Modifications to Charter Vessel and Headboat Reporting Requirements

Amendment 39 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

Amendment 9 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic

Amendment 27 to the Fishery Management Plan for the Coastal Migratory Pelagics Fishery of the Gulf of Mexico and Atlantic Region

(including Environmental Assessment, Regulatory Impact Review, and Regulatory Flexibility Analysis)

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ENVIRONMENTAL ASSESSMENT COVER SHEET

Name of Action

Modifications to Charter Vessel and Headboat Report Requirements (For-Hire Amendment)

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ABBREVIATIONS USED IN THIS DOCUMENT

ACL	Annual Catch Limit
ACCSP	Atlantic Coastal Cooperative Statistics Program
AM	Accountability Measure
AP	Advisory Panel
ASMFC	Atlantic States Marine Fisheries Commission
CEA	Cumulative Effects Analysis
CFR	Code of Federal Regulations
CMP	Coastal Migratory Pelagics of the South Atlantic and Gulf of Mexico
DNR	Department of Natural Resources
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EJ	Environmental Justice
ESA	Endangered Species Office
FEP	Fishery Ecosystem Plan
FMP	Fishery Management Plan
GAR	Greater Atlantic Region
GARFO	Greater Atlantic Fisheries Office
GMFMC	Gulf of Mexico Fishery Management Council
GulfFIN	Gulf of Mexico Fishery Information Network
HAPC	Habitat Area of Particular Concern
HMS	Highly Migratory Species
LPS	Large Pelagic Survey
MMPA	Marine Mammal Protection Act
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOR	Net Operating Revenue
NRC	National Research Council
OLE	Office of Law Enforcement
OY	Optimum Yield
PS	Producer Surplus
RA	Regional Administrator
RFA	Regulatory Flexibility Act
RFAA	Regulatory Flexibility Act Analysis
RIR	Regulatory Impact Review
SAFMC	South Atlantic Fishery Management Council
Secretary	Secretary of Commerce
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SMZ	Special Management Zone
SRD	Science and Research Director

SRHS	Southeast Region Headboat Survey
SSC	Scientific and Statistical Committee
USCG	United States Coast Guard
VTR	Vessel Trip Report

SUMMARY

What is proposed in the For-Hire Reporting Amendment?

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing mandatory electronic reporting for charter vessels. The South Atlantic Council is also proposing modifying the timing of headboat reporting by reducing the grace period allowed for submitting reports.

Who would this affect?

The South Atlantic Council proposes to implement the same reporting requirements for federally permitted charter vessels that currently exist for federally permitted headboats. Federally permitted charter vessels and headboats in the snapper grouper, dolphin wahoo, and coastal migratory pelagics (mackerel and cobia) fisheries along the Atlantic Coast will be affected. A federal permit is required for all for-hire vessels (charter and headboats) operating more than 3 miles offshore (federal waters).

Why is this needed?

Mandatory electronic reporting for charter vessels is expected improve the data available for management and stock assessments, improve the accuracy and timeliness of data collection, and allow fishery managers to better monitor landings and discards, and more accurately assess the impacts of regulations on the for-hire industry fishing in federal waters. Requiring reporting by vessels could prevent data gaps and missed information

Reducing the grace period for headboat reporting would have a positive effect to fish stocks by providing data to the Southeast Fisheries Science Center more quickly, which can reduce the likelihood of exceeding the annual catch limits, thus reducing the likelihood of overfishing. It would also reduce the recall period for those who wait until the deadline to report, which can improve data accuracy.

How many charter vessels are expected to be impacted and would there be a cost for electronic reporting?

There are currently 1,984 charter vessels in the South Atlantic with Federal For-Hire Permits. There are also 76 headboats in the Southeast Region Headboat Survey, including 59 with some type of federal For-Hire permit.

Cost: If you have a computer or access to a computer (for example in a library), the only cost will be your time to input the trip information; this time is estimated to be approximately ten minutes. The South Atlantic Council is working on a pilot project, in cooperation with charter and headboat vessel operators, to develop user-friendly software to make it easy and quick to enter the proposed trip reports, and enable data entry from a mobile device.

Summary of Actions in the For-Hire Reporting Amendment

Action 1. Operators of charter vessels would report electronically:

- **Alternative 1.** No Action. If selected, a charter vessel operator must maintain a fishing record for each trip or portion of such trip. Reports must be on approved paper logbook forms and postmarked no later than seven days after the end of each week (Sunday).
- **Preferred Alternative 2.** All operators of charter vessels would file electronic reports for each trip. Reports would be due weekly, or at intervals shorter than a week if notified. Electronic reports would be due by Tuesday following each week that ends on Sunday.
- **Alternative 3.** Daily. Electronic reports would be filed daily by all charter vessel operators, and due by noon of the following day.

Action 2. Operators of headboats would report on a new deadline:

- **Alternative 1.** No Action. If selected, a headboat operator must submit an electronic fishing record for each trip of all fish harvested through the Southeast Region Headboat Survey. Electronic fishing records (reports) must be submitted weekly (or at intervals shorter than a week if notified) by 11:59 p.m., local time, the Sunday following a reporting week.
- **Preferred Alternative 2.** Reports would be due weekly, or at intervals shorter than a week if notified. Electronic reports would be due by Tuesday following each week that ends on Sunday, instead of reports being due on the following Sunday. This is a change from seven days to prepare and submit reports to two days.
- Alternative 3. Daily. Electronic reports would be due by noon of the following day.

Action 3. Operators of charter vessels would report catch locations the same way headboats currently report location:

- **Alternative 1.** No action. Charter vessels in the for-hire survey report area fished (inshore, state, or federal waters) if selected.
- **Preferred Alternative 2.** Operators of charter vessels would report location electronically by entering latitude/longitude in degrees and minutes in the required fields or by clicking on an electronic chart. This is how headboats report now.

Timing for the For-Hire Reporting Amendment

- **December 7-11, 2015** (Atlantic Beach, North Carolina) – South Atlantic Council reviews document, picks preferred alternatives, and approves for public hearings.
- **January 19, 2016** – Informal Question and Answer Webinar
- **January 25-February 3, 2016** – Public hearings from North Carolina to Florida
- **February 8, 2016** – Webinar Public Hearing for Mid-Atlantic and New England fishermen
- **February 10, 2016** – Written comments due by 5 pm
- **March 7-11, 2016** (Jekyll Island, Georgia) – South Atlantic Council reviews public comments, modified preferred alternatives as required, and approves all actions. Public comment on Wednesday, March 9th beginning at 5:30 pm
- **June 13-17, 2016** (Cocoa Beach, Florida) – South Atlantic Council reviews core data elements. Public comment on Wednesday, June 15th beginning at 5:30 pm
- **September 12-16, 2016** (Myrtle Beach, South Carolina) – South Atlantic Council reviews document. Public comment on Wednesday, September 14th beginning at 5:30 pm.
- **December 5-9, 2016** (Atlantic Beach, North Carolina) – South Atlantic Council reviews document and considers for final approval. Public comment on Wednesday, December 7th beginning at 5:30 pm.
- **January 15, 2017** - Send for review and implementation by Secretary of Commerce/National Marine Fisheries Service.
- **TBD, Mid-2017** – target date for regulations to be effective; operators of charter vessels begin electronic reporting and new deadline effective for headboats.
    - Voluntary charter vessel reporting from date of implementation through remainder of 2017, to allow:
        - NMFS to work out the details of data flow, compliance, monitoring, etc.
        - NMFS to work out the details of system requirements, access, etc.
        - Outreach via the proposed South Atlantic Council Outreach Project during 2017.
        - Charter vessel owners time to become familiar with the reporting system prior to 1/1/18
- **No Sooner than January 1, 2018** – Mandatory charter vessel reporting effective, to occur at least 6 months following publication of the final rule and no earlier than January 1, 2018.

CHAPTER 1. INTRODUCTION

1.1 What actions are proposed?

The South Atlantic Fishery Management Council (South Atlantic Council) and the National Marine Fisheries Service (NMFS) are proposing actions under the Magnuson-Stevens Fishery Conservation and Management Act in the For-Hire Reporting Amendment that would change the method, frequency, and required data elements of fishery data reporting by fishermen with a federal for-hire permit. This amendment proposes: mandatory electronic reporting for charter vessel operators with a federal for-hire permit in the snapper grouper, dolphin wahoo, or coastal migratory pelagic fisheries; alternatives for weekly or daily reporting; reducing the time allowed for headboat operators to complete their electronic reports; and requiring location reporting by charter vessels with the same detail now required for headboat vessels.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks in the South Atlantic Region
- Consists of 13 voting members who are appointed by the Secretary of Commerce, 1 representative from each of the 4 South Atlantic states, the Southeast Regional Director of NMFS, and 4 non-voting members
- Responsible for developing fishery management plans and amendments under the Magnuson-Stevens Act; recommends actions to NMFS for implementation
- Management area is from 3 to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West, with the exception of Mackerel which is from New York to Florida, and Dolphin-Wahoo, which is from Maine to Florida

1.2 Who is proposing the actions?

The For-Hire Reporting Amendment began as a joint effort with the Gulf of Mexico Fishery Management Council (Gulf Council) and is now being developed by the South Atlantic Council and the National Marine Fisheries Service (NMFS). The Gulf Council is developing a separate for-hire reporting amendment. The South Atlantic Council develops the amendment and sends the amendment to the NMFS who, on behalf of the Secretary of Commerce, ultimately approves, disapproves, or partially approves, and implements the actions in the amendment through the development of regulations. The South Atlantic Council and NMFS are responsible for making this document available for public comment. The draft environmental assessment (EA) was made available to the public for their comments during the scoping process, public hearings, and in South Atlantic Council meeting briefing books. The final EA/amendment will be made available for additional public comment during the notice of availability and proposed rule stages of the rulemaking process. The public hearing draft and final EA/amendment may be found online South Atlantic Council's Website at http://www.safmc.net and on the Southeast Regional Office website at: www.sero.nmfs.noaa.gov

1.3 Why are the South Atlantic Council and NMFS considering action?

The intent of this amendment is to improve the timeliness and accuracy of catch data. Accurate fisheries information about catch, effort, and discards is important to fulfill the management obligations of the South Atlantic Council and NMFS. Reliable and complete fishery data are critical to stock assessment and management evaluations. While the for-hire component of the recreational sector harvests a substantial proportion of the annual catch limit (ACL) for some South Atlantic Council managed fish species, such as cobia, dolphin, and wahoo, current data collection programs for charter vessels do not provide catch information on a timely enough basis for the South Atlantic Council to respond to developments in these fisheries. In addition, the survey-based method used to currently estimate catch by charter vessels may not always provide reasonably accurate and reliable information for many South Atlantic Council managed species, especially those with low catches and low ACLs. The current survey-based methods are particularly imprecise for those snapper grouper species that are only rarely encountered by fishery participants.

Purpose for Actions

The *purpose* is to increase the accuracy and timeliness of landings, discards, effort and socio-economic data of federally permitted for-hire vessels participating in the South Atlantic managed fisheries.

Need for Actions

The *need* is to improve charter vessel and headboat fishery data used for management and to improve monitoring and compliance of federally permitted for-hire vessels in the South Atlantic managed fisheries.

1.4 Who will be affected by these actions?

The For-Hire Reporting Amendment affects headboat and charter vessel operators with a federal for-hire permit for species managed under the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), FMP for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP), and the FMP for the Coastal Migratory Pelagic (CMP) Resources of the Gulf of Mexico and Atlantic Region (CMP FMP) (**Figure 1.1.1**). There is one combined federal for-hire permit for both charter vessels and headboats in each of these three FMPs.

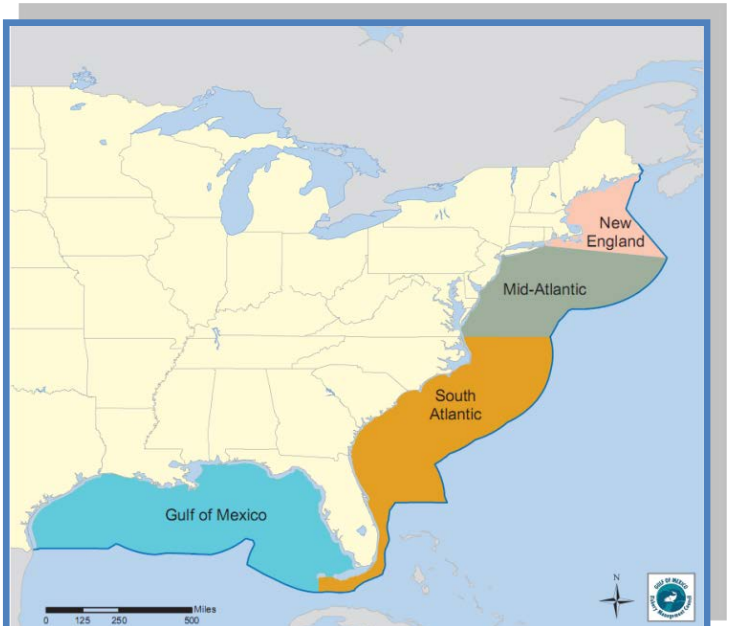

Figure 1.1.1. Jurisdictional boundaries of the Gulf of Mexico (blue), South Atlantic (orange), Mid-Atlantic (green), and New England (peach) Fishery Management Councils.

South Atlantic snapper grouper species are managed in federal waters from North Carolina through the Florida Keys to the boundary between the Gulf and South Atlantic Councils. Atlantic dolphin and wahoo are managed in federal waters by the South Atlantic Council along the entire east coast, from Maine through the Florida Keys to the boundary between the Gulf and South Atlantic Councils. South Atlantic CMP species are managed in federal waters from New York through the Florida Keys to the boundary between the Gulf and South Atlantic Councils. The actions proposed in this amendment extend the reporting requirements of the For-Hire Reporting Amendment through the Mid-Atlantic and New England Fishery Management Councils' areas for vessels with a federal for-hire permit for snapper grouper, dolphin wahoo, or CMP species.

1.5 What is a charter vessel?

Charter vessels carry recreational anglers but fees are paid for chartering the vessel rather than paying individual angler fees. A charter vessel is less than 100 gross tons (90.8 metric tons) that meets the requirements of the U.S. Coast Guard to carry six or fewer passengers on a for-hire trip and that engages in charter fishing at any time during the calendar year (50 C.F.R. § 622.2). The number of charter vessels with a federal for-hire permit for the snapper grouper, dolphin wahoo or CMP fisheries in the South Atlantic is shown in **Table 1.3.1**. Note that this table does not include charter vessels that may operate in the South Atlantic but do not possess any federal for-hire permits for fisheries managed by the South Atlantic Council. Such vessels would not be impacted by this amendment.

Table 1.3.1. Total number of federally-permitted charter vessels in the South Atlantic.

Year	FL	GA	NC	SC	Other States	Total
2010	1,124	24	396	144	453	2,141
2011	1,110	25	392	138	451	2,116
2012	1,131	25	365	143	455	2,119
2013	1,124	28	343	149	410	2,054
2014	1,071	32	332	157	392	1,984

Source: NMFS, Southeast Regional Office, Permits Office.

1.6 What is a headboat vessel?

Headboats carry recreational anglers where passage is charged on a per angler, or per head basis. Headboats are generally defined as vessels that hold a valid Certificate of Inspection issued by the U.S. Coast Guard to carry more than six passengers for hire (50 C.F.R. § 622.2). However, the Southeast Region Headboat Survey (SRHS) includes only large capacity vessels that sell passage to recreational anglers primarily as headboats (i.e., charges by the "head"). Currently, a vessel is selected by the Science and Research Director to participate in the SRHS if it meets all, or a combination, of these criteria:

1) Vessel licensed to carry ≥ 15 passengers (Gulf); > 6 (South Atlantic).
2) Vessel fishes in the exclusive economic zone (EEZ) or state and adjoining waters for federally managed species.
3) Vessel charges primarily per angler (i.e., by the "head").

The number of headboats surveyed in the South Atlantic by the SRHS by state from 2010 through 2015 is provided in **Table 1.4.1** (South Atlantic).

Table 1.4.1. Total number of headboats in the South Atlantic participating in the SRHS 2010-2015.

Year	FL	GA	NC	SC	Total
2010	47	3	10	20	80
2011	43	3	10	21	77
2012	43	3	11	21	78
2013	44	3	11	18	76
2014	45	3	10	18	76
2015	46	3	9	18	76

Source: NMFS, Southeast Regional Headboat Survey

1.7 What is the history of management?

Detailed information on the history of management is provided in **Appendix D**. The following is a summary of regulations addressing for-hire reporting requirements in the fisheries affected by

this amendment, which include South Atlantic snapper grouper, Atlantic dolphin wahoo, and coastal migratory pelagic.

Amendment 4 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic (Snapper Grouper FMP) (SAFMC, 1991) established charterboat and headboat permits and required charterboats and headboats to report, if selected. Amendment 4 also required that recreational fishermen must make snapper grouper species, or parts thereof, available for inspection upon request. Amendment 7 (SAFMC 1994) established federal permits for both charter and headboats. Amendment 15B (SAFMC 2008) required that for-hire vessels with a for-hire permit, and private recreational vessels if fishing for snapper grouper species in the exclusive economic zone (EEZ), shall use observer coverage, logbooks, electronic logbooks, video monitoring, or any other method deemed necessary to measure by catch by NMFS, if selected to report. Electronic logbook reporting for headboat vessels was required under Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin Wahoo FMP/Amendment 22 to the Coastal Migratory Pelagic (CMP) FMP (SAFMC 2013a). This amendment required selected vessels with a federal for-hire permit to report landings data electronically; and implemented a provision that authorizes NMFS to require weekly or daily reporting as required.

The Dolphin Wahoo FMP (SAFMC, 2003) required owners of commercial vessels and/or charter vessels/headboats to have vessel permits and, if selected, submit reports and required dealers to have permits and, if selected, submit reports. In 2004, the Dolphin Wahoo FMP required that operators of commercial vessels, charter vessels and headboats that are required to have a federal vessel permit for dolphin and wahoo must display operator permits. Amendment 2 (SAFMC 1987) to the CMP FMP (implemented in 1987) required that charter vessels and headboats fishing in the EEZ of the Gulf of Mexico or Atlantic for CMP species have permits.

1.8 How is the for-hire recreational sector monitored now?

Charter vessel landings and discards for the South Atlantic are monitored through the for-hire survey of the Marine Recreational Information Program (MRIP). Fishing effort, including the number of trips and types of trips, is calculated based on a phone survey that directs calls to a sample of 10% of federally-permitted charter vessels. Catch rate observations and catch sampling is provided through dockside monitoring. The results of the phone-based effort survey and the dockside catch rate survey are combined to develop catch total catch estimates. Information is reported in 2 month waves, with preliminary reports available 45 days after the end of each wave. The actions in this amendment do not affect requirements for vessels to participate in the MRIP survey.

Catch and effort information for headboats is provided by the SRHS administered by the Southeast Fisheries Science Center. In accordance with prior South Atlantic Council actions, headboats report each trip through an electronic application, and are required to report by the Sunday following the end of each week ending on Sunday. Although headboat operators report on a weekly basis, information on catches is made available on the same schedule as the MRIP derived charter vessel estimates (i.e., 45 days after the end of each wave).

Currently, headboat catches are reported 45 days after each 2-month wave, providing consistency with the reporting by MRIP. Part of the reason for the 45 day timing for providing estimates is that the South Atlantic Council has specified the recreational ACL in pounds, requiring the reported numbers of fish to be converted to pounds. Generating catch estimates in pounds requires the integration of mean weights collected by angler intercepts. This is accomplished for the headboat catches during the 45 day period after a 2-month wave. The MRIP catch estimates are also reported, in numbers and weight, approximately 45 days after each 2-month wave. The SEFSC applies a standardized methodology for weight estimation that is used for assessments and management needs in the southeast. This recalculation, along with other adjustments necessary for standardization, occur in the 15 day period after wave estimates are released. This amendment would allow for the collection of data from headboat and charter vessels in a timelier manner and would provide better management of the fisheries because of the more accurate and timely data.

1.9 How would the for-hire fishery be monitored if this amendment is implemented?

Charter vessel landings and discards for South Atlantic would continue to be monitored through the for-hire survey of the Marine Recreational Information Program (MRIP) as described above. In addition, charter vessel landings and discards would be reported from the electronic charter vessel logbook program. This amendment would allow for the collection of data from charter vessels in a much more timely manner and would provide better management of the fisheries because of the more accurate and timely data.

Catch and effort information for headboats would continue to be provided by the Southeast Regional Headboat Survey (SRHS) administered by the Southeast Fisheries Science Center (SEFSC) as described above. This amendment would change the reporting deadline from the Sunday following the end of each week ending on Sunday to the Tuesday following each week that ends on Sunday. This is a change from 7 days to prepare and submit reports to 2 days. This amendment would allow for the collection of data from headboats in a much more timely manner and would provide better management of the fisheries because of the more accurate and timely data.

The South Atlantic Council and NMFS have specified, in this amendment, that the electronic charter vessel logbook reports must be provided using NMFS-approved hardware and software. The ongoing charter pilot electronic logbook program is a cooperative effort by the South Atlantic Council, NMFS, ACCSP, and the States of South Carolina, Georgia, and Florida to develop a system that will be MRIP-compliant (see details in the next section below). The South Atlantic Council and NMFS are working out the details of how the system would be implemented with MRIP and ACCSP. The intent is that the pilot system would be certified by NMFS as a NMFS-approved hardware and software system and as a MRIP-compliant methodology. Other systems could also be certified by NMFS as long as they collect the core data elements as specified in this amendment. It is also the intent that the catches (numbers of fish) by charter vessels and headboats would be available on the NMFS SERO quota monitoring website updated weekly as is the commercial dealer data. This weekly data can be used to inform

managers and the public about the level of recreational catch from the for-hire vessels between times when the MRIP wave data are available.

Before an electronic logbook system could replace the current survey-based system, each state would have to implement a similar for-hire electronic logbook requirement. At this time only South Carolina has an electronic for-hire logbook requirement in place. Once the four South Atlantic States implement an electronic for-hire logbook requirement, then the two systems would run at the same time for a period of two or three years to develop the proper calibration factors so that the new estimates can be used to extend the historical time series of catch data.

In the meantime, the South Atlantic Council is working with NMFS (SERO, SEFSC, and MRIP) on how to use the electronic logbook estimates to inform decisions about the level of for-hire catch to be compared to the annual catch limits. Having data reported by individual charter vessel and headboat captains/owners should improve their confidence in the catch data used for monitoring fisheries and for closing retention of specific species. The two data systems should provide more well informed decisions about the status of catches compared to annual catch limits.

1.10 What other data reporting projects and activities are underway in the Southeast Region?

The South Atlantic and Gulf Councils convened a Technical Subcommittee devoted to for-hire reporting in 2014 to develop best practices recommendations for improved for-hire data collections programs. The full report of that group is provided in Appendix E to this amendment. Additionally, discussion of each action indicates how the preferred alternatives address this group's recommendations.

The South Atlantic Council is a partner in an Atlantic Coast Cooperative Statistics Program (ACCSP) research project that is now underway to test tablets for recording fishery data for charter vessel trips. Tablets have been be provided to participating vessels from North Carolina through Florida for testing and evaluating electronic reporting. A subset of participants will are using an electronic measuring board to measure the length of fish that are released. The South Atlantic Council considers the software developed in conjunction with ACCSP as a tool NMFS would certify and compliant for fishermen to submit trip reports proposed under in this amendment. The South Atlantic Council is also working with NMFS and ACCSP on a related project to develop a validation methodology for logbook data using the existing South Carolina for-hire logbook program.

The pilot electronic logbook program will be modified to incorporate results from the validation study. In this way, the electronic logbook pilot would become a MRIP-compliant methodology.

Recognizing that outreach will be critical to the successful implementation of the charter vessel electronic logbook program and the continued improvement of the headboat logbook program, the South Atlantic Council and NMFS (SERO and SEFSC) have submitted a proposal for consideration under the $7 million dollars available for Electronic Reporting/Monitoring. The proposal addresses the training, outreach, and support needs for implementation of electronic

reporting requirements in the South Atlantic region. Specifically, the proposal will develop and deliver training and outreach programs targeting charter captains in the South Atlantic region (NC to the East coast of Florida) to deliver information about the need and purpose for electronic reporting and to train captains how to use electronic reporting platforms. These activities are aimed at encouraging compliance with upcoming electronic reporting requirements scheduled for approval by the South Atlantic Council in December 2016 and implementation in 2017/18 Additionally, the proposal addresses training and outreach support for law enforcement officers on the use of a reporting compliance mobile app being developed during a pilot project currently being conducted by the South Atlantic Council in cooperation with ACCSP and NMFS. Outreach materials developed for the charter vessel sector outlining the upcoming electronic reporting requirements will also be used for complementary outreach materials to provide updates to the headboat sector on changes to their electronic reporting requirements.

In Year 1, the project aims to focus on pre-implementation activities to support training of charter captains as well as law enforcement officers. The South Atlantic Council will partner with Harbor Lights Software Inc., developer of electronic reporting platforms (software and mobile app) for use by the fishing industry, on developing a training toolkit that will include printed and online video training modules, fact sheets, and user's manual for use by charter captains. Law enforcement officer advisors will provide feedback on developing training materials for an electronic reporting compliance mobile app. Pre-implementation training will be provided throughout the South Atlantic region to charter captains and law enforcement officers using a combination of quarterly, onsite training classes, and monthly video webinars.

In Year 2, the project aims to focus on providing support to charter captains after the electronic reporting requirements in that sector are implemented through the availability of a 24/7 Help Desk providing access to Harbor Lights Software, Inc. technicians; an electronic reporting discussion board on the South Atlantic Council's online fisherman forum; and subsequent onsite training programs offered biannually and monthly video webinars.

Although federally permitted commercial dealers currently report weekly through an electronic system, commercial fishermen with a snapper grouper, dolphin wahoo, or CMP federal permit must report via a paper logbook. Commercial fishermen have expressed interest in reporting electronically, and the South Atlantic Council is exploring ways to allow them to use software to report, similar to what is being done in the northeast (i.e., North Carolina through Maine). Through a future amendment, the South Atlantic Council will would also consider requiring electronic reporting for commercial fishermen.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1: Modify Frequency and Mechanism of Data Reporting for Charter Vessels

Alternative 1 (No Action). The owner or operator of a charter vessel for which a charter vessel/headboat permit for South Atlantic coastal migratory pelagic (CMP) species, South Atlantic snapper grouper, or Atlantic dolphin and wahoo has been issued, or whose vessel fishes for or lands such (CMP species, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic exclusive economic zone (EEZ), and who is selected to report by the Science and Research Director (SRD) must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD. Completed fishing records must be submitted to the SRD weekly, postmarked no later than 7 days after the end of each week (Sunday). Information to be reported is indicated on the form and its accompanying instructions.

For South Atlantic snapper grouper, charter vessels selected to report by the SRD must participate in the National Marine Fisheries Service (NMFS) sponsored electronic logbook and/or video monitoring program as directed by the SRD. Completed fishing records may be required weekly or daily, as directed by the SRD.

Note: The catastrophic conditions provisions, delinquent reporting, and the requirement to participate in a video monitoring program if selected are not changed by any of the alternatives in this amendment and are described in further detail in **Section 1.1**.

Preferred Alternative 2. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware and software). Weekly = Tuesday following each fishing week. Snapper Grouper Advisory Panel preferred.

Preferred Sub-alternative 2a. Report all fish harvested and discarded on all trips regardless of where the fish were caught.

Sub-alternative 2b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where the fish were caught. (snapper grouper, dolphin/wahoo, and CMP species)

Sub-Alternative 2c. Report all federally-managed fish harvested and discarded on all trips regardless of where the fish were caught.

Alternative 3. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware-and software). Daily = by noon of the following day.

Sub-alternative 3a. Report all fish harvested and discarded on all trips regardless of where the fish were caught.

Sub-alternative 3b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where the fish were caught. (snapper grouper, dolphin/wahoo, & CMP species)

Sub-Alternative 3c. Report all federally-managed fish harvested and discarded on all trips regardless of where the fish were caught.

Comparison of Alternatives

Preferred Alternative 2 would require federally permitted charter vessels participating in the dolphin wahoo, snapper grouper, and CMP fisheries to submit fishing records weekly, or at intervals shorter than a week, via electronic reporting (using NMFS approved hardware and software). **Preferred Alternative 2** could improve fishery dependent data in several ways. Mandatory reporting of all fish harvested and discarded by all charter vessels would remove the need to develop survey based estimates of catch and effort. Weekly reporting could make data available to the science and management process faster, potentially reducing the likelihood of exceeding annual catch limits (ACLs). **Preferred Alternative 2** could also improve data accuracy as reports would be completed shortly after each trip, potentially reducing problems associated with recall errors. Reporting by Tuesday would standardize charter vessel logbook reporting with headboats if **Alternative 2** is chosen for **Action 2**. However, **Preferred Alternative 2** would reduce the timing flexibility for report preparation by charter vessel operators and this could be burdensome during peak season when the number of trips taken, the number of passengers carried, and catch are greatest.

Preferred Sub-alternative 2a of **Alternative 2** requires operators of charter vessels with dolphin wahoo, snapper grouper, CMP for hire permits to report all effort and all catch, including harvest and discard, regardless of where a trip takes place or what species may be targeted. This is the most inclusive of the sub-alternatives considered, and would therefore best prevent any gaps in catch reporting. Limiting reporting to either South Atlantic Fishery Management Council (South Atlantic Council) managed species, as in **Sub-alternative 2b**, or to federally managed fish as in **Sub-alternative 2c**, would allow some species to be caught but not reported. This could reduce future management effectiveness, as events such as range expansions by, or developing fisheries for, species not managed by the South Atlantic Council would be overlooked in the data system. This would hinder the South Atlantic Council's ability to modify managed species in response to environmental, social, or economic changes that may occur in the future. In addition, omitting some species from mandatory reporting is counter to the South Atlantic Council's intent to eliminate duplicate reporting. Under **Sub-alternative 2b**, additional monitoring programs would be required to collect information for federal and state species, and under **Sub-alternative 2c** additional monitoring programs would be required to collect information for state managed species. Given the multi-species nature of the South Atlantic charter sector, these data omissions could result in a significant loss of information.

Alternative 3 would require charter vessels participating in the subject fisheries to submit a report for each day. As with **Preferred Alternative 2,** this report would be submitted electronically and received by NMFS (due noon the following day). **Alternative 3** could further reduce the likelihood of exceeding ACLs with reduced recall error compared to **Alternative 1 (No Action)** and **Preferred Alternative 2**. However, **Alternative 3** would add additional burden and reduced flexibility compared to **Alternatives 1 (No Action)** and **Preferred Alternative 2.** The sub-alternatives of **Alternative 3** are the same as those for **Alternative 2** and carry the same relative risks and benefits.

