

Report on the Virginia Marine Resources Commission's Mandatory Reporting Program for Cobia, *Rachycentron canadum*

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Alex Aspinwall, Somers Smott, & Olivia Phillips

Fisheries Management Division
Virginia Marine Resources Commission
380 Fenwick Road, Hampton, Virginia

Abstract

This report is intended to inform Virginia's recreational anglers on the total catch, effort, and biological data of cobia collected through the Virginia Marine Resources Commission (VMRC) Recreational Mandatory Reporting Program through 2019. This report does not replace nor substitute the current landings and effort data provided by the Marine Recreational Information Program. The Recreational Mandatory Reporting Program has evolved throughout the years. It will need to be evaluated with our partners from the Atlantic States Marine Fisheries Commission and the Atlantic Coastal Cooperative Statistics Program to understand the utility of the data to inform best management practices for cobia in the future.

Introduction

In 2015, a group of recreational cobia anglers expressed interest in recreational self-reporting of cobia to further aid in the monitoring of recreational cobia harvest in Virginia. At the time, the VMRC had a recreational mandatory reporting program for some species (e.g., striped bass, blueline tilefish), but not for cobia. As such, VMRC added cobia to the recreational mandatory reporting program in 2016. The recreational mandatory reporting program for cobia required a free permit for all captains or operators of vessels, as well as those who fished without a vessel (i.e. shore, pier, etc.). All permittees would be responsible for reporting their cobia activity during the recreational season. The recreational reporting program for cobia harvest and releases was voluntary during the beginning stages of development. As the program developed, the recreational cobia reporting program became mandatory to increase reporting rate.

The reporting rate (total number of unique permittee reports/total number of permittees) in 2019 was approximately 61%, which means that 39% of permittees (23,117 individuals) had not reported any activity by 21 days after the end of the 2019 cobia fishing season. The reporting rates in 2017 and 2018 were 55% and 58%, respectively. Although the data set in 2019 is incomplete, staff was still able to gather valuable information on catch and effort in the fishery. Data collected from the VMRC's Recreational Mandatory Reporting Program were considered for use in the recent 2018 cobia stock assessment to characterize the length composition of released cobia in Virginia. Unfortunately, the dataset was not used because the time series was too short to be robust. The assessment determined that the VMRC Recreational Mandatory Reporting Program data needed additional years of data to be viable. In 2019, the VMRC took further steps to increase compliance by establishing a consequence for non-reporters. That is, permittees who did not report their participation in the recreational cobia fishery by 21 days after the end of the season were ineligible for the following year's recreational cobia permit. Improvements in recreational reporting will increase the reliability and accuracy of the data provided to managers.

Methods

All cobia permittees in 2019 were required to report trips where cobia were caught, harvested, released, or possessed within seven days of that trip occurring. Any permittee who did not take fishing trips in which cobia were targeted were required to report their lack of participation by 21 days after the end of the season (i.e., October 21, 2019). Recreational permittees were required to

report online through the Virginia Saltwater Journal located here: <https://www.vasaltwaterjournal.com/> or on paper forms provided by the Commission ([Appendix I](#)). All reports were requested to have the following information:

- 1) A unique identifier (MRC ID);
- 2) Date of trip;
- 3) Species;
- 4) Mode (Charter or Private Angler);
- 5) Fished from (Vessel, Pier, Kayak, Shore);
- 6) Number of anglers;
- 7) Number of cobia kept;
- 8) Number of cobia released.

Although it was not required, anglers could provide length, weight, effort, and location information for the cobia they kept and/or released. The sum of recreationally reported kept and released fish by year was used to estimate total recreational catch of cobia. Monthly recreational catch was used to evaluate changes in reported catch throughout the recreational season. The sum of reported trips in which cobia were targeted was used to estimate total recreational effort. Length and weight data were used to estimate the average length and weight of catches by year.

Results

In 2019, cobia permittees reported catching a total of 31,134 cobia, where 7,623 cobia were kept and 23,511 cobia were released. Recreational reported catch estimates (harvest and releases) in 2019 are 66% higher than catch estimates in 2018 and 206% higher than catch estimates in 2017 ([Figure 1](#)). Most cobia are caught (kept and released) in June, and catch numbers decline steadily through September ([Figure 2](#)).

