

# Report Summarizing Survey of 2016 Recreational Cobia Permittees

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## Introduction

High-quality recreational fisheries data are important because the recreational fishing sector has the potential to cause overfishing (Coleman et al. 2000; Post et al. 2002). The National Marine Fisheries Service's (NMFS) Marine Recreational Fishery Statistics Survey (MRFSS) was one of the first major programs to estimate effort and harvest in recreational fisheries. It has since been revised—upon recommendations from the National Research Council in 2006—and renamed the Marine Recreational Information Program (MRIP), undergoing many changes in sampling protocol as well as estimation techniques. Although its design is much more sound than any earlier program, NMFS may not be able to provide enough resources to collect adequate samples of smaller, more specialized fisheries. For example, a review of the MRIP estimates for blueline tilefish will show that there is no estimated harvest in Virginia during the years 2009-2015. However, state-level mandatory recreational reporting programs show consistent harvest every one of those years for this species.

Anglers in Virginia and North Carolina expressed considerable frustration with the MRIP harvest and effort estimates for recreational cobia in 2015. The states from Georgia through New York are managed under an annual catch limit (ACL) system by the federal-level South Atlantic Fishery Management Council. In 2015, MRIP estimated these states together harvested 1,565,186 pounds of cobia, more than doubling the recreational ACL of 630,000 pounds and the stock (commercial plus recreational) ACL of 690,000 pounds. Under the accountability measures outlined in the Coastal Migratory Pelagics Fishery Management Plan (which includes cobia), NMFS would have to close the season early, which, based on the magnitude of the overage, was June 20<sup>th</sup>. Many stakeholders in these two states, including anglers, charter captains, and tackle shop owners, expressed disbelief at the scale of the harvest and repeatedly called for better data collection. Although MRIP is currently undergoing another review, the Virginia Marine Resources Commission (VMRC) decided to begin implementing mandatory recreational reporting to provide a supplemental source of data.

The VMRC already has mandatory reporting in place for two recreational fisheries: the tilefish-grouper complex and the spring trophy striped bass season. The tilefish-grouper reporting program was implemented by the VMRC in 2009 and was one of the state's first attempts to have anglers and captains self-report recreational fisheries data using permits and reporting forms. The goal of this program was to provide justification for the inclusion of Virginia's tilefish fishery in the management plan. The VMRC also has had mandatory reporting for the spring trophy striped bass season since 1995 but did not create the permit to monitor the participants until 2014. The success of such programs often depends on consistent support from the administrating agency but, overall, it is difficult to maintain active participation (Cooke et al. 2000). This has been evident throughout Virginia's recreational reporting programs, with low compliance for the two fisheries that already require it. However, the VMRC plans to revise the reporting framework to increase usability of and interest in the programs for tilefish-grouper, spring trophy striped bass, and cobia.

To reach this end, staff at the VMRC designed a survey in an attempt to solicit feedback from cobia anglers who participated in the voluntary recreational cobia permit-and-reporting system in 2016. By obtaining the input of the stakeholders most directly involved with this fishery, the VMRC hoped to consider the suggestions and opinions so that it could improve the system for 2017 and beyond, when reporting would be mandatory.

## **Methodology**

### Survey Design

The survey was designed to achieve two primary goals: 1) develop an understanding of the level of recreational cobia effort in Virginia and 2) solicit feedback on the Saltwater Journal and recreational reporting in general to improve the system from the angler's perspective. The first eleven questions dealt with the first goal and gathered information such as the number of cobia trips taken, mode of fishing, and angler-awareness of fishery issues. Questions 11-25 were designed to gather information on anglers' reporting behaviors and opinions regarding the current programs for recreational reporting, the online Saltwater Journal platform, and paper-based reporting forms. The final three questions were used to gather demographic and fishing affiliation information. Most questions were multiple choice, with some allowing for multiple answers to be selected; one question included a group of response scale questions ("strongly disagree"- "strongly agree"); and there were two free-response questions. This survey contained "skip logic," depending on how respondents answered. For the purposes of presenting the results, the percentages given were determined by the number of answers to that specific question, which does not always equal the total number of respondents to the survey (Table 1).

### Piloting

After drafts of the survey and corresponding informative cover letter were created, a small meeting was held with a focus group of four anglers, ranging from casual cobia anglers to very dedicated. They were shown the survey and cover letter prior to the meeting, which allowed them to come prepared with comments for improving the contents. Feedback was solicited on the relevance of the questions, whether or not the wording was familiar and appropriate, and the length required to read the cover letter and complete the survey. After these comments were incorporated into the drafts, some further communications by email helped address any final concerns.

### Implementation

The survey was converted into an online, web-based questionnaire housed by VMRC staff through its Saltwater Journal web portal. An email was sent to every angler who had signed up for the recreational cobia permit—regardless of mode (private boat, charter boat, shore/pier permits)—with an invitation and the link for the survey. Once the respondent clicked on the link, the "cover letter" appeared on a webpage with the option to read more detailed information on the importance of angler-reported data or take the survey. Each web link was created such that it only allowed for one completed survey to be submitted. This ensured the frame of potential respondents was known and limited it to those who had signed up for a permit. After one week, another email was sent out to those who had not yet completed the survey, reminding them of their invitation to do so and requesting them to complete it. Survey responses were sent to a database also house by VMRC staff and access was limited to staff directly involved with the survey.

