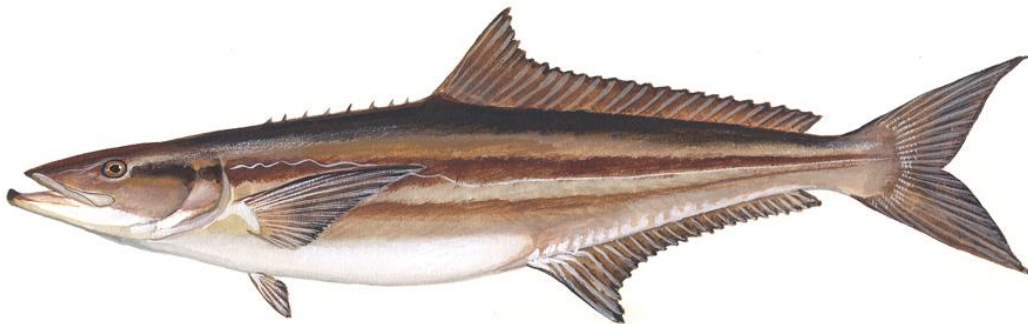


ATLANTIC STATES MARINE FISHERIES COMMISSION
REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR

ATLANTIC COBIA
(*Rachycentron canadum*)

2020 FISHING YEAR



Prepared by the Plan Review Team

Approved September 2021
Updated August 2022 (Table 2)



Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Table of Contents

I.	Status of the Fishery Management Plan.....	1
II.	Status of the Stocks.....	2
III.	Status of the Fishery	3
IV.	Status of Assessment Advice	4
V.	Status of Research and Monitoring	4
VI.	Status of Management Measures and Issues.....	5
VII.	Implementation of FMP Compliance Requirements for 2019	6
VIII.	Recommendations of the Plan Review Team	6
IX.	References	7
X.	Figures.....	8
XI.	Tables	12

I. Status of the Fishery Management Plan

Date of FMP Approval: Original FMP – November 2017

Amendments & Addenda: Amendment 1 – August 2019

Addendum 1 – October 2020

Management Areas: The distribution of the Atlantic stock of cobia from Georgia through Rhode Island

Active Boards/Committees: Coastal Pelagics Management Board; Cobia Technical Committee, Plan Development Team, and Plan Review Team; South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted an [Interstate Fishery Management Plan \(FMP\)](#) for the Atlantic Migratory Group of cobia (Atlantic cobia) in 2017 (ASMFC, 2017). Prior to the FMP, federal management was through the South Atlantic Fishery Management Council's (SAFMC) Fishery Management Plan for Coastal Migratory Pelagic Resources (CMP FMP), while New York, New Jersey, Delaware, Virginia, North Carolina and South Carolina had regulations for their respective state waters.

The FMP established a complementary management approach between the ASMFC and SAFMC. Under the ASMFC, Atlantic cobia are managed as part of the Coastal Pelagics Board (Board). Through the FMP, regulations for states with a declared interest were required to reflect several measures established federally through the CMP FMP.

In March, 2019, [Regulatory Amendment 31](#) to the CMP FMP became effective (SAFMC, 2018). This removed Atlantic cobia from the CMP FMP, resulting in management solely through the ASMFC.

In August, 2019, the Board approved [Amendment 1](#) to reflect removal of Atlantic cobia from the CMP FMP, assume management responsibilities previously accomplished through the SAFMC and CMP FMP, and establish recommendations for measures in federal waters. Amendment 1 stated requirements were to be implemented by July, 2020.

Amendment 1 maintains many regulations of the original Commission FMP and previous CMP FMP. These include a 36-inch fork length (or 40 inch total length) recreational minimum size limit, 1 fish per person recreational bag limit, a recreational daily vessel limit not to exceed 6 fish per vessel, a 33-inch fork length (or 37-inch total length) commercial minimum size limit, and a commercial possession limit of 2 cobia per person not to exceed 6 cobia per vessel.

There are four plan objectives:

- 1) Provide a flexible management system to address future changes in resource abundance, scientific information, and fishing patterns among user groups or areas.

- 2) Promote cooperative collection of biological, economic, and social data required to effectively monitor and assess the status of the cobia resource and evaluate management efforts.
- 3) Manage the cobia fishery to protect both young individuals and established breeding stock.
- 4) Develop research priorities that will further refine the cobia management program to maximize the biological, social, and economic benefits derived from the cobia population.

In February, 2020, the Board approved an annual total harvest quota of 80,112 fish for 2020-2022, based on results from the Southeast Data, Assessment, and Review (SEDAR) 58 stock assessment for Atlantic cobia, allocated to the recreational and commercial sectors based on the Amendment 1 allocation of 92% recreational and 8% commercial. However, states with commercial harvest had an agreement to harvest a smaller portion of that amount in 2020. SEDAR 58 used updated recreational catch estimates from the Marine Recreational Information Program's (MRIP) 2018 transition and calibration to the mail-based Fishing Effort Survey effort estimates, which replaced those of the Coastal Household Telephone Survey.