For both **Preferred Alternative 2** and **Alternative 3**, it is the intent of the South Atlantic Council to maintain existing provisions for catastrophic conditions, delinquent reporting, and video monitoring. During catastrophic conditions, the use of paper forms for basic required reporting may be authorized by the Regional Administrator (RA) through publication of timely notice, and the RA also has the authority to waive or modify reporting time requirements. An electronic report not received within the time specified is delinquent. A delinquent report automatically results in a prohibition on harvesting or possessing the applicable species by the permit holder, regardless of any additional notification to the delinquent permit owner and operator by NMFS. This prohibition is applicable until all required and delinquent reports have been submitted and received by NMFS according to the reporting requirements. For South Atlantic snapper grouper, charter vessels selected to report by the SRD must participate in the NMFS-sponsored electronic logbook and/or video monitoring program as directed by the SRD. Completed fishing records may be required weekly or daily, as directed by the SRD. This reporting requirement places the responsibility for submitting required information directly on the permit holder. Further, a permit renewal application for which all logbooks have not been submitted is considered incomplete and the application will be considered abandoned if the deficiency is not corrected in a timely manner. However, the federal for-hire permit is open access, and a fisherman can purchase a new permit if a permit is lost or expired. If a vessel is delinquent for any trips, an e-mail reminder is to be sent to the vessel owner after the reporting week ends. If the vessel continues to be non-compliant, the permit office and law enforcement are notified. A vessel that fails to report in a timely manner may be reported to law enforcement The obligation to report is to be reinforced annually via certified letter to each permit holder.

Currently, charter vessels in fisheries for snapper grouper, dolphin wahoo, and CMP are only required to report if selected. None have been selected to date. The South Atlantic Council's intent in considering this action is for the owner or operator of a charter vessel with a for-hire charter vessel permit for South Atlantic CMP species, South Atlantic snapper grouper, or Atlantic dolphin and wahoo, and whose vessel fishes for or lands CMP species, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic EEZ, to report all catch and fishing effort through an electronic system, regardless of where they operate. It is the South Atlantic Council's intent that all fishing trips shall be selected to report and all operators shall report their fishing activities, rather than just a subset of selected vessels. None of the actions proposed in this amendment affect requirements of vessels to participate in surveys conducted by the Marine Recreational Information Program (MRIP).

The South Atlantic Council's intent is to eliminate duplicate reporting and allow fishermen to file a single report that would be available to all agencies and programs requiring fishing effort and catch information. Charter operators who are currently required to report, such as through the South Carolina Department of Natural Resources charter logbook, the Greater Atlantic Region (GAR) Vessel Trip Report (VTR) system, or programs implemented in the Southeast for the Gulf of Mexico, should not have to file an additional report for fishing activities requiring reporting under this amendment to comply with the provisions of the For-Hire Reporting Amendment. Furthermore, it is the South Atlantic Council's intent that reports submitted under other permits a vessel may possess, such as those issued in the GAR or for Gulf Council fisheries, will fulfill the requirements of this amendment when the other reporting requirements the vessel complies with are more stringent than those in this amendment (e.g., requiring daily

reporting) and the data reported address the core elements. For this reason, the South Atlantic Council supports the Atlantic Coastal Cooperative Statistics Program (ACCSP) model, which has a proven ability to assimilate electronic catch reports from both state and federal agencies across a wide variety of platforms providing mobile, at-sea, and shore based options.

Mandatory, electronic, weekly reporting by a census of the entire recreational sector with federal for-hire permits addresses the mandatory participation, electronic data collection, reporting frequency and census reporting recommendations of the National Research Council and the Gulf and South Atlantic Technical Subcommittee on for-hire reporting. Requiring that reports be filed even if no fishing activity took place addresses the recommendation pertaining to validation and accountability. However, the South Atlantic Council's intent is to allow provisions for filing of "did not fish" reports in advance, for up to 30 days, as currently allowed for headboat vessels.

The South Atlantic Council is considering taking action for limited entry in the for-hire sector. Compliance with the reporting requirements of this amendment may be considered by the South Atlantic Council when determining eligibility criteria for limited access permits. In its review of the For-Hire Reporting Amendment in April 2015, the Mackerel Advisory Panel (AP) recommended the South Atlantic Council consider limited entry if electronic reporting were implemented in the for-hire sector.

The South Atlantic Council's intent is that charter vessels with federal for-hire permits for snapper grouper, dolphin wahoo, and CMP meet the similar data elements currently collected for headboats in the Southeast Region Headboat Survey (SRHS), and for charter vessels and headboats in South Carolina. The specified core data elements (listed below) identified by the South Atlantic Council in this amendment are intended to meet these requirements.

The South Atlantic Council identified core data elements to collect for each charter fishing trip are intended to provide basic information on catch and effort required for each trip to manage the recreational sector for the snapper grouper, dolphin wahoo, and CMP fisheries and monitor fish populations. Core elements also include limited economic variables to improve the South Atlantic Council's ability to determine the economic impacts of regulations. More detailed information that may be required to improve social and economic evaluations or more precisely describe where species are encountered by the recreational sector may be obtained through dedicated sampling of a sub-set of charter trips, similar to what is now done to obtain commercial discard and economic information. Such information could be collected on a voluntary basis. The core data elements include many of the specific data recommendations identified by the technical subcommittee as necessary for validation and estimation.

CORE DATA ELEMENTS. Variables to collect for each trip.

- Start Date
- Start Time
- End Date
- End Time
- Start Location
- End Location
- Vessel ID (name, License #)
- Captain ID (name, License #)
- Number of fishermen
- Number of crew
- Method (general categories, e.g., troll, bottom, spear, drift)
- Hours fished

Primary depth fished: may be reported as a range	Number of each species kept
Target species: may be reported in categories or groups	Number of each species released
Location: 1 minute grid (consistent with headboat reporting)	Charter fee
	Fuel used
	Fuel price per gallon

Additional data that could be collected on a sample or voluntary basis from both charter vessels and headboats include:

- releases/discards measured and specific location (depth) of release recorded
- retained catch at specific location (depth) recorded
- economic data (similar to what is currently being collected from commercial fishermen)
- social data

While there needs to be sufficient flexibility in the structure and design of the data collection program to ensure that the system can be built in a timely and efficient manner, the South Atlantic Council expects to be included, and given an opportunity to participate in the process for determining changes, if the Agency determines that changes in the core data elements are needed. Furthermore, the South Atlantic Council's expectation for involvement includes the opportunity for participation, review and comment by the South Atlantic Council's designated advisory groups including its Scientific and Statistical Committee and appropriate fishery management plan Advisory Panels.

2.2 Action 2: Modify Frequency and Mechanism of Data Reporting for Headboats

Alternative 1 (No Action). Under current regulations, the owner or operator of a headboat with a charter vessel/headboat permit for South Atlantic CMP species, South Atlantic snapper grouper, or Atlantic dolphin and wahoo, and whose vessel fishes for or lands such CMP species, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic exclusive economic zone (EEZ), and who is selected to report by the SRD, must submit an electronic fishing record for each trip of all fish harvested via the SRHS. Electronic fishing records must be submitted at weekly intervals (or intervals shorter than a week if notified by the SRD) by 11:59 p.m., local time, the Sunday following a reporting week. If no fishing activity occurred during a reporting week, an electronic report stating so must be submitted for that reporting week by 11:59 p.m., local time, the Sunday following a reporting week.

Note: The catastrophic conditions provisions, delinquent reporting, and the requirement to participate in a video monitoring program if selected are not changed by any of the alternatives in this amendment and are described in further detail in **Section 1.1**.

Preferred Alternative 2. Require that headboats, while operating as a headboat, submit fishing records to the SRD weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware and software). Weekly = Tuesday following each fishing week. Snapper Grouper Advisory Panel preferred.

Alternative 3. Require that headboats, while operating as a headboat, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware and software). Daily = by noon of the following day.

Comparison of Alternatives

The difference between **Alternative 1 (No Action)** and **Preferred Alternative 2 and Alternative 3** is the time between the end of the fishing week (Sunday) and report submission. No other existing headboat reporting requirements are affected by this amendment.

The SRHS, which is administered by the NMFS Southeast Fisheries Science Center (SEFSC), includes approximately 76 large capacity headboats operating in the South Atlantic from Florida through North Carolina (**Table 1.4.1**). Federally permitted vessels included in this survey are required to report catch and effort data weekly to NMFS (**Table 2.1.2**). The SRHS requires all federally permitted headboat vessels operating in South Atlantic waters to report, weekly, through the electronic logbook system. There are vessels located in the GAR (Virginia to Maine) which possess South Atlantic for-hire permits that are not currently selected by the SRD to report under the SRHS electronic logbook, because these vessels hold permits that require them to report all fishing activity and catch through the GAR VTR System. Due to the requirements to collect biological samples of catches through dockside sampling, and the need for validation of fishing records and efforts, it is more practical and efficient for primary data collection to take place in the region where vessels are located.

Alternative 1 (No Action) requires headboats participating in South Atlantic snapper grouper, Atlantic dolphin wahoo, or Gulf of Mexico and Atlantic CMP fisheries, if selected by the SRD, to submit electronic reports weekly (or at intervals less than a week if requested by the SRD) due seven days after the end of each week (Sunday).

Preferred Alternative 2 would continue the requirement for headboats participating in the South Atlantic snapper grouper, Atlantic dolphin wahoo, or Gulf of Mexico and Atlantic CMP fisheries to report weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware and software). The difference between **Alternative 1 (No Action)** and **Preferred Alternative 2** is the time between the end of the fishing week (Sunday) and report submission. **Alternative 1 (No Action)** allows 7 days to prepare and submit reports while **Preferred Alternative 2** would allow only 2 days. **Preferred Alternative 2** could improve data in several ways. Data could be available in the science and management process faster, potentially reducing the likelihood of exceeding ACLs. **Preferred Alternative 2** could also improve accuracy as reports would be completed soon after each trip reducing problems associated with recall errors. However, **Preferred Alternative 2** would reduce the flexibility of the headboat operators for the timing of report preparation and this could be acute during peak season when the number of trips, the number of passengers, and catch are greatest.

Alternative 3 would require headboats participating in the South Atlantic snapper grouper, Atlantic dolphin wahoo, or Gulf of Mexico and Atlantic CMP fisheries to submit a report each day. This report would be submitted electronically and would need to be received by NMFS (by noon the following day). **Alternative 3** could further reduce the likelihood of exceeding ACLs and reduce recall error compared to **Alternative 1** or **Preferred Alternative 2**. However, **Alternative 3** would add additional burden and reduced flexibility in comparison to **Alternative 1** or **Preferred Alternative 2.**

For both **Alternative 2** and **Alternative 3**, it is the intent of the South Atlantic Council to maintain existing provisions for catastrophic conditions, delinquent reporting, and video monitoring. This action only affects the timing of reports currently required. During catastrophic conditions, the use of paper forms for basic required reporting may be authorized by the Regional Administrator (RA) through publication of timely notice, and the RA also has the authority to waive or modify reporting time requirements. An electronic report not received within the time specified is delinquent. A delinquent report automatically results in a prohibition on harvesting or possessing the applicable species by the permit holder, regardless of any additional notification to the delinquent permit owner and operator by NMFS. This prohibition is applicable until all required and delinquent reports have been submitted and received by NMFS according to the reporting requirements. For South Atlantic snapper grouper, charter vessels selected to report by the SRD must participate in the NMFS-sponsored electronic logbook and/or video monitoring program as directed by the SRD. Completed fishing records may be required weekly or daily, as directed by the SRD.

Historically, headboat vessels reported logbook information to the SRHS using paper forms. Beginning January 27, 2014, selected vessel owners/operators have been required to submit

electronic logbooks. Vessel operators selected to report are required to report 100% of their vessel trips, regardless of whether the trips occur in the EEZ or in state waters. The current reporting requirements place the responsibility for submitting required information directly on the permit holder. Further, a permit renewal application for which all logbooks have not been submitted is considered incomplete and the application will be considered abandoned if the deficiency is not corrected in a timely manner. However, in the South Atlantic the federal for-hire permit is open access, and a fisherman can purchase a new permit if a permit is lost or expired. If a vessel is delinquent for any trips, an e-mail reminder is sent to the vessel owner after the reporting week ends. If the vessel continues to be non-compliant, the permit office and law enforcement is notified. A vessel that fails to report in a timely manner may be reported to law enforcement. The obligation to report is reinforced annually via certified letter to each permit holder.

The South Atlantic Council is considering taking action through future amendments that could consider limited entry in the for-hire sector. Compliance with the reporting requirements of the For-Hire Reporting Amendment may be among the factors considered by the South Atlantic Council when determining eligibility criteria in any future limited entry programs.

2.3 Action 3: Modify Electronic Reporting Requirements to Require Vessel or Catch Location Reporting

Alternative 1 (No Action). Current regulations require charter vessels participating in the for-hire survey to report area fished (inshore, state, or federal waters), if selected as part of the survey. Headboats participating in the SRHS are required to report latitude and longitude of area fished (degrees and minutes only; within 1 nautical mile $(nm)^2$ area).

Preferred Alternative 2. Require federally permitted charters vessels to report location fished electronically by manually entering latitude and longitude in degrees and minutes or by clicking on an electronic chart. Snapper Grouper Advisory Panel preferred.

Two Alternatives Considered

Section 1502.14(a) of the National Environmental Policy Act states that "agencies shall: rigorously explore and objectively evaluate all reasonable alternatives…." Two reasonable alternatives for this action, including the no action alternative, have been identified by NMFS and the South Atlantic Council. The South Atlantic Council is considering requiring charter vessels to report catch location in the same manner as is currently required for headboats. **Preferred Alternative 2** reflects the current manner in which headboats are required to report area fished. The South Atlantic Council and NMFS could consider a third alternative to not require charter vessels to report area fished, but that would not meet the purpose and need and is therefore not a reasonable alternative.

Comparison of Alternatives

Charter vessels that are surveyed using the MRIP for-hire survey are asked to report area fished (i.e., area fished, state, or federal waters) in addition to the other elements listed in **Table 2.1.1**. This Action includes alternatives to require reporting of fishing locations with greater spatial resolution.

Alternative 1 would maintain the current self-reporting systems in place, that is, reporting of area fished if selected in the for-hire survey (charter vessel) or latitude and longitude of area fished within 1 nm^2 area (headboat).

Preferred Alternative 2 would require charter vessels to report location fished, by either manually entering latitude and longitude in degrees and minutes, or by clicking on a geographic grid in the electronic reporting application. This is currently required for headboats in the South Atlantic, and these methods of reporting are available in the reporting application. All vessels would be required to report this information.

Core data elements listed under **Action 1** are consistent with this preferred alternative. Selecting this alternative ensures that area reporting is consistent for all federal for-hire vessels in the South Atlantic. To some extent this action is tied to **Action 1**, since there will be no need to specify electronic reporting of area with a particular resolution if the mandatory electronic reporting alternatives of **Action 1** are not approved.

CHAPTER 3. AFFECTED ENVIRONMENT

3.1 Description of the Physical Environment

3.1.1 Snapper Grouper

Habitat for Snapper Grouper Species

Information on the habitat utilized by species in the Snapper Grouper Complex is included in Volume II of the Fishery Ecosystem Plan (FEP) (SAFMC 2009) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx

Essential Fish Habitat for Snapper Grouper Species

Essential Fish Habitat (EFH) is defined in the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories of EFH identified in the South Atlantic Bight, which are utilized by federally- managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas. Specifically, estuarine/inshore EFH includes: Estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: Live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

EFH utilized by snapper grouper species in this region includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 183 meters [600 feet (but to at least 2,000 feet for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival of larvae and growth up to and including settlement. In addition, the Gulf Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meter (100 feet) contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom habitats.

Habitat Areas of Particular Concern for Snapper Grouper Species

Areas which meet the criteria for Habitat Areas of Particular Concern (HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank HAPC; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and South Atlantic Council-designated Artificial Reef Special Management Zones (SMZ). Areas that meet the criteria for HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though fishery management plans (FMPs) regulations, the South Atlantic Fishery Management Council (Council), in cooperation with National Marine Fisheries Service (NMFS), actively comments on non-fishing projects or policies that may impact EFH. The South Atlantic Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel (AP) and adopted a comment and policy development process. With guidance from the Habitat AP, the South Atlantic Council has developed and approved habitat policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; and alterations to riverine, estuarine and near shore flows, offshore aquaculture, invasive estuarine species, and invasive marine species (available at www.safmc.net).

EFH and HAPCs in the South Atlantic Region are show in in **Figure 3.1.1**.

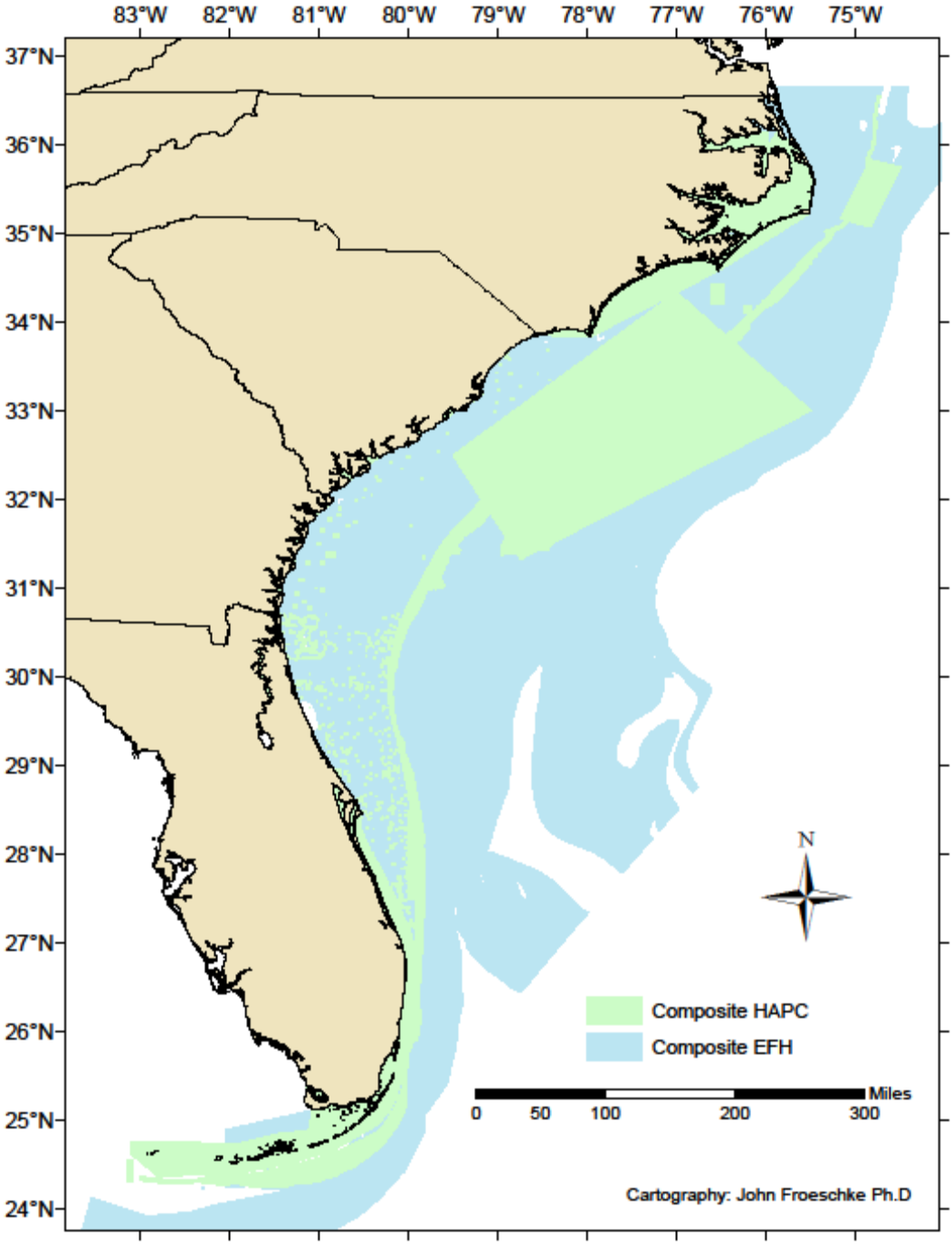

Figure 3.1.1. Composite map of HAPC and EFH in the South Atlantic Region.
Source: John Froescke, Ph.D. Gulf of Mexico Fishery Management Council

3.1.2 Dolphin and Wahoo

Habitat for Dolphin and Wahoo

Information on the habitat utilized by dolphin and wahoo is included in Volume II of the Fishery FEP (SAFMC 2009) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx

EFH for Dolphin and Wahoo

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum.* This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999, as a part of the Council's Comprehensive Habitat Amendment (SAFMC 1998) (dolphin was included within the Coastal Migratory Pelagics FMP at that time, and the EFH definition has been carried forward through the establishment of the dolphin and wahoo FMP). This definition does not apply to extra-jurisdictional areas.

HAPCs for Dolphin and Wahoo

HAPCs for dolphin and wahoo in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic Sargassum. A map of these areas is available via the FEP link above. This HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the Council's Comprehensive Habitat Amendment (dolphin was included within the Coastal Migratory Pelagics FMP).

3.1.3 Coastal Migratory Pelagics

Habitat for Coastal Migratory Pelagics

A description of the physical environment for coastal migratory pelagic (CMP) species is provided in Amendment 18 to the CMP FMP (GMFMC and SAFMC 2011), and is incorporated herein by reference.

EFH for Coastal Migratory Pelagics

A description of the EFH for CMP species is provided in Amendment 18 to the CMP FMP (GMFMC and SAFMC 2011), and is incorporated herein by reference. EFH for CMPs include coastal estuaries from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Council and the South Atlantic Council from estuarine waters out to depths of 100 fathoms (GMFMC 2004). In the South Atlantic, EFH for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf Stream shoreward,

including *Sargassum*. In addition, all coastal inlets, all state-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all primary nursery areas and all secondary nursery areas).

For cobia, EFH also includes high salinity bays, estuaries, and seagrass habitat. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse coastal migratory pelagic larvae. For king and Spanish mackerel and cobia, essential fish habitat occurs in the South Atlantic and Mid-Atlantic Bights.

HAPCs for Coastal Migratory Pelagics (CMP)

A description of the HAPCs for CMP species is provided in Amendment 18 to the CMP FMP (GMFMC and SAFMC 2011), and is incorporated herein by reference. Areas which meet the criteria for HAPCs include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada (Florida); The Marathon Hump off Marathon (Florida); The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the Estuarine Living Marine Resources Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River (North Carolina), for cobia, Broad River (South Carolina).

3.2 Description of the Biological, Physical and Ecological Environment

The biological environment in the areas affected by actions in this amendment is defined by two components (**Figure 3.2.1**). Each component will be described in detail in the following sections.

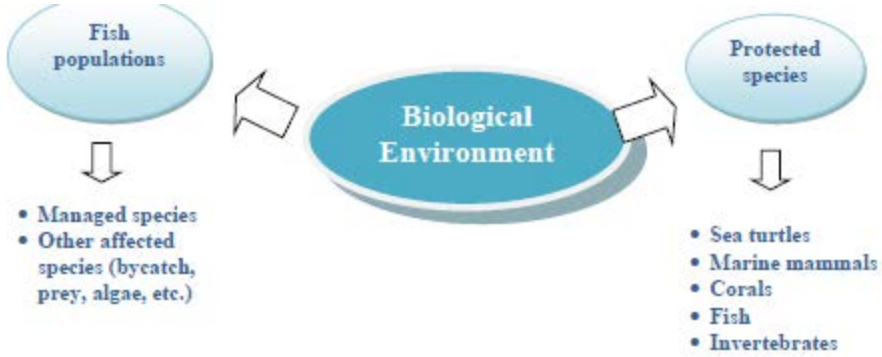

Figure 3.2.1. Components of the biological environment described in this amendment.

3.2.1 Snapper Grouper

Information on the biology of species in the Snapper Grouper Complex is included in Volume II of the FEP (SAFMC 2009) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx

3.2.2 Coastal Migratory Pelagics

A description of CMP species biology is provided in Amendments 18, 20A, and 20B to the CMP FMP (GMFMC and SAFMC 2011, 2013, 2014), and is incorporated herein by reference.

3.2.3 Dolphin and Wahoo

Information on the biology of dolphin and wahoo is included in Volume II of the Fishery Ecosytem Plan (FEP) (SAFMC 2009) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx

3.2.4 Protected Species

There are 40 listed species protected by federal law that may occur in the Exclusive Economic Zone (EEZ) of the South Atlantic Region and are under the purview of the NMFS. Thirty-one of these species are marine mammals protected under the Marine Mammal Protection Act (MMPA). Six of these marine mammal species (sperm, sei, fin, blue, humpback, and North Atlantic right whales) are also listed as endangered under the Endangered Species Act (ESA). In

addition to those six marine mammals, five species of sea turtles (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five distinct population segments (DPSs) of Atlantic sturgeon; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]) are also protected under the ESA. Portions of designated critical habitat for North Atlantic right whales and *Acropora* corals occur within the Council's jurisdiction. Additionally, on September 10, 2014, NMFS listed 20 new coral species under the ESA, five of those species occur in the Caribbean (including Florida) and all of these are listed as threatened. The two previously listed *Acropora* coral species remain protected as threatened.

The NMFS has reviewed the potential impacts of the snapper grouper, coastal migratory pelagics and the dolphin wahoo fishery on protected species in the region. The potential impacts from the continued authorization of these fisheries on currently listed protected species have been considered in previous ESA Section 7 consultations or subsequent memoranda. Consultations indicate that of the species listed above, sea turtles and smalltooth sawfish are the most likely to interact with these fisheries and are therefore discussed further below.
The complete consultation history for the snapper-grouper, dolphin and wahoo, and coastal migratory pelagics fishery are described below.

Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South Atlantic region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick (eds.) 1997, Lutz et al. (eds.) 2003).

Green sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988, Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida

1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

Kemp's ridley hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 cm carapace length they move to relatively shallow (less than 50m) benthic foraging habitat over unconsolidated substrates (Márquez-M. 1994). They have also been observed transiting long distances between foraging habitats (Ogren 1989). Kemp's ridleys feeding in these nearshore areas primarily prey on crabs, though they are also known to ingest mollusks, fish, marine vegetation, and shrimp (Shaver 1991). The fish and shrimp Kemp's ridleys ingest are not thought to be a primary prey item but instead may be scavenged opportunistically from bycatch discards or from discarded bait (Shaver 1991). Given their predilection for shallower water, Kemp's ridleys most routinely make dives of 50 m or less (Soma 1985, Byles 1988). Their maximum diving range is unknown. Depending on the life stage a Kemp's ridleys may be able to stay submerged anywhere from 167 minutes to 300 minutes, though dives of 12.7 minutes to 16.7 minutes are much more common (Soma 1985, Mendonca and Pritchard 1986, Byles 1988). Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life cycle. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1,000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora et al. 1984, Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

Loggerhead hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764 ft) (Thayer et al. 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer et al. 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan et al. 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan et al. 1989).

Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. In the South Atlantic region, they are most commonly found in Florida, primarily off the Florida Keys (Simpfendorfer and Wiley 2004). Only two smalltooth sawfish have been recorded north of Florida since 1963 [the first was captured off North Carolina in 1963 and the other off Georgia in 2002 (National Smalltooth Sawfish Database, Florida Museum of Natural History)]. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 m (Bigelow and Schroeder 1953, Adams and Wilson 1995), while mature animals occur in waters in excess of 100 m (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food resources (Simpfendorfer 2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938, Bigelow and Schroeder 1953).

CMP FMP Consultation History

NMFS completed a biological opinion on June 18, 2015, evaluating the impacts of the CMP fishery on ESA-listed species. In the biological opinion, NMFS determined that the proposed continued authorization of the CMP Fishery, is not likely to adversely affect any listed whales (i.e., blue, sei, sperm, fin, humpback, or North Atlantic right whales), Gulf sturgeon, or elkhorn and staghorn corals. NMFS also determined that the CMP Fishery is not likely to adversely affect designated critical habitats for elkhorn and staghorn corals or loggerhead sea turtles, and will have no effect on designated critical habitat for the North Atlantic right whale.

According to the 2015 Biological Opinion on CMP fisheries, green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, Atlantic sturgeon, and the smalltooth sawfish are all likely to be adversely affected by the CMP fishery. Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles area all highly migratory, travel widely throughout the Gulf of Mexico and South Atlantic, and are known to occur in area of the fishery. The distribution of Atlantic sturgeon and smalltooth sawfish within the action area is more limited, but all of these species overlap with the CMP fisheries in certain regions of the action area and these species have the potential to be been incidentally captured in the CMP fisheries.

An incidental take statement for sea turtles, smalltooth sawfish, and Atlantic sturgeon was issued in the 2015 Biological Opinion for incidental take coverage in the federal CMP fisheries throughout the action area. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them.

On April 6, 2016, NMFS published a final rule (81FR 20057) listing 11 DPSs of green sea turtles. The North Atlantic and South Atlantic DPSs of green sea turtles are listed as threatened, and are the only DPSs whose individuals can be expected to be encountered in the action areaIn addition, on June 29, 2016, NMFS published a final rule (81 FR 42268) to list Nassau grouper as threatened under the ESA, effective July 29, 2016. Currently the Protected Resources Division is evaluating additional actions, such as establishing critical habitat or application of the 4(d) rule

under the ESA. Reinitiation of Section 7 consultation on the CMP FMP may be needed to address the newly listed species and DPSs.

Dolphin Wahoo Consultation History

NMFS completed a biological opinion that evaluated the effects of the Atlantic dolphin and wahoo fishery on ESA-listed species on August 27, 2003 (NMFS 2003). The opinion for the dolphin and wahoo fishery concluded the fishery is not likely to jeopardize the continued existence of any listed sea turtle species. NMFS issued an Incidental Take Statement specifying reasonable and prudent measures to minimize the impact of these incidental takes, along with terms and conditions to implement them. NMFS determined the other listed species and critical habitat in the South Atlantic Region (ESA-listed marine mammals, North Atlantic Right whale critical habitat, Atlantic salmon, and smalltooth sawfish) are not likely to be adversely affected by the fishery.

Subsequent to issuing the biological opinion, NMFS modified the list of protected species for which they are responsible. These changes included: (1) the listing of two species of *Acropora* coral (71 FR 26852, May 9, 2006); (2) the designation of *Acropora* critical habitat (73 FR 72210, November 26, 2008); (3) the listing of nine DPSs of loggerhead sea turtles (76 FR 58868, September 22, 2011); (4) the listing of five DPSs of Atlantic sturgeon (77 FR 5914 and 77 FR 5880, February 6, 2012); (5) the designation of critical habitat for the Northwest Atlantic Ocean (NWA) DPS of loggerhead sea turtles (79 FR 39856, July 10, 2014); (6) the listing of 20 new coral species, five of which occur in the South Atlantic (79 FR 53851, September 10, 2014); (7) the listing of 11 DPSs of green sea turtles, two of which (the North Atlantic and South Atlantic DPSs) occur in the South Atlantic (81 FR 20057, April 6, 2016); and (8) the listing of Nassau grouper (81 FR 42268, June 29, 2016).