## Results

### Characterizing Respondents

The survey was sent out to the 448 recreational cobia permittees, and 214 submitted completed surveys, for a response rate of 48%. Over 54% of the respondents were more than 50 years old, over 43% were between 25 and 50 years old, and 2% were under 25 years old. Almost 34% of respondents live in the Hampton Roads/Virginia Beach area; 18% live in Richmond or Northern Virginia; 15% live on the Eastern Shore; 9% live in the Northern Neck area; 6% live on the Middle Peninsula; and 18% reported living in none of these areas (Table 2). Only 27 respondents reported being affiliated with some sort of fishing club, representing 19 distinct organizations. Of the 214 respondents, 35 (16%) responded that they had not fished for cobia in the past two years.

### Respondent Involvement with the Cobia Fishery

When given a range of responses for level of recreational cobia fishing, the majority of respondents (61%) reported that they “target it sometimes” (Figure 1). Approximately 19% reported only targeting cobia when the fishing “is really good,” 16% consider it the main species they target, and approximately 3% only catch it incidentally. The majority of respondents reported taking between 1 and 5 directed cobia trips (57%), and nearly 31% reported taking between 6 and 15 such trips (Figure 2). Almost an equal number of respondents take trips from public boat ramps and private access sites/marinas (43% and 39% respectively; Figure 3), which is important because marinas and private access sites are not, by default, covered by the MRIP intercept surveys that measure catch-per-unit-effort (unless given permission). Almost 93% of the respondents identified as private anglers, almost 4% identified as charter captains, and almost 4% identified as both.

Almost all respondents (94%) were aware of the VMRC’s decision to implement the no-cost, voluntary recreational cobia permit. When asked how they heard about the permit, the majority reporting hearing about it on the VMRC website or some other online social media (Table 3). Of the five response-scale questions, the statements anglers agreed with the most were those regarding the maintaining of a successful trophy fishery and giving Virginia its own source of cobia data (Table 4). Of slightly less importance were fear of getting in trouble for not having it (permit was voluntary this year), reporting for the benefit of the cobia population, and signing up because other friends had signed up. In terms of word-of-mouth dissemination of the program, most respondents (57%) reported telling only 1-4 other anglers about the recreational cobia permit, while only 10% told 10 or more other anglers (Figure 4). Opinions were somewhat divided about the current structure of having separate permits for the various modes versus providing one overall recreational cobia permit: almost 58% wanted to keep the separate permits, over 40% wanted them to be combined into one, and almost 2% of the responses were unknown due to errors in the online survey portal.

### Usage of Saltwater Journal/Paper Forms

Only 42 respondents (26%) said they reported at least one of their cobia trips to the VMRC. For those that didn’t respond, the two main reasons were the knowledge that it was only voluntary and forgetting to report (Table 5). Of those 42 respondents, slightly less than half indicated they reported all of their trips (45%) while 26% indicated they reported less than half of their trips (Figure 5). Twenty-three of these respondents preferred using a computer to enter data, 18 preferred a smartphone, and only one preferred the paper form. Additionally, 57% of them indicated reporting their information within a week of the trip, almost 17% indicated they reported at the end of the season, 14% said their reporting varies, and only 12% entered data on the same day as the fishing trip (Figure 6).

### Opinions on Saltwater Journal/Paper Forms

The “Waterbody,” or fishing location field, was a topic of discussion during piloting, so a question was added to measure opinions regarding it. About half of the 42 respondents appeared happy with the current set-up, while 7% indicated there were too many spots listed, 13% felt the spots are too specific, and more than 24% were not familiar with this field (Table 6). Half of these respondents reported using the Saltwater Journal for species other than cobia, and 45% of them reported keeping personal fishing records outside of the Saltwater Journal. The survey also contained a question asking whether or not the cobia, spring trophy striped bass, and tilefish-grouper reporting should be done on the same webpage or continue having dedicated sections in the Saltwater Journal platform. More than 52% of these 42 respondents wanted them put together so all reporting could be done using the same webpage, while 26% liked keeping them separate (easier to keep track); 21% were undecided on the matter.

A larger pool of respondents (n=179) were asked about the reporting of lengths and weights for cobia. Only 21% felt reporting of the lengths of all cobia should be mandatory, while 40% felt it should only be required for retained cobia (Figure 7). Nearly half of these same respondents felt reporting the weights of cobia should be optional for all types of catch, while only 4% felt it should be completely mandatory (Figure 8). When asked how often anglers should be required to report cobia trips, approximately half (51%) of these 179 respondents preferred end-of-season reporting, while 16% and 17% desired monthly and weekly reporting, respectively (Figure 9). Approximately 16% felt they should not be required to report any cobia data. Almost 60% of the entire pool of respondents (n=214) indicated they'd be more inclined to report recreational fishing activity if the VMRC offered a native smartphone app for that purpose; 23% indicated they would not be more inclined to report, while 17% were undecided.