Given the increased recreational catch estimates used in the SEDAR 58 assessment, the total annual quota approved by the Board also increased, resulting in increases to both the recreational and commercial quotas. As this increase in recreational harvest did not truly reflect a change in previous effort, only the estimate of that effort, [Addendum I to Amendment 1](#) was approved by the Board in October 2020 to reconsider the percent allocations to the commercial and recreational sectors to better reflect the observed harvest. The Addendum changed the allocation of the resource between the recreational and commercial fisheries from 92% and 8%, respectively, to 96% and 4%, respectively. The calculation of the commercial trigger, which determines when an in season coastwide commercial closure occurs, was also revised. The Addendum established a commercial *de minimis* set aside of 4% of the commercial quota with a maximum cap of 5,000 pounds to account for potential landings in *de minimis* states not tracked in-season against the quota. The Addendum also allowed states that are *de minimis* for their recreational fisheries to 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 their recreational fishery to 1 fish per vessel per trip with a minimum size of 33 inches fork length (or an equivalent total length of 37 inches). Based on maturity data from the SEDAR 58 assessment, this latter regulatory option was updated from 29 inches fork length to 33 inches fork length in Addendum I to allow a greater number of females to spawn before being susceptible to harvest. The coastwide recreational harvest target for 2021-2023 fishing seasons is 76,908 fish and results in the following state-specific soft targets:

- Georgia - 7,229 fish
- South Carolina - 9,306 fish
- North Carolina - 29,302 fish
- Virginia - 30,302 fish
- De minimis - 769 fish

The commercial fishery has a coastwide commercial quota of 73,116 pounds annually for the 2021-2023 fishing seasons. The current management measures for the commercial fishery include a 33"

FL minimum size limit and 2 fish limit per person, with a 6 fish maximum vessel limit. The commercial Atlantic cobia fishery will close once the commercial quota is projected to be reached.

II. Status of the Stock

SEDAR 58

In 2020, the Board approved the SEDAR 58 Atlantic Cobia benchmark assessment for management use which 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 provided new reference points and determined that the stock is not overfished and overfishing is not occurring (Figures 1 and 2). This assessment used the recalibrated recreational catch data from MRIP, which yielded much higher biomass and spawning stock biomass estimates as compared to SEDAR 28 (Figure 3). Even with the large changes in biomass estimates, the trends of abundance, recruitment, and relative status were very similar between the two assessments. Stock structure also remained unchanged from the SEDAR 28 assessment which established the stock boundary between Atlantic and Gulf of Mexico cobia at the FL/GA border with the Atlantic stock extending northward to Rhode Island.

Updated Reference Points

The assessment proposed updated reference points of $F_{40\%}$ and 75% of $SSB_{F_{40\%}}$ as the threshold reference points (Figures 4 and 5). The reference points were selected as the fishing rate and SSB that allows the population to reach 40% of the maximum spawning potential the stock would have obtained in the absence of harvest. These reference points serve as proxies for maximum sustainable yield-derived relationships due to insufficient data for cobia.

Status of the Stock and Fishery

Spawning stock biomass showed little overall trend throughout the estimated time series, but the terminal year is the lowest in the time series. Age structure estimated by the base run indicated a slight decline in the number of younger fish in the last decade, but the rest of the age structure was above the expected values in 2017. The estimated fishing mortality rates have generally increased through the assessment time frame, peaking in 1996, with the recreational fleet as the largest contributor to total F ($F_{2015-2017}/F_{40\%} = 0.29$).

III. Status of the Fishery

Regulations, by state, for the 2020 fishing year are presented in Table 1. Total Atlantic cobia landings are estimated at 2.4 million pounds in 2020. (Figure 7, Tables 2 and 3). The commercial and recreational fisheries harvested 3% and 97% of the 2020 total, respectively. Commercial landings of Atlantic cobia in 2020 span from Rhode Island through Georgia (Table 2). Coastwide commercial landings show an increasing trend since low harvests in the 1970s and early 1980s but comprise a small portion of the total harvest due, in part, to a current 8% allocation of the total annual catch limit (Figure 7); this has been revised to 4% beginning with the 2021 fishing year. Coastwide cobia commercial landings in 2020 were estimated at 74,960 pounds. The commercial fishery was

projected to meet the federal ACL and was closed on November 6, 2020, for the remainder of the year in federal waters though state waters were allowed to remain open as the ASMFC-set quota was not yet caught. North Carolina (51%) and Virginia (38%) harvested the majority of the commercial landings (Table 2).

Recreational harvests have fluctuated widely throughout the time series, often through rapid increases and declines. Average recreational harvest for the time series is 1 million pounds (Figure 7, Table 3) and 37,000 fish (Figure 8, Table 4). This fishery has grown noticeably over the time series, with average harvests over the last 10 years of 1.9 million pounds and 68,000 fish. The 2020 recreational harvest was 2.3 million pounds or 76,786 fish. Virginia (68% of pounds, 65% of fish) and North Carolina (18% of pounds, 20% of fish) harvested the majority of recreational landings by pounds and number of fish. Average weight (recreational harvest in pounds divided by recreational harvest in numbers) in 2020 was 30 pounds per fish – an increase of an average 2 lbs per fish from 2019.

Recreational releases of live fish have generally increased throughout the time series (Figure 8, Table 5). In 2020, 245,343 recreationally-caught fish were released, a 19% decrease from 2019.

IV. Status of Assessment Advice

Current stock status information comes from SEDAR 58 (SEDAR, 2020), which determined the stock is not overfished and overfishing is not occurring. Results of this assessment were approved for management use by the Board at their February 2020 meeting, and, as such, have been incorporated into ASMFC's FMP.