With the exception of the green sea turtle North Atlantic and South Atlantic DPS listing and the Nassau grouper listing, NMFS has already considered how the continued authorization of the Atlantic dolphin and wahoo fishery would interact with these recently listed species and designated critical habitat in a series of consultation memoranda. In separate memoranda, NMFS concluded the continued authorization of the Atlantic dolphin and wahoo fishery is not likely to adversely affect *Acropora* or *Acropora* critical habitat (May 18, 2010), and the Atlantic sturgeon DPSs (February 15, 2012). The February 15, 2012, memorandum also stated that because the 2003 biological opinion had evaluated the impacts of the fishery on the loggerhead subpopulations now wholly contained within the NWA DPS, the opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid with respect to the NWA DPS. In a memorandum dated September 11, 2014, NMFS indicated the South Atlantic dolphin and wahoo fishery is still not likely to adversely affect *Acropora* corals and are also not likely to adversely affect any of the newly listed corals. In a memorandum dated September 16, 2014, NMFS concluded that activities associated with the dolphin and wahoo fishery would not adversely affect any of the NWA loggerhead DPS critical habitat units. Reinitiation of Section 7 consultation on the Dolphin Wahoo FMP may be needed to address the newly listed species and DPSs.

Snapper Grouper Consultation History

The snapper-grouper fishery is known to interact with listed sea turtles and smalltooth sawfish. In a June 7, 2006, biological opinion, NMFS determined that its continued authorization of the Snapper-Grouper FMP is likely to adversely affect sea turtles and smalltooth sawfish, but is not likely to jeopardize their continued existence. An incidental take statement was issued specifying the amount and extent of anticipated take of green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them. In that same biological opinion and subsequent memoranda, NMFS determined that all other listed species and their designated critical habitat in the EEZ of the South Atlantic Region are not likely to be adversely affected.

However, because of new information on protected species and status in the region, reinitiation of the consultation on the snapper grouper fishery began on February 11, 2016. NMFS is currently developing a new biological opinion on the South Atlantic snapper-grouper fishery. This biological opinion is likely to be completed in 2016.

3.2.5 Bycatch

A summary of the bycatch and discards is provided in the Bycatch Practicability Analysis in **Appendix F**. The actions in this amendment will help to better quantify the bycatch and discard rates in the snapper grouper, CMP, and dolphin wahoo fisheries in the Southeast Region. With more accurate and timely reporting, managers can better understand the level of bycatch and discards associated with the charter and for-hire components of these fisheries.

3.3 Description of the Economic Environment

3.3.1 Commercial Sector

The actions in this proposed amendment only pertain to the recreational for-hire sector (charter vessels and headboats). As a result a description of the economic environment for the commercial sector is not provided.

3.3.2 Recreational Sector

The actions in this proposed amendment would primarily apply to for-hire vessels operating in the South Atlantic. However, management of the CMP species and dolphin wahoo by the South Atlantic Council extends up the U.S. Atlantic coast. Because the proposed actions would primarily affect South Atlantic for-hire vessels, the following discussion focuses on the characteristics of this fleet. Detailed information on the operation of the for-hire fleet in the mid- and northeast Atlantic is provided in Steinback and Brinson (2013) and is incorporated herein by reference.

Angler Effort

The for-hire sector is comprised of charter vessels and headboats (party boats). Although charter vessels tend to be smaller, on average, than headboats, the key distinction between the two types of operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

Estimates of the South Atlantic charter vessel angler effort (individual angler trips regardless of trip duration or species target intent or catch success) for 2011-2014 are provided in **Table 3.3.1**. These estimates are derived from the Marine Recreational Information Program (MRIP). Estimates of charter vessel angler effort for additional years, and measures of directed effort, are available at http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index.

Table 3.3.1. Number of South Atlantic charter vessel angler trips, by state, 2011-2014.

	Florida	Georgia	North Carolina	South Carolina	Total
2011	123,796	15,687	151,681	81,215	372,379
2012	143,663	19,920	160,097	24,662	348,342
2013	155,572	21,040	111,366	48,464	336,441
2014	192,504	30,773	96,620	94,374	414,271
Average	153,884	21,855	129,941	62,179	367,858

Source: MRIP database, NMFS, SERO.

The effort estimates provided in **Table 3.3.1** are from all charter vessels in the respective states and, thus, include effort for both federally permitted vessels and charter vessels that only fish in state waters. Although the MRIP data allows estimation of effort in federal waters, for which respective vessels would require a federal permit (see the permits discussion below), federally permitted vessels also fish in state waters and are subject to federal regulations wherever they fish. As a result, it is not possible with available data to estimate the number of charter vessel angler trips by only federally permitted charter vessels. Therefore, the estimates provided in **Table 3.3.1** exceed the angler effort on the vessels encompassed by the proposed actions in this amendment by an unknown number of trips.

Estimates of headboat angler effort in the South Atlantic for 2011-2014 are provided in **Table 3.3.2**. These estimates are derived from the NMFS Southeast Region Headboat Survey (SRHS). Headboat angler effort is calculated as angler days, which are a standardized count of trips that result from the combination of partial-day, full-day, and multiple-day trips. The SRHS includes some vessels that do not possess a federal for-hire permit. Thus, the estimates of headboat angler days, like the estimates of effort on charter vessels, do not reflect effort for just federally permitted vessels.

Table 3.3.2. South Atlantic headboat angler days, by state, 2011–2014.

	Angler Days			
	Florida-Georgia*	**North Carolina**	**South Carolina**	**Total**
2011	132,492	18,457	44,645	195,594
2012	147,699	20,766	41,003	209,468
2013	165,679	20,547	40,963	227,189
2014	195,890	22,691	42,025	260,606
Average	160,440	20,615	42,159	223,214

Source: SRHS.
*Florida and Georgia are combined for confidentiality purposes.

Permits

A federal for-hire vessel permit is required for fishing in federal waters for Atlantic dolphin wahoo , Atlantic CMP species, and South Atlantic snapper grouper species. On October 30, 2015, there were 2,138 vessels with at least one valid (non-expired) federal for-hire permit to fish for Atlantic dolphin wahoo, Atlantic CMP species, or South Atlantic snapper grouper species. Each of these permits is an open access permit, so the total number of permitted vessels changes year-to-year. Most for-hire vessels possess more than one for-hire permit. Among the vessels with at least one for-hire permit, 1,604 vessels had all three permits, 199 vessels had two permits (83 vessels possessed both the dolphin wahoo and CMP permits, 35 vessels possessed both the dolphin wahoo and snapper grouper permits, and 81 vessels possessed both the CMP and snapper grouper permits), and 335 vessels had only one for-hire permit (247 vessels possessed only the dolphin wahoo permit, 19 vessels possessed only the CMP permit, and 69 vessels possessed only the SG permit). The totals for valid Atlantic CMP permits and valid Atlantic permits include vessels operating in the mid- and northeast Atlantic. Finally, 402 of the

vessels with at least one for-hire permit also possessed at least one federal for-hire permit required to fish in federal waters in the Gulf of Mexico to fish for CMP or reef fish species.

Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, if a vessel meets the selection criteria (see **Section 1.4**) used by the SRHS and is selected to report by the SRD of the Southeast Fishery Science Center (SEFSC), the vessel is determined to operate primarily as a headboat and is required to submit harvest and effort information to the SRHS. As of February 2016, 74 South Atlantic headboats were registered in the SRHS (K. Fitzpatrick, NMFS SEFSC, pers. comm.). It is unknown how many headboats in the mid- or northeast Atlantic have an Atlantic CMP or Atlantic dolphin wahoo for-hire permit.

Information on South Atlantic charter vessel and headboat operating characteristics is included in Holland et al. (2012) and is incorporated herein by reference.

Economic Value

Economic value for for-hire vessels can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. For vessels in the South Atlantic, the estimated NOR values are $160 per charter angler trip and $43 per headboat angler trip (C. Liese, NMFS SEFSC, pers. comm.). As previously noted, management by the South Atlantic Council of the CMP species and dolphin wahoo extends up the U.S. Atlantic coast and not just the South Atlantic region. The average NOR values per angler trip for for-hire vessels in the mid-Atlantic and Northeast region are $24 and $26, for charter vessels and headboats, respectively (S. Steinback, NMFS NEFSC, pers. comm.).
All estimates are in 2015 dollars.

Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the information provided below represents a distributional analysis only.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Estimates of the business activity (economic impacts) associated with recreational charter vessel angling in 2014 in the South Atlantic are provided in **Table**

3.3.3. These estimates and additional details are available at https://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2014/index

The estimates provided in **Table 3.3.3** include only impacts at the state level. These numbers are not additive across the region. Addition of the state-level estimates to produce a regional (or national total) could either under- or over-estimate the actual amount of total business activity because of the complex relationship between different jurisdictions and the expenditure/impact multipliers. Neither regional nor national estimates are available at this time.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRIP in the South Atlantic. As a result, estimation of the appropriate business activity coefficients for headboat effort has not been conducted. Beginning in August 2014, socio-economic data fields were added to the SRHS electronic logbook. However, these data refer to the vessel operation and not angler expenditures, which are the basis for estimating the business activity associated with the different recreational sector modes.

The estimates of business activity for the South Atlantic do not include the business activity associated with vessels that possess the appropriate South Atlantic Council-mandated for-hire permits (dolphin wahoo or CMP), but operate north of the South Atlantic states. This information is not available at this time.

Table 3.3.3. 2014 business activity (thousands of 2014 dollars) associated with charter vessel trips in the South Atlantic. Output and value added impacts are not additive.

	Florida	Georgia	North Carolina	South Carolina
Output Impact	$146,821	$13,493	$48,746	$56,195
Value Added Impact	$89,171	$7,639	$27,801	$32,457
Jobs	1,338	144	518	625

Source:
https://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2014/index

3.4 Description of the Social Environment

The proposed actions in this amendment would be expected to affect charter fishing businesses associated with the South Atlantic's snapper grouper, CMP, and dolphin wahoo fisheries, which are not already participating in the SRHS. A description of the current requirements for participants of the SRHS and a description of the information collected in the survey are provided in **Section 3.5.1.1** and in the South Atlantic Headboat Amendment (SAFMC 2013c). The proposed actions in this amendment do not pertain to the commercial sector. Therefore, a description of the social environment for the commercial sector is not provided.

Detailed descriptions of the social environment for each fishery are included in recent amendments and are herein incorporated by reference. These include Dolphin Wahoo Amendments 5 and 8 (SAFMC 2013b; 2015); Coastal Migratory Pelagics Amendment 20A (GMFMC/SAFMC 2013a); and Snapper Grouper Amendments 29 and 34 (SAFMC 2014; 2015).

Federal for-hire permits are currently required for vessels to take paying passengers to fish in federal waters. In the South Atlantic, the for-hire permits for snapper grouper, CMPs, and dolphin wahoo are all open access; existing permits may not be transferred, but new permits may be issued. The annual application fee for these vessel permits is $25 for the first permit and $10 for each additional permit.

Table 3.4.1 shows the number of federal charter permits for South Atlantic dolphin wahoo, CMP, and snapper grouper by region and state. Most permits are on vessels associated with one of the South Atlantic states, but there are also vessels with for-hire permits (particularly dolphin wahoo and coastal migratory pelagics) in the Mid-Atlantic region, New England region, and even in the Gulf of Mexico region.

The number of charter vessels possessing each type of for-hire permit is provided for the South Atlantic states by county in **Table 3.4.2**. In Florida, the communities with the highest number of vessels with at least one for-hire permit are in the counties of Monroe (Florida Keys), Volusia, Brevard, Palm Beach, Broward and Miami-Dade. Important tourism areas on the Florida east coast and Keys are generally the areas with higher numbers of for-hire businesses, such as St Augustine, Daytona Beach/Port Orange, Cocoa Beach, Canaveral, West Palm Beach, Merritt Island, Islamorada, Marathon and Key West.

In Georgia, most for-hire vessels are associated with the Savannah area (Chatham County) and St Simons/Brunswick (Glynn County). For South Carolina communities, most vessels with for-hire permits are near the Myrtle Beach area (including Little River and Murrells Inlet in Horry County), Charleston, and Hilton Head Island. The North Carolina communities with the most for-hire vessels include Hatteras and Manteo (Dare County), Morehead City/Atlantic Beach (Carteret County), and the Southport area (Brunswick County) (**Table 4.3.2**). As in Florida, all of these communities are also important areas for coastal tourism. These are also areas with high levels of engagement and reliance on recreational fishing (SAFMC 2013b; 2014; 2015).

Table 3.4.1. Distribution of South Atlantic charter permits, as of November 20, 2015.

	South Atlantic Charter Permits		
	Dolphin Wahoo	CMP	Snapper Grouper
South Atlantic Total	**1,069**	**1.061**	**1,098**
North Carolina	272	258	252
South Carolina	140	157	155
Georgia	24	33	32
Florida East Coast	339	326	355
Florida Keys	294	287	304
Gulf of Mexico Total	**280**	**289**	**282**
Florida West Coast	220	225	223
Alabama	20	27	25
Mississippi	1	2	1
Louisiana	7	7	6
Texas	32	28	27
Mid-Atlantic Total	**233**	**99**	**75**
Virginia	42	32	29
Maryland	60	22	15
Delaware	33	5	2
New Jersey	52	23	17
Pennsylvania	17	5	3
New York	29	12	9
New England Total	**19**	**10**	**9**
Connecticut	3		
Rhode Island	4	3	3
Massachusetts	9	4	3
New Hampshire	1	1	1
Maine	2	2	2
Other	**4**	**3**	**2**
TOTAL PERMITS	**1,605**	**1,462**	**1,466**

Source: SERO Permits Office

Table 3.4.2. Number of valid and renewable permits held by charter vessels in the South Atlantic, by coastal county as of November 20, 2015.

	Total # of Vessels with at least one South Atlantic Charter Permit	**Breakdown of # Vessels with Each South Atlantic Charter Permit**		
		Dolphin Wahoo	CMP	Snapper Grouper
Florida Keys TOTAL	**316**	**294**	**287**	**304**
Florida East Coast TOTAL	**378**	**339**	**326**	**355**
Nassau	9	7	9	9
Duval	16	16	16	16
Flagler/St Johns	26	25	25	26
Volusia	44	42	40	41
Brevard	64	63	62	61
Indian River	24	23	24	24
St Lucie	9	9	9	9
Martin	13	12	12	13
Palm Beach	67	61	55	60
Broward	44	40	38	41
Miami-Dade	62	41	36	55
Georgia TOTAL	**33**	**24**	**33**	**32**
Chatham	13	13	13	12
Bryan	5	5	5	5
McIntosh	1	1	1	1
Glynn	12	4	12	12
Camden	2	1	2	2
South Carolina TOTAL	**162**	**140**	**157**	**155**
Horry	62	**58**	**62**	**60**
Georgetown	4	4	4	4
Charleston	57	**51**	**52**	**54**
Colleton	6	4	6	6
Beaufort	33	**23**	**33**	**31**
North Carolina TOTAL	**281**	**272**	**258**	**252**
Currituck	5	5	4	5
Dare	105	103	102	97
Hyde	5	5	5	5
Carteret	64	62	52	53
Onslow	18	16	17	15
Pender	5	5	5	5
New Hanover	34	33	31	30
Brunswick	39	38	38	37
Other Counties	6	5	4	5
South Atlantic TOTAL	**1,170**	**1,069**	**1,061**	**1,098**

Source: SERO permits office.

3.5 Environmental Justice Considerations

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories… ." This executive order is generally referred to as environmental justice.

South Atlantic federally permitted for-hire fishing businesses participating in the dolphin wahoo, CMP, and snapper grouper fisheries would be expected to be affected by this proposed action. This action is expected to impact the administrative procedures of federally permitted charter for-hire businesses and would require the submission of electronic reports. Information on race and ethnicity of federally permitted charter for-hire business owners and their employees is not available; however it is very unlikely that there would be a disproportionately high impact on businesses including members of minority populations, as direct impacts from adopting the new reporting requirements are expected to be minimal. Further, it is expected that there would be no impact to low-income populations as owners of these businesses are likely not in poverty. As discussed elsewhere in the document (such as in the Effects on the Social Environment section, Chapter 4, and Chapter 5) because the economic and social effects would be expected to be minimal to non-existent in the short-run (charter vessels are currently required to report if selected by the SRD, but to date, have not been selected) and positive in the long-run (more timely harvest reporting supporting improved management decisions), no adverse effects would be expected to accrue to charter vessel customers, or associated businesses and communities. Thus, no environmental justice concerns are expected to arise from this proposed action.

3.6 Description of the Administrative Environment

3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.), originally enacted in 1976. The MSA claims sovereign rights and exclusive fishery management authority over most fishery resources within the U.S. Exclusive Economic Zone (EEZ), an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (Secretary) and eight regional Fishery Management Councils that represent the expertise and interests of constituent states. Regional Fishery Management Councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for collecting and providing the data necessary for the Councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the MSA and with other applicable laws summarized in Appendix C. In most cases, the Secretary has delegated this authority to NMFS.

The South Atlantic Council is responsible for conservation and management of fishery resources in the EEZ of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of the states of North Carolina, South Carolina, Georgia, and east Florida to Key West with the exception of two fishery management plans: species in the CMP FMP are managed from New York to Florida and those in the Dolphin Wahoo FMP are managed from Maine to Florida. The South Atlantic Council has thirteen voting members: one from NMFS; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. There are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard (USCG), Department of State, and Atlantic States Marine Fisheries Commission (ASMFC).

The South Atlantic Council has adopted procedures whereby the non-voting members serving on the South Atlantic Council committees have full voting rights at the committee level but not at the full South Atlantic Council level. In addition, provisions allow the Mid-Atlantic Fishery Management Council 2 voting seats at the committee level for snapper grouper and CMP, and both the Mid-Atlantic and New England Fishery Management Councils have 1 voting seat at the committee level for dolphin wahoo. South Atlantic Council members serve three-year terms and are recommended by State Governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through South Atlantic Council meetings, which, with few exceptions, are open to the public. The Regional Fishery Management Councils use Scientific and Statistical

Committees to review the data and science being used in assessments and fishery management plans/amendments. In addition, the regulatory process is in accordance with the Administrative Procedures Act, in the form of "notice and comment" rulemaking.

3.5.1.1. South Atlantic Region Reporting Requirements

Currently, the owner or operator of a vessel for which a charter vessel permit for South Atlantic CMP fish, South Atlantic snapper grouper, or Atlantic dolphin and wahoo has been issued, or whose vessel fishes for or lands such coastal migratory pelagic fish, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic exclusive economic zone (EEZ), and who is selected to report by the SRD, must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD. Completed records for charter vessels must be submitted to the SRD weekly, postmarked no later than 7 days after the end of each trip (Sunday). Currently, all headboats are required to submit fishing records to the SRD weekly or at intervals shorter than a week if notified by the SRD via electronic reporting (via computer or Internet). Weekly = 7 days after the end of each week (Sunday).

The Southeast Region recreational reporting requirements by fishery management plan are summarized in Table 3.5.1. Detailed information on electronic reporting requirements and the future implementation plan for the Southeast region can be found in the NMFS Southeast Region Electronic Monitoring and Reporting Regional Implementation Plan (NMFS 2015) and is hereby incorporated by reference.
http://sero.nmfs.noaa.gov/sustainable_fisheries/documents/pdfs/em_er_implementation_plan_southeast.pdf

Table 3.5.1. Summary of the existing monitoring tools currently implemented in recreational fisheries of the Southeast Region. Green cells indicate fisheries where electronic technologies have already been implemented and regulated programs are in place. Fisheries where additional Electronic Reporting (ER) and Electronic Monitoring (EM) could potentially be suitable are noted, and yellow cells indicate those fisheries that have been identified as the highest priority for implementation.

Region	Fishery	Current Requirements					Additional ER Potentially Suitable?	EM Potentially Suitable?
		Paper logbooks/reports	Electronic Logbooks	VMS	Video	Observers		
Caribbean	Reef Fish	N	N	N	N	N		
	Queen Conch	N	N	N	N	N		
	Spiny Lobster	N	N	N	N	N		
	Corals and Reef Associated Plants and Invertebrates	Harvest and possession prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity						
Gulf of Mexico	Reef Fish	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter; pilot testing electronic apps for private sector	VMS, if used in conjunction with electronic reporting or catch share program; pilot testing VMS in Headboat Collaborative
	Shrimp	Shrimp are not recreationally harvested in the Gulf of Mexico EEZ						
	Aquaculture	Proposed for commercial purposes only.						
	Red Drum	N	N	N	N	N		
	Corals	Live rock harvested for commercial purposes. Harvest and possession of corals prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity						
Gulf of Mexico and South Atlantic	Coastal Migratory Pelagics	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Spiny Lobster	N	N	N	N	N		
South Atlantic	Snapper-Grouper	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Shrimp	Shrimp are not recreationally harvested in the South Atlantic EEZ						
	Dolphin-Wahoo	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Golden Crab	Golden crabs are not recreationally harvested in the South Atlantic EEZ						
	Sargassum	Sargassum is not recreationally harvested in the South Atlantic EEZ						
	Corals	Live rock harvested for commercial purposes. Harvest and possession of corals prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity						

3.5.1.2 Greater Atlantic Region Reporting Requirements

The Greater Atlantic Region Fisheries Office (GARFO) requires that all federally-permitted vessels whether fishing in state or federal waters report catch as described in **Table 3.5.2.** Vessel owners or operators issued permits for the fisheries required to report are required to complete a vessel trip report (VTR) for every fishing trip, whether the vessel is fishing in state or federal waters, or in another region of the country, such as the South Atlantic. This is true for all trips, no matter what species is being fished for or caught. All species caught must be reported. Having an observer or at-sea monitor on board during a trip does not relieve the owner or operator from reporting requirements. A VTR is required for any trip on a federally permitted vessel when fish are caught, or when operations include activities that would support fishing, such as preparing to catch or harvest fish, or attempting to catch or harvest fish. All such fishing activities must be reported, even if no landings are made. The trip is the period of time during which these activities are conducted, beginning when the vessel leaves port and ending when the vessel returns to port. There are only two instances where a VTR isn't required for a specific trip. One is if the vessel is transiting without any product onboard and does not engage in any fishing activity, such as when moving to a shipyard or returning to home port. The other is if the vessel is operating under a scientific Letter of Acknowledgement. Reporting is required even if no fish are caught or onboard if the following events occur: trips that were started but ended before gear could be set due to weather or mechanical issues, trips made solely to set out gear; and unsuccessful trips where no fish are caught. VTRs are required even if a vessel is not used for any fishing activity for the entire reporting period, weekly or monthly, that is applicable to the permit types. In such cases the cases, reports are filed using the "Did Not Fish" field and appropriate vessel identification information.

Table 3.5.2. Greater Atlantic Region Fisheries Office (GARFO) vessel trip report (VTR) requirements by vessel permit type.

	Frequency of reporting	**Report deadline**	**If you did not fish…..**
If a vessel is issued a permit for: *Atlantic herring; *Atlantic mackerel; *Illex squid; *Longfin squid/butterfish; *Northeast multispecies; *Ocean quahogs: *Surfclams	Then the owner/operator must submit trip reports weekly	Reports must be postmarked or received by midnight of the Tuesday following the reporting week (Sunday through Saturday). If a trip starts in one week, and offloads in the next, it should be reported in the week the catch was offloaded.	If subject to weekly reporting, you must submit a Did Not Fish report for each week that there is no fishing trip activity. If you know your vessel will be inactive, you may submit these reports electronically up to 3 months in advance.
If a vessel is issued a permit for: *Atlantic bluefish *Atlantic deep-sea red crab *Atlantic sea scallop *Black sea bass *Monkfish *Northeast skate *Scup *Spiny dogfish *Summer flounder *Tilefish	Then the owner/operator must submit trip reports monthly	Reports must be postmarked or received within 15 days of the end of the month. If a trip starts in one month, and offloads in the next, it should be reported for the month in which the catch was offloaded	If subject to monthly reporting, you must submit a Did Not Fish report for each month that there is no fishing trip activity. If you know your vessel will be inactive, you may submit these reports electronically up to 3 months in advance.
If a vessel is issued a permit for American lobster **and** no other Greater Atlantic Region vessel permit	Then the owner/operator is not required to submit trips reports (check with your state, which may require reporting).	--	--

3.5.1.3. Highly Migratory Species Management Division Reporting Regulations for Charter Vessels and Headboats

Owners of vessels that carry passengers for-hire and fish for, possess, or retain Atlantic Highly Migratory Species (HMS) (tunas, billfish, swordfish, and sharks) must obtain an annual Atlantic HMS Charter/Headboat permit and have a valid Merchant Marine License or Uninspected Passenger Vessel License. HMS charter vessels and headboats operate under different rules depending on whether they are on a "for-hire" or a "non-for-hire" trip, and the combination of permits held by the charter vessel/headboat.

If the vessel owner only holds an Atlantic HMS charter/headboat permit, that owner is required to report catch in the appropriate NMFS logbook program, if selected. Entries on a day's fishing activities must be entered on the logbook form within 48 hours of completing the day's activities, or before offloading, whichever is sooner. The owner or operator must submit the logbook forms postmarked within 7 days of offloading all Atlantic HMS. If a selected vessel did not fish during a calendar month, then that vessel must submit a no-fishing form no later than 7 days after the end of the month. Atlantic HMS charter vessels and headboats may also be selected for cost-earnings reporting.

If a vessel owner issued an HMS charter/headboat permit also has a permit issued in a non-HMS fishery that is required to report, any landings should be reported, as required, under the appropriate NMFS Regional vessel logbook program.

All HMS charter/headboat vessel owners/operators must report all recreational landings (i.e., fish kept) of Atlantic billfish (blue marlin, white marlin, roundscale spearfish, and sailfish), swordfish, and bluefin tuna (landings and dead discards) to NMFS within 24 hours of landing at the dock (with the exception of fish landed in Maryland or North Carolina) either via a web-based reporting system or by calling the appropriate Reporting Hotline. Participation in surveys such as the Large Pelagics Survey (LPS) or MRIP does not fulfill recreational reporting obligations.

Please refer to the charter/headboat sections of the Atlantic HMS Commercial and Recreational Compliances guides for additional information on the Atlantic HMS charter headboat fleet: http://www.nmfs.noaa.gov/sfa/hms/compliance/guides/index.html

3.5.2 State Fishery Management

The state governments of North Carolina, South Carolina, Georgia, and the east coast of Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. North Carolina's marine fisheries are managed by the Division of Marine Fisheries of the North Carolina Department of Environmental Quality. The Marine Resources Division of the South Carolina Department of Natural Resources regulates South Carolina's marine fisheries. Georgia's marine fisheries are managed by the Coastal Resources Division of the Department of Natural Resources. The Marine Fisheries Division of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's

marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the South Atlantic Council is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters.

The South Atlantic states are also involved in the management of marine fisheries through the Atlantic States Marine Fisheries Commission (ASMFC). This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The ASFMC also is represented at the South Atlantic Council, but only has voting authority at the committee level.

The NMFS' State-federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the ASMFC to develop and implement cooperative state-federal fisheries regulations.

3.5.3 Enforcement

Both the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office for Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

Administrative monetary penalties and permit sanctions are issued pursuant to the guidance found in the Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions for the NOAA Office of the General Counsel – Enforcement Section. This Policy is published at the Enforcement Section's website: http://www.gc.noaa.gov/enforce-office3.html .

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1. Action 1: Modify Frequency and Mechanism of Data Reporting for Charter Vessels

4.1.1 Direct and Indirect Effects on the Physical/Biological/Ecological Environment

The reporting requirement for charter vessels with federal for-hire permits is an administrative process for providing a means of collecting data from the industry, and does not directly affect the physical or biological environment, but does have an indirect effect. There would be positive indirect biological effects because having all charter vessels report electronically would make it easier to track landings in a timely manner. This would help prevent exceeding annual catch limits (ACLs), leading to healthier fish stocks by reducing the likelihood of overfishing. **Alternative 1 (No Action)** already requires that vessels, if selected, must maintain a fishing record for each trip, or a portion of such trips as specified by the Science and Research Director (SRD), on forms provided by the SRD; however, no charter vessels have been selected. Completed fishing records must be submitted to the SRD weekly, postmarked no later than 7 days after the end of each week (Sunday). **Alternative 1 (No Action)** could result in adverse impacts if landings are not reported in a timely fashion and allowable harvests are exceeded. Reporting provides a method to estimate mortality, which is then used to assess the stock conditions. Electronic reporting by charter vessels, as proposed by **Preferred Alternative 2** and **Alternative 3** (and associated sub-alternatives) could reduce the likelihood of overages of the ACLs by providing a means for more timely reporting

Action 1: Modify Frequency and Mechanism of Data Reporting for Charter Vessels

Alternative 1 (No Action). Federally permitted for-hire vessels in the snapper grouper, dolphin wahoo, or CMP fisheries must maintain records of fishing trips, if selected to report, using provided paper forms.
Preferred Alternative 2. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware and software). Weekly = Tuesday following each fishing week. SG AP Preferred.

Preferred Sub-alternative 2a. Report all fish harvested and discarded on all trips regardless of where caught. (current headboat requirement)

Sub-alternative 2b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where caught. (snapper grouper, dolphin wahoo, & CMP species)

Sub-Alternative 2c. Report all federally-managed fish harvested and discarded on all trips regardless of where caught.

Alternative 3. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware and software). Daily = by noon of the following day.

Sub-alternative 3a. Report all fish harvested and discarded on all trips regardless of where caught. (current headboat requirement)

Sub-alternative 3b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where caught. (snapper grouper, dolphin wahoo, & CMP species)

Sub-Alternative 3c. Report all federally-managed fish harvested and discarded on all trips regardless of where caught.

*See Chapter 2 for a detailed statement of the Alternatives.

as well as providing a source for better data collection to support the stock assessments and future management.

Overages of the ACLs can have an adverse effect to the stock and stock conditions. For overfished species in the South Atlantic, any overages are deducted from the allowable harvest the following fishing year. In these instances, the adverse effects may be mitigated. However, for species under a rebuilding plan, simply lowering the following year ACL may not offset the adverse impacts of the overage. For example, the reduction in spawning potential of the stock due to exceeding the ACL is not fully compensated by an equivalent harvest reduction in the next fishing year.

In these cases, overages may prevent achieving the rebuilding target and optimum yield. All of the alternatives, (even **Alternative 1**) require some kind of reporting, if selected. **Preferred Alternative 2** and **Alternative 3** would require that the reporting be done electronically and **Preferred Alternative 2** would require reports to be submitted weekly or at intervals shorter than a week, based on the SRD request. **Alternative 3** would require daily electronic reporting. All of the action alternatives would require that data be submitted to the Southeast Fisheries Science Center (SEFSC) more frequently than the current requirements and electronically resulting in positive indirect biological effects.