There were two free-response questions in this survey, one which asked for desirable aspects of the current reporting framework, while the other asked for suggestions on how to improve it. The most common element anglers appreciated was that reporting was simple and easy for them, while a few others like that it did not take a long time (Table 7). Suggestions for improving the Saltwater Journal and reporting form were more varied, with all elements being mentioned once or twice. Some of these were confusion about reporting locations, confusion about reporting all data in general, and the need for a smartphone app (Table 8).

### **Conclusions**

There are recreational cobia anglers from all over the state of Virginia, including many who do not live in the immediate vicinity of the Chesapeake Bay. Most of the cobia anglers who completed the survey only take a few trips each year, which could result from a casual to moderate commitment to the fishery or perhaps a lack of appropriate equipment (e.g., boat). Anecdotally, multiple anglers have suggested, during the pilot meeting and outside of the survey, that cobia is a fish that people will decide to target if they are already out fishing and come upon one. The fact that many of these anglers take off from private-access sites could be causing the MRIP estimates to be biased, as interviewers cannot sample private-access sites unless given permission by the owner of the property. Many of the respondents were interested in keeping the trophy fishery at a high quality and believe that Virginia having its own dataset can be a benefit to managing the fishery.

The fact that reporting compliance was so low appeared to result from the permit being voluntary this year. If this is true, compliance would spike in 2017 when this program is

mandatory. However, a large number of people reported having forgotten to report, and one even answered in the free-response question that there needed to be a better way of reminding anglers to report their cobia activity. Compliance could also be difficult depending on the reporting frequency the VMRC decides to mandate. Most of those who reported in 2016 indicated they did so within a week of their trip, but others were more varied. This information, combined with the fact that the majority of respondents preferred end-of-season reporting to be the requirement in the future (and some who did not want mandatory reporting at all), means there could be confusion and frustration over new regulations. Additionally, many anglers do not want to be required to report lengths and weights of cobia, yet lengths are required for both Virginia's mandatory recreational reporting for tilefish-grouper and striped bass, and weights are required for tilefish-grouper.

The free-responses were largely positive, even the question asking for improvements, as only 14 of the 42 respondents listed specific suggestions. Others indicated they were happy or simply did not answer the question. However, this could be misleading, as this group of respondents likely represents the anglers most willing to participate in reporting through the Saltwater Journal. It is possible that the respondents not asked to complete these questions (also those who did not even complete the survey or sign up for the permit this year) would have been more critical of the reporting platform. The suggestions that were provided often seemed to fit under the theme of making it simpler, with clear, step-by-step reporting and reminders to report. Once again, these may not represent the majority opinion, and this revision process will likely continue as more anglers become familiar with the recreational cobia permit and its associated reporting requirements.

## References

Coleman, FC, CC Koenig, GR Huntsman, JA Musick, AM Eklund, JC McGovern, GR Sedberry, RW Chapman, and CB Grimes. 2000. Long-lived reef fishes: The grouper-snapper complex. *Fisheries* 25(3): 14-21.

Cooke, SJ; WI Dunlop, D MacClennan, and G Power. 2000. Applications and characteristics of angler diary programmes in Ontario, Canada. *Fisheries Management and Ecology* 7: 473-487.

Post, JR, M Sullivan, S Cox, NP Lester, CJ Walters, EA Parkinson, AJ Paul, L Jackson, and BJ Shuter. 2002. Canada's recreational fisheries: The invisible collapse? *Fisheries* 27(1): 6-17.

## Tables

*Table 1: List of number of responses for each question, as not all questions were relevant to each respondent, depending on answers to certain questions*

Question(s)	Number of Respondents
1, 25-28	214
2-5, 22-24	179
6-7	169
8-10	167
11-12A	161
12B	119
13-21	42

*Table 2: Responses for the question: "Where do you live?"*

Response	Percent
Hampton Roads/Virginia Beach	33.64%
None of these areas	18.22%
Richmond/Northern Virginia	17.76%
Eastern Shore of Virginia	14.95%
Northern Neck	9.35%
Middle Peninsula	6.07%

*Table 3: Responses for the question: "How did you hear about the permit? Please select all options that apply."*

Response	Percent
The VMRC website	36.28%
Other online social media (for example, Facebook, news websites, etc.)	30.97%
From a friend or tackle shop owner	22.57%
I was at the Commission meeting in May.	6.19%
Other	3.98%
I had not heard about it until now.	0%

Table 4: Response scale items, which had five choices ranging from "strongly disagree" to "strongly agree." Thus, an average score of "5" would indicate all responses of "strongly agree."

Item	Average Score
I want Virginia to have its own recreational fisheries data for cobia.	4.38
It is the right thing to do for the cobia population.	4.16
I did not want to get into trouble for not having one.	4.02
I want to maintain a successful trophy fishery for cobia.	4.49
My friends signed up.	3.54

Table 5: Responses to the question: "What was/were the reason(s) why you did not report any trips to the VMRC? Please check any or all that apply."