The stock assessment could be improved by developing a fishery-independent sampling program for abundance of cobia and other coastal migratory pelagic species. The currently used fishery-dependent index cause notable uncertainty in part due to the lack of an effective sampling methodology. In addition, due to federal water closures, the index could only be calculated through 2015. The assessment could also benefit from improved characterization of age, reproductive, genetic, and migratory characteristics, tag-based information on natural mortality, and more precise recreational catch estimates.

V. Status of Research and Monitoring

There are no monitoring or research programs required annually of the states except for the submission of a compliance report. Fishery-dependent (other than catch and effort data) are conducted in Maryland, Virginia, North Carolina, South Carolina, and Georgia. Data collected includes length, age, and sex data. Fishery-independent monitoring programs conducted by states that may encounter or target cobia are conducted in New Jersey, Delaware, Maryland, South Carolina, and Georgia.

VI. Status of Management Measures and Issues

Fishery Management Plan

Rhode Island joined the Board in 2021 after declaring an interest in the cobia fishery and is in the process of setting regulations through their state process. The state has applied for *de minimis* status with the implementation of standard *de minimis* measures instead of using the nearest non-*de minimis* state regulations. State regulations are expected to be effective January 1, 2022.

Delaware established a cobia regulation in May 2020, but is currently going through an amendment process to update regulations as of Addendum I. The proposed regulation will allow the public to decide which *de minimis* regulation is preferred (i.e. matching the nearest non-*de minimis* state's regulations or adopting the standard *de minimis* measures), and the regulations should be finalized by September 2021.

New Jersey adjusted their recreational regulations for 2021 to meet the standard *de minimis* measures rather than using the nearest non-*de minimis* state regulations.

In 2021, Virginia lowered the vessel limit from 3 fish to 2 fish in order to be in compliance with Amendment 1. The season was also shortened by 30 days, changing to June 15-September 15. Virginia was required to reduce recreational harvest by 42% to not exceed the recreational soft target for 2021-2023. Maryland has adjusted their regulations to maintain consistency with Virginia's, the nearest non-*de minimis* state to them.

North Carolina liberalized recreational measures wherein they increased the vessel limit of two cobia per vessel per day to include the month of June (previously only May).

In 2020, the South Carolina legislature codified the federal regulations for Cobia into the South Carolina Code of Laws. Prior to this, Cobia regulations (outside of the SCMZ) were covered by legal adherence to federal regulations for any species that did not have specific regulations in SC law.

De Minimis

The FMP requires adherence to state harvest targets, allocated to non-*de minimis* states from a Recreational Harvest Limit (RHL). The RHL is derived from the CMP FMP's former recreational Annual Catch Limit (ACL). One percent of the recreational ACL is designated to account for harvest in *de minimis* states.

The FMP allows states to request *de minimis* status if their recreational harvests (in pounds) in two of the previous three years are less than 1% of annual coastwide recreational landings during that time period. If a state qualifies for *de minimis*, the state may choose to match all FMP-related recreational management measures (including seasons and vessel limits) implemented by an adjacent non-*de minimis* state (or the nearest non-*de minimis* state if none are adjacent) or the state may choose to limit its recreational fishery to 1 fish per vessel per trip with a minimum size of

33 inches fork length (or 37 inches total length) with no seasonal restrictions. Rhode Island, New Jersey, Delaware, Maryland, and Florida requested recreational *de minimis* status through the annual reporting process. All of these states qualify for *de minimis* status.

De minimis status for commercial fisheries may be granted to states if their commercial landings for 2 of the previous 3 years were less than 2% of the coastwide commercial landings for the same time period. Commercial regulations in *de minimis* states are also limited to a minimum size of 33 in FL with 2 fish per person for a total of 6 fish per vessel. Rhode Island, New Jersey, Delaware, Maryland, Georgia, and Florida, requested *de minimis* status for commercial fisheries through the annual reporting process. All of these states qualify for *de minimis* status.

VII. Implementation of FMP Compliance Requirements for 2020

The PRT finds no inconsistencies among states in regards to the Fishery Management Plan.

VIII. Recommendations of the Plan Review Team

Management

The PRT recommends that the Board approve the 2020 FMP Review, state compliance, and *de minimis* requests from Rhode Island, New Jersey, Delaware, Maryland, Georgia, and Florida.

Research

The following are important research recommendations from the PRT:

Continue to collect and analyze current life history data from fishery independent and dependent programs, including full size, age, maturity, histology workups and information on spawning season timing and duration. Increase spatial and temporal coverage of age samples collected regularly in fishery dependent and independent sources. Continue collection of genetic material to continue to assess the stock identification and any Distinct Population Segments that may exist within the management unit relative to recommendations made by the SEDAR 58 Stock ID Process.

Define, develop, and monitor adult and juvenile abundance estimates through the expansion of current or development of new fishery independent surveys.

Expand existing fishery independent surveys in time and space to better define and cover cobia habitats, including conducting otolith microchemistry studies to identify regional recruitment contributions and new and ongoing satellite tagging programs to help identify spawning and juvenile habitat use and regional recruitment sources. Additional work to better understand the impacts of climate change on cobia habitat and range expansion.