In 2019, 873 total lengths (TL, inches) and 184 weights of cobia were reported through the Recreational Mandatory Reporting Program. The average reported length of a kept cobia in 2019 was 45.6 ± 0.46 inches total length whereas the average length of a released fish in 2019 was 36.6 ± 0.54 inches TL ([Figure 3](#)). The average lengths of kept and released fish are consistent across all years ([Figure 3](#)).

Of the 9,269 trips reported by cobia permittees in 2019, 8,045 trips (87%) were reported by the private recreational fleet and 1,224 trips (13%) were reported by the charter recreational fleet. The total number of recreational trips in 2019 represents a 33% increase in effort relative to 2018 and a 73% increase in effort relative to 2017. In 2019, a total of 7,980 recreational cobia permits were obtained by both the private and charter fleets. The number of permits in 2019 represents a 13%

increase in the number permits relative to 2018 and a 20% increase in the number of permits relative to 2017.

Discussion

Estimates of catch and effort within the recreational cobia fishery in Virginia have increased substantially since cobia were added to the recreational mandatory reporting program. The increase in recreationally reported catch could be attributed to a variety of different factors in the fishery including: 1) an increased number of cobia permittees, 2) an increased number of recreational trips, 3) changes in angler understanding of reporting requirements, 4) changes in management measures (e.g, recreational season, size or possession limits), 5) changes in environmental conditions, 6) changes in fish availability and abundance, or 7) some combination of these factors.

Although recreationally reported catch has increased since the beginning of the reporting program, there was also a steady increase in the number of permittees each year, which likely contributes to the increased number of reports. A comparison of recreationally reported catch and effort from the VMRC's Recreational Mandatory Reporting Program to data provided through the Marine Recreational Information Program (MRIP) indicates that recreational catch and effort of cobia have increased in recent years and that catch estimates tend to be more variable in MRIP data. However, data provided through MRIP is not recreationally reported, instead catch estimates are generated from the Access Point Angler Intercept Surveys (APAIS) coupled with effort from mail-in reports through the Fishing Effort Survey (FES) to estimate catch and effort in the fishery. The survey designs themselves follow different approaches to estimate recreational catch and effort. MRIP is a long-standing survey that uses a sub-sample of the angling population to extrapolate recreational catch and effort while the VMRC's Recreational Mandatory Reporting Program for cobia relies on recreational reports to generate estimates of catch and effort in the fishery. Although both sampling designs are different in structure, they still indicate that effort and catch of cobia has steadily increased in Virginia over time.

Modifications in the reporting process are necessary to improve the accuracy and reliability of the data collected. Unfortunately, anglers who do not hold a cobia permit, but capture (and release) cobia as bycatch are not required to submit a report. Recreational releases represent a substantial amount of the catch in the cobia fishery, as such it is possible that the Recreational Mandatory Reporting Program's dataset does not include all possible release data because non-permittees are not required to report cobia bycatch (and release). In 2019, approximately 76% of the recreationally reported catch was released and 24% was kept. Recent studies on cobia indicate that release mortality is low (5%), however it is important that this activity is captured to improve the quality of the data. Staff will consider ways to address possible missing release data in the future.

VMRC has collected biological data for certain finfish species through Virginia's Sportfish Collection Program since 2007. The program provides freezer donation centers in popular marinas, tackle shops, and boat launches where anglers can donate carcasses from which biological data will be collected. The VMRC provides anglers who donate with a free t-shirt, hat, or fish ruler in appreciation for their donation to the program. In 2017, a total of 242 cobia were donated to the Sportfish Collection Program. The average donated cobia in 2017 was 44.3 inches TL. In 2018, of a total of 325 cobia donated to the Sportfish Collection Program, and the average cobia was 43.1

inches TL. In 2019, of a total 438 cobia were donated and the average donated cobia was 43.3 inches TL. The number of donation freezers and locations have not increased significantly over time, but cobia donations have, which suggests an increase in harvest and effort within the recreational cobia fishery over time. Biological data collected from recreational reports indicate that the average length of kept and released cobia in 2019 were approximately 45.7 inches TL and 35.6 inches TL, respectively. Average cobia lengths are similar between the Recreational Mandatory Reporting Program for cobia and the Sportfish Collection Program, indicating the accuracy of self-reported lengths through the Recreational Mandatory Reporting Program for cobia.