Response	Percent
It was only voluntary this year.	31.54%
I forgot to report.	26.85%
The system was too difficult to use.	6.71%
I don't own a computer.	0.67%
I don't see why it's important.	2.01%
It's important, but I don't think it will help us.	4.70%
Other	27.52%

Table 6: Responses to the question: "What are your opinions on the "Waterbody" field, which requires you to report where you caught your fish? Please select any or all that apply."

Response	Percent
I like that I can be as general or specific as I want.	55.56%
There are too many spots to choose from.	6.67%
The spots are too specific.	13.33%
I am not familiar with this field.	24.44%

*Table 7: This table synthesizes the responses to the open-ended question asking what permittees liked about the current reporting format.*

Reason	Number of Respondents	Percentage of responses	Example
Convenience of Online	2	5	"I like that it's online."
Convenience of Smartphone Compatibility	1	2	"I like that you consider smartphone users."
Simple and Easy	9	21	"Easy to use"
Short	4	10	"It was quick to do."
Voluntary	1	2	"It's not mandatory."
Tracks Harvest	1	2	"Keep up with harvest"
N/A	24	57	N/A

*Table 8: This table synthesizes the responses to the open-ended question asking what permittees did not like about the current reporting format.*

Reason	Number of Respondents	Percentage of responses	Example
Location is confusing	2	5	"Location/waterbody was a bit confusing."
No smartphone app	2	5	"It needs to be an app on a smartphone."
Clearer directions	2	5	"Make it a step by step process."
Need a map	1	2	"There needs to be a map to reference."
Complicated	1	2	"Too complicated"
Time-consuming	1	2	"Too time-consuming"
Provide incentives for reporting	1	2	"Data would be better if you incentivized people to report."
Add a reminder for reporting	1	2	"I would like a reminder."
Needs a call-in system	1	2	"Set up a call-in system."
Allow for estimated measurements	1	2	"Estimates have to be accepted."
Concern over reporting frequency	1	2	"I never know when my last trip will be."
Keep it simple	1	2	"Simple as possible"
Can't report unsuccessful trips	1	2	"No way to report unsuccessful trips"
N/A	26	62	N/A

## Figures

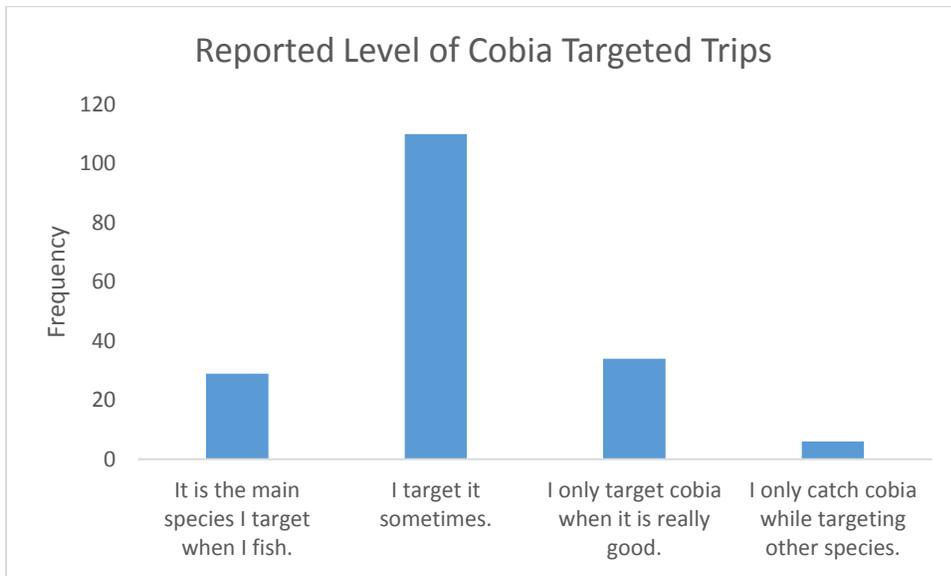


Figure 1: Reported levels of targeted cobia fishing activity by recreational permittees