Additional research recommendations can be found in Section 2.8 of the [SEDAR 58 stock assessment](#).

IX. References

ASMFC. 2017. Interstate Fishery Management Plan for Atlantic Migratory Group Cobia. ASMFC, Arlington, VA. 85 p.

SAFMC. 2018. Amendment 31 to the Fishery Management Plan for Coastal Migratory Pelagics Resources in the Gulf of Mexico and Atlantic Region. NOAA Award # FNA10NMF441001. Charleston, SC. 209 pp.

SEDAR. 2013. SEDAR 28 – South Atlantic Cobia Stock Assessment Report. SEDAR, North Charleston SC. 420 pp. available online at:
http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=28

SEDAR. 2020. SEDAR 58 – Atlantic Cobia Stock Assessment Report. SEDAR, North Charleston SC. 500 pp. available online at: <http://sedarweb.org/sedar-58>

X. Figures

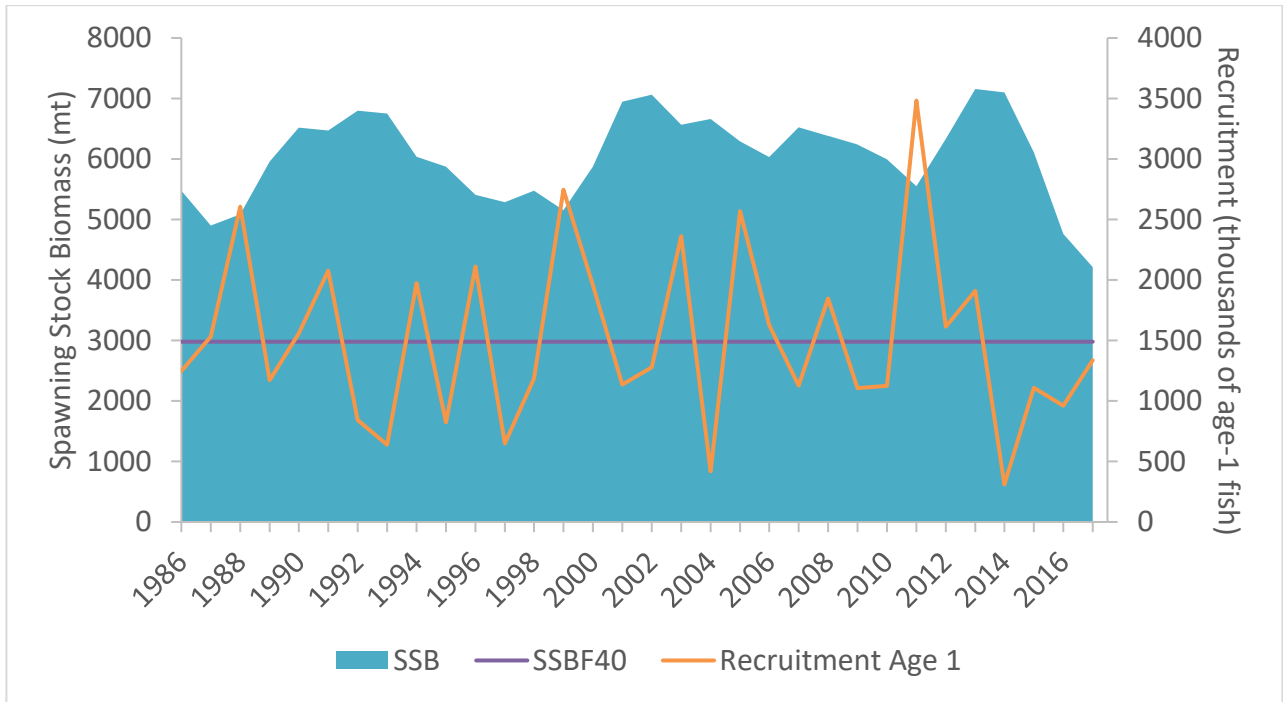


Figure 1. Atlantic Cobia spawning stock biomass (SSB) and recruitment of year 1 fish. (SEDAR, 2020)

