resulted in those years being excluded from allocation calculations. Similarly, 2020 is excluded due to COVID-19 impacts on MRIP sampling and use of imputed data for 2020 recreational harvest estimates.

**Table 3.** Allocation percentages for Atlantic cobia by region.

<b>Region</b>	<b>Allocation Percentage</b>
Northern Region	68.7%
Southern Region	31.3%
Total	100%

All states in a region are required to have the same size limit and vessel limit. Seasons may differ among states in a region.

The following outlines when management measures switch from the previous state-by-state measures to a region-wide size and vessel limit. Recreational management measures remain status quo in each state until completion of the SEDAR 95 stock assessment, or until a region needs to take a reduction based on evaluation of the region’s landings against the harvest target, whichever comes first. At that time, the states in the region will work with the Cobia Technical Committee to determine a set of management measures for all states in the region to meet the reduction (i.e., uniform size limit and vessel limit; seasons may differ). Regions cannot



liberalize measures before the completion of SEDAR 95. Changes to management measures are required to be reviewed by the Technical Committee and approved by the Board prior to implementation.

Conservation equivalency (CE) is not allowed for recreational management measures.

*The following sentence replaces section 3.3.2 in Addendum I to Amendment 1*

States with recreational *de minimis* status are subject to the recreational management measures determined for the region they are part of.

### **3.2 Updates to State/Regional Recreational Allocations**

*This section replaces part of Section 4.3.5 in Amendment 1*

The Board may change recreational allocations via Board action (voting at a Board meeting; no addendum needed) if harvest estimates for the allocation source data years are revised (i.e., if MRIP estimates are updated).

If the Board is considering changing allocation via Board action under the above scenario, the Cobia Technical Committee will re-calculate allocations and bring the new allocations to the Board for consideration.

If the Board considers allocation changes outside of the above scenario, an addendum is needed to consider reallocation.

### **3.3 Data and Uncertainty in Recreational Landings Evaluations**

*This section replaces part of section 4.3.5 in Amendment 1*

Recreational landings are evaluated against recreational harvest targets at the same time (i.e., at the same meeting) as the specification process. 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.

States in each region will have different management measures from each other until the measures are changed to a uniform set of measures (same size and vessel limit; seasons may differ) when a reduction or liberalization occurs, or following the completion of SEDAR 95. This does not affect the evaluation; the evaluation timeframe only depends on if measures have changed from year-to-year, not if they differ between states.

### **3.4 Overage Response for Recreational Landings Evaluations with Rolling Averages**

*This section replaces part of section 4.3.5 in Amendment 1*

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 harvest that does not exceed the harvest target.

Changes to management measures for states with overages or states that wish to liberalize management measures are required to be reviewed by the Technical Committee and approved by the Board prior to implementation.

### **3.5 Provision on the Use of Confidence Intervals**

The Board can decide in the future via Board vote to switch from a rolling average approach to a confidence interval approach for harvest target evaluation. Using confidence intervals instead of a rolling average for evaluation would more directly account for the uncertainty around the MRIP harvest point estimates.

The confidence interval approach requires PSEs and confidence interval values for the regional total harvest estimates, which are currently only available via MRIP's custom data request process.

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 the same 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 to be 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.

### **3.6 Timeline for Setting Commercial and Recreational Measures**

*This section replaces section 4.1 in Amendment 1.*

The coastwide total harvest quota, vessel limits, possession or bag limits, size limits, and commercial closure triggering mechanism may be specified through Board action for up to five years. New specified harvest measures may be implemented after the expiration of previously specified measures or following a completed stock assessment. In years when harvest specifications are made, they are to occur no later than the Annual Board meeting, and resulting measures implemented in the following year.

### **4.0 COMPLIANCE SCHEDULE**

This Addendum is effective as of August 7, 2024.