Fishermen are required to meet the reporting requirements associated with their permit (CFR §622.5). With electronic reporting, as proposed in **Preferred Alternative 2** and **Alternative 3**, it would be much easier to track those who are not meeting the reporting requirements of their permit. In 2015, there were 76 headboats (**Table 1.4.1**) in the South Atlantic reporting catches electronically; however, there are approximately 2,000 charter vessels (**Table 1.3.1**) that would need to use the new electronic reporting system. Thus, tracking charter vessels, and taking action when they do not report, could require more effort than for headboat vessels because there are so many more charter vessels.

Alternative 1 (No Action), **Preferred Alternative 2**, and **Alternative 3** are unlikely to result in any direct adverse impacts on protected species such as endangered or threatened whales, sea turtles, corals, or Habitat-Areas-of-Particular-Concern (HAPCs). Modifications to reporting requirements for the charter sector are not expected to change current fishing practices. Total harvest would still be constrained by the commercial and recreational ACLs, and accountability measures (AMs) would still be used to help prevent overfishing. It is unlikely any alternative would result in increased or modified fishing effort in the dolphin wahoo, coastal migratory pelagic (CMP), or snapper grouper fisheries; therefore, no adverse biological impacts on protected species or physical environment, or bycatch or prey species is expected as a result of this action.

4.1.2 Direct and Indirect Effects on the Economic Environment

Currently, effort and catch data for federally permitted charter vessels operating in South Atlantic Fishery Management Council (South Atlantic Council) managed fisheries are collected through the Marine Recreational Information Program (MRIP) For-Hire Survey. This program is not census based, rather it is a subsample of the for-hire fleet which may require several weeks to several months to compile harvest and effort data. Additionally, for-hire operators of the

National Marine Fisheries Service (NMFS) Greater Atlantic Region (GAR) federally permitted vessels are required to submit a vessel trip report (VTR) for each fishing trip. VTRs provide information on when and where catch occurred, what was caught, gear used, number of crew and anglers, and depth fished. The VTR can be submitted using a paper or electronic form. These reports typically cover fishing activity occurring north of North Carolina. Presumably, vessels participating in South Atlantic Council managed fisheries in the GAR are covered by the VTR program. However, any vessels in the GAR who possess only South Atlantic for-hire permits (CMP, dolphin wahoo, or snapper grouper), and possess no GAR permits, are not covered by the GAR VTR program. The provisions of the For-Hire Reporting Amendment would require all vessels with South Atlantic federal for-hire permits to report their landings. Although an analysis to verify this has not been conducted, this assessment assumes that because federally permitted for-hire vessels operating in the GAR are required to participate in the VTR program, charter vessels with federal for-hire permits in the GAR, fishing for South Atlantic managed species, would be able to submit reports to the VTR system. This assumption is consistent with the South Atlantic Council's stated intent to prevent duplicate reporting and to recognize other reports filed by vessels complying with more stringent reporting programs to which they are subject.

Alternative 1 (no action) would maintain current reporting requirements for federally permitted charter vessels and would therefore not affect the harvest and customary uses of South Atlantic snapper grouper, Atlantic dolphin wahoo, or CMP species. Consequently, **Alternative 1** would not be expected to result in direct economic effects. However, **Alternative 1** would continue to allow for a lengthy time lag in the collection of landings information. If the time lags result in delaying needed management measures, e.g., a timely closure of a species, and adversely affect fish stocks, adverse indirect economic effects would be expected to result. Additionally, the absence of census-type coverage logbook trip reports for charter vessels in the South Atlantic limits the amount and quality of available information, such as harvest, discard, effort, and economic data, on which to base other management decisions (beyond the timing of quota closure) and restricts the management options available for implementation. These limitations may have economic implications for both this component of the recreational sector, the recreational sector as a whole, and the commercial sector. For example, better data would enable more accurate estimates of total fishing mortality, effort, and operational costs. This would support improved monitoring of quotas (as previously discussed), better ensuring that overruns do not occur, as well as improved forecasts of the expected biological, economic, and social effects of current and proposed regulations. As part of the larger recreational sector, circumstances that limit understanding of the performance of charter vessels by extension affect understanding of the performance of the recreational sector as a whole and the expected economic effects of proposed management measures. For example, a stock assessment that is adversely affected by poor harvest or effort data from charter vessels would have harvest and management implications on all users within the recreational sector as well as the commercial sector.

Electronic reporting would be more efficient than other forms of reporting because the information provided could be directly integrated into an electronic system that would allow a combination of records and tabulation of harvests. With electronic reporting, data would not have to be manually input from paper forms, faxes, or scanned documents. This can reduce costs and data entry errors. The specification of ACLs and accountability measures (AMs) has

increased the need for more timely collection of harvest data. Recreational AMs vary from in-season closures for some species such as black sea bass, red grouper, and golden tilefish to a reduction in the length of the fishing season in the year following an ACL overage for many other species. The current frequency of data reporting could increase the likelihood of harvest overages for species that have in-season closures like black sea bass. For species with a recreational AM that shortens the length of the following fishing season, better and more timely data could help ensure landings do not exceed the ACL in the year following an overage. Only in extreme situations would potential overages be expected to be so severe that the status of a stock or a recovery plan would be jeopardized under the current reporting schedule. However, overages have the potential, depending on the AMs, to result in significant disruption in fishing behavior and reduce revenue and profit for for-hire vessels and associated businesses, and reduce potential fishing opportunities for anglers. **Alternative 1 (No Action)** would be expected to continue to result in these indirect economic effects.

Electronic reporting could have benefits for charter vessel owners. Electronic submission of data could provide a warehouse for storing data for a vessel. Reports can be generated that would allow vessel owners to track performance over time. Reports could even be generated to compare a vessel's fishing success against that of the average charter fishing vessel.

Preferred Alternative 2 and **Alternative 3** would require federally permitted charter vessels to submit fishing records via electronic reporting. **Preferred Alternative 2** and **Alternative 3** would require weekly and daily submissions, respectively. **Preferred Sub-alternative 2a** and **Sub-alternative 3a**, **Sub-alternatives 2b** and **3b,** and **Sub-alternatives 2c** and **3c** would require reporting for all fish harvested/discarded, reporting only for South Atlantic Council managed species, or reporting for all federally-managed species, respectively.

In terms of the time necessary to complete the requests and associated costs, in general **Preferred Alternative 2** would be less burdensome than **Alternative 3** because reporting would be weekly instead of daily. From an economic perspective, there are no substantial differences between the sub-alternatives of **Preferred Alternative 2** and **Alternative 3** if the for-hire vessel only fishes for and harvests South Atlantic Council managed species, as operators would always report all fishing trips. If the vessel is also used to fish for unmanaged or state-managed species, then the reporting requirements specified in **Sub-alternatives 2b** and **3b** would be the least burdensome, followed by **Sub-alternatives 2c and 3c,** since these sub-alternatives would not require reporting fish harvested or discarded on trips strictly catching unmanaged or state-managed species**. Preferred Sub-alternative 2a** and **Sub-alternative 3a** would be most burdensome as charter vessel operators would need to report all fish harvested or discarded, regardless of the management status of the species. As previously discussed, indirect economic benefits derived from improved data and associated improved management would be expected to accrue for all of the sub-alternatives under **Alternatives 2** and **3.** The ranking of the sub-alternatives relative to these benefits would be the inverse of the ranking based on burden, with the more burdensome, time consuming options expected to yield better data and greater associated economic benefits.

The cost of implementing electronic reporting that is expected to be borne by charter operators to report would be minimal if they own a computer or have access to a computer. It is also likely

that other electronic devices such as tablets and smartphones may be used to satisfy the electronic reporting requirements. Additionally, whatever device is used would need to have access to the Internet. However, if the charter operator does not own or have access to a computer (e.g., at a library) or other approved electronic device, they would need to purchase such a device. For this analysis, it is not known how many charter vessel owners already own a computer, tablet, and/or smartphone or have access to the Internet. Given the wide variety of devices, computers and tablets were chosen for the analysis as an upper estimate of equipment expenses, as these devices tend to be more expensive than smart phones. According to **Table 1.3.1**, in 2014 there were 1,984 federally-permitted charter vessels in the South Atlantic. It is not known how many of the vessels have the same owner that would report landings using the same electronic device. Therefore, the worst-case scenario is that all vessels would need a basic computer on which to report landings and a basic Internet connection. A basic computer system can be purchased for $260 (in 2016 dollars; www.amazon.com/Dell-Optiplex-Included-Processor-Professional/dp/B00UTV6ZWM/ref=sr_1_98?ie=UTF8&qid=1453746419&sr=8-98&keywords=PC+Computer+with+monitor). A tablet computer with a detachable keyboard can be purchased for as little as $120 (in 2016 dollars; www.amazon.com/Viking-Pro-Computer-Touchscreen-Detachable/dp/B0174AX43I/ref=sr_1_1?ie=UTF8&qid=1453748342&sr=8-1&keywords=tablet+computer). The cost of a basic monthly Internet connection is $46.92 (in 2014 dollars; http://www.ask.com/business-finance/average-internet-bill-439f4e05fc0bb3c7). The estimated one time cost, if all 1,984 permitted vessel owners needed to purchase a computer would be $515,840. To purchase a tablet computer would be $238,080. An annual cost for the average Internet connection would be approximately $1,117,071 for all of the vessel owners. What is not included in these estimates are costs associated with training to learn how to use a computer, if needed, nor is maintenance or replacement, as needed. However, the stated costs associated with implementing electronic reporting are likely to be highly over-estimated because many charter vessel owners are already using the Internet for various business-related activities such as to promote their business, attract customers, and upload photographs from successful trips.

Regardless of the alternative selected, all data would need to be entered at the trip level. Beyond the potential differences of which trips would need to be recorded and the species included in the reports, the proposed alternatives primarily differ in the frequency of submitting reports. Once the user learns the data entry software, it is estimated that reporting requirements would take a charter vessel operator approximately ten minutes per trip for either **Preferred Alternative 2** or **Alternative 3,** as records would need to be kept for each trip, regardless of reporting frequency. In 2015, there were 192,781 angler trips taken on charter vessels in federal waters in the South Atlantic region (Personal communication from NMFS, Fisheries Statistics Division, August 9, 2016). Assuming that all of these trips occurred on vessels that were federally permitted to fish for South Atlantic Council managed species and were carrying an average of 3 to 6 anglers per trip, a total of 32,130 to 64,260 individual charter trips were taken. Applying an average of ten minutes spent on record keeping per trip, a total of 5,355 hours to 10,710 hours would be expended to satisfy the reporting requirements under **Preferred Alternative 2** and **Alternative 3,** assuming both alternatives encompassed the same number of trips. Based on the Bureau of Labor Statistics May 2015 mean hourly wage for fishers and related fishing workers of $13.90 per hour, the estimated cost stemming from the reporting requirement is approximately $74,435 to $148,870 on an annual basis (in 2015 dollars; USDOL 2016). Building a report for each trip

would be the same for all reporting options, but logging on to submit trip reports may take additional time. Because **Alternative 2** would require weekly electronically submission of trip reports instead of daily reporting, the realized time burden would likely be less than **Alternative 3.** Therefore, the realized cost from **Alternative 2** would likely be towards the lower end of the estimated range. Charter trips occurring outside of the South Atlantic region were not included in this analysis, because it is assumed that if these captains have a federal fishing permit for South Atlantic managed fisheries, they will also have federal fishing permits for Greater Atlantic Region fisheries and will, therefore, already be covered under the VTR program.

The Atlantic Coast Cooperative Statistics Program (ACCSP) has approved development of software for at-sea data entry using a tablet computer. The amount funded for the software development is $195,680. NMFS SEFSC has developed computer software, currently used by headboat operators, which could be modified, as needed, for use by charter vessels. The costs of such modifications are currently unknown.

Similarly, costs expected to be borne by the Agency to administer these data collection efforts are unknown and may be variable. For various potential cost estimates of implementing electronic reporting, see **Table 1** in **Appendix E**. If it is assumed that shortening the reporting frequency from weekly to daily reporting would result in marked improvements in the data collected and that these improvements would result in more effective management, then **Alternative 3** would be expected to result in the greatest economic benefits, followed by **Preferred Alternative 2**. However, the net economic effects expected to result from these alternatives cannot be determined at this time because the potential benefits that would be expected to result from the proposed changes and the costs of the hardware and software that would be approved by NMFS cannot be estimated at this time.

4.1.3 Direct and Indirect Effects on the Social Environment

Section 3.4 (Social Environment) includes detailed information about fishermen and communities that may be affected by changes to reporting requirements for for-hire permit holders. In general, negative social effects of charter vessel reporting requirements would likely be associated with any added time and financial burden for charter vessel operators to meet the requirements. Increased frequency in reporting under **Preferred Alternative 2** and **Alternative 3** may have some negative effects on charter vessel owners and captains because businesses would need to allocate additional time or staff to submit reports. The daily reporting requirement under **Alternative 3** would be more burdensome for charter vessels than the weekly reporting in **Preferred Alternative 2**. **Alternative 1 (No Action)** would not be expected to negatively impact charter vessels in terms of additional time and money requirements.

The requirement for electronic reporting under **Preferred Alternative 2** and **Alternative 3** would affect charter vessel owners and operators who do not already use computer systems or some other electronic devices in their businesses. Some fishermen are not familiar with computers or Internet, and some may simply be more comfortable with paper fishing records. There may also be an increased risk of errors for electronic reporting by fishermen who typically do not use computers or some other electronic device, and Internet in their businesses.

However, requiring all charter vessels to report electronically and more frequently (**Preferred Alternative 2** and **Alternative 3**) is expected to result in broad social benefits. Assuming compliance from fishery participants, more frequent and timely reporting would be expected to contribute to improved quota monitoring. This could lead to increased likelihood of an in-season AM being triggered (such as an in-season closure) and there may be some short-term negative effects on the entire recreational sector due to restricted or no access to a species. However, the long-term biological benefits of timely AMs that keep recreational catch below the recommended levels would be more beneficial in the long term for consistent and stable recreational fishing opportunities.

Reporting requirements in **Preferred Alternative 2** and **Alternative 3** are expected to provide additional information that may help to better forecast early closures and minimize frequency of post-season AMs, such as reduced seasons in the subsequent year. This could help for-hire operators in annual or multi-year business planning. Under **Alternative 1 (No Action)**, there would be no improvements to monitoring as a result of more timely reporting, and it would be more likely that AMs would continue to impact charter businesses, communities, and customers.

4.1.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 (No Action) would result in no increase in administrative burden on NMFS as this is the status quo how data are currently collected. **Preferred Alternative 2** and **Alternative 3** would increase the administrative burden on NMFS, as all federally-permitted charter vessels would be required to submit electronic records to the SRD and this would be an increase in the number of vessels reporting electronically. There is currently no SEFSC application configured to specifically accept this information, so a platform and database would also have to be developed or existing programs modified. These costs could be minimized by working through an already developed program, such as that now used by headboats for electronic reporting, or having the data submitted through ACCSP. However, the details of the data collection program required to implement the actions of this amendment would be developed by the SRD at a later date, once the actions are approved. In order of administrative impacts to the agency, **Alternative 3** would have the highest administrative impact with trip daily reporting, then **Preferred Alternative 2** with mandatory weekly reporting.

4.2. Action 2: Modify Frequency and Mechanism of Data Reporting for Headboats

Action 2: Modify Frequency and Mechanism of Data Reporting for Headboats

Alternative 1 (No Action). Require the owner or operator of a headboat with a for-hire permit in the snapper grouper, dolphin wahoo, or CMP fisheries, who is selected to report, to submit an electronic fishing record for each trip by the Sunday following a reporting week.

Preferred Alternative 2. Require that headboats, while operating as a headboat, submit fishing records to the SRD weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware and software). Weekly = Tuesday following each fishing week. SG AP Preferred.

Alternative 3. Require that headboats, while operating as a headboat, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware and software). Daily = by noon of the following day.

*See Chapter 2 for a detailed statement of the Alternatives.

4.2.1 Direct and Indirect Effects on the Physical/Biological/Ecological Environment

The headboat vessel reporting requirement is an administrative process for providing a means of collecting data from the industry, and does not directly affect the biological environment, but does have an indirect effect. **Alternative 1 (No Action)** requires the owner or operator of a headboat for which a charter vessel/headboat permit for Atlantic CMP species, South Atlantic snapper grouper, or Atlantic dolphin and wahoo has been issued, or whose vessel fishes for or lands such CMP species, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic exclusive economic zone (EEZ), and who is selected to report by the SRD (Note: The headboat amendment specified that all headboats must report) must submit an electronic fishing record for each trip of all fish harvested via the Southeast Region Headboat Survey (SRHS). Electronic fishing records must be submitted at weekly intervals (or intervals shorter than a week if notified by the SRD) by 11:59 p.m., local time, the Sunday following a reporting week. If no fishing activity occurred during a reporting week, an electronic report stating so must be submitted for that reporting week by 11:59 p.m., local time, the Sunday following a reporting week. The action alternatives would modify the frequency of reporting and would require that any vessel operating under a headboat permit must report electronically, not just those headboat selected by the SRD. **Alternative 1 (No Action)** could result in adverse impacts if landings are not reported in a timely fashion and allowable harvests are exceeded. Reporting provides a method to estimate mortality, which is then used to assess the stock conditions. Stock assessment results based on data with a high degree of uncertainty are not as useful for management purposes.

Like **Alternative 1 (No Action)**, **Preferred Alternative 2** would require electronic reporting by headboats. However, instead of reporting by 11:59 p.m., local time, the Sunday following a reporting week, **Preferred Alternative 2** would require reporting on Tuesday following each fishing week. Thus, landings would be provided to the SRD sooner under **Preferred Alternative 2** than under

Alternative 1 (No Action). **Alternative 3** would increase the frequency of reporting from weekly to daily. **Preferred Alternative 2** and **Alternative 3** could provide positive effect to fish stocks by providing data to the SRD more quickly than **Alternative 1 (No Action)**, which can reduce the likelihood of exceeding the ACLs, thus reducing the likelihood of overfishing. Overages of the ACLs can have an adverse effect to the stock and stock conditions.

Alternative 1 (No Action), **Preferred Alternative 2**, and **Alternative 3** are unlikely to result in any direct adverse impacts on protected species such as endangered or threatened whales, sea turtles, corals, or HAPCs. All alternatives would modify reporting requirements for the headboat sector, but overall, this would not change current fishing practices. Total harvest would still be constrained by the commercial and recreational ACLs, and AMs would still be used to help prevent overfishing. It is unlikely any alternative would result in increased or modified fishing effort in the dolphin wahoo, CMP, or snapper grouper fisheries; therefore, no adverse biological impacts on protected species or physical environment, or bycatch or prey species, are expected under this action.

4.2.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 (No Action) would not affect the harvest and customary uses of South Atlantic snapper grouper, Atlantic dolphin wahoo, or CMP species because it would maintain current reporting requirements for headboats. Current logbook reporting is expected to encompass all headboats with a South Atlantic federal for-hire permit, through participation in either the SRHS or VTR programs. Therefore, **Alternative 1 (No Action)** would not be expected to result in direct economic effects.

Preferred Alternative 2 and **Alternative 3** would require all headboats to submit fishing records via electronic reporting on different time schedules. Electronic submission of fishing records is currently required; this action only addresses the time by which reports must be filed. **Preferred Alternative 2** and **Alternative 3** would require weekly and daily submissions, respectively. Headboats with federal permits that are operating north of North Carolina would not be impacted, as they are already participating in the VTR program and are therefore not selected for reporting to the current Southeast Region Headboat Survey.

Marginal differences in the time required for record keeping between daily rather than weekly reporting is expected to be minimal, as records would need to be kept for each trip regardless of reporting interval. Logging on to the internet to submit trips electronically may take more time, therefore, the daily reporting requirements may create a greater time burden for reporting compared to the weekly submission. In terms of a time buffer for reporting and forgoing being out of compliance along with the associated burden to headboats of doing so, **Preferred Alternative 2** would be similar to **Alternative 1 (No Action)**, as both would require weekly reporting, with **Preferred Alternative 2** being slightly more restrictive by requiring reporting earlier in the week. **Alternative 3** would be most costly, as reporting would be daily instead of weekly. For details on the burden imposed for the reporting intervals, see the discussion in **Section 4.1.2** for **Action 1**. The weekly reporting requirements of **Alternative 1** and **Preferred Alternative 2** may create some recall error if trip records are not accurately kept during or immediately after a trip is completed. Daily reporting as would be required under **Alternative 3** may help alleviate some of the recall error and improve logbook data, with reporting up to 7 days

per week if fishing activity occurs each day. There are 76 headboats operating in the South Atlantic Region (**Table 1.4.1**) that would be effected by **Action 2**. Currently, all South Atlantic headboats are required to report electronically, therefore, no additional costs would be expected to be borne by headboat operators to gain access to a computer or the Internet.

4.2.3 Direct and Indirect Effects on the Social Environment

Section 3.4 (Social Environment) includes detailed information about fishermen and communities that may be affected by changes to reporting requirements for for-hire permit holders with headboat businesses. The effects of reporting requirements on headboat businesses would be similar to expected effects on charter vessels, as described in **Section 4.1.3** (**Action 1** Social Effects). In general, negative social effects of headboat reporting requirements would likely be associated with any added time and financial burden for headboat owners and crew to meet the requirements. Increased frequency in reporting under **Preferred Alternative 2** and **Alternative 3** may have some negative effects on headboat owners and captains because businesses would need to allocate additional time or staff to submit reports. The daily reporting requirement under **Alternative 3** would be more burdensome for headboats than the weekly reporting in **Preferred Alternative 2**. **Alternative 1 (No Action)** would not be expected to negatively impact the for-hire sector in terms of additional time and money requirements. The requirement for increased electronic reporting under **Preferred Alternative 2** and **Alternative 3** would affect vessel owners who do not already use computer systems in their businesses, or could result in errors. However, requiring all headboats to report electronically and more frequently (**Alternative 3**) is expected to result in broad social benefits by improving quota monitoring, as discussed in **Section 4.1.3**.

There may also be some positive benefits for individual charter fishing businesses associated with having a consistent record of catch on the charter boat's trips under **Preferred Alternative 2** or **Alternative 3**. This information could be used for marketing purposes to demonstrate the ability and knowledge of the captain and crew. Additionally, a database could be established that would allow charter business owners to access their own records and compare them to summarized reports at a local or regional level.

4.2.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 (No Action), the status quo alternative, would not be expected to result in an increase in administrative burden to NMFS. Under **Alternative 1,** there would be no changes in how data are currently collected for fishery quota monitoring. **Preferred Alternative 2** and **Alternative 3**, would increase the administrative burden on NMFS, as all federally permitted vessels would be required to submit records to the SRD on a weekly basis. However, the difference in administrative burden between **Preferred Alternative 2** and **Alternative 3** is expected to be minimal.

Alternative 1 (No Action), the status quo alternative, would not be expected to result in any increase in administrative burden on vessel owners. **Alternative 3** would result in more burden to the vessels owners as they would be required to report daily compared to weekly (or shorter than a week) in **Preferred Alternative 2.**

4.3 Action 3: Modify Electronic Reporting Requirements to Require Vessel or Catch Location Reporting

Action 3. Modify Electronic Reporting Requirements to Require Vessel or Catch Location Reporting.

Alternative 1 (No Action). Current regulations require charter vessels participating in the for-hire survey to report area fished (inshore, state, or federal waters) if selected as part of the survey. Headboats participating in the SRHS are required to report latitude and longitude of area fished (degrees and minutes only; within 1 nm^2 area).

Preferred Alternative 2. Require federally permitted charters vessels to report fishing location electronically by manually entering latitude and longitude in degrees and minutes or by clicking on an electronic chart. SG AP Preferred.

4.3.1 Direct and Indirect Effects on the Physical/Biological/Ecological Environment

The requirement to report the location of area fished is an administrative process for providing a means of collecting data from the industry, and does not directly affect the biological or physical environment but may have an indirect effect. It is expected that with more complete location information, managers would be able to make better decisions about future management.

Preferred Alternative 2 would require electronic reporting of fishing location (latitude/longitude in degrees and minutes only; within a 1 nm^2 area) or by clicking on a geographic chart for charter vessels fishing in the South Atlantic. Neither **Alternative 1 (No Action)** nor **Preferred Alternative 2** would have direct impacts on the physical, biological or ecological environment but **Preferred Alternative 2** may result in better management decisions that can ultimately result in biological benefits to the species. Because **Preferred Alternative 2** only proposes electronic location reporting, it is tied to **Action 1 (No Action)**. If electronic reporting for the charter vessel fleet is not implemented, this action would not be relevant.

Two Alternatives Considered

Section 1502.14(a) of the National Environmental Policy Act states that "agencies shall: rigorously explore and objectively evaluate all reasonable alternatives…." Two reasonable alternatives for this action, including the no action alternative, have been identified by NMFS and the South Atlantic Council. The South Atlantic Council is considering requiring charter vessels with federal for-hire permits to report catch location in the same manner as is currently required for headboats to ensure consistency in reporting throughout the region.

4.3.2 Direct and Indirect Effects on the Economic Environment

As **Alternative 1 (No Action)** is the status quo and no requirement is in place to require catch location reporting for charter vessels with federal for-hire permits, it is expected not to have any additional economic effects. However, under the current circumstances, there is a general deficiency of data on fishing locations for the charter fleet. Obtaining such information would be beneficial for stock assessments as well as in determining the effects of future management actions on the charter fleet.

Assuming electronic reporting becomes a requirement for charter vessels (**Action 1**), **Preferred Alternative 2** would be expected to have minor negative economic effects. While it is possible to have electronic location reporting without trip logbook reporting, such as mandating the use of vessel monitoring systems, this type of requirement is included in this amendment and is therefore not analyzed. Reporting locations fished will require additional time when filling out a trip report, but the marginal increase in time burden is expected to be minimal. There are expected benefits from improved quantity and quality of data on charter vessel fishing locations. This information would help better inform stock assessments as well as improve economic analysis of management decisions focusing on specific fishing locations such as permanent or seasonal area closures. It is expected that these benefits would outweigh the increased negative economic effects created by the burden of reporting locations fished, thus yielding a net increase in economic benefits.

4.3.3 Direct and Indirect Effects on the Social Environment

Section 3.4 (Social Environment) includes detailed information about fishermen and communities that may be affected by location reporting requirements for for-hire permit holders. In general, the expected social effects would likely be at the individual level and would be associated with a financial burden on fishermen to purchase and maintain any required equipment. Detailed analysis of the expected economic effects is included in **Section 4.3.2** (economic effects). Under **Alternative 1 (No Action)**, there would be no additional financial burden.

There are some expected benefits to the fleet and other long-term broad social benefits from the location reporting requirements under **Preferred Alternative 2**. Reporting location information under **Preferred Alternative 2** would also improve data collection on fishing behavior and important fishing grounds. For example, impacts on charter vessels from a potential marine protected area would be clarified and quantified if data are available at a finer resolution (e.g., headboat grids). Location data could also be used in broader long-term studies to better understand fleet dynamics and environmental factors affecting fishing decisions. These benefits would not be possible under **Alternative 1 (No Action)**.

It is likely that some charter vessel and headboat owners and crew will not be supportive of reporting location (**Preferred Alternative 2**) because it may be perceived as an invasion of privacy or could disclose fishing areas they depend on in their for-hire businesses. **Alternative 1 (No Action)** would not require location information and would not be expected to result in negative perceptions from the for-hire fleet.

Overall, the expected benefits to the fleet and to the public would be reduced by the negative impacts from the additional short-term and long-term costs to purchase and maintain equipment necessary to meet location reporting requirements under **Preferred Alternative 2**.

4.3.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 (No Action), the status quo alternative, would not be expected to result in an increase in administrative burden to NMFS as this alternative does not change how data are currently collected. **Preferred Alternative 2** would have a very small administrative burden relative to **Alternative 1 (No Action)** in that it would merely extend the current headboat requirement to report latitude and longitude or location electronically to charter vessels fishing in the South Atlantic. This system is already in place and being used by headboat operators. However, just as described for **Action 1,** collecting information from charter vessels would slightly increase the administrative burden due to the increase in vessels reporting.

CHAPTER 5. COUNCIL RATIONALE

This amendment intends to improve timeliness and accuracy of catch data to prevent annual catch limit overages in the recreational for-hire sector, and to improve the data used in stock assessments and management evaluations. More accurate data could extend fishing seasons in a given year, enable longer fishing seasons the following year, and improve other measures designed to catch more fish while ensuring healthy fish stocks. The South Atlantic Fishery Management Council's (Council) intent for the For-Hire Reporting Amendment is to require electronic reporting of all for-hire fishing activities in areas covered by South Atlantic Council fishery management plans for snapper grouper, dolphin wahoo, and coastal migratory pelagics (CMP). This would ensure all for-hire vessels with federal permits landing species managed by the South Atlantic Council report all fishing effort and fish caught. The proposed changes, particularly the requirement for all charter vessels with federal for-hire permits to report landings, could reduce uncertainty in catch and effort data for the for-hire component of three federally managed fisheries, increasing the likelihood that the optimum yield (OY) would be achieved and catch overages would be avoided, as well as improving stock assessments. Reduced catch uncertainty could reduce the buffers used to address uncertainty in fishing level recommendations.

The South Atlantic Council concludes it is advantageous to impose reporting consistency in the for-hire sector, and have charter vessels reporting electronically just as headboats currently report. A long term goal is to have the current Marine Recreational Information Program (MRIP) for-hire survey for charter vessels entirely replaced by an electronic logbook census reporting program. The South Atlantic Council concludes that the Atlantic Coastal Cooperative Statistics Program (ACCSP) offers a proven and effective mechanism for meeting this goal, and therefore strongly recommends that the National Marine Fisheries Service (NMFS) consider using ACCSP when implementing the provisions of this amendment. To this end, the South Atlantic Council is working with NMFS (Southeast Regional Office, Southeast Fisheries Science Center, and Marine Recreational Information Program) on implementation details. This type of cooperative work will result in the successful implementation of electronic reporting by charter vessels.

The South Atlantic Council also intends to reduce duplicate reporting and allow fishermen to file a single report that can be made available to all entities requiring reporting and data. One report submitted to, for example, ACCSP or the Greater Atlantic Region Vessel Trip Reporting system should be available to each Agency needing the data. One issue to be resolved is the timing for reports: under the preferred alternatives for this amendment, any for-hire vessel with a South Atlantic federal permit would be required to report electronically via the charter vessel logbook the Tuesday following the end of the week (Sunday); whereas, the paper vessel reports for the Greater Atlantic Region permitted vessels are currently due on or before 11:59 pm the Saturday following the end of the fishing week that is Sunday through Saturday. There is also the possibility for differences in variables collected under different programs. Efforts are underway to make the Vessel Trip Reports electronic and to ensure the core data elements are included. The South Atlantic Council is working cooperatively with the Mid-Atlantic Council, National Marine Fisheries Service, and Atlantic Coastal Cooperative Statistics Program to make this happen. The South Atlantic Councils intent is that reports filed by a vessel to comply with a more stringent reporting program, such as the GAR VTR or the proposed daily reporting in the

Gulf of Mexico, should be recognized as meeting the requirements of this amendment for those vessels with permits issued by multiple jurisdictions.