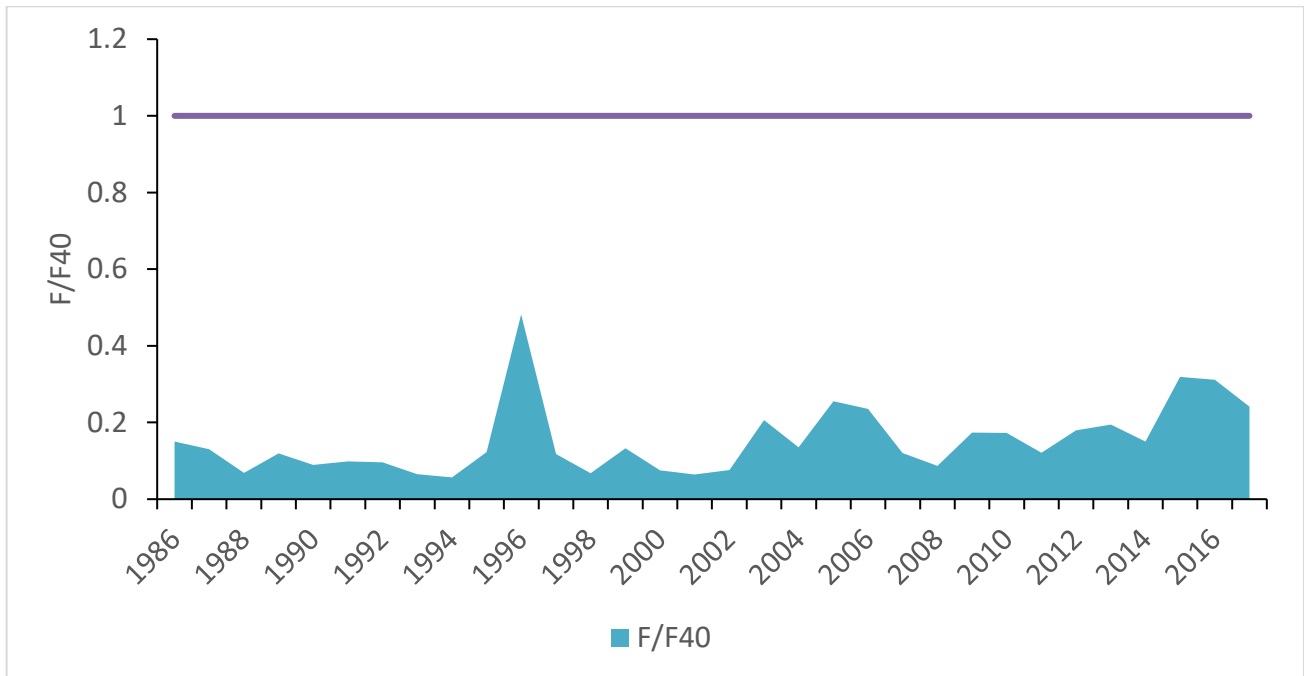


Figure 2. Atlantic Cobia fishing mortality (F) relative to the F40 reference point from 1986-2017. (SEDAR, 2020)

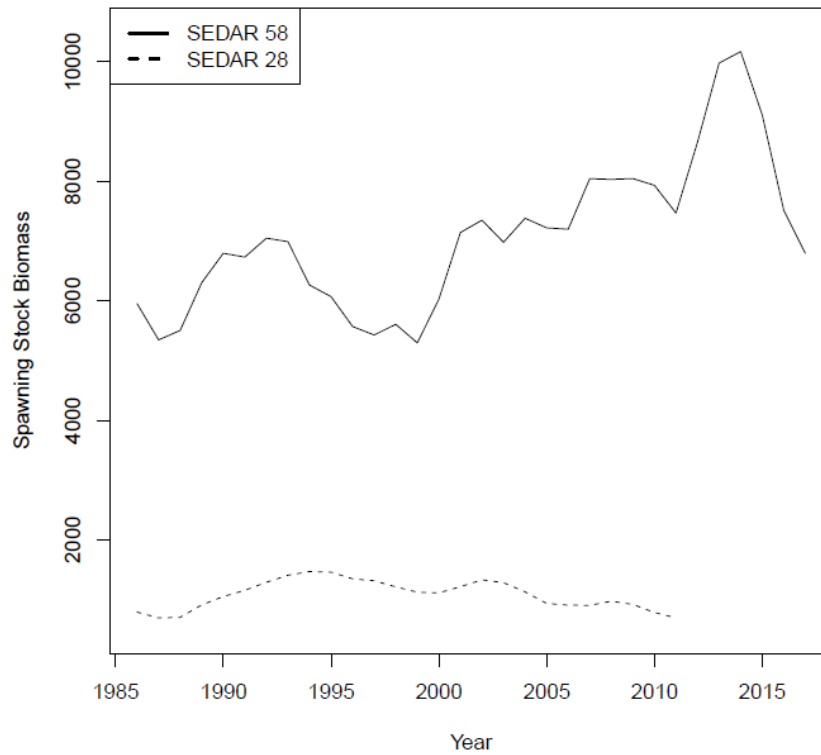


Figure 3. Comparing spawning stock biomass from the current assessment (SEDAR 58) to the last assessment (SEDAR 28). (SEDAR, 2020)