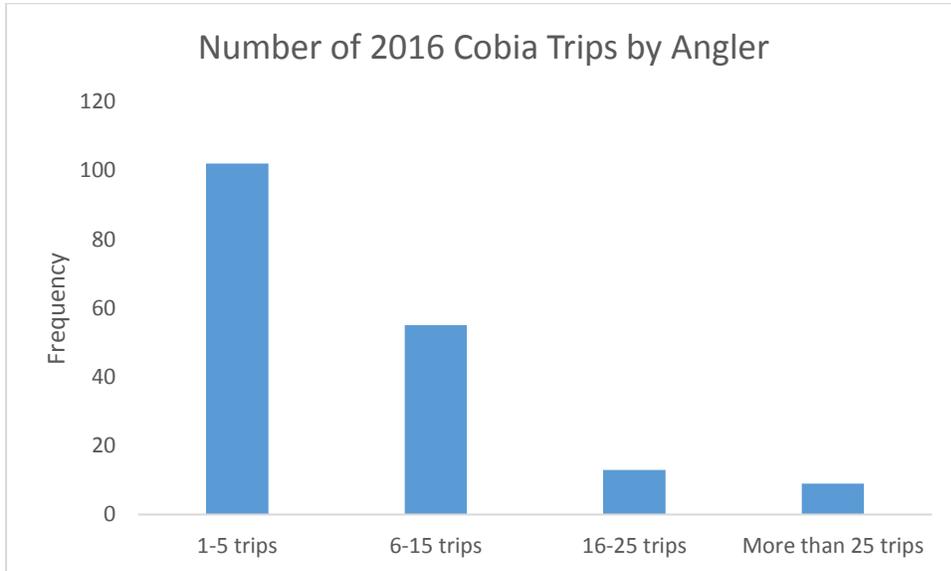


Figure 2: Reported number of cobia trips taken by recreational permittees during 2016

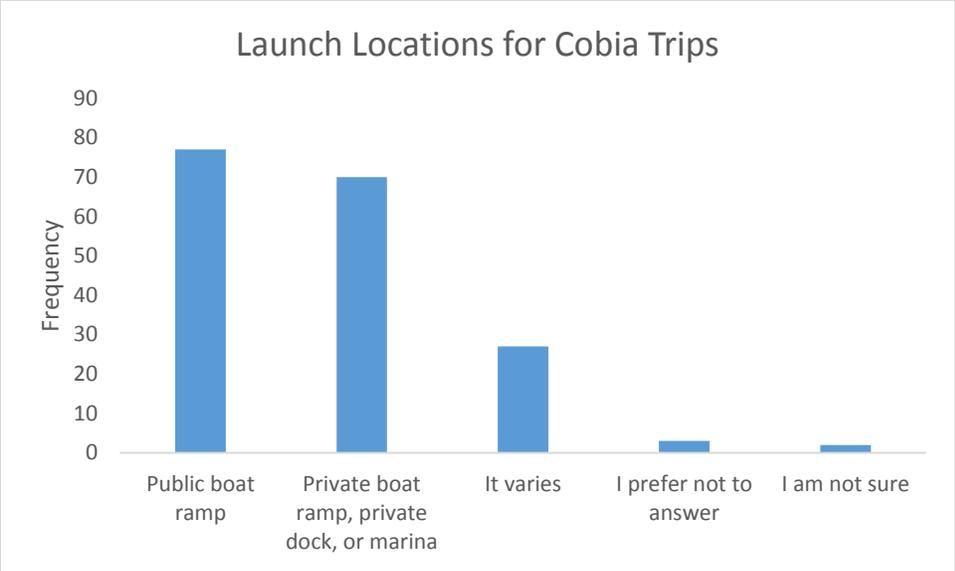


Figure 3: Types of areas where recreational permittees leave from for their cobia trips