The otoliths collected from the Sportfish Collection Program can be used to age the donated fish. The age distributions of Cobia collected in 2017 and 2018 can be found in [VMRC 2017 Ageing and Growth Annual Report](#) and [VMRC 2018 Ageing and Growth Annual Report](#), respectively. The age distribution of Cobia collected in 2019 can be found in Table 4.1 in [VMRC 2019 Ageing and Growth Annual Report](#). Apparent shifts in the number of donated cobia at age may represent strong year classes moving through the fishery or shifts in angler behavior. Anglers who are interested in estimating ages for their cobia can do so using the [Fish Age Estimator](#) developed by VMRC.

Acknowledgment

We thank all of our cobia permittees who contributed their time and effort to the mandatory report program for cobia. This report would not be possible without data collected from our recreational anglers. We also thank staff from the VMRC Fisheries Management Division for their untiring dedication and commitment to the program. Lastly, we thank Dr. Hank Liao for his expertise with the biological data.

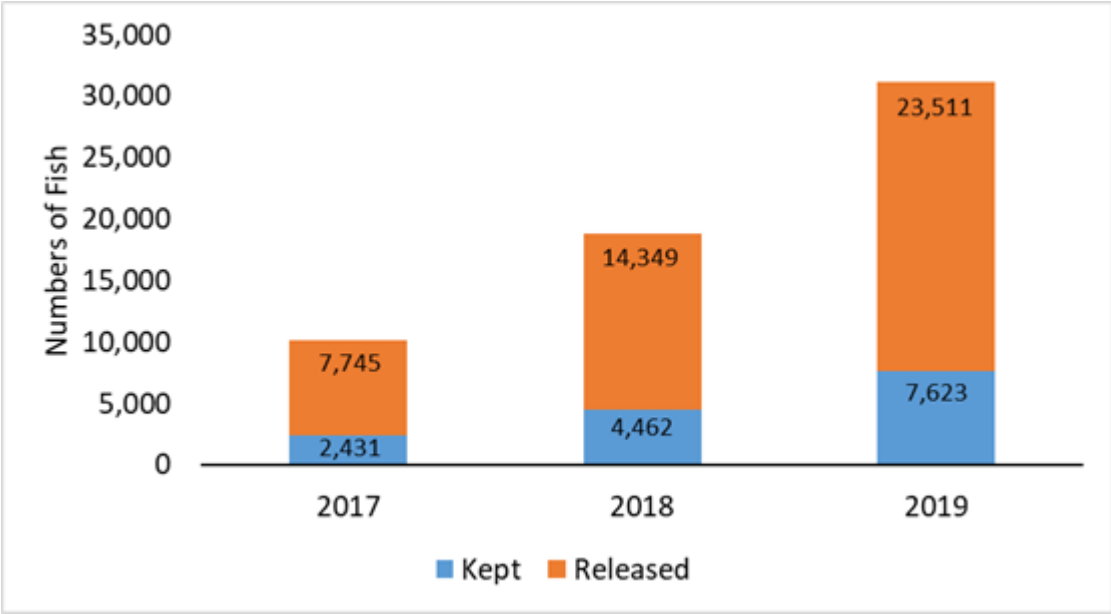


Figure 1: Reported Recreational Catch (Kept and Released) of Cobia in Virginia, 2017-2019.