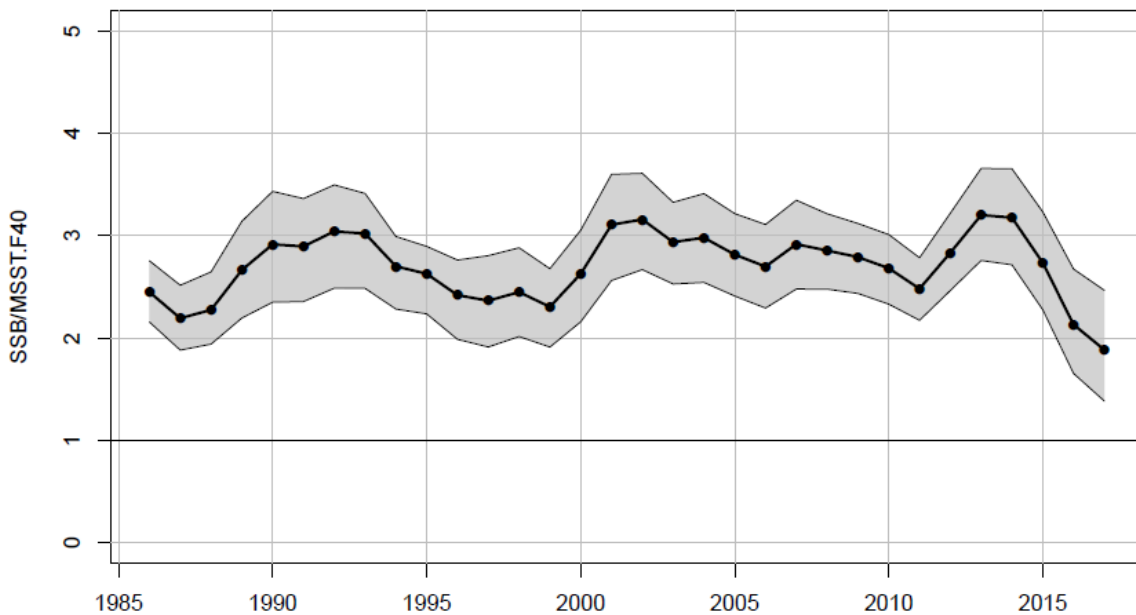


Figure 4. Estimated time series of Spawning Stock Biomass (SSB) relative to the Minimum Stock Size Threshold (MSST) (SEDAR, 2020).

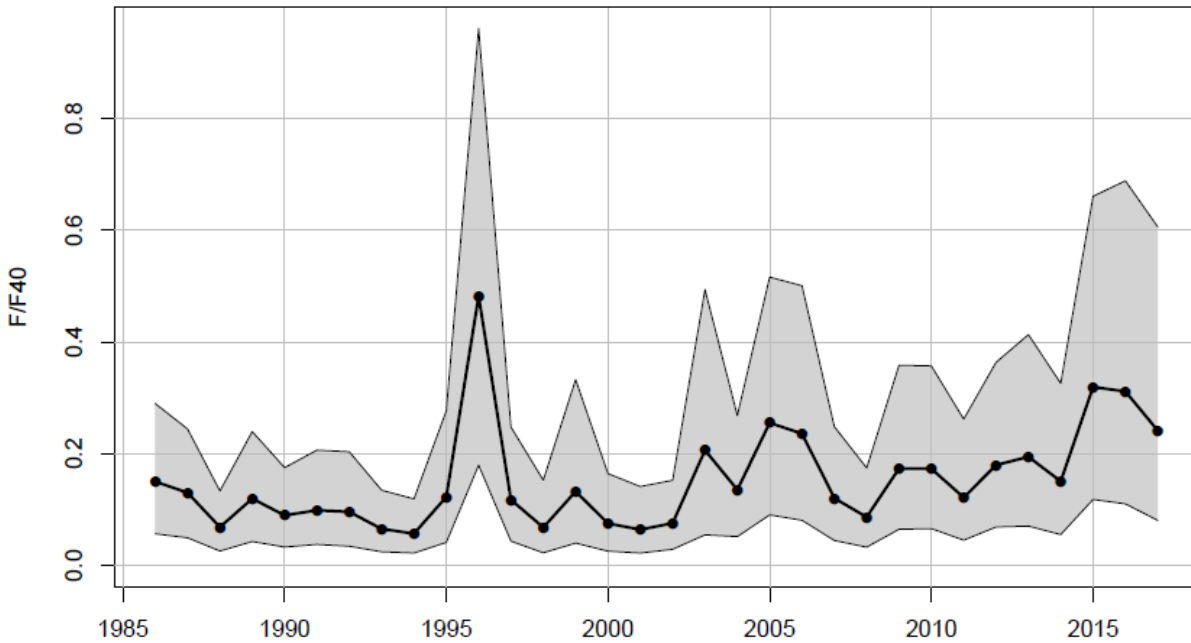


Figure 5. Estimated time series of Fishing Mortality (F) relative to F at Maximum Sustainable Yield (F_{40%}) (SEDAR, 2020).