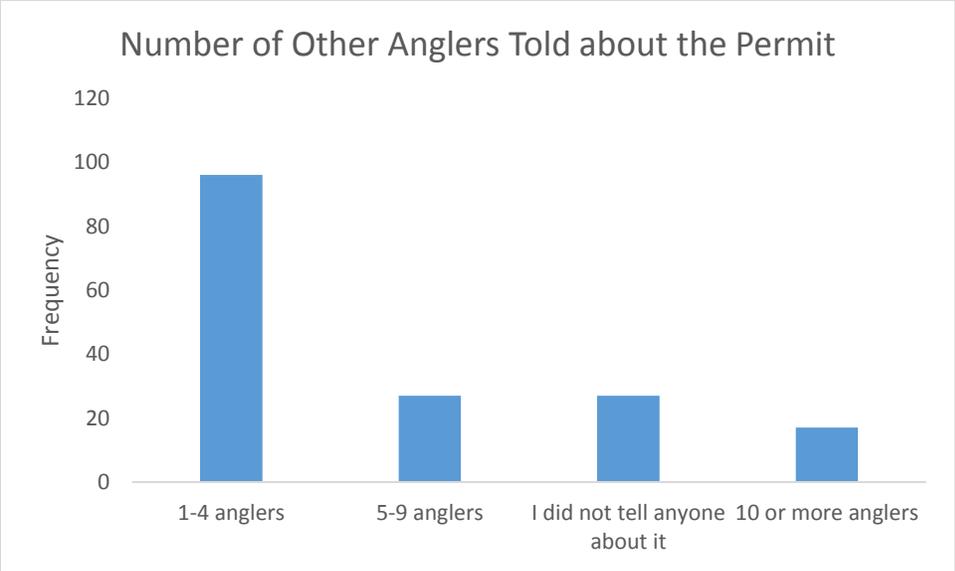
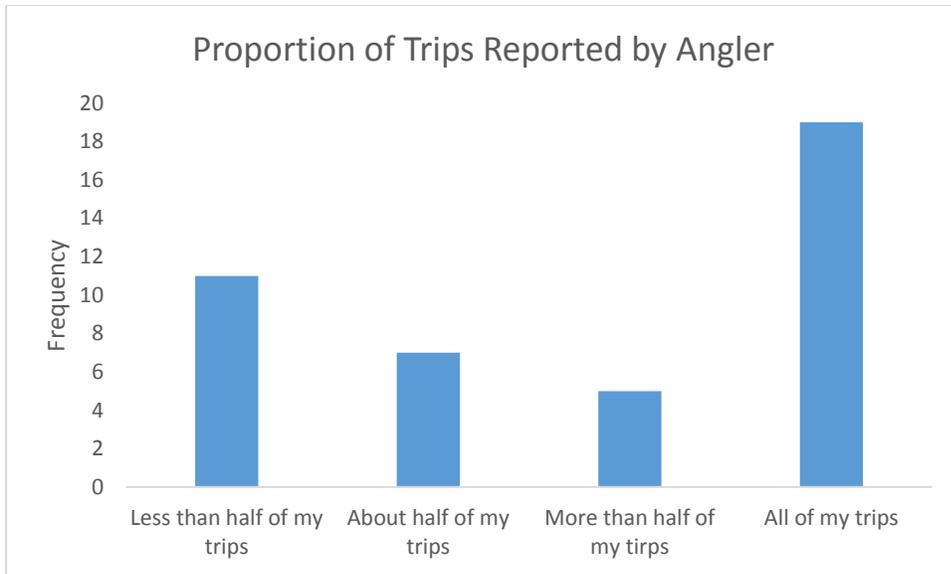
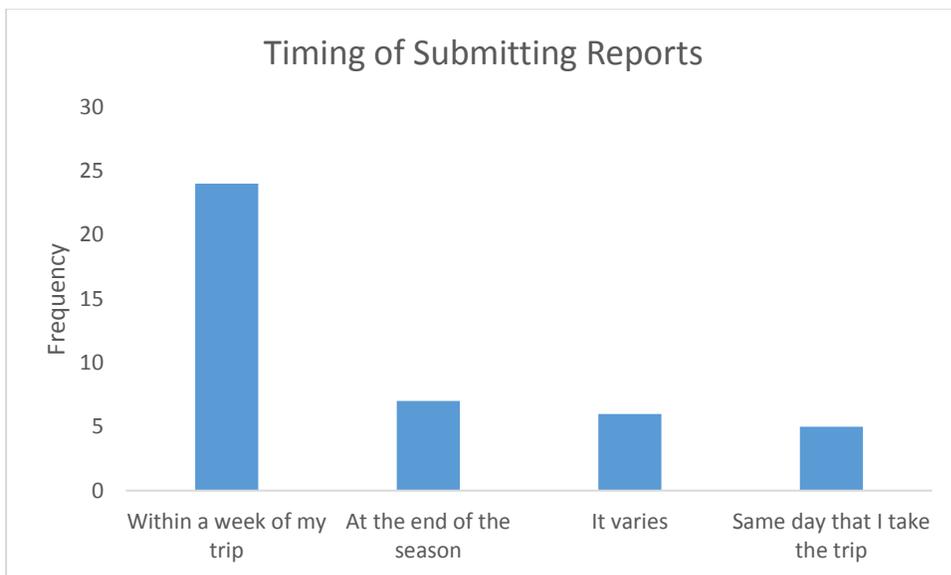


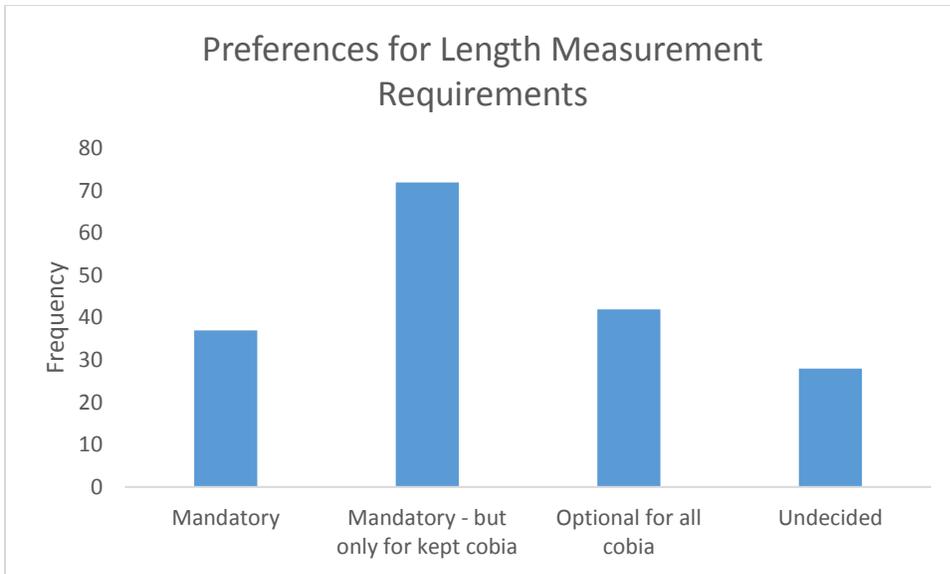
Figure 4: The extent to which anglers spread the information regarding the VMRC's new recreational cobia permit