## 5.0 REFERENCES

- Atlantic States Marine Fisheries Commission (ASMFC). 2024. Review of the Interstate Fishery Management Plan For Atlantic Cobia (*Rachycentron canadum*): 2023 Fishing Year. Arlington, Virginia. 22 pp. Available online at: [http://www.asmfc.org/uploads/file/66bd04a7CobiaFMPReview\\_FY2023.pdf](http://www.asmfc.org/uploads/file/66bd04a7CobiaFMPReview_FY2023.pdf)
- Crear, Daniel P., B.E. Watkins, V.S. Saba, J.E. Graves, D.R. Jensen, A.J. Hobday, and K.C. Weng. 2020. Contemporary and future distributions of cobia, *Rachycentron canadum*. Biodiversity Research 26(8):1002-1015.
- Manooch, Charles S. 1984. Fisherman's guide to fishes of the Southeastern United States. North Carolina Museum of Natural History. Raleigh, North Carolina. 362 pp.
- SouthEast Data, Assessment, and Review (SEDAR). 2013. SEDAR 28 – South Atlantic Cobia Stock Assessment Report. SEDAR, North Charleston SC. 420 pp. available online at: <https://sedarweb.org/assessments/sedar-28/>
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- Smith, Joseph W. 1995. Life history of cobia *Rachycentron canadum* (Osteichthyes: Rachycentridae), in North Carolina Waters. *Brimleyana* 23:1-23

**APPENDIX A. 2023 State Management Measures for Atlantic Migratory Group Cobia**

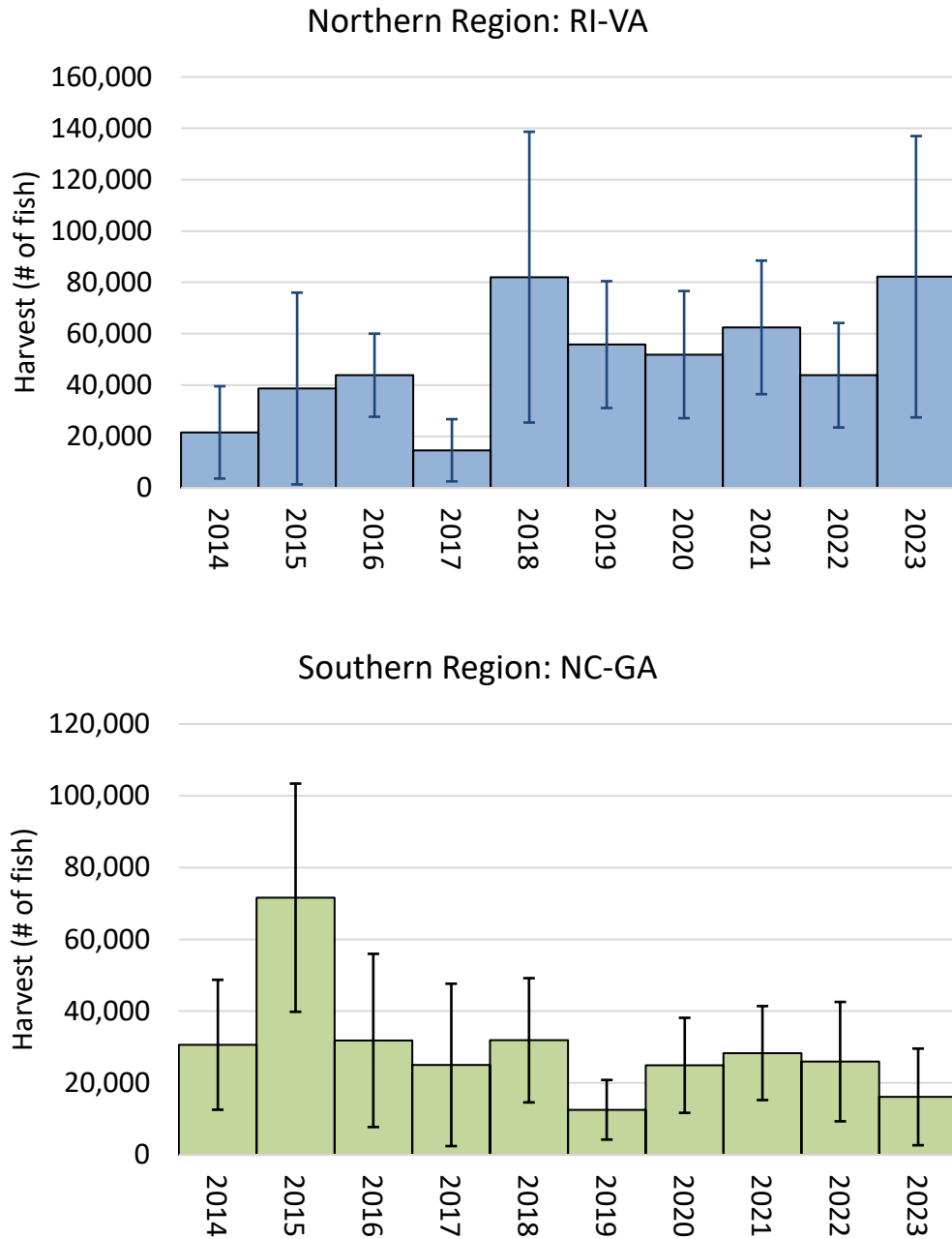
State	Recreational Measures	Commercial Measures
RI	<i>De minimis</i> Minimum Size: 37 in total length Vessel Limit: 1 fish per vessel Season: year-round	<u>Coastwide</u> Possession Limit: 2 fish per person Minimum Size: 33 in fork length or 37 in total length Vessel Limit: 6 fish
NY	<i>Declared into the fishery in 2023; could qualify for de minimis</i> Minimum Size: 37 in total length Vessel Limit: 1 fish per vessel Season: year-round	If commercial fishing in state waters is closed, commercial fishing in federal waters will be recommended to mirror state closures
NJ	<i>De minimis</i> Minimum Size: 37 in total length Vessel Limit: 1 fish per vessel Season: year-round	<u>Deviations</u> -Rhode Island and New York possession limit is 2 fish per vessel -Virginia possession limit is per licensee rather than per person -North Carolina has 36 minimum fork length
DE	<i>De minimis</i> Minimum Size: 37 in total length Bag Limit: 1 fish per vessel Vessel Limit: 1 fish per vessel	-No commercial harvest in South Carolina state waters -Georgia possession limit is 1 fish per person (not to exceed 6 per vessel) and minimum size is 36 in fork length
MD	<i>De minimis</i> Minimum Size: 40 in total length Bag Limit: 1 fish per person Vessel Limit: 2 fish per vessel Season: June 15-September 15	
PRFC	Minimum Size: 40 in total length (only 1 fish over 50" per vessel) Bag limit: 1 per person Vessel Limit: 2 fish per vessel Season: June 15-September 15	
VA	Minimum Size: 40 in total length (only 1 fish over 50" per vessel) Bag Limit: 1 fish per person Vessel Limit: 2 fish per vessel Season: June 15-September 15	