The South Atlantic Council's goal in selecting the alternative for weekly reporting is to make data available on a more timely basis. The current MRIP for-hire data collection and monitoring system is reported in 2-month waves and data for monitoring are available approximately 45 days after the end of each wave. This delay in availability makes timely management decisions difficult. This current combination of data collection and monitoring systems is inadequate for in-season monitoring for species with small annual catch limits (ACLs) or short recreational seasons, resulting in large catch overruns or overly precautionary management actions. Also, the survey methods (i.e., catch and effort estimates) can be imprecise for less commonly encountered species, leading to greater scientific and management uncertainty that requires larger buffers to prevent excessive harvest and may prevent achieving OY. Direct, weekly reporting by charter vessels provides an opportunity for monitoring catch over shorter time periods, that can support more precise and responsive management.

The South Atlantic Council's goal is to have the mandatory logbook program begin January 1, 2018. However, there are many details to be worked out and there is a need for flexibility as to when the reporting requirement becomes mandatory. The South Atlantic Council suggests that reporting be voluntary from the date of implementation (expected to be mid-2017) through the remainder of 2017. In addition, as with any new data collection program, there will need to be a period of overlap between the existing MRIP for-hire survey approach for charter vessel monitoring and the mandatory electronic logbook census considered by the actions in this amendment. Collecting data through both approaches during the overlap period would provide information that is critical to calibrating past survey based estimates to the proposed census logbook.

The South Atlantic Council's preferred alternatives for the actions in this amendment address many of the key recommendations of the Gulf and South Atlantic Technical Subcommittee convened to develop best practice recommendations for for-hire reporting. These include recommendations for mandatory, electronic, census reporting on a weekly basis, including reports when no fishing activity takes place. The South Atlantic Council further intends to work with the National Marine Fisheries Service to address the subcommittee recommendations addressing validation, accountability measures, calibration with existing survey methods, and program coordination when implementing the provisions of this amendment. The South Atlantic Council intends to allow "did not fish reports" to be filed in advance, for up to 30 days, as allowed for headboat vessels.

The South Atlantic Council's visioning process for the snapper-grouper FMP identified a number of objectives related to data collection (**Appendix J**). Through this amendment process, the South Atlantic Council made progress on Science Strategy 1.1 by evaluating fishery dependent data collection of for-hire catch and effort, and encouraging adequate validation of data collected under this amendment, on Science Strategy 1.2 which encouraged uniform, efficient reporting; and Science Strategy 4.2, which included priority actions for the use of electronic reporting mechanism for all sectors, and consequences for lack of reporting.

The South Atlantic Council's Snapper Grouper Advisory Panel reviewed this amendment on several occasions during its development. Their preferred alternatives are noted in the document. The Mackerel and Dolphin Wahoo Advisory Panels also reviewed the document, with no preferred alternatives identified. The Mackerel AP membership was divided in their opinions on the proposed actions, with some supporting improved information and timeliness and other opposing any further burdens on the industry. The Mackerel AP passed a motion that for-hirer permits should be limited entry if the South Atlantic Council considers electronic reporting.

The South Atlantic Council's Scientific and Statistical Committee (SSC) reviewed this amendment and offered suggestions on core data elements, supporting collection of information on discard details such as mortality and depth, overall range of depth fished, effort based on actual hours fished, and evaluation of information collected to ensure it is useful for assessment and management purposes. The SSC did not identify preferred alternatives for the proposed actions.

The South Atlantic Council is considering taking action through future amendments that could consider limited entry in the for-hire sector. Compliance with the reporting requirements of this amendment may be among the factors considered by the South Atlantic Council when determining eligibility criteria in any future limited entry programs.

5.1 Action 1: Modify Frequency and Mechanism of Data Reporting for Charter Vessels

The South Atlantic Council prefers **Alternative 2** for **Action 1**. Weekly, electronic reporting of fishing trips would be expected to reduce time lags in catch information. The South Atlantic Council prefers **Sub-Alternative 2a**, requiring reporting of all fish harvested or discarded by all charterboats regardless of where harvested. This is similar to the headboat requirements and would be expected to prevent gaps in data reporting.

Electronic, weekly reporting would facilitate the availability of catch in numbers sooner than catch in pounds. The South Atlantic Council is considering specifying recreational annual catch limits (ACLs) in numbers of fish so that the headboat sector (and the charter vessel sector if this amendment is approved by the South Atlantic Council) can be tracked weekly. Specifying the recreational ACLs in numbers of fish could also reduce the time in which MRIP data are available to track recreational landings.

Requiring reporting of all catch, regardless of where a vessel operates, would be expected to reduce gaps in catch information and therefore improve catch monitoring for federally permitted vessels. It would also provide information on species, that are not managed by the South Atlantic Council, which could become more prevalent in the South Atlantic ecosystem, and thus more important to South Atlantic fisheries, at some point in the future.

Action 1 Alternatives

(preferred alternatives in bold)

1. Alternative 1. No Action. If selected, a charter vessel operator must maintain a fishing record for each trip or portion of such trip. Reports must be postmarked no later than 7 days after the end of each week (Sunday).
2. **Preferred Alternative 2. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD weekly, or at intervals shorter than a week if notified by the SRD, via electronic reporting (via NMFS approved hardware/software). Weekly = Tuesday following each fishing week. Snapper Grouper Advisory Panel preferred.**
   - **Preferred Sub-alternative 2a. Report all fish harvested and discarded on all trips regardless of where caught.**
   - Sub-alternative 2b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where caught. (snapper grouper, dolphin/wahoo, & CMP species)
   - Sub-Alternative 2c. Report all federally-managed fish harvested and discarded on all trips regardless of where caught.
3. Alternative 3. Require that federally permitted charter vessels, while operating as a charter vessel, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware and software). Daily = by noon of the following day.
   - Sub-alternative 3a. Report all fish harvested and discarded on all trips regardless of where caught.
   - Sub-alternative 3b. Report only South Atlantic federally-managed fish harvested and discarded on all trips regardless of where caught. (snapper grouper, dolphin/wahoo, & CMP species)
   - Sub-Alternative 3c. Report all federally-managed fish harvested and discarded on all trips regardless of where caught.

The South Atlantic Council's intent in selecting this action is to reduce duplicate reporting and allow fishermen to file a single report that can be made available to all entities requiring reporting and data. The South Atlantic Council concludes that Atlantic Coastal Cooperative Statistics Program (ACCSP) offers a proven and effective mechanism for meeting the goals of the electronic reporting requirements, and therefore strongly recommends that NMFS consider using ACCSP when implementing the provisions of this amendment. The South Atlantic Council also intends to recognize, in fulfillment of the requirements of this amendment for vessels subject to multiple reporting requirements, reports provide to programs with more stringent reporting requirements such as the GAR VTR program.

The South Atlantic Council's preferred alternatives address many of the key recommendations of the technical subcommittee convened to develop best practice recommendations for for-hire reporting. These include recommendations for mandatory, electronic, census reporting on a weekly basis, as well as reports when no fishing activity takes place. The South Atlantic Council further recommends that the NMFS consider the subcommittee recommendations addressing validation, accountability measures, calibration with existing survey methods, and program coordination when implementing the provisions of this amendment.

The South Atlantic Council's visioning process identified a number of objectives related to data collection (**Appendix J**). Through this amendment process, the South Atlantic Council made progress on Science Strategy 1.1 by evaluating fishery dependent data collection of for-hire catch and effort and encouraging adequate validation of data collected under this amendment. The preferred alternative chosen for **Action 1** provides for electronic charter reporting that is consistent with existing headboat reporting; thereby, addressing Science Strategy 1.2, which encouraged uniform, efficient reporting. This action also makes progress on Science Strategy 4.2, which included priority actions for the use of electronic reporting mechanism for all sectors, and consequences for lack of reporting.

The South Atlantic Council's Snapper Grouper Advisory Panel reviewed this amendment on several occasions during its development. Their preferred alternatives are noted in this amendment at the beginning of each action . For **Action 1**, the Snapper Grouper Advisory Panel preferred **Alternative 2**.

The South Atlantic Council's SSC reviewed this amendment and offered suggestions on core data elements, supporting collection of information on discard details such as mortality and depth, overall range of depth fished, effort based on actual hours fished, and evaluation of information collected to ensure it is useful for assessment and management purposes. The SSC did not identify preferred alternatives for the proposed actions.

Currently, charter vessels with federal for-hire permits in fisheries for snapper grouper, dolphin wahoo, and CMP are only required to report, if selected. None have been selected to date. The South Atlantic Council's intent in considering this action is for the owner or operator of a charter vessel with a for-hire charter vessel permit for Atlantic CMP species, South Atlantic snapper grouper, or Atlantic dolphin and wahoo, and whose vessel fishes for or lands CMP species, snapper grouper, or Atlantic dolphin or wahoo in or from state waters adjoining the applicable South Atlantic or Atlantic Exclusive Economic Zone (EEZ), to report their catch and fishing

effort regardless of where they operate. If this amendment is implemented, all fishing trips shall be reported and all operators shall report their fishing activities, rather than just a subset of selected vessels as currently required. Reporting would be accomplished through an electronic, Internet-based system approved by the Science and Research Director (SRD), rather than paper logbook forms are currently required.

The South Atlantic Council's intent is to have the entire for-hire sector's landings available weekly, similar to commercial landings. Headboats are currently required to electronically report data weekly and, if this amendment is implemented, charter vessels would also be required to report weekly via electronic reporting. Having the for-hire catches updated weekly would help inform the projection process for the private recreational sector's catches that are available 45 days after a 2-month wave.

Preferred Alternative 2, **Preferred Sub-Alternative 2a** best meets the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law.

5.2 Action 2: Modify Frequency and Mechanism of Data Reporting for Headboats

The South Atlantic Council prefers **Alternative 2** for **Action 2**. Changing the timing of reporting by headboat operators prevents the need for them to split a weekend into separate reports and achieves consistency between headboat and charter operations reporting requirements. The shortened window for reporting should reduce recall bias and improve the timeliness of data availability.

The South Atlantic Council recommends that NMFS report headboat catch information more frequently than the current approach, that mirrors the MRIP 2-month wave. Doing so would be expected to improve catch monitoring and provide the fishermen better information on landings. More frequent tabulation of reports would also benefit validation and efforts to reduce delinquent reporting.

The South Atlantic Council's preferred alternative for **Action 2** addresses recommendation 4.3 of the technical subcommittee convened to develop best practice recommendations for for-hire reporting. This recommendation was for weekly reporting submitted on Tuesday.

Action 2 Alternatives
(preferred alternatives in bold)

1. Alternative 1. No Action. If selected, a headboat operator must submit an electronic fishing record for each trip of all fish harvested through the Southeast Region Headboat Survey. Electronic fishing records (reports) must be submitted weekly (or at intervals shorter than a week if notified) by 11:59 p.m., local time, the Sunday following a reporting week.
2. **Preferred Alternative 2. Require that headboats, while operating as a headboat, submit fishing records to the SRD weekly or at intervals shorter than a week if notified by the SRD via electronic reporting (via NMFS approved hardware and software). Weekly = Tuesday following each fishing week.** Snapper Grouper Advisory Panel preferred.
3. Alternative 3. Require that headboats, while operating as a headboat, submit fishing records to the SRD daily via electronic reporting (via NMFS approved hardware and software). Daily = by noon of the following day.

The South Atlantic Council's visioning process identified a number of objectives related to data collection. By choosing a consistent reporting period for charter vessels and headboats, the South Atlantic Council's preferred alternative for **Action 2** addresses Science Strategy 1.2 encouraging uniform, efficient reporting.

Preferred Alternative 2 best meets the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law.

5.3 Action 3: Modify Electronic Reporting Requirements to Require Vessel or Catch Location Reporting

The South Atlantic Council prefers **Alternative 2** for **Action 3**. This alternative is consistent with the method and resolution of area reporting currently required by the headboat electronic reporting program. It is; therefore, consistent with the visioning priority actions, under Science Strategy 1.2, of a uniform, efficient reporting mechanism. The preferred reporting resolution is consistent with the visioning priority action under Science Strategy 4.2 for improvements in existing logbook programs to include better resolution of logbook grids.

Preferred Alternative 2 best meets the purpose and need and the objectives of the Snapper Grouper FMP, as amended, while complying with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law.

Action 3 Alternatives

(preferred alternatives in bold)

1. **Alternative 1 (No Action)**. Current regulations require charter vessels participating in the for-hire survey to report area fished (inshore, state, or federal waters), if selected as part of the survey. Headboats participating in the Southeast Region Headboat Survey (SRHS) are required to report latitude and longitude of area fished (degrees and minutes only; within 1 nm^2 area).
2. **Preferred Alternative 2. Require federally permitted charters vessels to report location electronically, by manually entering latitude and longitude in degrees and minutes or by clicking on an electronic chart.** Snapper Grouper Advisory Panel preferred.

5.4 Recommendations of South Atlantic Council Advisors

The Snapper Grouper Advisory Panel reviewed the For-Hire Reporting Amendment in April 2015, November 2015, and April 2016. In November 2015, the Snapper Grouper Advisory Panel expressed support for **Alternative 2** under **Action 1**, **Alternative 2** under **Action 2**, and **Alternative 2** under **Action 3**. In April 2016, the Snapper Grouper Advisory Panel suggested collecting information on the use of descending devices to reduce barotrauma.

The Mackerel Advisory Panel reviewed this amendment in April 2015 and recommended that limited entry be considered in the for-hire sector to improve validation and compliance. In February 2016, the Mackerel Advisory Panel declined to identify any preferred actions until after public hearings were held. The committee recognized that reporting could improve data availability and information on the fisheries, while also expressing concern with the reporting burden and validity of information reported.

The South Atlantic Council's SSC reviewed this amendment in May 2016; most comments concerned the core data elements. The SSC supported collecting information on discards and evaluating data collected for use in management and assessment. Consideration of split-trip reporting was also suggested to allow better resolution of catch and effort for trips that may include both trolling and bottom fishing activities, or cover a wide geographic area.

5.4 Recommended Reporting Program Details

The NMFS Southeast Fisheries Science Center (SEFSC) would develop the specific details of how the reporting and data management system would operate. The South Atlantic Council looks forward to working with the National Marine Fisheries Service and expects to be provided ample opportunity to have input into the system design. The South Atlantic Council recommends that the reporting and data management system include the following items as recommended by the Technical Sub-committee:

a) Logbook data collected via authorized platform, e.g., web, tablet, phone, or vessel monitoring system (VMS) application
b) Data submitted to ACCSP or Gulf Fisheries Information Network (GulfFIN);
c) Data integrated by ACCSP or GulfFIN into single composite data set;
d) Composite data set distributed to appropriate agencies for analyses and use, and made available to the public via ACCSP.
e) NMFS and/or ACCSP/GulfFIN develop a compliance tracking procedure that balances timeliness with available staff and funding resources.
f) NMFS use validation methods developed in the Gulf of Mexico logbook pilot study and the MRIP/South Carolina validation project as a basis to ensure that the actual logbook report is validated and standardized validation methodologies are employed among regions.
g) Dual survey methods (existing MRIP and new mandatory reporting) maintained for no less than 3 years, and no management advice expected from the new method during the first year.
h) NMFS require and maintain a comprehensive permit/email database of participants.
i) NFMS include procedures for expanding estimates for non-reporting.

j) NMFS allow multiple authorized applications or devices that can transmit data from sea to report data as long as they meet required data and transferability standards.
k) Explore ways to determine the impact of state permitted vessels on landings of federally managed species, and pursue a long-term strategy of including the entire fleet, federal and non-federally permitted, in the reporting program.

Core Data Elements

The South Atlantic Council identified core data elements to collect for each charter fishing trip. Core data elements listed below are intended to provide basic information on catch and effort required for each trip to manage the fishery and monitor the population. Core elements also include limited economic variables to improve the South Atlantic Council's ability to determine the economic impacts of regulations. The core data elements also include many of the specific data recommendations identified by the technical subcommittee as necessary for validation and estimation.

CORE DATA ELEMENTS. Variables to collect for each trip.

Start Date	Hours fished
Start Time	Primary depth fished: may be reported as a range
End Date	Target species: may be reported in categories or groups
End Time	Location: 1 minute grid (consistent with headboat reporting)
Start Location	Number of each species kept
End Location	Number of each species released
Vessel ID (name, License #)	Charter fee
Captain ID (name, License #)	Fuel used
Number of fishermen	Fuel price per gallon
Number of crew	
Method (general categories, e.g., troll, bottom, spear, drift)	

Detailed information to improve social and economic evaluations, or more precisely describe where species are encountered by the for-hire sector, could be obtained through dedicated sampling of a sub-set of charter trips, similar to what is now done to obtain commercial discard and economic information. Providing opportunities for fishermen to provide detailed information, whether it be set-level catch records or social and economic data, should be considered when developing the reporting program to address provisions of this amendment. Additional data that could be collected on a sample or voluntary basis from both charter vessels and headboats includes:

- set-level data including retained catch, measurements and condition of released fish, and use of release mortality reduction methods and tools at specific locations and depths
- detailed economic data and social data, similar to what is currently being collected from commercial fishermen

CHAPTER 6. CUMULATIVE EFFECTS

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

6.1 Cumulative Biological Impacts

1. Affected Area

The For-Hire Reporting Amendment includes Amendment 39 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic (Amendment 39), Amendment 9 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo Amendment 9), Amendment 27 to the Fishery Management Plan for the Coastal Migratory Pelagics (CMP) Fishery of the Gulf of Mexico and Atlantic Region (CMP Amendment 27).

The South Atlantic Fishery Management Council (South Atlantic Council) manages the snapper grouper resource in federal waters off Florida, Georgia, South Carolina and North Carolina. The South Atlantic Council, in cooperation with the Mid-Atlantic Fishery Management Council and the New England Fishery Management Council, is responsible for conservation and management of dolphin and wahoo in federal waters off the Atlantic states. The South Atlantic Council, in cooperation with the Gulf of Mexico Fishery Management Council (Gulf Council) is responsible for the Coastal Migratory Pelagic Resources in the Gulf of Mexico and the Atlantic Region.

The immediate impact area for this amendment is the federal 200-mile Exclusive Economic Zone (EEZ) of the Atlantic off the coasts of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and east Florida to Key West.

The ranges of affected species are described in **Section 3.2.1**. **Section 3.1.1** describes the essential fish habitat designation and requirements for snapper-grouper, dolphin wahoo, and CMP.

2. Past, Present, and Reasonably Foreseeable Actions Impacting the Affected Area

For this action, the cumulative effects analysis (CEA) includes an analysis of actions and events dating back to when the original dolphin wahoo, CMP, and snapper grouper fishery management plans (FMP) were implemented, and through what is expected to take place approximately before or within 2015-2016.

The reader is referred to **Appendix D** of this document for a comprehensive list of past regulatory activity for the dolphin wahoo, CMP, and snapper grouper FMPs. For the purposes of

this discussion the past, present and foreseeable actions listed below are those related to data collection in the snapper grouper, CMP, and dolphin wahoo fisheries.

Past Actions

Snapper Grouper

The following amendments to the Snapper Grouper FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

Amendment 4 (SAFMC 1991) established charterboat and headboat permits and required charterboats and headboats to report, if selected. Amendment 4 also required that recreational fishermen must make snapper grouper species, or parts thereof, available for inspection by the National Marine Fisheries Service (NMFS) Science and Research Director (SRD) or an authorized representative, upon request. Amendment 4 also designated prohibited gear, defined overfishing and established rebuilding timeframes, established gear marking requirements for black sea bass traps, size limits, bag limits and spawning season closures.

Amendment 7 (SAFMC 1994) established permits for both charter and headboats, allowed sale under specified conditions, and adjusted bag limits and crew specifications for charter and headboats. Amendment 7 also adjusted specified size limits for hogfish and mutton snapper, modified the management unit to include scup and specified allowable gear and made allowances for experimental gear.

Amendment 16 (SAFMC 2009) established a prohibition on captain and crew on for-hire trips retaining the bag limit of vermilion snapper and species within the 3-fish grouper aggregate. Amendment 16 also specified allocations for gag and vermillion snapper, required dehooking tools for sea turtle bycatch, established a spawning season closure for gag and a reduced bag limit and recreational closed season for vermillion. Directed commercial quotas were also established for both gag and vermillion snapper.

Amendment 15B (SAFMC 2008) prohibited the sale of bag-limit caught snapper grouper species; reduced the effects of incidental hooking on sea turtles and smalltooth sawfish; adjusted commercial renewal periods and transferability requirements; implemented plan to monitor and assess bycatch; established reference points for golden tilefish; established allocations for snowy grouper (95% commercial & 5% recreational) and red porgy (50% commercial & 50% recreational). Amendment 15B also required that commercial vessels with a snapper grouper permit, for-hire vessels with a for-hire permit, and private recreational vessels if fishing for snapper grouper species in the EEZ, shall use observer coverage, logbooks, electronic logbooks, video monitoring, or any other method deemed necessary to measure by catch by NMFS, if selected to report.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin Wahoo FMP/Amendment 22 to the CMP FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for snapper grouper, dolphin wahoo, and CMP species. This amendment required selected vessels with a federal for-hire permit to report landings data electronically; and implemented a provision that authorizes NMFS to require weekly or daily reporting as required.

South Atlantic Dolphin Wahoo

The following amendments to the Dolphin Wahoo FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

The Dolphin Wahoo FMP, implemented in 2003, contained management measures such as minimum size limits, allowable gear, closed areas, and quotas. The Dolphin Wahoo FMP required owners of commercial and for-hire vessels to have vessel permits and, if selected, submit reports on their fishing activities. Dealers were also required to have permits and, if selected, submit reports. In 2004, the Dolphin Wahoo FMP required that operators of commercial and for-hire vessels that are required to have a federal vessel permit for dolphin and wahoo to display operator permits.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin and Wahoo FMP/Amendment 22 to the CMP FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for snapper grouper, dolphin wahoo, and CMP.

CMP Fishery

The following amendments to the CMP FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

Amendment 2 (SAFMC 1987) to the CMP FMP (implemented in 1987) required that charter vessels and headboats fishing in the EEZ of the Gulf of Mexico or Atlantic for CMP species have permits.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin and Wahoo FMP/Amendment 22 to the CMP FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for snapper grouper, dolphin wahoo, and CMP.

P**resent Actions**

Along with this reporting amendment, the Gulf Council is developing the Generic Amendment to the Reef Fish Resources of the Gulf of Mexico and Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic that would require electronic reporting for vessels fishing in the reef fish and CMP fisheries. This amendment is on a slightly different timeline than the For Hire Amendment and may have implications for management that overlap with the For Hire Amendment.

Reasonably Foreseeable Actions

The Joint Commercial Logbook Reporting Amendment being developed would require electronic reporting of landings information by federally-permitted commercial vessels, which would increase the timeliness and accuracy of landings data; currently, fishermen report using paper logbooks.

The South Atlantic Council may consider limited entry in the for-hire fishing sector, which would affect availability of federal for-hire permits.

3. Consideration of Climate Change and Other Non-Fishery Related Issues

Climate Change

Global climate changes could have significant effects on Atlantic fisheries. However, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (Link et al, 2015).

It is unclear how climate change would affect fish species in the Atlantic Ocean. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Climate change may significantly impact species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

Weather Variables

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Although these effects may be temporary, those fishing-related businesses whose profitability is marginal may go out of business if a hurricane strikes.

Deepwater-Horizon Oil Spill

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, resulting in the release of an estimated 4.9 million barrels of oil into the Gulf. In addition, 1.84 million gallons of Corexit 9500A dispersant were applied as part of the effort to constrain the spill. The cumulative effects from the oil spill and response may not be known for several years. The oil spill affected more than one-third of the Gulf area from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. The impacts of the Deepwater Horizon MC252 oil spill on the physical environment are expected to be significant and may be long-term. Oil is dispersed on the surface, and because of the heavy use of dispersants, oil is also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf of Mexico, as well as non-floating tar balls. Whereas, suspended and floating oil degrades over time, tar balls are more persistent in the environment and can be transported hundreds of miles. Oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion. Zooplankton that feed on algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow. The highest concern is that the oil spill may have impacted spawning success of species that spawn in the summer months, either by reducing spawning activity or by reducing survival of the eggs and larvae. Effects on the physical environment, such as low oxygen, could lead to impacts on the ability of larvae and post-larvae to survive, even if they never encounter oil. In addition, effects of oil exposure may create sub-lethal effects on the

eggs, larva, and early life stages. The stressors could potentially be additive, and each stressor may increase the susceptibility to the harmful effects of the other. The oil from the spill site was not detected in the South Atlantic region, and does not likely pose a threat to the South Atlantic species addressed in this amendment. However, the effects of the oil spill on fish species would be taken into consideration in future Southeast Data Assessment and Review assessments. Indirect and inter-related effects on the biological and ecological environment of the fisheries in concert with the Deepwater Horizon MC252 oil spill are not well understood. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of populations, combined with any anthropogenically induced natural mortality that may occur from the impacts of the oil spill. The impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators may be significant in the future.

4. Overall Impacts Expected from Past, Present, and Future Actions

The For-Hire Reporting Amendment proposes changes to the current reporting requirements to collect data from fishermen through electronic reports and would modify the frequency of reporting for headboats. **Chapter 4**of this document analyzes the effects of alternatives for electronic reporting in the charter and headboat sectors of the CMP, snapper grouper and dolphin wahoo fisheries, and none of the impacts have been determined to be significant.

The cumulative effects of the actions proposed in combined with effects of other past, present, and future actions, are not expected to affect the magnitude of bycatch, diversity, and ecosystem structure of fish communities, or safety at sea of fishermen. The actions in this amendment are mainly administrative in action and combined with past, present and foreseeable actions would not cause significant impacts to the resource or to the fishery participants.

This action is not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific cultural or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the Atlantic region. The Stellwagen Bank off the Northeastern U.S., USS Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the Atlantic exclusive economic zone.

5 Monitoring and Mitigation

The effects of the proposed actions are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed actions relate to data collection, and the activity does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, the actions in the amendment do not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on nonindigenous species. None of the beneficial or adverse impacts from the proposed management action (as summarized in Chapter 2 of this document) have been determined to be significant.

See Chapter 4 for the detailed discussions of the magnitude of the impacts of the preferred alternatives on the human environment. The actions in the For-Hire Reporting Amendment would not have significant biological, social, or economic effects because the actions are administrative and will not have any direct impacts on harvest of species. Therefore, the cumulative effects of the action proposed in the For Hire Amendment are not expected to affect the magnitude bycatch, diversity and ecosystem structure of fish communities, or safety at sea of fishermen targeting dolphin and wahoo, CMP or snapper grouper. Based on the cumulative effects analysis presented herein, the proposed action would not have any significant adverse cumulative impacts compared to, or combined with, other past, present, and foreseeable future actions.

CHAPTER 7: LIST OF PREPARERS

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Adam Bailey	Technical Writer Editor	Regulatory writer	NMFS/SERO
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NMFS = National Marine Fisheries Service
SAFMC = South Atlantic Fishery Management Council
GMFMC = Gulf of Mexico Fishery Management Council
SEFSC = Southeast Fisheries Science Center
SERO = Southeast Regional Office
GC = General Counsel

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APPENDIX A: ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.4 Action 4: Amend the Gulf Reef Fish, South Atlantic Snapper Grouper, Coastal Migratory Pelagics, and Atlantic Dolphin and Wahoo Fishery Management Plans to Specify Certain Aspects of Reporting for For-Hire Vessels

Alternative 1 (No Action). There is no specified time for data to be made available to the public and to the Councils.

Alternative 2. Specify the following data flow via electronic reporting:

a) Logbook data collected via authorized platform, ex. web, tablet, phone, or VMS application
b) Data submitted to ACCSP or GulfFIN;
c) Data integrated by ACCSP or GulfFIN into single composite data set;
d) Composite data set distributed to appropriate agencies for analyses and use.

Sub-alternative 2a. Apply to charter vessels reporting.
Sub-alternative 2b. Apply to headboat reporting.

Alternative 3. Specify the following aspects of electronic reporting:

a) NMFS and/or ACCSP develop a compliance tracking procedure that balances timeliness with available staff and funding resources.
b) NMFS is to use validation methods developed in the Gulf of Mexico logbook pilot study as a basis to ensure that the actual logbook report is validated and standardized validation methodologies are employed among regions.
c) NMFS is to require and maintain a comprehensive permit/email database of participants.
d) NFMS is to include procedures for expanding estimates for non-reporting.
e) NMFS is to allow multiple authorized applications or devices to report data as long as they meet required data and transferability standards.

Sub-alternative 3a. Apply to charter vessel reporting.
Sub-alternative 3b. Apply to headboat reporting.

Discussion

The technical subcommittee recommends a multi-faceted approach where a number of reporting platforms can be used so long as the minimum data standards and security protocols are met. Data standards would need to be developed and the subcommittee agreed that the National Marine Fisheries Service (NMFS), the GulfFIN, and Atlantic Coastal Cooperative Statistics Program (ACCSP) could work collaboratively to develop appropriate standards.

The subcommittee recommends this process for data storage and management:

1. Logbook data collected via authorized platform, ex. web, tablet, phone, or VMS application
2. Data submitted to ACCSP or GulfFIN;
3. Data integrated by ACCSP or GulfFIN into single composite data set;
4. Composite data set distributed to appropriate agencies for analyses and use.

This process could eliminate duplicate reporting for some participants (e.g., South Carolina headboats and charter vessels) so long as appropriate data standards are in place and the respective agencies agree to confidentiality standards, which would allow sharing and accepting one another's data for use. Elimination of duplicate reporting (e.g., separate state and federal reports) would be a substantial benefit to participants in this survey program and could mitigate any additional reporting requirements for comparison to the current MRIP survey program.

The South Atlantic Council is concerned about the time it takes to get data needed to track recreational catches. The current South Atlantic blueline tilefish recreational ACL versus recreational catches is currently unknown pending receipt of the first wave of MRIP data (should be available 45 days after the end of February) and any headboat catches. Part of the time it takes to get data is related converting numbers of fish to pounds. This adds an unspecified period of time after the MRIP data are released for the Southeast Fisheries Science Center to apply their conversion factors and provide a catch estimate. The South Atlantic Council is considering specifying recreational ACLs in numbers of fish so that the headboat sector (and the charter vessel sector once this amendment is approved) can be tracked weekly. Specifying the recreational ACL in numbers of fish would also reduce the delay in using the MRIP data to track recreational ACLs.