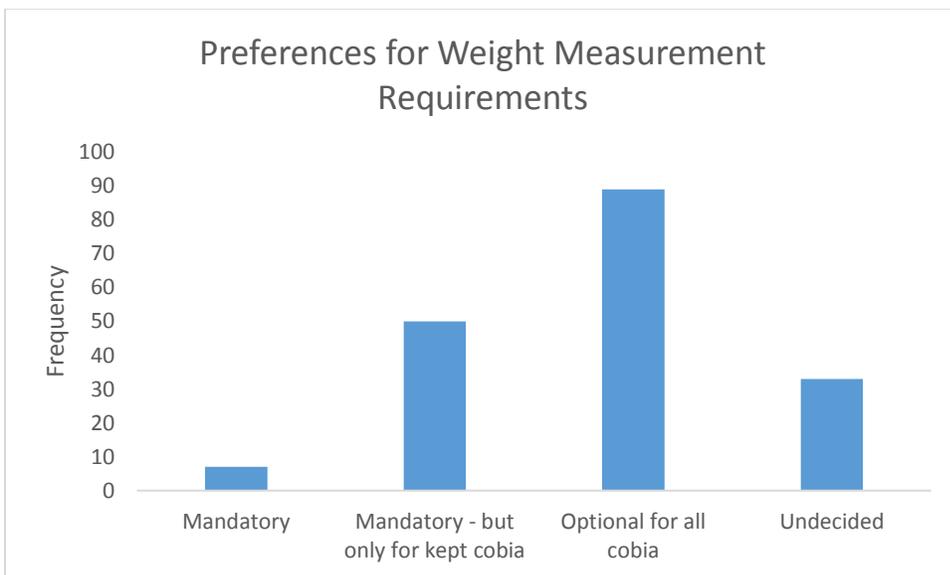
*Figure 5: Proportion of 2016 cobia trips permittees reported to the VMRC through paper-based or Saltwater Journal forms*



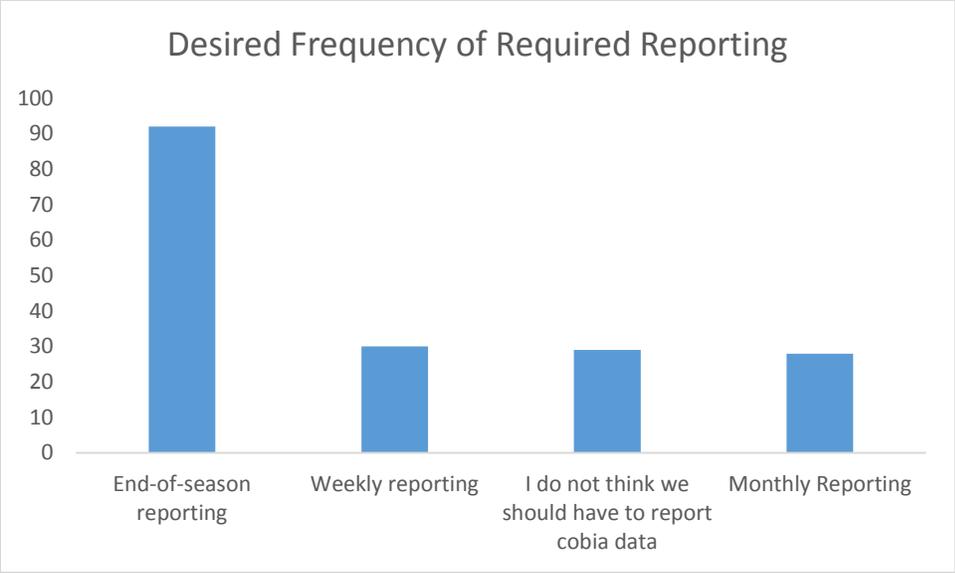
*Figure 6: The duration that elapsed between permittees taking their cobia trips and reporting them to the VMRC*



*Figure 7: Permittees' preferences for whether or not they should be required to report the lengths of cobia*



*Figure 8: Permittees' preferences for whether or not they should be required to report the weights of cobia*



*Figure 9: Permittees' preferences for how frequently they should be required to submit their trips reports to the VMRC*

## Appendix I: Copy of the survey questions

Thank you for your participation in this survey, which will help us learn more about the cobia fishery and our new reporting system. Please follow any directions in *italics* if they apply to your answers.

1. Have you fished for cobia in the past two years?
  - Yes
  - No—*please skip to Question 25.*
  
2. How would you describe your level of cobia fishing?
  - It is the main species I target when I fish.
  - I target it sometimes.
  - I only target cobia when it's really good.
  - I only catch cobia while targeting other species.
  
3. Approximately how many recreational directed cobia trips did you take during the 2016 season? Consider a directed trip as any fishing trip where you actively targeted cobia for at least part of the time.
  - 1-5 trips
  - 6-15 trips
  - 16-25 trips
  - More than 25 trips
  
4. Considering only your cobia trips, do you leave from a public boat ramp or a private-access site (private boat ramp, private dock, or marina)?
  - Public boat ramp
  - Private boat ramp, private dock, or marina
  - It varies.
  - I'm not sure
  
  - I'd prefer not to answer.
  