NC	<p>Minimum Size: 36 in fork length          Bag Limit: 1 fish per person          Season: May 1-December 31  <u>Private Vessel Limit</u>          May 1- June 30: 2 fish          July 1-Dec 31: 1 fish</p> <p><u>For-Hire Vessel Limit</u>          May 1-Dec 31: 4 fish</p>	
SC	<p>Bag Limit: 1 fish per person          Minimum Size: 36 in fork length          Vessel Limit: 6 fish          Season: Open year-round</p> <p><u>Southern Cobia Management Zone:</u>          Minimum Size: 36 in FL          Season: June 1-April 30 (closed in May)          Bag Limit: 1 fish per person          Vessel Limit: 3 fish</p> <p>-If recreational fishing in federal waters is closed, recreational fishing in all SC state waters is also closed.</p>	
GA	<p>Bag Limit: 1 fish per person          Minimum Size: 36 in fork length          Vessel Limit: 6 fish          Season: March 1-October 31</p>	
<p><b>*Florida has a declared interest in the Atlantic Coastal Migratory Group, but their cobia fisheries are managed as part of the Gulf of Mexico Migratory Group due to cobia stock boundaries.</b></p>		

**APPENDIX B. Percent Standard Error (PSE) for State and Regional Harvest Estimates**

**Table B1.** Percent standard error (PSE) for each region’s recreational cobia harvest estimate in number of fish from 2014-2023. Yellow indicates a PSE between 30 and 50 (MRIP cautions use of the estimate in fisheries management). Red indicates a PSE greater than 50 (MRIP does not support use of the estimate). Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP May 2024).

Year	Northern Region	Southern Region
	RI-VA	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 B1.** Regional recreational cobia harvest in number of fish from 2014-2023 for each region. Error bars indicate 95% confidence intervals. Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division (MRIP May 2024).