Action 4 addresses the following recommendations from the Technical Sub-Committee:

- Development of compliance tracking procedures that balance timeliness with available staff and funding resources.
- Use validation methods developed in the Gulf of Mexico logbook pilot study as a basis to ensure that the actual logbook report is validated and standardized validation methodologies are employed among regions.
- Require and maintain a comprehensive permit/email database of participants.
- Include procedures for expanding estimates for non-reporting.
- Allow multiple authorized applications or devices to report data as long as they meet required data and transferability standards.

The technical subcommittee recommends building upon the validation methodology developed in the Gulf of Mexico MRIP pilot study.

The technical subcommittee recommends use of an MRIP certified methodology for validation with the following elements: Gulf of Mexico MRIP pilot study methodologies, including dockside validation of catch and vessel activity, and maintenance of site and vessel registries.

The technical subcommittee recommends dual survey methods (existing and new) for no less than three years. Data from the new program would not be expected to provide management advice during the first year of operation. Moreover, this would allow the possibility of an initial phase-in or limited implementation to identify and solve significant problems prior to

implementation for all participants.

The technical subcommittee recommends that the Councils move forward with development of a reporting system that includes federally permitted for-hire vessels while also exploring ways to determine the impact of state permitted vessels on landings estimates of federally managed species. Long term, the subcommittee recommends that both state and federally permitted charter vessels participate in this census to include the entire fleet of charter vessels harvesting federally managed species.

Weekly electronic dealer and headboat reporting are fully implemented. However, it takes some time to have updated landings available to the public for their use in planning trips and to the Councils for monitoring ACLs. A solution, in the Atlantic, could be to have the raw weekly data fed to ACCSP and made available to the public via the ACCSP website. The "official" numbers for quota closures would continue to be the numbers maintained by NMFS and available on the NMFS Website but this would provide more timely and useful updates to the public.

The result would be updated and current catch data available on a daily basis for the public, states, NMFS, and the Councils to use in monitoring ACLs and planning fishing trips.

Rationale for Removal

The South Atlantic Council held extensive discussions with the National Marine Fisheries Service (Southeast Fisheries Science Center, Marine Recreational Information Program, and Southeast Regional Office) about implementation details. The National Marine Fisheries Service is responsible for the implementation details and has assured the South Atlantic Council that they will be consulted and included as the details are developed. The South Atlantic Council looks forward to continuing to work cooperatively with the National Marine Fisheries Service, the Mid-Atlantic and New England Fishery Management Councils, the Atlantic Coastal Cooperative Statistics Program, and state partners to successfully implement electronic logbook reporting.

Based on these discussions and assurance, the Council approved moving **Action 4** to the considered but eliminated from detailed analysis appendix.

APPENDIX B: GLOSSARY

Atlantic Coastal Cooperative Statistics Program (ACCSP): A cooperative state-federal program that designs, implements, and conducts marine fisheries statistics data collection programs and integrates those data into a single data management system that will meet the needs of fishery managers, scientists, and fishermen

Allowable Biological Catch (ABC): Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

ALS: Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

Biomass: Amount or mass of some organism, such as fish.

B_{MSY}: Biomass of population achieved in long-term by fishing at F_{MSY}.

Bycatch: Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

Caribbean Fishery Management Council (CFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The CFMC develops fishery management plans for fisheries off the coast of the U.S. Virgin Islands and the Commonwealth of Puerto Rico.

Catch Per Unit Effort (CPUE): The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

Charter Boat: A fishing boat available for hire by recreational anglers, normally by a group of up to 6 anglers for a short time period.

Cohort: Fish born in a given year. (See year class.)

Control Date: Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

Constant Catch Rebuilding Strategy: A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches B_{MSY} at the end of the rebuilding period.

Constant F Rebuilding Strategy: A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached BMSY at the end of the rebuilding period.

Directed Fishery: Fishing directed at a certain species or species group.

Discards: Fish captured, but released at sea.

Discard Mortality Rate: The % of total fish discarded that do not survive being captured and released at sea.

Derby: Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

Effort: The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

Exclusive Economic Zone (EEZ): Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

Exploitation Rate: Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

F: Fishing mortality.

Fecundity: A measurement of the egg-producing ability of fish at certain sizes and ages.

Fishery Dependent Data: Fishery data collected and reported by fishermen and dealers.

Fishery Independent Data: Fishery data collected and reported by scientists who catch the fish themselves.

Fishery Management Plan: Management plan for fisheries operating in the federal produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

Fishing Effort: Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

Fishing Mortality: A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Fishing Power: Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

$F_{30\%SPR}$: Fishing mortality that will produce a static SPR = 30%.

$F_{45\%SPR}$: Fishing mortality that will produce a static SPR = 45%.

F_{OY}: Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of B_{OY}. Usually expressed as the yield at 85% of F_{MSY}, yield at 75% of F_{MSY}, or yield at 65% of F_{MSY}.

F_{MSY}: Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}.

Fork Length (FL): The length of a fish as measured from the tip of its snout to the fork in its tail.

Framework: An established procedure within a fishery management plan that has been approved and implemented by NMFS, which allows specific management measures to be modified via regulatory amendment.

Gear restrictions: Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

Growth Overfishing: When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

Greater Atlantic Region

Gulf of Mexico Fishery Management Council (GFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

Headboat: A fishing boat that charges individual fees per recreational angler onboard.

Highgrading: Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

Individual Fishing Quota (IFQ): Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

Longline: Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

Magnuson-Stevens Fishery Conservation and Management Act: Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

Marine Recreational Fisheries Statistics Survey (MRFSS): Survey operated by NMFS in cooperation with states that collected marine recreational fishing data from 1979 through 2008.

Marine Recreational Information Program (MRIP): Re-designed survey formally adopted in 2008, based on the MRFSS, operated by NMFS in cooperation with states, that collects marine recreational fishing data.

Maximum Fishing Mortality Threshold (MFMT): The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

Maximum Sustainable Yield (MSY): The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

Mid Atlantic Fishery Management Council (MAFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The MAFMC develops fishery management plans for fisheries off the coast of North Carolina to New York.

Minimum Stock Size Threshold (MSST): The biomass level below which a stock would be considered overfished.

Modified F Rebuilding Strategy: A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

Multispecies fishery: Fishery in which more than one species is caught at the same time and location with a particular gear type.

National Marine Fisheries Service (NMFS): Federal agency within NOAA responsible for overseeing fisheries science and regulation.

National Oceanic and Atmospheric Administration: Agency within the Department of Commerce responsible for ocean and coastal management.

Natural Mortality (M): A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Optimum Yield (OY): The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

Overfished: A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).
Quota: % or annual amount of fish that can be harvested.

Recruitment (R): Number or percentage of fish that survives from hatching to a specific size or age.

Recruitment Overfishing: The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

Scientific and Statistical Committee (SSC): Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advice to a fishery management council.

Selectivity: The ability of a type of gear to catch a certain size or species of fish.

South Atlantic Fisheries Management Council (SAFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

Spawning Potential Ratio (Transitional SPR): Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

% Spawning Per Recruit (Static SPR): Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

Spawning Stock Biomass (SSB): The total weight of sexually mature fish in a stock.

Spawning Stock Biomass Per Recruit (SSBR): The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce over its lifetime.

Total Allowable Catch (TAC): The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

Total Length (TL): The length of a fish as measured from the tip of the snout to the tip of the tail.

APPENDIX C: OTHER APPLICABLE LAW

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

Administrative Procedures Act
All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

The proposed rule associated with this amendment will include a request for public comment, and if approved, upon publication of the final rule, there will be a 30-day wait period before the regulations are effective in compliance with the APA.

Coastal Zone Management Act
Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that directly affect any land or water use or natural resource of a state's coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state's coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission of the amendment, NMFS will determine if this amendment is consistent with the Coastal Zone Management programs of the states that it will impact to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Information Quality Act
The Information Quality Act (IQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the IQA directs the Office of Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to OMB on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the IQA, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the IQA. The information contained in this document was developed using best available scientific information. Therefore, this document is in compliance with the IQA.

National Environmental Policy Act (NEPA)
This document has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including an EA, as described in NOAA Administrative Order (NAO) 216- 6, Section 6.03.a.2.

Purpose and Need for Action The purpose and need for this action are described in **Chapter 1**.
Alternatives The alternatives for this action are described in **Chapter 2**.
Affected Environment The affected environment is described in **Chapter 3.**
Impacts of the Alternatives The impacts of the alternatives on the environment are described in **Chapter 4.**

Endangered Species Act (ESA)
The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They conclude informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely

to adversely affect" threatened or endangered species or adversely modify designated critical habitat.

The history of ESA consultations in the CMP, snapper-grouper and dolphin wahoo fisheries are described in detail in **Section 3.2.**

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; and Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans.

The for-hire fisheries for snapper grouper, coastal migratory pelagics and dolphin and wahoo are conducted using hook and line gear and are listed as a Category III fishery under the List of Fisheries (81 FR 20550, April 8, 2016) because they are unlikely to interact with marine mammals.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as Essential Fish Habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the South Atlantic Fishery Management Council has, under separate action, approved an environmental impact statement (SAFMC 1998) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. EFH and EFH HAPCs are described in Chapter 3 of this amendment.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The NOAA Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act.

On July 1, 2016, the Small Business Administration final rule revising the small business size standards for several industries became effective (79 FR 33647). The rule increased the size standard for Finfish Fishing from $19.0 to $20.5 million, Shellfish Fishing from $5.0 to $5.5 million, and Other Marine Fishing from $7.0 to $7.5 million.

This amendment includes the RIR as **Appendix E**.

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

This Executive Order mandates that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. Federal agency responsibilities under this Executive Order include conducting their programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefit of, or subjecting persons to discrimination under, such, programs policies, and activities, because of their race, color, or national origin. Furthermore, each federal agency responsibility set forth under this Executive Order shall apply equally to Native American programs. Environmental justice considerations are discussed in detail in **Section 3.4**.

The action in this amendment is not expected to negatively impact minority or low-income populations.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The actions in this are consistent with the provisions of E.O. 12962.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those

components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes and local entities (international too).

No federalism issues have been identified relative to the actions proposed in this amendment.

APPENDIX D: HISTORY OF MANAGEMENT

Snapper Grouper FMP for the South Atlantic

The following amendments to the Snapper Grouper FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

Amendment 4 (SAFMC 1991) Amendment 4 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic (Snapper Grouper FMP) (SAFMC, 1991) established charterboat and headboat permits and required charterboats and headboats to report, if selected. Amendment 4 also required that recreational fishermen must make snapper grouper species, or parts thereof, available for inspection by the NMFS Science and Research Director or an authorized representative, upon request. Amendment 4 also designated prohibited gear, defined overfishing and established rebuilding timeframes, established gear marking requirements for black sea bass traps, size limits, bag limits and spawning season closures.

Amendment 7 (SAFMC 1994) established permits for both charter and headboats, allowed sale under specified conditions, and adjusted bag limits and crew specifications for charter and headboats. Amendment 7 also adjusted specified size limits for hogfish and mutton snapper, modified the management unit to include scup and specified allowable gear and made allowances for experimental gear.

Amendment 16 (SAFMC 2009) established a prohibition on captain and crew on for-hire trips retaining the bag limit of vermilion snapper and species within the 3-fish grouper aggregate. Amendment 16 also specified allocations for gag and vermillion snapper, required dehooking tools for sea turtle bycatch, established a spawning season closure for gag and a reduced bag limit and recreational closed season for vermillion. Directed commercial quotas were also established for both gag and vermillion snapper.

Amendment 15B (SAFMC 2008) prohibited the sale of bag-limit caught snapper grouper species; reduced the effects of incidental hooking on sea turtles and smalltooth sawfish; adjusted commercial renewal periods and transferability requirements; implemented plan to monitor and assess bycatch; established reference points for golden tilefish; established allocations for snowy grouper (95% commercial & 5% recreational) and red porgy (50% commercial & 50% recreational). Amendment 15B also required that commercial vessels with a snapper grouper permit, for-hire vessels with a for-hire permit, and private recreational vessels if fishing for snapper grouper species in the EEZ, shall use observer coverage, logbooks, electronic logbooks, video monitoring, or any other method deemed necessary to measure by catch by NOAA Fisheries, if selected to report.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin Wahoo FMP/Amendment 22 to the Coastal Migratory Pelagic (CMP) FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for Snapper Grouper, Dolphin Wahoo, and Coastal Migratory Pelagics. This amendment required selected vessels with a Federal for-hire Permit to report landings data electronically; and implemented a provision that authorizes NOAA Fisheries Service to require weekly or daily reporting as required.

South Atlantic Dolphin Wahoo

The following amendments to the Dolphin Wahoo FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

The Dolphin Wahoo FMP, which was implemented in 2003, contained many management measures for the operation of the fishery such as minimum size limits, allowable gear, closed areas, and quotas. The Dolphin Wahoo FMP required owners of commercial vessels and/or charter vessels/headboats to have vessel permits and, if selected, submit reports and required dealers to have permits and, if selected, submit reports. In 2004, the Dolphin Wahoo FMP required that operators of commercial vessels, charter vessels and headboats that are required to have a federal vessel permit for dolphin and wahoo must display operator permits.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin and Wahoo FMP/Amendment 22 to the CMP FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for Snapper Grouper, Dolphin Wahoo, and CMP.

Coastal Migratory Pelagic Fishery

The following amendments to the CMP FMP contained actions that pertained to the for-hire sector including permit and reporting requirements.

Amendment 2 (SAFMC 1987) to the CMP FMP (implemented in 1987) required that charter vessels and headboats fishing in the EEZ of the Gulf of Mexico or Atlantic for CMP species have permits.

Amendment 31 to the Snapper Grouper FMP/Amendment 6 to the Dolphin and Wahoo FMP/Amendment 22 to the CMP FMP (SAFMC 2013a) required electronic logbook reporting for headboat vessels fishing for Snapper Grouper, Dolphin Wahoo, and CMP.

APPENDIX E: SUPPORTING INFORMATION

South Carolina Logbook Report

ATTACHMENT 1

DNR
www.dnr.sc.gov

SOUTH CAROLINA HEADBOAT LOG

Section 50-5-1915 of the South Carolina Code of Laws requires all licensed headboats to maintain a trip log, copies of which must be submitted monthly to the South Carolina Department of Natural Resources. **A report must be received even if no trips were made during the month. To submit a no trips report, write "No Business For (month) in the middle of a report form. (For example, No Business For January).** Date and sign the report.

To fulfill both the mandatory reporting of the NMFS and the requirements of state law without an undue burden on the permit holder, South Carolina will use the existing NMFS Headboat logbook. The white copy should be mailed or faxed to the address below so it is received no later than the 10th of the month following the report month. For example, June reports should reach our office by 10 July. The yellow copy should be retained for the NMFS representative, and the pink copy should be retained for your records. Complete a separate form for each trip. Should you need more reports, attach a note to your reports or call our office.

Please mail or FAX the white copies to the:

SCDNR - Fisheries Statistics Program
P.O. Box 12559
Charleston, SC 29422-2559
TELEPHONE: (843) 953-9313 **FAX**: (843) 953-9362

INSTRUCTIONS

To complete a trip report, record the following information in the proper blanks:

VESSEL: Enter vessel name and SC Charterboat Permit Number.
DATE: Enter the date(s) of the trip.
DEPART TIME: Enter the time of departure from the dock.
ARRIVE TIME: Enter the time of arrival back at the dock.
OPERATOR'S LICENSE NUMBER: Enter the vessel USCG or state documentation #.
FULL DAY, 3/4 DAY, ETC.: Check the appropriate box for the length of trip.
NIGHT: Check 1st if the trip departed between 6:00PM and midnight. Check 2nd if the trip departed after 12:00 midnight.
DISTANCE FROM SHORE: Check the appropriate box.
PAY TYPE: Check the appropriate box.
LOCATION: Please enter the location code for your fishing area using the grid printed inside the flip cover.

Example: Refer to the grid and the small block marked **X** in grid 32-78 (lat/long). Read up or down the column to determine the letter code (C in this example). Read left or right across the row to determine the number code (1 in this example). This location code entry would be **32-78-C1**. Each individual small square is 10 miles long by 10 miles wide or roughly 100 square miles.

NUMBER OF ANGLERS: Enter the number of passengers who went to fish.
NUMBER OF ANGLERS WHO FISHED: Enter the number of passengers who actually fished.

CATCH INFORMATION

SPECIES: Use blank lines to list additional species caught.
NUMBER AND WEIGHT: Enter the total number and weight (to the nearest whole pound) of all species retained in the NUMBER CAUGHT and TOTAL WEIGHT columns.
NUMBER RELEASED: Regardless of disposition, ALL FISH must be reported. Please enter the number of each species released in the appropriate column. DO NOT include releases in the number caught or total weight columns.

SC DAILY CATCH (HEADBOAT)

ATTACHMENT 1 4-2004

Vessel: ______ Date: ______ Depart Time: ______ Arrive Time: ______

Operator's License No.: ______ Full Day: ☐ Night: ☐ 1st ☐ 2nd

Location: ______ 3/4 Day: ☐ Overnight: ☐

Number of Anglers: ______ 1/2 Day: ☐ AM ☐ PM

Number of Anglers Who Fished: ______ Other: ______

Distance from Shore:
> 3 miles ☐
≤ 3 miles ☐
Inland ☐

Pay Type:
Per Person ☐
Per Group ☐
No Charge ☐

AGENCY USE ONLY

1 2	3 4	5 6	7	8 9	10 11	12 13	14 15	16 17	18 19 20	21	22 23 24	44	45 46 47	48
Yr	Mo	Day		Area	Lat	Lon	CA CN	Trip Type	Anglers	VT	Vessel	PT	Ang Fished	DFS

25-27	Fish Species	Number Caught 28-31	Total Weight 32-37	# Released Alive 38-40	# Released Dead 1-43
	GROUPERS				
29	Gag				
30	Scamp				
20	Speckled Hind				
21	Snowy Grouper				
22	Red Grouper				
23	Warsaw Grouper				
26	Rock Hind				
31	Yellowfin Grouper				
27	Red Hind				
39	Yellowfin Grouper				
88	Graysby				
	SEA BASSES				
33	Black Sea Bass				
34	Bank Sea Bass (Yellow)				
38	Sand Perch				
	GRUNTS				
50	White Grunts				
51	Tomtate (Redmouth)				
54	Bluestriped Grunt				
53	Margate				
35	Porkfish				
	PORGIES				
01	Red Porgy				
02	Whitebone Porgy				
03	Knobbed Porgy				
04	Spottail Pinfish				
05	Jolthead Porgy				
06	Littlehead Porgy				
08	Scup (Northern)				
83	Pinfish				
	SHARKS				
230	Sharpnose Shark				
234	Sandbar Shark				
231	Blacktip Shark				
119	Smooth Dogfish				
250	Nurse Shark				
232	Dusky Shark				
140	Remora				
	TRIGGERFISHES				
77	Gray Triggerfish				
82	Queen Triggerfish				

25-27	Fish Species	Number Caught 28-31	Total Weight 32-37	# Released Alive 38-40	# Released Dead 1-43
	SNAPPERS				
10	Vermilion Snapper				
11	Red Snapper				
12	Silk Snapper				
14	Blackfin Snapper				
15	Yellowtail Snapper				
16	Lane Snapper				
17	Cubera Snapper				
18	Gray Snapper				
19	Mutton Snapper				
	MACKERELS				
74	King Mackerel				
56	Spanish Mackerel				
	JACKS				
60	Greater Amberjack				
62	Almaco Jack				
123	Banded Rudderfish				
97	Blue Runner				
57	Rainbow Runner				
90	African Pompano				
87	Crevalle Jack				
	TUNAS, etc.				
79	Bluefish				
55	Cobia				
117	Dolphin				
133	Wahoo				
116	Little Tunny (Bonito)				
126	Blackfin Tuna				
147	Yellowfin Tuna				
121	Great Barracuda				
	REEF FISHES				
78	Squirrelfish				
98	Bigeye (Toro)				
86	Short Bigeye				
80	Hogfish (Hog Snapper)				
47	Spadefish				
72	Inshore Lizardfish				
	TILEFISHES				
40	Blueline Tilefish (Gray)				
44	Sand Tilefish				
	OTHER FISH				

Signature ______

Revised 6/99

09-6619

ATTACHMENT 2
Revised 4-2012

SOUTH CAROLINA CHARTERBOAT LOGBOOK

Vessel (Please Print): _____ Date: _____ Permit No.: _____

Number of Anglers: _____ Trip Start Time: _____ Actual Hours Fished: _____ Location: _____
Example: 32-78-C1 (see map)

Trip Start Location: _____ Artificial Reef Name: _____ Target Species: _____
(Please specify)

Locale: ☐ Estuarine ☐ 0 – 3 miles ☐ Offshore

Method: ☐ Troll ☐ Bottom ☐ Cast / Fly ☐ Dive ☐ Gig

Water Depth: Shallowest: _____ feet Deepest: _____ feet

MAIL OR FAX REPORT BY THE 10TH OF THE MONTH TO:
SCDNR Fisheries Statistics Section, P.O. Box 12559, Charleston, SC 29422-2559
FAX: (843) 953-9362 Phone: (843) 953-9313

AGENCY USE ONLY

Yr	Mo	Day	Permit #	Location	Locale	Area#	Meth

Target Sp.	Hrs.	Reef	Trip Start	Shallowest	Deepest

	Species	# Kept	Lbs Kept	# Released Alive	# Released Dead		Species	# Kept	Lbs Kept	# Released Alive	# Released Dead
1050	Dolphin					1423	Gag				
4710	Wahoo					1424	Scamp				
4655	Yellowfin Tuna					1414	Snowy Grouper				
4658	Blackfin Tuna					1416	Red Grouper				
3026	Sailfish					1410	Other Grouper				
2177	White Marlin						(Specify)				
2179	Blue Marlin					3302	Red Porgy (Pinks)				
1940	King Mackeral					3295	Other Porgies				
3840	Spanish Mackeral						(Specify)				
4653	Little Tunny					3764	Red Snapper				
0330	Bonita					3765	Vermilion Snapper				
4654	Skip Jack					3360	Black Sea Bass				
0180	Barracuda					3314	Spottail Pinfish				
3810	Spadefish					1441	White Grunt				
0030	Amberjack					1440	Other Grunts				
0870	Crevalle Jack						(Specify)				
0230	Bluefish					4560	Triggerfish				
0570	Cobia					1082	Red Drum				
4350	Tarpon					1081	Black Drum				
	Other Fish					3447	Spotted Seatrout				
	(Specify)					3446	Weakfish				
						1209	Flounder				
						3560	Sheepshead				
						4410	Ladyfish				
						1970	Whiting				
						2670	Inshore Pinfish				
						3518	Sharpnose Shark				
						3495	Blacktip Shark				
						3483	Bonnethead Shark				
						3521	Spiny Dogfish				
						3511	Smooth Dogfish				
						3508	Other Sharks				
							(Specify)				
						2860	Stingrays				

Captain's Notes:

Signature: _____

Print Name: _____

ATTACHMENT 2

SOUTH CAROLINA CHARTERBOAT LOG

Section 50-5-1915 of the South Carolina Code of Laws requires all permitted charter vessels to submit daily trip reports for all trips to the Marine Resources Division on a monthly basis. These reports must specify: 1) the number of persons fishing, 2) the number of hours fished, 3) the number of fish of each species caught, and 4) their total weight. Subsequent charter vessel permits will not be issued unless these requirements are met.

Please complete a logsheet for each trip following the instructions below. If you made two or more trips on a particular date, complete a separate report for each trip. Trip reports are required even if no fish were caught. Mail or FAX the white copy to the address below by the 10th of the following month. Retain the yellow copy for your records.

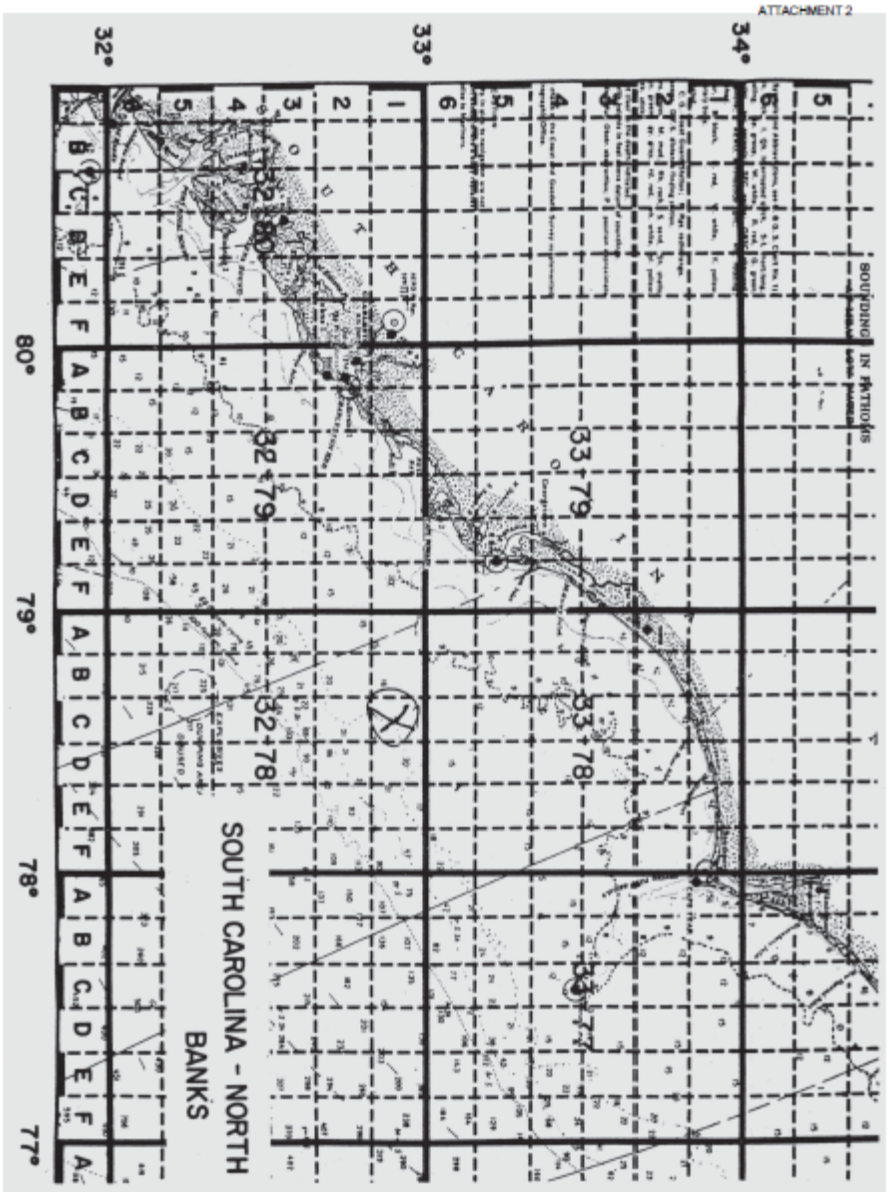
SCDNR - Fisheries Statistics Program
P.O. Box 12559
Charleston, SC 29422-2559
TELEPHONE - (843) 953-9313 **FAX** - (843) 953-9362

A report must be received even if no trips were made during the month. To submit a no trip report, write "No Business For The Month Of (month) on the middle of a report form. Date and sign the report.

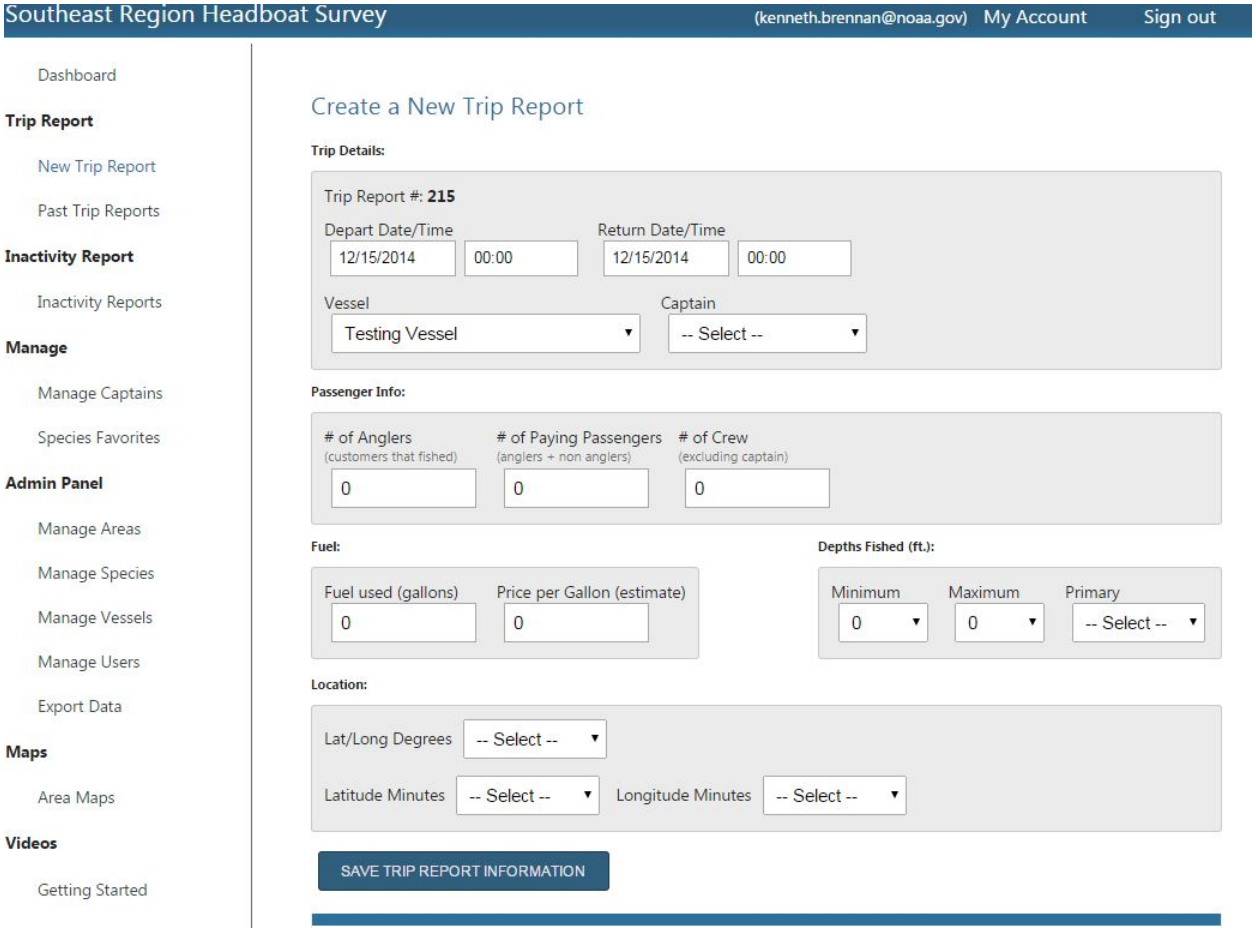
The Captain's Notes space may be used to record trip data such as weather, fuel, addresses, etc.