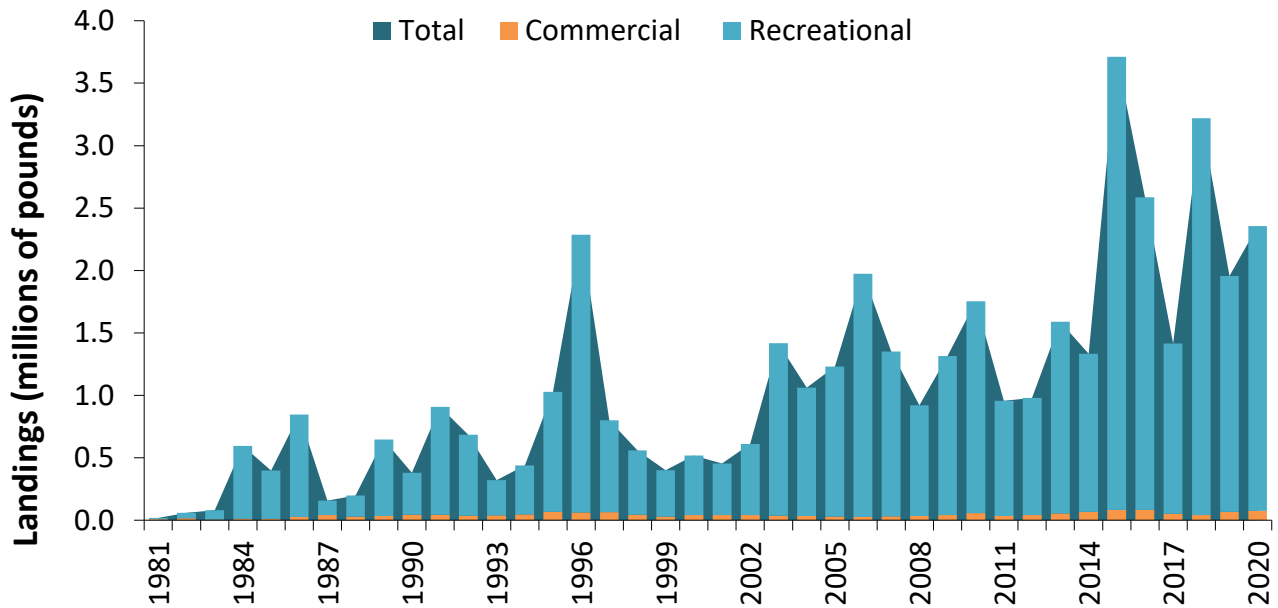


Figure 7. Commercial and recreational landings (pounds) of Atlantic cobia. Recreational data not available prior to 1981. See Tables 2 and 3 for values and data sources.

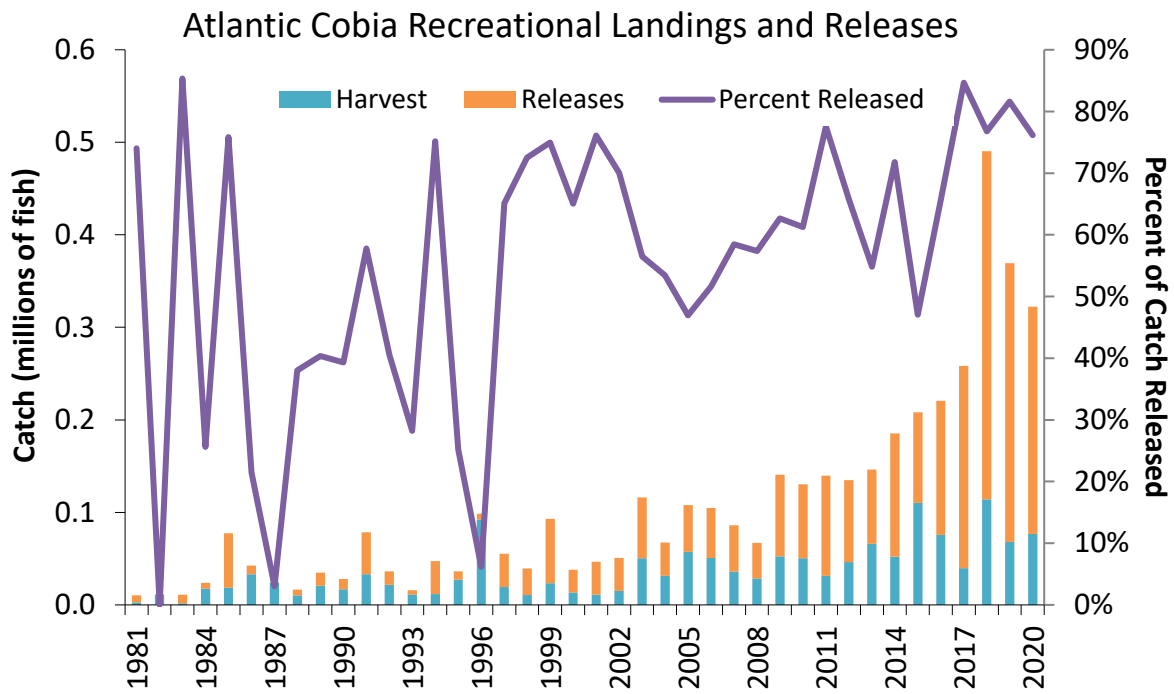


Figure 8. Recreational catch (harvest and live releases) of Atlantic cobia (numbers) and the proportion of catch that is released. See Tables 4 and 5 for values and data sources.

XI. Tables

Table 1. Atlantic cobia regulations for 2020.

State	Recreational Measures	Commercial Measures
RI ⁺	<i>De minimis</i> Minimum Size: 37 in total length Bag 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 If commercial fishing in state waters is closed, commercial fishing in federal waters will be recommended to mirror state closures <u>Deviations</u> -Virginia possession limit is per licensee rather than per person -North Carolina has 36 minimum fork length -No commercial harvest in South Carolina state waters -GA possession limit is 1 fish per person and minimum size is 36 in fork length
NJ	<i>De minimis</i> Minimum Size: 40 in total length Bag Limit: 1 fish per person, 3 per vessel Season: year round	
DE ⁺	<i>De minimis</i> Minimum Size: 40 in total length Bag limit: 1 fish per person Vessel Limit: 3 fish per vessel Season: June 1-September 15	
MD	<i>De minimis</i> Minimum Size: 40 in total length Bag Limit: 1 fish per person Vessel Limit: 3 fish per vessel Season: June 1-September 30	
PRFC	Minimum Size: 40 in total length Bag limit: 1 per person Vessel Limit: 3 fish per vessel Season: June 1-September 30	
VA	Minimum Size: 40 in total length or 1 >50" total length Bag Limit: 1 fish per person Vessel Limit: 3 fish per vessel, with one over >50" total length Season: June 1-September 30	
NC	Minimum Size: 36 in fork length Bag Limit: 1 fish per person Vessel Limits/Seasons: <u>Private</u> May 1- May 30: 2 fish June 1-Dec 31: 1 fish <u>For-Hire</u> May 1-Dec 31: 4 fish	
SC	Bag Limit: 1 fish per person Minimum Size: 36 in fork length Vessel Limit: 6 fish	