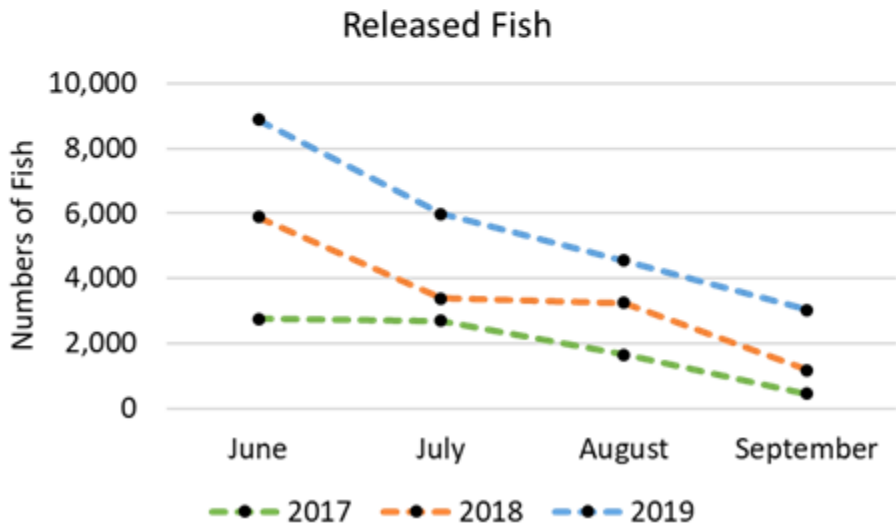
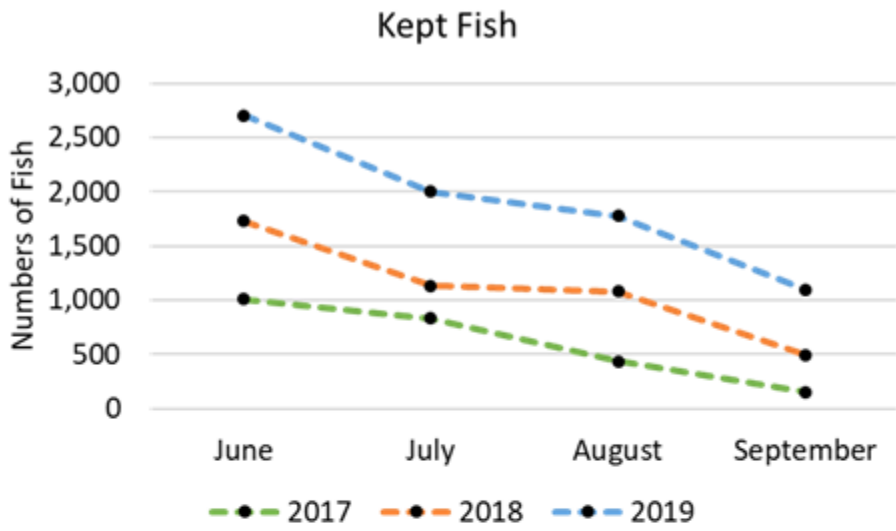


Figure 2: Reported Recreationally Kept and Released Cobia by Month, 2017-2019.