INSTRUCTIONS

- **VESSEL:** Enter the name of your vessel. If unnamed, enter the registration number of your boat, e.g. SC-1234-AB.
- **DATE:** Enter the date of the trip.
- **PERMIT NO.:** Enter your SC charter vessel permit number (number provided on your license).
- **# ANGLERS:** Enter the number of persons who fished, not including crew.
- **TRIP START TIME:** Enter the time the boat left the dock or landing, e.g. 11:30 AM, 1:00 PM, 3:30 PM, etc.
- **HOURS FISHED:** Enter the number of hours actually fished to the nearest hour, not including travel time.
- **LOCATION:** Enter the location code where MOST of your fishing took place. Refer to the map printed on the inside of the flip cover and the following example. If you fished in the grid marked **X**, Grid 32-78, read up or down the column to determine the letter code (C here). Read left or right across the row to determine the number code (1 here). The proper entry for this location is **32-78-C1**.
- **TRIP START LOCATION:** Enter the marina/boat landing name where this trip originates/end (i.e. where you pick up/drop off customers).
- **ARTIFICIAL REEF:** If you fished at an artificial reef, enter the reef name in the blank.
- **TARGET SPECIES:** Enter the name of the species you were MOST interested in catching, whether any were caught or not. Enter ANY if you had no preference.
- **LOCALE:** Check the appropriate zone fished.
- **METHOD:** Check the fishing method.
- **WATER DEPTH:** Enter the shallowest water depth and deepest water depth (in feet) that were fished.
- **CATCH INFORMATION:** Enter the number of each species kept and their weight to the nearest whole pound in the appropriate spaces. Enter the number of each species released in the proper columns. Additional species may be added on the blank spaces or if additional space is needed, you may cross out an existing name and add the new species.


ATTACHMENT 2
SOUNDING IN FATHOMS
SOUTH CAROLINA - NORTH BANKS
32°
33°
34°
80°
79°
78°
77°

Southeast Region Headboat Survey Forms



Catch Information

- [ ] Show Species Grid
- [ ] Show All Species
- [ ] Order Species By Most Reported

Species: -- Select --

Number Kept: 0

Number Released: 0

SAVE CATCH INFORMATION

	Species Name	Number Kept	Number Released	
Edit	ALMACO JACK	5	0	Delete
Edit	BANDED RUDDERFISH	7	0	Delete
Edit	ATLANTIC SHARPNOSE SHARK	0	14	Delete
Edit	BLACK SEABASS	25	300	Delete
Edit	GAG	2	1	Delete
Edit	LITTLE TUNNY	2	0	Delete
Edit	RED PORGY	11	38	Delete
Edit	RED SNAPPER	0	21	Delete
Edit	REMORA	0	3	Delete
Edit	SPOTTAIL PINFISH	45	0	Delete
Edit	GRAY TRIGGERFISH	77	0	Delete
Edit	VERMILION SNAPPER	132	48	Delete

Greater Atlantic Region Reporting Requirements

§648.7 Recordkeeping and reporting requirements.

(a) *Dealers*—(1) *Detailed report.* Federally permitted dealers, and any individual acting in the capacity of a dealer, must submit to the Regional Administrator or to the official designee a detailed report of all fish purchased or received for a commercial purpose, other than solely for transport on land, within the time period specified in paragraph (f) of this section, by one of the available electronic reporting mechanisms approved by NMFS, unless otherwise directed by the Regional Administrator. The following information, and any other information required by the Regional Administrator, must be provided in each report:

(i) *Required information.* All dealers issued a dealer permit under this part must provide: Dealer name; dealer permit number; name and permit number or name and hull number (USCG documentation number or state registration number, whichever is applicable) of vessel(s) from which fish are purchased or received; trip identifier for each trip from which fish are purchased or received from a commercial fishing vessel permitted under this part; date(s) of purchases and receipts; units of measure and amount by species (by market category, if applicable); price per unit by species (by market category, if applicable) or total value by species (by market category, if applicable); port landed; cage tag numbers for surfclams and ocean quahogs, if applicable; disposition of the seafood product; and any other information deemed necessary by the Regional Administrator. If no fish are purchased or received during a reporting week, a report so stating must be submitted.

(ii) *Exceptions.* The following exceptions apply to reporting requirements for dealers permitted under this part:

(A) Inshore Exempted Species, as defined in §648.2, are not required to be reported under this part;

(B) When purchasing or receiving fish from a vessel landing in a port located outside of the Northeast Region (Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia and North Carolina), only purchases or receipts of species managed by the Northeast Region under this part, and American lobster, managed under part 697 of this chapter, must be reported. Other reporting requirements may apply to those species not managed by the Northeast Region, which are not affected by this provision; and

(C) Dealers issued a permit for Atlantic bluefin tuna under part 635 of this chapter are not required to report their purchases or receipts of Atlantic bluefin tuna under this part. Other reporting requirements, as specified in §635.5 of this chapter, apply to the receipt of Atlantic bluefin tuna.

(2) *System requirements.* All persons required to submit reports under paragraph (a)(1) of this section are required to have the capability to transmit data via the Internet. To ensure

compatibility with the reporting system and database, dealers are required to utilize a personal computer, in working condition, that meets the minimum specifications identified by NMFS. The affected public will be notified of the minimum specifications via a letter to all Federal dealer permit holders.

(3) *Annual report.* All persons issued a permit under this part are required to submit the following information on an annual basis, on forms supplied by the Regional Administrator:

(i) All dealers and processors issued a permit under this part must complete all sections of the Annual Processed Products Report for all species that were processed during the previous year. Reports must be submitted to the address supplied by the Regional Administrator.

(ii) Surfclam and ocean quahog processors and dealers whose plant processing capacities change more than 10 percent during any year shall notify the Regional Administrator in writing within 10 days after the change.

(iii) Atlantic herring processors, including processing vessels, must complete and submit all sections of the Annual Processed Products Report.

(iv) Atlantic hagfish processors must complete and submit all sections of the Annual Processed Products Report.

(4) [Reserved]

(b) *Vessel owners or operators*—(1) *Fishing Vessel Trip Reports*—(i) The owner or operator of any vessel issued a valid permit or eligible to renew a limited access permit under this part must maintain on board the vessel, and submit, an accurate fishing log report for each fishing trip, regardless of species fished for or taken, on forms supplied by or approved by the Regional Administrator. If authorized in writing by the Regional Administrator, a vessel owner or operator may submit reports electronically, for example by using a VMS or other media. With the exception of those vessel owners or operators fishing under a surfclam or ocean quahog permit, at least the following information and any other information required by the Regional Administrator must be provided: Vessel name; USCG documentation number (or state registration number, if undocumented); permit number; date/time sailed; date/time landed; trip type; number of crew; number of anglers (if a charter or party boat); gear fished; quantity and size of gear; mesh/ring size; chart area fished; average depth; latitude/longitude (or loran station and bearings); total hauls per area fished; average tow time duration; hail weight, in pounds (or count of individual fish, if a party or charter vessel), by species, of all species, or parts of species, such as monkfish livers, landed or discarded; and, in the case of skate discards, “small” (*i.e.*, less than 23 inches (58.42 cm), total length) or “large” (*i.e.*, 23 inches (58.42 cm) or greater, total length) skates; dealer permit number; dealer name; date sold, port and state landed; and vessel operator's name, signature, and operator's permit number (if applicable).

(ii) *Surfclam and ocean quahog vessel owners and operators.* The owner or operator of any vessel conducting any surfclam and ocean quahog fishing operations, except those conducted exclusively in waters of a state that requires cage tags or when he/she has surrendered the

surfclam and ocean quahog fishing vessel permit, shall maintain, on board the vessel, an accurate daily fishing log for each fishing trip, on forms supplied by the Regional Administrator, showing at least: Name and permit number of the vessel, total amount in bushels of each species taken, date(s) caught, time at sea, duration of fishing time, locality fished, crew size, crew share by percentage, landing port, date sold, price per bushel, buyer, tag numbers from cages used, quantity of surfclams and ocean quahogs discarded, and allocation permit number.

(2) *IVR system reports*—(i) *Atlantic herring owners or operators issued an All Areas open access permit.* The owner or operator of a vessel issued an All Areas open access permit to fish for herring must report catch (retained and discarded) of herring via an IVR system for each week herring was caught, unless exempted by the Regional Administrator. IVR reports are not required for weeks when no herring was caught. The report shall include at least the following information, and any other information required by the Regional Administrator: Vessel identification; week in which herring are caught; management areas fished; and pounds retained and pounds discarded of herring caught in each management area. The IVR reporting week begins on Sunday at 0001 hr (12:01 a.m.) local time and ends Saturday at 2400 hr (12 midnight). Weekly Atlantic herring catch reports must be submitted via the IVR system by midnight each Tuesday, eastern time, for the previous week. Reports are required even if herring caught during the week has not yet been landed. This report does not exempt the owner or operator from other applicable reporting requirements of this section.

(ii) *Tilefish vessel owners or operators.* The owner or operator of any vessel fishing under a tilefish IFQ allocation permit issued under this part, as described in §648.294(a), must submit a tilefish catch report by using the IVR system, or other reporting system approved by the Regional Administrator, within 48 hours after returning to port and offloading. The report shall include at least the following information, and any other information required by the Regional Administrator: Vessel identification; trip during which tilefish are caught; pounds landed; VTR pre-printed serial number; and the Federal dealer number for the dealer who purchases the tilefish. This reporting requirement does not exempt the owner or operator from other applicable reporting requirements of this section.

(3) *VMS Catch Reports*—(i) *Atlantic herring owners or operators issued a limited access permit or Areas 2/3 open access permit.* The owner or operator of a vessel issued a limited access permit or Areas 2/3 open access permit to fish for herring must report catch (retained and discarded) of herring daily via VMS, unless exempted by the Regional Administrator. The report shall include at least the following information, and any other information required by the Regional Administrator: Fishing Vessel Trip Report serial number; month and day herring was caught; pounds retained for each herring management area; and pounds discarded for each herring management area. Additionally, the owner or operator of a vessel issued a limited access permit or Areas 2/3 open access permit to fish for herring using midwater trawl or bottom trawl gear must report daily via VMS the estimated total amount of all species retained (in pounds, landed weight) by statistical area for use in tracking catch against catch caps (haddock, river herring and shad) in the herring fishery. Daily Atlantic herring VMS catch reports must be submitted in 24-hr intervals for each day and must be submitted by 0900 hr (9:00 a.m.) of the following day. Reports are required even if herring caught that day has not yet been landed. This

report does not exempt the owner or operator from other applicable reporting requirements of this section.

(A) The owner or operator of any vessel issued a limited access herring permit or Areas 2/3 open access permit must submit a catch report via VMS each day, regardless of how much herring is caught (including days when no herring is caught), unless exempted from this requirement by the Regional Administrator.

(B) Atlantic herring VMS reports are not required from Atlantic herring carrier vessels.

(C) *Reporting requirements for vessels transferring herring at sea.* The owner or operator of a vessel issued a limited access permit to fish for herring that transfers herring at sea must comply with these requirements in addition to those specified at §648.13(f).

(*1*) A vessel that transfers herring at sea to a vessel that receives it for personal use as bait must report all transfers on the Fishing Vessel Trip Report.

(*2*) A vessel that transfers herring at sea to an authorized carrier vessel must report all catch daily via VMS and must report all transfers on the Fishing Vessel Trip Report. Each time the vessel transfers catch to the carrier vessel is defined as a trip for the purposes of reporting requirements and possession allowances.

(*3*) A vessel that transfers herring at sea to an at-sea processor must report all catch daily via VMS and must report all transfers on the Fishing Vessel Trip Report. Each time the vessel offloads to the at-sea processing vessel is defined as a trip for the purposes of the reporting requirements and possession allowances. For each trip, the vessel must submit a Fishing Vessel Trip Report and the at-sea processing vessel must submit the detailed dealer report specified in paragraph (a)(1) of this section.

(*4*) A transfer between two vessels issued limited access permits requires each vessel to submit a Fishing Vessel Trip Report, filled out as required by the LOA to transfer herring at sea, and a daily VMS catch report for the amount of herring each vessel catches.

(ii) *Atlantic mackerel owners or operators.* The owner or operator of a vessel issued a limited access mackerel permit must report catch (retained and discarded) of mackerel daily via VMS, unless exempted by the Regional Administrator. The report must include at least the following information, and any other information required by the Regional Administrator: Fishing Vessel Trip Report serial number; month, day, and year mackerel was caught; total pounds of mackerel retained and total pounds of all fish retained. Daily mackerel VMS catch reports must be submitted in 24-hr intervals for each day and must be submitted by 0900 hr on the following day. Reports are required even if mackerel caught that day have not yet been landed. This report does not exempt the owner or operator from other applicable reporting requirements of this section.

(iii) *Longfin squid/butterfish moratorium permit owners or operators.* The owner or operator of a vessel issued a longfin squid/butterfish moratorium permit must report catch (retained and discarded) of longfin squid daily via VMS, unless exempted by the Regional Administrator. The

report must include at least the following information, and any other information required by the Regional Administrator: Fishing Vessel Trip Report serial number; month, day, and year longfin squid was caught; total pounds longfin squid retained and total pounds of all fish retained. Daily longfin squid VMS catch reports must be submitted in 24-hr intervals for each day and must be submitted by 0900 hr on the following day. Reports are required even if longfin squid caught that day have not yet been landed. This report does not exempt the owner or operator from other applicable reporting requirements of this section.

(c) *When to fill out a log report.* Log reports required by paragraph (b)(1)(i) of this section must be filled out with all required information, except for information not yet ascertainable, prior to entering port. Information that may be considered unascertainable prior to entering port includes dealer name, dealer permit number, and date sold. Log reports must be completed as soon as the information becomes available. Log reports required by paragraph (b)(1)(ii) of this section must be filled out before landing any surfclams or ocean quahogs.

(d) *Inspection.* Upon the request of an authorized officer or an employee of NMFS designated by the Regional Administrator to make such inspections, all persons required to submit reports under this part must make immediately available for inspection copies of reports, and all records upon which those reports are or will be based, that are required to be submitted or kept under this part.

(e) *Record retention*—(1) *Dealer records.* Any record, as defined in §648.2, related to fish possessed, received, or purchased by a dealer that is required to be reported, must be retained and made available for immediate review for a total of 3 years after the date the fish were first possessed, received, or purchased. Dealers must retain the required records and reports at their principal place of business.

(2) *VTRs.* Copies of fishing log reports must be kept on board the vessel and available for review for at least 1 year, and must be retained for a total of 3 years after the date the fish were last possessed, landed, and sold.

(3) *At-sea monitor reports.* Any record, as defined in §648.2, related to fish observed by an at-sea monitor, including any reports provided to NMFS, sector managers, or another third-party service provider specified in paragraph (h) of this section, must be retained and made available for immediate review for a total of 3 years after the date the fish were first observed. At-sea monitor providers must retain the required records and reports at their principal place of business.

(f) *Submitting reports*—(1) *Dealer or processor reports.* (i) Detailed reports required by paragraph (a)(1)(i) of this section must be received by midnight of the first Tuesday following the end of the reporting week. If no fish are purchased or received during a reporting week, the report so stating required under paragraph (a)(1)(i) of this section must be received by midnight of the first Tuesday following the end of the reporting week.

(ii) [Reserved]

(iii) Dealers who want to make corrections to their trip-level reports via the electronic editing features may do so for up to 3 business days following submission of the initial report. If a correction is needed more than 3 business days following the submission of the initial trip-level report, the dealer must contact NMFS directly to request an extension of time to make the correction.

(iv) Through April 30, 2005, to accommodate the potential lag in availability of some required data, the trip identifier, price and disposition information required under paragraph (a)(1) may be submitted after the detailed weekly report, but must be received within 16 days of the end of the reporting week or the end of the calendar month, whichever is later. Dealers will be able to access and update previously submitted trip identifier, price, and disposition data.

(v) Effective May 1, 2005, the trip identifier required under paragraph (a)(1) of this section must be submitted with the detailed report, as required under paragraphs (f)(1)(i) of this section. Price and disposition information may be submitted after the initial detailed report, but must be received within 16 days of the end of the reporting week.

(vi) Annual reports for a calendar year must be postmarked or received by February 10 of the following year. Contact the Regional Administrator (see Table 1 to §600.502) for the address of NMFS Statistics.

(2) *Fishing vessel log reports.* (i) For any vessel not issued a NE multispecies; Atlantic herring permit; or any Atlantic mackerel, longfin squid, Illex squid, or butterfish permit; fishing vessel log reports, required by paragraph (b)(1)(i) of this section, must be postmarked or received by NMFS within 15 days after the end of the reporting month. For any vessel issued a NE multispecies permit; Atlantic herring permit; or any Atlantic mackerel, longfin squid, Illex squid, or butterfish permit; fishing vessel log reports must be postmarked or received by midnight of the first Tuesday following the end of the reporting week. For the purposes of this paragraph (f)(2)(i), the date when fish are offloaded will establish the reporting week or month the VTR must be submitted to NMFS, as appropriate.

(ii) Surfclam and ocean quahog log reports, required by paragraph (b)(1)(ii) of this section, must be postmarked or received within 3 days after the end of each reporting week.

(3) *At-sea purchasers and processors.* With the exception of the owner or operator of an Atlantic herring carrier vessel, the owner or operator of an at-sea purchaser or processor that purchases or processes any Atlantic herring, Atlantic mackerel, squid, butterfish, scup, or black sea bass at sea must submit information identical to that required by paragraph (a)(1) of this section and provide those reports to the Regional Administrator or designee by the same mechanism and on the same frequency basis.

(g) *Additional data and sampling.* Federally permitted dealers must allow access to their premises and make available to an official designee of the Regional Administrator any fish purchased from vessels for the collection of biological data. Such data include, but are not limited to, length measurements of fish and the collection of age structures such as otoliths or scales.

(h) *At-sea monitor/electronic monitoring reports.* Any at-sea monitor assigned to observe a sector trip and any third-party service provider analyzing data from electronic monitoring equipment deployed on a sector trip must submit reports on catch, discard, and other data elements specified by the Regional Administrator to NMFS, the sector manager, and monitoring contractor, as instructed by the Regional Administrator.

Technical Subcommittee Report to the South Atlantic and Gulf of Mexico Fishery Management Councils: Recommendations for Electronic Logbook Reporting

November 2014


GULF OF MEXICO
Fishery Management Council


South Atlantic Fishery Management Council
"To Conserve and Manage"


NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

Abbreviations used in this Document

ACCSP	Atlantic Coastal Cooperative Statistics Program
EEZ	Exclusive Economic Zone
FHS	For-hire-survey
FWC	Florida Fish and Wildlife Conservation Commission
FIN	Fisheries Information Network
GulfFin	Gulf of Mexico Fisheries Information Network
GMFMC	Gulf of Mexico Fishery Management Council
GSMFC	Gulf States Marine Fisheries Commission
GPS	Global Positioning System
HMS	Highly Migratory Species
MRIP	Marine Recreational Information Program
NOAA	National Oceanic and Atmospheric Administration
NCDENR	North Carolina Department of Environment and Natural Resources NRC National Research Council
PPS	Proportional Probability Sampling
SAFMC	South Atlantic Fisheries Management Council
SCDNR	South Carolina Department of Natural Resources
SERO	Southeast Regional Office
SRHS	Southeast Region Headboat Survey
SEFSC	Southeast Fisheries Science Center
TPWD	Texas Parks and Wildlife Department
VMS	Vessel Monitoring System

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EXECUTIVE SUMMARY

Catch from recreational anglers comprises a substantial proportion of total catch for many species in the regions managed by the Gulf of Mexico and South Atlantic Fishery Management Councils. For-hire charter vessels are an important component of the recreational fishery both in terms of fishing effort and harvest. There is a need to improve data collection practices for charter vessels to address evolving needs of science and management and to capitalize on the improvements of emerging electronic reporting technologies. The Gulf of Mexico and South Atlantic Fishery Management Councils are considering changes in management for these purposes and formed a technical subcommittee to provide recommendations to implement electronic logbook reporting for charter vessels in the Gulf of Mexico and South Altantic Fishery Management Councils respective jurisdictions.

Currently, for-hire data collection programs gather information on fishing effort and catch by marine recreational anglers fishing on professionally licensed for-hire vessels (including charter, guide, and large party boats). NOAA Fisheries, in coordination with the states, ACCSP, and FINS, support regional programs to collect these statistics, with the ultimate goal of building a system of data collection programs that are responsive to regional needs and are coordinated at the national level to provide standard data elements for both regional and national assessments of fish stocks and associated fisheries management.

The technical subcommittee was formed from state and federal biologists and resource managers that have the requisite experience to develop best practices for an improved for-hire data collection program. The technical subcommittee was instructed to provide these recommendations by December 1, 2014 and this report reflects these recommendations. The group met May 27-28, 2014 and drafted initial recommendations for the Gulf of Mexico and South Atlantic Fishery Management Councils' review. This guidance has been integrated into the report to the extent practicable yet, the recommendations remain those of the technical subcommittee.

The subcommittee recommends a census style, electronic reporting system that builds upon the Gulf of Mexico electronic logbook pilot program, the electronic reporting program for headboats, and the recently implemented electronic dealer reporting program. A brief overview of the recommendations is below:

- Complete census of all participants;
- Mandatory, trip level reporting with weekly electronic submission. Give flexibility to require

submission more frequently than weekly if necessary. Give flexibility to declare periods of inactivity in advance;

- Development of compliance tracking procedures that balance timeliness with available staff and funding resources;
- Implementation of accountability measures to ensure compliance;
- Use validation methods developed in the Gulf of Mexico logbook pilot study as a basis to ensure that the actual logbook report is validated and standardized validation methodologies are employed among regions;
- Minimize reporting burden to anglers by reducing (or preferably eliminating) paper reporting and eliminating duplicate reporting;
- Maintain capability for paper-based reporting during catastrophic conditions;
- Require and maintain a comprehensive permit/email database of participants;
- Develop and implement the program in close coordination with MRIP, SERO, SEFSC, HMS, state agencies, ACCSP, and GulfFIN;
- Include procedures for expanding estimates for non-reporting; and,
- Allow multiple authorized applications or devices to report data as long as they meet required data and transferability standards.

The technical subcommittee has provided these recommendations within the framework of finite fiscal and personnel resources with consideration of reporting burden and technology requirements for charter vessel operators. The recommended program should be flexible enough to accommodate changes in technology or funding availability without compromising the integrity of the long-term data series. The technical subcommittee also realizes that advances in data collection technologies will continue and the program will require evaluation, and likely subsequent improvement to meet the evolving needs of science and management.

SECTION 1. BACKGROUND

Catch from recreational anglers comprises a substantial proportion of total catch for many species in the regions managed by the Gulf of Mexico and South Atlantic Fishery Management Councils (GMFMC, SAFMC). For-hire data collection programs gather information on fishing effort and catch by marine recreational anglers fishing on professionally licensed for-hire vessels (including charter, guide, and large party boats). NOAA Fisheries, in coordination with the states, ACCSP, and FINs, supports regional programs to collect these statistics, with the ultimate goal of building a system of data collection programs that are responsive to regional needs and are coordinated at the national level to provide standard data elements for both regional and national assessments of fish stocks and associated fisheries management.

Recreational harvest from for-hire vessels in the Southeast Region are monitored through a combination of effort and dockside intercept surveys. The Marine Recreational Information Program's (MRIP) for-hire survey (FHS) and the Southeast Region Headboat Survey. The FHS estimates charter vessel catches of state and federally managed species off the U.S. Atlantic and Gulf coast states, with the exception of Texas and more recently Louisiana. The Texas Parks and Wildlife Department conducts their own creel survey to estimate private and charter landings.

Since 1993, South Carolina has administered a paper-based logbook reporting program for every licensed six-pack charter operator. These data are primarily used for state management and quota monitoring for federally managed species occurs as part of the MRIP for-hire survey.

North Carolina is also developing an electronic logbook system for their own use with the goal of supplanting the MRIP for-hire survey once fully operational and compatible with MRIP. In recent years, interest by constituents and the Councils has been growing to implement electronic reporting requirements in the for-hire sector. There is general distrust of MRIP landings estimates for the for-hire survey and managers and fishermen have expressed a need for more timely and accurate data to support fishery monitoring, science, and management. Additionally, the National Research Council's (NRC) review of recreational survey methods concluded that in most cases charter boats should be required to maintain logbooks of fish landed and kept. These factors led to an electronic logbook pilot study of Texas and Florida charter vessels in 2010-11 and new electronic reporting regulations for headboats in 2014. Four additional projects have also been funded by MRIP or the National Fish and Wildlife Foundation in 2014 to test new approaches for monitoring charter vessel catch and effort. The GMFMC and SAFMC have also passed motions at recent meetings expressing their interest in electronic reporting by charter vessels and they formed this technical subcommittee to develop recommendations for the Councils' consideration by December 1, 2014, on how to best achieve an electronic reporting system for charter vessels. The technical subcommittee met May 27-28, 2014 to develop recommendations to the Councils. The technical subcommittee reached consensus of several aspects on a proposed program and identified a framework for implementation.

SECTION 2. OBJECTIVES

The Councils appointed this technical subcommittee (membership list below) to develop recommendations to implement an improved data collection program to support the needs of science, fisheries management, and address stakeholder concerns about data quality and redundancy in reporting. Specifically, the technical subcommittee was charged with developing recommendations to implement electronic reporting for charter vessels in the Gulf of Mexico and US South Atlantic in support of the following objectives:

- Increasing the timeliness of catch estimates for in-season monitoring;
- Increasing the temporal (and/or spatial) precision of catch estimates for monitoring;
- Providing vessel-specific catch histories for management;
- Reducing biases associated with collection of catch statistics; and,
- Increasing stakeholder trust and buy-in associated with data collection.

SECTION 3. TECHNICAL SUBCOMMITTEE MEMBERS

3.1 Membership

- Gregg Bray – GSMFC
- Ken Brennan – SEFSC
- Mike Cahall – ACCSP
- Mike Errigo – SAFMC
- Mark Fisher - TPWD
- John Froeschke – GMFMC
- Eric Hiltz – SCDNR
- Doug Mumford – NCDENR
- Ron Salz – MRIP
- Beverly Sauls – FWC
- George Silva – HMS
- Andy Strelcheck – SERO

3.2 Timeline

- May 2014 – Technical subcommittee meeting in Tampa, Florida
- June 2014 - Provide meeting summary to Councils for review and guidance;
- July 2014 - Technical subcommittee conference call to discuss Councils' review and guidance;
- September 2014 - Technical subcommittee webinar to discuss items needed to complete the report;
- November 2014 - Draft report sent to subcommittee for review;
- December 1, 2014 - Provide report to Gulf and South Atlantic Councils.

SECTION 4. RECOMMENDATIONS

The technical subcommittee discussed trade offs and limitations of potential modifications to fisheries reporting in for-hire fisheries. The subcommittee agreed (by consensus) on preferred approaches for several aspects and discussed barriers to implementation of a new program. The subcommittee solicited and received preliminary input from both Councils following the May 27-28 meeting. This guidance has been integrated into the report to the extent practicable yet, the recommendations remain those of the technical subcommittee.

The subcommittee emphasized that the program should ***not*** be designed around a single species, and should be flexible enough to accommodate different reporting requirements for different segments of the for-hire fleet. For example, if federally permitted vessels were required to report more frequently during the recreational red snapper season, other vessels that do not participate in this fishery should be able to continue reporting at their normal frequency.

Similarly, an electronic reporting system should be able to accommodate vessels already required to carry VMS units for participation in commercial fisheries without necessarily requiring all for-hire vessels to report through VMS. Although not currently required, the Gulf Council expressed interest in using VMS and hail-out, hail-in protocols to improve effort estimates. This practice certainly could improve the quality of effort estimation in the for-hire fleet, although, implementation would not be without challenges. The cost of a VMS program both in terms of vessel equipment and agency staff/infrastructure would require additional, long-term funding (see section about costs). This may be beyond current resource availability. Rather than recommend fleet-wide implementation of VMS and hail-out, hail-in requirements, the subcommittee recommends structuring the charter fishery monitoring program such that it is scaleable and expandable as management needs, technology, and funding availability change.

This recommendation would allow improved data collection in the near term building on the recently implemented electronic reporting system for southeast region headboats (i.e., weekly, electronic reporting) and the MRIP charter vessel pilot program, yet would not require full implementation of VMS to move beyond the current process.

The current survey methodology was deemed inadequate to meet the objectives posed to the group (although not necessarily the original intent of the charter vessel survey). Specifically, timeliness, bias reduction, and stakeholder buy-in could be improved with an electronic reporting system without the inherent expense and time for implementation of VMS technology in the charter fleet (of course, the introduction of new biases is possible). These improvements are necessary given the requirement to establish annual catch limits for federally managed species and close the fishery when the target harvest level has been caught each year. This requirement for in-season quota monitoring is far beyond the management needs when the original charter vessel survey was designed and implemented and the guidance herein attempts to match the data collection effort to the needs of the current and future fisheries management.

4.1 Mandatory or voluntary participation

The technical subcommittee discussed participation in any new charter vessel monitoring program. Specifically, the subcommittee considered if participation in the program by charter vessel owner/operators could be voluntary or if mandatory participation is necessary. Voluntary

reporting programs can be advantageous in that reporting burden is reduced (or absent) from participants that do not wish to participate. This would also reduce the number of reports that require processing for catch and effort estimation. However, in absence of a complete sample, estimation procedures are necessary. Estimation procedures can be accurate and robust in a well- designed survey, however, likely at the expense of reduced timeliness. Developing estimates of total catch from a volunteer program is problematic as the proportion of participants may be highly variable through time or across the survey area and volunteer participants may not be representative of all possible participants in this survey. This pattern has been demonstrated previously (e.g., angler avidity) in other studies of volunteer programs and will bias estimates when expanded to the total sector. Voluntary programs would also require careful consideration of the characteristics of the participants and those who choose not to participate as it is impossible to compare catch patterns with participants and non-participants; and an assumption that they are identical is necessary but likely inaccurate. The subcommittee agreed that the potential for bias is too great to recommend any voluntary reporting program and suggested that any program (i.e., census or survey) require reporting from participants be mandatory if selected (e.g., Southeast Region Headboat Survey (SRHS)).

The subcommittee agreed that the potential for bias is too great to recommend any voluntary reporting program and mandatory participation is necessary for vessel/owner operators selected. This is recommended to best achieve the overarching objectives of the proposed program.

4.2 Survey or census

Both census and statistical surveys can (and are) used to estimate catch and effort in marine fisheries. Surveys are beneficial in that a representative sample of anglers (as opposed to the entire "population" of anglers in the fishery) and their catch is used to estimate the total catch. However, management often requires these estimates over relatively small areas, short-time scales, or for rare event species. In these situations, survey estimates sometimes lack the precision necessary or desired for management decisions. The common remedy is to increase sample effort (i.e., sample size) to achieve desired precision levels, however, the necessary sample size may exceed program resources. An additional challenge of surveys is that the strata (e.g., area, time-period) require complete coverage before making an estimate. In practice, this means that surveys generally have a longer lag between the time fishing occurs and when the resulting data are available for use.