	<p>Season: Open year-round</p> <p><u>Southern Cobia Management Zone:</u></p> <p>Minimum Size: 36 in FL</p> <p>Season: June 1-April 30</p> <p>Bag Limit: 1 fish per person</p> <p>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</p> <p>Minimum Size: 36 in fork length</p> <p>Vessel Limit: 6 fish</p> <p>Season: March 1-October 31</p>
<p>*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.</p> <p>+Currently undergoing management revisions</p>	

Table 2. Commercial landings (pounds) of Atlantic cobia by state, 2011-2020. (Sources: 2021 state compliance reports for 2020 fishing year; for years prior to 2020, personal communication with Atlantic Coastal Cooperative Statistics Program [ACCSP], Arlington, VA)

Year	Other*	RI	NJ	DE	MD	PRFC	VA	NC	SC	GA	Total
2011	393	170	C		C		8,500	19,924	4,020	C	33,394
2012	152	217	699		C		5,382	31,972	3,359	C	C
2013	840	476	885	C	C		10,900	35,456	3,829	C	53,177
2014	311	C	359		C		21,255	41,798	3,492	C	68,076
2015	235	C	C		C		25,352	52,684	2,487	C	82,117
2016	114	183	282	C	C		29,459	48,244	4,064	C	83,583
2017	80	115	C	C	C		26,748	16,890	4,261	C	52,376
2018	C	290	707		C		21,355	16,578	2,723	C	42,711
2019	1,191	352	C	C	C	2,375	31,647	21,553	2,447	C	62,778
2020	C	844	831	C	C	378	27,936	38,344	1,312	C	74,960

C: confidential landings.

*Other: states that do not have a declared interest in Atlantic migratory cobia and do not sit on the Coastal Pelagics Board.

Table 3. Recreational harvest (pounds) of Atlantic cobia by state, 2011-2020. Values shown are the new MRIP numbers. (Sources: 2021 state compliance reports for 2020 fishing year; for years prior to 2020, personal communication with MRIP [Queried July 2021])

Year	RI	NJ	DE	MD	VA	NC	SC	GA	Total
2011					341,751	399,192		182,799	923,742
2012		60,473			47,547	102,077	214,512	512,499	937,108
2013					488,181	980,541	24,005	43,915	1,536,642
2014					499,218	645,427	79,171	42,481	1,266,297
2015					1,166,000	1,925,762	434,899	102,917	3,629,578
2016				307	1,505,528	838,363	159,345		2,503,543
2017					488,287	872,861		390	1,361,538
2018			15,053	4,647	2,259,661	685,962	205,647	6,081	3,177,051
2019					1,573,485	254,963	58,204	1,632	1,888,284
2020				38,991	1,541,393	407,883	247,250	44,976	2,280,493
% Imputed Data 2020				6%	76%	88%	8%	1%	

Table 4. Recreational harvest (numbers) of Atlantic cobia by state, 2011-2020. Values shown are the new MRIP numbers. (Sources: 2021 state compliance reports for 2020 fishing year; for years prior to 2020, personal communication with MRIP [Queried July 2021])

Year	RI	NJ	DE	MD	VA	NC	SC	GA	Total
2011					12,663	10,711		7,990	31,364
2012		18,287			1,429	3,805	7,626	15,104	46,251
2013					24,145	37,617	1,580	2,638	65,980
2014					21,585	24,601	3,883	2,168	52,237
2015					38,672	47,110	15,575	8,934	110,291
2016				56	43,780	26,421	5,437		75,694
2017					14,613	25,025		19	39,657
2018			581	206	80,679	25,331	6,340	233	113,939
2019					55,770	10,090	1,991	72	67,923
2020				1,360	50,287	15,067	7,650	2,203	76,786
% Imputed Data 2020				4%	78%	88%	7%	1%	

Table 5. Recreational live releases (numbers) of Atlantic cobia by state, 2011-2020. Values shown are the new MRIP numbers. (Sources: 2021 state compliance reports for 2020 fishing year; for years prior to 2020, personal communication with MRIP [Queried September 2020])

Year	RI	NJ	DE	MD	VA	NC	SC	GA	Total
2011					26,523	47,151	29,021	5,619	108,314
2012		178			17,184	66,567	4,404	383	88,716
2013					35,731	35,398	7,438	1,577	80,144
2014					58,092	32,184	42,811		133,087
2015		416			40,689	44,254	12,369	283	98,011
2016				1,075	81,482	39,237	20,255	2,917	144,966
2017					77,184	125,251	11,359	4,830	218,624
2018		2,879		21,384	194,865	68,219	71,020	18,056	376,423
2019		10,166	30	251	184,716	38,285	59,008	9,080	301,536
2020			564	8,233	146,913	51,158	23,384	15,091	245,343
% Imputed Data 2020			0%	2%	74%	62%	1%	17%	