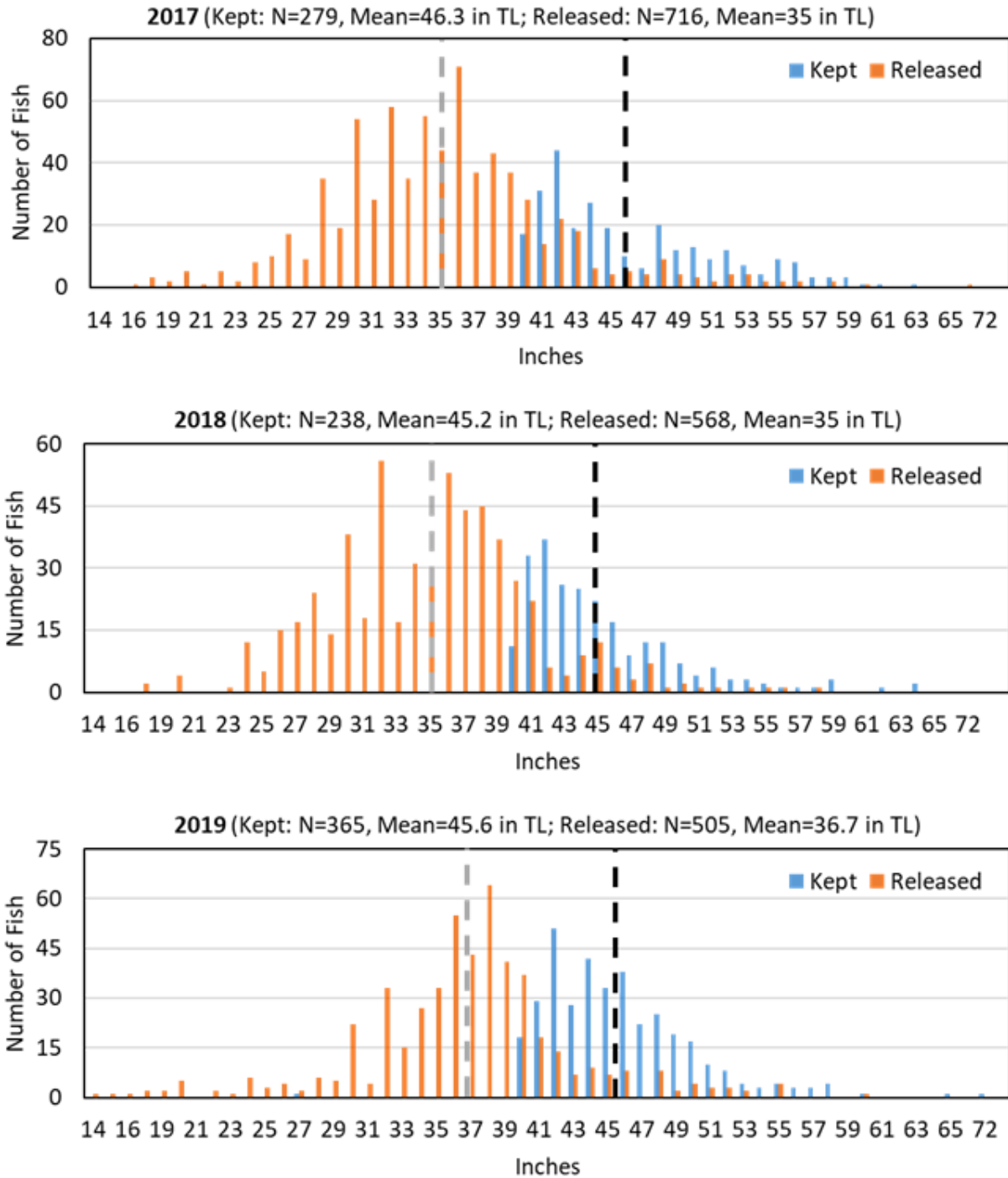


Figure 3: Reported Recreational Length of Kept and Released Cobia, 2017-2019. The vertical gray and black dash-line represent the mean total length (inch) of released and kept fish, respectively.

Appendix I: Recreational Reporting Form, page 1.

2020 Recreational/Charter Reporting Form

REQUIRED INFORMATION

Name: VMRC ID:
(ex. N0####)

SPECIES (Please select only one)

Cobia Black Sea Bass (February Season)

Mode of Fishing: Private boat Charter/Headboat Shore Pier Kayak

CHECK THE BOX TO THE LEFT IF YOU HAVE THE PERMIT, BUT DID NOT FISH.
(If you checked this box, you have reported "no activity" and completed the form)

SPECIES KEY: CO = Cobia | BSB = Black Sea Bass

Date of Trip	Species (see key above)	Number of Anglers	Number Kept	Number Released
	SELECT SPECIES ▾			
	SELECT SPECIES ▾			
	SELECT SPECIES ▾			
	SELECT SPECIES ▾			
	SELECT SPECIES ▾			
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	SELECT SPECIES ▾			

- If you catch one of these mandatory species, you must report that trip and its harvest within 7 days.
- Please report trips even when you did not catch any of your targeted fish. Likewise, please report trips when you caught one of these fish, even if you were not targeting them.
- If you have a permit but did not fish the corresponding season, please submit a form noting "no activity" by the 21st day after the close of the recreational cobia season (cobia only) or by March 15th of the current calendar year (black sea bass only).
- Failure to report any activity for these mandatory species may result in the ineligibility to receive a permit in 2021.
- Length refers to "total length," measured from the most forward projection of the snout, with the mouth closed, to the tip of the longer lobe of the tail (caudal) fin, measured with the tail compressed along the midline, using a straight-line measure, not measured over the curve of the body.
- For further information, please see the appropriate VMRC regulations online (mrc.virginia.gov) or call our office at (757) 247-2200 to obtain them.
- Reports should be sent to the following address:

Virginia Marine Resources Commission
 380 Fenwick Road
 Fort Monroe, Virginia 23651
 Fax: (757) 247-2002
 Email: fisheries@mrc.virginia.gov

Please see reverse side for more information. Revised 06/2020