5. Before receiving this survey, were you aware of the VMRC's decision to institute a no-cost, voluntary recreational cobia permit this year?
  - Yes
  - No—*please skip to Question 22*

6. How did you hear about the permit? Please select all options that apply.
- The VMRC website
  - Other online social media (for example, Facebook, news websites, etc.)
  - From a friend or tackle shop owner
  - I was at the Commission meeting in May.
  - Other
  
  - I had not heard about it until now.

7. Did you sign up for the recreational cobia permit this year?
- Yes
  - No—*please skip to Question 22.*

8. Please indicate how much you agree or disagree with the following reasons for signing up for the recreational cobia permit.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I want Virginia to have its own recreational fisheries data for cobia.	<input type="radio"/>				
It is the right thing to do for the cobia population.	<input type="radio"/>				
I did not want to get into trouble for not having one.	<input type="radio"/>				
I want to maintain a successful trophy fishery for cobia.	<input type="radio"/>				
My friends signed up.	<input type="radio"/>				

9. Approximately how many other cobia anglers did you tell about the permit?
- I did not tell anyone about it.
  - 1-4 anglers
  - 5-9 anglers
  - 10 or more anglers

10. Considering only your cobia fishing, are you a private angler or a charter captain?
- Private angler
  - Charter captain—*please skip to Question 22.*
  - Both
11. Currently, the VMRC has three separate cobia permits (private boat angler, shore/pier angler, and charter captain). Would you like the VMRC to keep the three-permit format or combine all types of cobia fishing requirements into one permit?
- Keep the three separate permits.
  - Combine them into one recreational cobia permit.
12. Did you report any of your trips through the Virginia Saltwater Journal or with a paper 2016 Cobia Monthly Reporting Form?
- Yes—*please skip to Question 13.*
  - No—*please answer the following before proceeding to Question 22:*
    - What was/were the reason(s) why you did not report any trips to the VMRC? Please check any or all that apply.
      - It was only voluntary this year.
      - I forgot to report.
      - The system was too difficult to use.
      - I don't own a computer.
      - I don't see why it's important.
      - It's important, but I don't think it will help us.
      - Other
13. Approximately how many of your total recreational cobia fishing trips did you report to the VMRC? Please include trips where you targeted cobia, but did not catch any, as well as trips where you were not targeting cobia but did catch at least one.
- Less than half of my trips
  - About half of my trips
  - More than half of my trips
  - All of my trips
14. What is your preferred method for entering your trip data?
- Computer
  - Smartphone
  - Hard-copy paper form
15. When do you report your trips?
- Same day that I take the trip
  - Within a week of my trip
  - At the end of the season
  - It varies.

16. What are your opinions on the “Waterbody” field, which requires you to report where you caught your fish? Please select any or all that apply.

- I like that I can be as general or specific as I want.
- There are too many spots to choose from.
- The spots are too specific.
  
- I am not familiar with this field.

17. What did you like about the reporting format? Please indicate whether you’re referring to the Saltwater Journal platform (online reporting) or paper-based form. Your response will help us as we revise our system to be as convenient as possible.

18. What did you **not** like about the reporting format? Please indicate whether you're referring to the Saltwater Journal platform (online reporting) or paper-based form. If possible, please provide suggestions as to how any problems could be fixed. Your response will help us as we revise our system to be as convenient as possible.

19. Do you use the Saltwater Journal for any other species?

- Yes
- No

20. Do you keep personal records of your fishing trips outside of the Saltwater Journal?

- Yes
- No

21. Should all reporting—cobia, trophy striped bass, tilefish/grouper, and all voluntary species—be done through a single Saltwater Journal webpage or remain separate? Currently, there are separate pages for cobia, striped bass, and tilefish/grouper reporting.

- Put them together, so I can do everything on the same webpage.
- Keep them separated; it's easier to keep track that way.
- Undecided

22. Do you think reporting the **lengths** of individual cobia should be mandatory or optional?

- Mandatory
- Mandatory, but only for kept cobia.
- Optional for all cobia
- Undecided

23. Do you think reporting the **weights** of individual cobia should be mandatory or optional?

- Mandatory
- Mandatory, but only for kept cobia.
- Optional for all cobia
- Undecided

24. What frequency of **required** reporting would you most **prefer** for the recreational cobia fishery?

- Weekly reporting
- Monthly reporting
- End-of-season reporting
  
- I don't think we should have to report cobia data.

25. Would you be more inclined to report your recreational fishing activity (**cobia and other species**) if the VMRC offered a smartphone app option in addition to the Saltwater Journal webpage and paper forms?

- Yes
- No
- Undecided

26. What is your age?

- Less than 25 years old
- 25-50 years old
- More than 50 years old

27. Where do you live?

- Eastern Shore of Virginia
- Hampton Roads/Virginia Beach
- Middle Peninsula
- Northern Neck
- Richmond/Northern Virginia
  
- None of these areas

28. Are you affiliated with any angling clubs? If so, please list below.

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