A census provides a sum of the total effort and catch by tabulating these metrics from all participants in the fishery. In theory, reporting and subsequent use of these data in management can be rapid as no additional estimation procedures are necessary and the report submission frequency can be established (e.g., weekly) to balance management needs with reporting burden on fishery participants. In practice, estimating catch and effort from a census can be challenging if some participants do not report their catch and effort data within the specified reporting periods. In this event, the census is incomplete and requires an expansion factor to calculate the total catch and effort. As with any survey design, this estimation routine requires additional time, resources, and reduces precision of the estimate. In extreme cases, expanding an incomplete census to a total estimate can be difficult or impossible if the proportion of non-compliant

participants is large or if the non-compliant participants are markedly different than those that are reporting as required. Nonetheless, this capability is essential in a real-world census and is important to consider when developing reporting requirements (frequencies and accountability measures) and minimum acceptable lag-time for use in fisheries management.

The technical subcommittee recommends the development and implementation of a electronic logbook census program to estimate catch and effort for southeast region charter vessels, including procedures for expanding for non-reporting. This recommendation was based in part on the inability of the current survey to meet the needs of science and management applications and the requirement of timeliness beyond which is readily achievable through a survey approach.

4.3 Reporting frequency

The subcommittee discussed how often reports need to be submitted to provide timely data for science and management. Frequent reporting has at least two benefits. Reporting as frequently as practicable reduces recall error/bias when producing catch reports. Frequent reporting also can make these data available for use sooner. Currently, the GMFMC and SAFMC require electronic reporting on a weekly basis for commercial seafood dealers and federally permitted headboat operators. Similarly, the subcommittee recommends mandatory weekly reporting, or at shorter intervals if necessary (e.g., The Gulf Council may want to require daily logbook submission during the recreational red snapper season) for a new charter vessel program. A second recommendation was that reports be due from the prior fishing week as soon as practicable. Commercial seafood dealer reports must be submitted by the Tuesday following the previous fishing week (Monday through Sunday). This was considered preferable over the headboat reporting requirements where trip reports are due one week after the end of the fishing week. The reduced lag addresses both advantages identified above.

The technical subcommittee recommends trip level reporting with weekly submission due the Tuesday following each fishing week. This would include no activity reports that could be submitted in advance if periods of inactivity are known. The technical subcommittee discussed that a daily reporting requirement may not be feasible or enforceable, however, reporting systems and user interfaces should be designed to encourage "real-time" at-sea reporting of catch and catch related data elements (e.g. fishing location, fishing method, target species).

4.4 Data collection

A variety of software applications are available for data collection and submission including web, smart phone, and tablet based technology. Web-based software provide the capability to report fisheries data after completing the trip. Smart phone or tablet technology could be used for at-sea or real time reporting of catch and effort. This approach may limit the complexity of reporting options but could provide enhanced validation methods because catch and effort data could be submitted before returning to port allowing enhanced dockside validation. Smart phone and tablet technology can also allow for data input without a current

network connection and are also capable of recording vessel positions during a trip via global positioning system (gps) (a far cheaper technology than VMS, but not in real-time).

The subcommittee recommends a multi-faceted approach where a number of reporting platforms can be used so long as the minimum data standards and security protocols are met. Data standards would need to be developed and the subcommittee agreed that NOAA Fisheries, the GulfFIN, and ACCSP could work collaboratively to develop appropriate standards.

These recommendations encompass two overarching objectives of the monitoring program: 1) Flexibility for specific regions, species, or time periods; 2) A flexible framework to allow incorporation of improved technologies as they become available. Electronic monitoring and reporting capabilities are rapidly evolving and the options available in the near-future may far exceed the current suite of tools. It is necessary to allow (and encourage) this development such that in can be leveraged effectively to meet the needs of fisheries management.

4.5 Data storage and management

The subcommittee discussed data storage and management that would be necessarily expanded from the status quo in a census based monitoring program. The ACCSP and GulfFIN expressed willingness to handle these raw data and indicated this could be accomplished with extant resources.

The subcommittee recommends this process:

1. Logbook data collected via authorized platform, ex. web, tablet, phone, or VMS application
2. Data submitted to ACCSP or GulfFIN;
3. Data integrated by ACCSP or GulfFIN into single composite data set;
4. Composite data set distributed to appropriate agencies for analyses and use.

This process could eliminate duplicate reporting for some participants so long as appropriate data standards are in place and the respective agencies agree to confidentiality standards, which would allow sharing and accepting one another's data for use. Elimination of duplicate reporting (e.g., separate state and federal reports) would be a substantial benefit to participants in this survey program and could mitigate any additional reporting requirements for comparison to the current MRIP survey program.

4.6 Validation and estimation

A successful electronic for-hire program will require adequate validation of catch and effort data and will require collaboration among state, federal, and fishery information network (FIN) programs. A census is likely to be incomplete and estimation procedures for adjusting catch estimates will need to be developed in cooperation with MRIP. The time lag necessary to

expand an incomplete census to an estimate (of harvest or effort) should be built into the timeliness need for science and management applications. The Gulf MRIP pilot program tested new validation procedures and provided guidance on improvements necessary before full implementation. The pilot program was successful in that electronic reporting was used (almost exclusively) and supported many of the goals (e.g., more timely, simplified reporting process) yet, many participants failed to submit reports within the required time frame complicating the use of these data for management. The rates of compliance increased over the length of the pilot study period and similar result would be expected with full implementation highlighting the need for validation and an estimation procedure to calculate total catch and effort.

The technical subcommittee recommends building upon the validation methodology developed in the Gulf MRIP pilot study. An overview of the proposed methodology is below.

Dockside Validation of Logbook Trip Reports (Catch and Effort)

Validation procedures are critical to assessing the accuracy and completeness of submitted logbook reports. Critical components of validation include the creation and review of a site and vessel registry, and methods to validate catch and effort of self-reported data. There is currently a MRIP funded project; *Pilot Project; Validation Methods for Headboat Logbooks,* which is testing dockside sampling methods that could be used to validate headboat logbooks. Results from this project will be available in the spring of 2015.

Site and Vessel Registry

A registry of all vessels required to report via logbooks should include detailed docking location information for each vessel. The port city and mailing address for owners of all federally permitted vessels (both active and non-active) is available from the permit frame maintained by NMFS SERO, and may be used as a starting point for identifying where vessels are located. A regularly updated list of all active charter vessels (both federal and state permitted) with docking site information is also maintained in states where the MRIP FHS is administered. From the vessel registry, a list of all known docking locations should be generated and each site should be given a unique identification code. Information contained in the site list should also include site location descriptions, site telephone numbers, contact person at the site, GPS location coordinates, and the total number of vessels located at the site. The site registry should be used to randomly select sites for dockside validation assignments (described below).

Validation of Catch

Dockside assignments for validating harvest should be randomly selected from the site registry and stratified by region (e.g. state or sub-region within large states) using probability proportional to size (PPS) sampling with replacement, with the size measure being the number of vessels at each site. This method is used in statistical sampling designs where sample clusters (e.g. sites where charter vessels dock) differ widely with respect the number of sample units (charter vessels) contained within. PPS sampling selects sites with a higher number of vessels more frequently and prevents potential sample bias by insuring that vessels at low pressure sites do not have a higher probability for selection. Sample days should be distributed across weeks and across weekend/weekday strata, and more weight should be given towards high fishing activity periods (summer and weekends). It is recommended that the site selection program be

run monthly by a regional coordinating entity, such as GSMFC, who provides draw files to local coordinators (states or other entities). Local coordinators should report tallies for the number of completed assignments and successful interviews to the regional entity weekly.

During an assignment, field samplers should arrive at the assigned site at least one hour before half-day charter fishing trips are expected to return. For sites where overnight fishing trips take place, field staff should call or visit the site the day before the assignment to determine if overnight trips are returning and arrive on site early if necessary to intercept those vessels. Upon arrival, samplers should survey the site and attempt to locate each vessel listed on the vessel register for that site. Each vessel at the site should be recorded on an Assignment Summary Form and coded as one of the following:

1 = vessel in

2 = vessel out, charter fishing (this must be verified)

3 = unable to validate (vessel sold, moved to unknown location, etc.) 4 = vessel out, NOT charter fishing (this must be verified)

5 = vessel out, fishing status unknown (use when unable to verify the fishing status)

For vessels coded as 2 (out charter fishing), the field sampler should attempt to verify the expected return time and record this time on the Assignment Summary Form. As each vessel returns from fishing, the sampler should record on a separate Dockside Intercept Survey Form the vessel name, vessel ID number, and the return date and time. Samplers should first approach the vessel operator for permission to weigh and measure all harvested fish, and the sampler should then observe the harvested catch and record the total number of fish for each species, as well as length at the mid-line (mm) and weight (kg) of whole fish that can be measured. After the catch is inspected, the field sampler should then conduct an interview in person with a crew member (captain and/or mate). It is important to conduct interviews directly with vessel operators, rather than with charter vessel clients, since the purpose of the dockside validation is to measure recall error and bias in trip data recorded by vessel operators on logbook trip reports. During the in-person interview, the following information should be recorded:

- Departure date
- Departure and return time
- Number of passengers (fishing and non-fishing, not including crew)
- Number of anglers (total number of passengers that fished at any time during the trip)
- Number of crew, including captain
- Target species
- Primary area fished (crew should be asked to identify the statistical area where the majority of fishing took place during the trip using statistical maps provided)
- The minimum and maximum depths (in feet) fished for the trip

- The percent of fishing time spent fishing in federal waters, state waters, and inland waters
- Primary fishing methods (bottom fishing, drifting, trolling, spear fishing)
- Hours fished (number of hours spent with gear in the water)
- For each species released or could otherwise not be observed by the field sampler, the total number released for each disposition:

  1 – Thrown back alive

  3 – Eaten/plan to eat

  4 – Used for bait/plan to use for bait

  5 – Sold/plan to sell

  6 – Thrown back dead/plan to throw away

  7 – Other purpose

Samplers should remain on site until the last vessel known to be out fishing has returned (with the exception of overnight trips).

Validation of Vessel Activity and Inactivity (Effort)

Validation of vessel activity (or inactivity) is critical to determining compliance with logbook reporting requirements. Information on whether or not a vessel is in or out of port on a particular day can be matched with logbook records or hail out/hail in requirements to determine if vessel activity was accurately reported. To validate vessel activity and inactivity before reporting in the logbook reporting system, sites should be clustered into groups of sufficient size that all sites within the selected region may be visited within a 6 to 8 hour time period, including driving time. Site clusters should be selected each week within a month using simple random sampling, without replacement. For small states where all sites may be visited in a single day, sites may all be included in a single cluster that is validated each week.

During a scheduled vessel activity validation assignment, the field sampler should visit all sites within a selected vessel activity validation region and attempt to verify the fishing status for all vessels at each site within that region. The sampler should record the fishing status and time for each vessel on a Vessel Status Validation Form using the following codes:

1 – Vessel in

2 – Vessel out, charter fishing (must be verified) 3 –

Unable to validate

4 – Vessel out, not charter fishing (must be verified) 5 –

Vessel out, status unknown

If possible, the sampler should verify the fishing status with someone at the dock or in the booking booth. If unable to verify the fishing status of a vessel, the sampler should use code 5.

Dockside validation will also serve the secondary, and essential, function of collecting biological samples from the for-hire fishery. These samples are necessary to characterize thecatch for use in stock assessments and to monitor the health of the stocks. If practicable, the subcommittee recommends using observers on six-pack charter vessels. Additionally, VMS in conjunction with hail-out, hail-in to improve validation could be considered to improve validation and data quality, although at the expense of additional cost and reporting burden.

The subcommittee recommends use of an MRIP certified methodology for validation with the following elements: Gulf MRIP pilot study methodologies, including dockside validation of catch and vessel activity, and maintenance of site and vessel registries.

The following additional elements should also be considered:

- At-sea observer coverage; and,
- Fine-scale discard data, depths of capture, area fished, release mortality.

If VMS and hail in/hail out requirements are implemented, methods for validation could be modified as VMS technicians could validate when trips occur through vessel position coordinates.

4.7 Accountability measures

Procedures to ensure timely and accurate reporting of data are essential to the success of any program. Late or missing reports can reduce accuracy (recall bias), increase uncertainty (e.g., requires procedure to estimate catch from missing reports), and can prevent timely use of these data for science and management. The Councils recently began requiring electronic submission of reports from commercial seafood dealers. Dealer reports and the associated problems with late or missing reports were discussed at length by the Councils. The Councils now require timely submission (weekly, with reports submitted by the Tuesday following the previous fishing week) and that seafood dealers are *only* authorized to purchase seafood if they are up to date on previous reports. A similar procedure should be developed for charter vessels requiring submission of previous reports to maintain a valid charter vessel permit and take passengers on for-hire trips. The subcommittee recognizes that accountability will be challenging and costly to implement due to the mobility, turnover and sheer number of charter vessels.

The principle objective is to encourage compliance without issuing fines and/or penalties. However, the full range of potential accountability measures should be enumerated in consultation with NOAA General Counsel through development of management regulations and penalty schedules. Similar (or identical) reporting requirements should be established between the South Atlantic and Gulf of Mexico management regions that will ease reporting burden and aid in compliance. Extensive outreach, training (as necessary), positive messaging, and industry participation in the design of the data collection system should aid in reporting compliance and meeting the goals of the program.

The subcommittee recommends accountability measures and reporting requirements similar to those implemented for commercial seafood dealers in the southeast region (i.e., weekly submission of trip level reports, including periods of no activity due Tuesday following each week). A charter vessel owner/operator would only be authorized to harvest or possess federally managed species if previous reports have been submitted by the charter vessel owner/operator and received by NMFS (NMFS) in a timely manner. Any delinquent reports would need to be submitted and received by NMFS before a charter vessel owner/operator could harvest or possess federally managed species from the EEZ or adjacent state waters.

4.8 Calibration with existing survey

Transitioning into the proposed program will require an upstart period of at least one year to conduct outreach and ensure a high level of compliance. **The subcommittee recommends dual survey methods (existing and new) for no less than three years.** This overlap in survey periods will provide a basis to calibrate the new census results to the historical catch and effort data from the existing charter vessel survey. Historical catch data are critical inputs for science (e.g., stock assessments) and management (e.g., season length) and implementation of a new system without calibration would compromise the value of the historical catch information. Additionally, implementation of the new program is likely to have start-up difficulties that require modification, as such, the *existing survey would not be expected to provide the best scientific information available (at least for the first year)* until the new program is deemed operational.

Data from the new program would not be expected to provide management advice during the first year of operation. Moreover, this would allow the possibility of an initial phase-in or limited implementation to identify and solve significant problems prior to implementation for all participants.

4.9 Should state permitted for-hire vessels be required to participate?

The subcommittee discussed the objectives of the proposed program (i.e., improved estimates of catch both in terms of timeliness and accuracy), as well as the importance of mandating participation from state permitted for-hire vessels. The possibility of state vessels landing federally managed species in state waters does exist but the magnitude of those landings is unknown at this time, but expected to be relatively small for most federally managed species. The difficulties in establishing rules to mandate state vessel participation may be too great and should not be a barrier to developing a reporting program for federally permitted vessels. However, incorporation of state vessels into the program should be a long-term objective that would aid in timeliness and accuracy of data from the entire for-hire fleet and could simplify validation protocols that would not require distinguishing between state and federally permitted vessels.

The subcommittee recommends that the Councils move forward with development of a reporting system that includes federally permitted for-hire vessels while also exploring ways to determine the impact of state permitted vessels on landings estimates of federallymanaged species. Long term, the subcommittee recommends that both state and federally permitted charter vessels participate in this census to include the entire fleet of charter vessels harvesting federally managed species.

4.10 Program coordination

The subcommittee discussed that the success of the program requires a smooth and well-coordinated program throughout the region. This is to meet timeliness needs, improve accuracy (and precision), and minimize duplication of effort.

To this end, the subcommittee recommends that GulfFIN and ACCSP committees work jointly with end users (i.e., MRIP, SERO, SEFSC, HMS, and state agencies) to coordinate this new reporting program. Both quality control and quality assurance units in the program to ensure data meets required standards. A timeline for program implementation must be developed with the Councils, states, and other agencies.

4.11 Budgetary implications

The vision of the subcommittee is that the proposed census program may be funded through MRIP and incorporate MRIP certified validation and estimation procedures but operation would be decentralized from MRIP to regional and state entities through their FINs**. It is expected that the census approach recommended by this subcommittee would result in additional costs for monitoring compliance and validating trip activity. Additional infrastructure and personnel may be necessary to maintain and process these data.**

Electronic Logbook Costs

Cost estimates are an important component to the development of any new reporting program, and provide resource managers and scientists with a sense of how much funding is needed to support both implementation and maintenance of a program. Costs for electronic reporting may include: software development, reporting and/or monitoring hardware, monthly service fees, and personnel for data management, validation, and estimation. Costs are incurred both by the government, as well as fishermen who report these data. The following provides a summary of estimated costs for the electronic reporting program developed by the Technical Subcommittee. Cost estimates from existing programs and pilot studies, such as MRIP, the Southeast Headboat Survey, the commercial coastal logbook program, and the MRIP electronic logbook pilot study, are also provided for comparative purposes. Implementation of a new reporting program would require side-by-side comparative testing for calibration purposes, and those costs are not considered herein. Costs for observer coverage are also not included. Rather, costs are focused on the initial implementation, ongoing administration, data management, and statistical estimation of an electronic reporting program in the Gulf of Mexico and South Atlantic.

Current and Pilot Study Program Costs

The Marine Recreational Information Program (MRIP) is the primary source of charter for-hire data in the Southeast Region. MRIP collects catch and effort data from both state-licensed and federally-permitted charter vessels from North Carolina through Mississippi. Charter vessel catch and effort data are also collected by the Louisiana Department of Fish and Wildlife and Texas Parks and Wildlife Department through creel surveys, and side-by-side comparison testing is planned for Louisiana in 2015. Annually, MRIP spends approximately $4.3 million dollars to conduct dockside sampling and validation in the Southeast Region (North Carolina to Louisiana) for both private and charter vessels. Costs for specifically conducting charter sampling were not estimated, as those costs are difficult to estimate due to a combination of factors (survey procedures, contractual pricing, fixed costs and staffing/administrative considerations), but obviously would be less than the overall costs indicated above. An additional $600 thousand dollars is spent conducting the for-hire telephone survey annually. A total of 3,920 charter vessels are currently included in the MRIP for-hire survey frame.

Headboat catch for 145 vessels is monitored through electronic logbooks by the SEFSC. A total of 13 federal, state, and contract personnel are involved in administering the program and monitoring fishing activity from North Carolina to Texas, including biological sampling and validation of reports of landings and effort. Costs for the program include salaries and benefits, vehicles, travel, supplies, and software development and maintenance. Total funding for the Southeast Headboat Survey is approximately $888 thousand dollars, which equates to $6,124 per vessel annually.

The SEFSC coastal logbook program for commercial fisheries is a paper-based logbook program, which obtains data from about 3,000 permit holders (vessels). Annually, the SEFSC spends $775 thousand dollars for data entry, personnel, printing, storage, software maintenance, and overhead for this program. These costs do not include Trip Interview Program sampling, which is used for validation and biological sampling of commercial landings. The costs also do not include compliance enforcement.

Lastly, MRIP conducted an electronic logbook pilot study in 2011. The study included 410 vessels from the Florida Panhandle and Port Aransas, Texas. Costs for the pilot program included $213.5 thousand dollars for start-up expenses, including a stakeholder workshop, software development, certified letters, outreach meetings, and working group meetings. Project expenses for logbook reporting and validation for one-year totaled $385.6 thousand dollars.

These expenses included salaries and overhead for a full-time coordinator, a database manager, and four field staff. Expenses were also included for travel and training expenses, equipment, printing costs, at-sea observer passenger fares, and GSMFC administrative costs. The average cost per vessel was $1,340 for Texas vessels and $658 for Florida vessels. Many more vessels were concentrated in a small geographic area in the Florida Panhandle, resulting in lower costs relative to Texas. In-kind contributions from NMFS and state employees were not

included for many staff who served on the project team for the pilot study and conducted analyses, customer service, and database management. Therefore costs presented in the final report are less than the true costs of the project. On average, the cost per vessel as reported in the pilot study was $911 after excluding observer passenger fares and paper-based logbook printing.

Table 1. Estimated Costs for an Electronic Logbook Program. Estimates are based on 2,555 federally permitted charter vessels. Headboat vessels are excluded from cost estimates, as well as vessels already possessing a commercial reef fish permit and VMS unit.

Activity	Cost Type	Estimated Expenses	Comments/Source
Software Development	Start-up (gov't)	$100,000	Costs for Web site/app development. These costs could be reduced if existing software applications (SE Headboat Survey or iSnapper) are used instead of any new software developed. However, modifications of data fields, data storage and data export procedures would be required to accommodate the increased number of vessels.
Hardware/database infrastructure	Start-up (gov't)	$25,000	Purchase of a server to store data.
Hardware/database maintenance	Reoccurring (gov't)	$20,000	There would be reoccurring costs for hardware/software and database maintenance.
Database manager(s) and administration	Reoccurring (gov't)	$150,000	Salaries and administrative costs for database management.
Certified Letters	Start-up, with period reoccurring compliance letters (gov't)	$15,858	2,643 vessels @ $6 per letter
Stakeholder Outreach Workshops	Start-up (gov't)	$30,000	15 meetings @ $2,000 per meeting
Field Samplers – Salaries, Benefits, and Overhead	Reoccurring (gov't)	$3,392,000	53 port agents @ 50 vessels per port agent. $64,000 for salary, benefits, and overhead per port agent – source SE Headboat Survey. If costs per vessel ($658-$1,340) from MRIP pilot study are used, then total costs range from $1.74 to $3.54 million.
Data Analyst(s) – Salary and Benefits	Reoccurring (gov't)	$215,000	1 Gulf and 1 South Atlantic analyst @ GS-13 salary + benefits
Training, Travel, and Equipment for Field Samplers	Reoccurring (gov't)	$158,700	~$60 per vessel – source MRIP pilot study; costs are higher for more remote areas vs. ports with large concentrations of vessels.
Enforcement and Compliance Monitoring – Enforcement officer salaries, benefits, and overhead.	Reoccurring (gov't)	$800,000	Data timeliness is critical for a logbook program. Additional compliance monitoring and enforcement for misreporting and non-compliance with reporting will be required. To properly conduct compliance an increase of 5 Enforcement Officers and 1 Supervisory Enforcement Officer are estimated to be needed.

VMS units (if required)	Start-up (gov't or industry)	$5,750,000 (low estimate) $7,750,000 (high estimate) (Reimbursement to fishermen for the purchase of VMS units may be available from NOAA Fisheries' Electronic Monitoring Grant Fund, but this money is currently not in hand and OLE would need to request funds through the budgetary process)	Currently 107 charter for-hire vessels have a commercial reef fish permit and VMS unit and another 145 vessels participate in the SE Headboat Survey. Approximately 2,500 charter for-hire vessels would need to obtain a VMS, if required. Costs for VMS units range from $2,300 to $3,800. Up to $3,100 is currently authorized for reimbursement.
VMS installation	Start-up (industry)	$500,000 (low estimate) $1,500,000 (high estimate)	2,500 vessels x $600 for marine technician to install VMS unit. Installation costs range from $200 to $600 depending upon proximity of vessel to marine electrician.
VMS personnel	Reoccurring (gov't)	$530,000	Salary and benefits for five VMS technical staff (monitor 500+ vessels each) and one OLE Helpdesk person.
VMS annual service charges	Reoccurring (industry)	$1,800,000	$60 per month per vessel; $720 annually per vessel x 2,500 vessels
VMS unit software	Reoccurring (gov't)	$50,000	If VMS units will report any unique information, units will need to have initial and periodically updated software installed at a cost up to $50,000.
Total Costs (w/o VMS)		$170,858 (Start-up) $4,735,700 (Reoccurring) $4,906,558 (Start-up + reoccurring)	
Total Costs (w/ VMS)		$6,420,858 (Start-up – low est.) $9,420,858 (Start-up – high est.) $7,115,700 (Re-occurring) $13,536,558 (Total – low est.) $16,536,558 (Total – high est.)	If VMS is required, some expenses for port sampling validation of fishing effort and enforcement compliance may be reduced.

SECTION 5. CHALLENGES

5.1 Calibration with existing survey

The subcommittee recommends the use of dual survey methods (existing and new) for no less than three years. This overlap in survey periods will provide a basis to calibrate the new census results to the historical catch and effort data from the existing charter vessel survey.

Historical catch data are critical inputs for science (e.g., stock assessments) and management (e.g., season length) and implementation of a new system without calibration would compromise the value of the historical catch information. Additionally, implementation of the new program is likely to have start-up difficulties that require modification, as such, the *proposed census would not be expected to provide the best scientific information available (at least for the first year)* until the new program was deemed operational.

5.2 Reporting burden

Although frequent reporting with as short as practicable lags between end of fishing period and report submission is desirable, the burden of reporting on vessel operators is an important concern. Wherever feasible, the reporting burden should be minimized.

Implementation of this new program would require additional reporting burden over the status quo. To mitigate this requirement, the subcommittee recommends reducing duplicate reporting (submission of reports to multiple agencies, possibly in different formats) to ease reporting requirements. For example, charter vessels selected for the current For-Hire telephone survey should be able to submit their data electronically satisfying the submission requirements for both programs.

5.3 Compliance

Ensuring compliance is likely the biggest barrier to achieving the objectives for this program; more timely data with improved accuracy and stakeholder confidence. The MRIP Gulf logbook pilot project was negatively affected by late or missing reports from participants. In a census program, this is detrimental to both timeliness and accuracy as complete catch estimates cannot be generated with missing reports. Late reporting also affects accuracy because of recall bias (i.e., difficult to remember what was caught several weeks earlier). In addition, an incomplete census will require an estimation procedure to account for un-reported landings that requires time and adds uncertainty to the final catch and effort estimates.

Adequate accountability measures are essential to achieving high compliance rates (i.e., 100% timely reporting). The subcommittee recommended an approach similar to the accountability measures recently developed for commercial seafood dealers and headboats.

Briefly, commercial seafood dealers are only authorized (i.e., possess valid permit) to purchase seafood if their weekly purchase reports have been submitted. As is the case with headboat

reporting, charter boats would not be allow to harvest or possess federally managed species from the EEZ or adjacent state waters until previous trip (including no activity) reports have been submitted. The effectiveness of this accountability measure is dependent of the capability of law enforcement to enforce reporting requirements. **The subcommittee recommends consultation with the Office of Law Enforcement and NOAA General Counsel to explore the selection of appropriate and enforceable accountability measures.**

5.4 Collaboration with states

Individual States would be tasked with data collection and validation within their collective states. State requirements vary regarding reporting of fishery data with some states (e.g., South Carolina) requiring the submission of paper-based reporting. Other states (e.g., North Carolina) are progressing rapidly toward electronic logbooks with the other states within this range. **Long term**, **the subcommittee recommends that both state and federally permitted charter vessels participate in this census to include the entire fleet of charter vessels harvesting federally managed species.** In the near-term, implementation of electronic logbook reporting for the federally permitted for-hire fleet would substantially improve the data collection program but not depend on delays and uncertainties associated with requiring similar regulations for state-permitted vessels at this time. Consideration of only federally permitted vessels would ease the implementation of this process with the caveat that a large proportion of charter vessels would not be included in the census and their catch (and effort) would have to be estimated via other means that would reduce effectiveness of the census program. However, for state-permitted vessels, requiring electronic reporting without duplicate paper reporting may require legislative changes in some states (e.g., South Carolina) and there is uncertainty if or when this could be accomplished.

National Marine Fisheries Service Southeast Region Electronic Monitoring and Reporting Regional Implementation Plan

February 26, 2015

NOAA
FISHERIES

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Abbreviations Used in this Document

ACCSP	Atlantic Coastal Cooperative Statistics Program
AIS	automated information system
CFMC	Caribbean Fishery Management Council
CMP	coastal migratory pelagic
ELB	electronic logbook
EM	electronic monitoring
ER	electronic reporting
FMC	fishery management council
FMP	fishery management plan
GMFMC	Gulf of Mexico Fishery Management Council
GSMFC	Gulf States Marine Fisheries Commission
HMS	highly migratory species
IBQ	individual bycatch quota
IFQ	individual fishing quota
ITQ	individual transferable quota
NMFS	National Marine Fisheries Service
SAFIS	Standard Atlantic Fisheries Information System
SAFMC	South Atlantic Fishery Management Council
SEFSC	NMFS Southeast Fisheries Science Center SERO
	NMFS Southeast Regional Office
VMS	vessel monitoring system

List of Terms

Electronic monitoring (EM) – The use of technologies – such as vessel monitoring systems or video cameras – to passively monitor fishing operations through observing or tracking. Video monitoring is often referred to as EM.

Electronic reporting (ER) – The use of technologies - such as phones, tablets, or computers - to record, transmit, receive, and store fishery data.

Electronic technology (ET) – Any electronic tool used to support catch monitoring efforts both on shore and at sea, including electronic reporting (e.g., e-logbooks, tablets, apps) and electronic monitoring (VMS, video cameras, and sensors).

Vessel Monitoring System (VMS) – Electronic monitoring technology that allows the tracking of fishing vessels, including their position, time at position, course, and speed.

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Background

There is a growing need for more timely and accurate data for fisheries management and science. Recognizing these growing demands for data collection, the National Marine Fisheries Service (NMFS) published policy guidance in May 2013 on the use of electronic technology for fishery-dependent data collection (NOAA 2013a). The policy included guidance on the use of both electronic monitoring (EM) and electronic reporting (ER). Later that year NMFS also published a discussion draft summarizing EM/ER guidance and best management practices for federally-managed species (NOAA 2013b), and in January 2014 a national EM workshop was held (Lowman et al. 2014). The May 2013 policy guidance gave specific directive for NMFS to develop regional EM/ER plans.

In the Southeast, there has been growing interest and use of EM/ER. Over the past 15 years, numerous pilot studies have been completed examining the use of EM and ER in federally managed fisheries (see **Table 1**). The Gulf of Mexico and South Atlantic Fishery Management Councils (FMCs) have both required the use of ER and/or vessel monitoring systems (VMS) for shrimp, commercial reef fish, headboats, and federally-permitted dealers, and there is growing interest to expand the use of ER in the charter for-hire, private, and commercial sectors. Requirements to monitor annual catch limits (ACLs) have also increased the need for more timely data to ensure catch limits are not exceeded and accountability measures are triggered. The plan will serve as a roadmap for EM/ER development and implementation throughout the Southeast Region.

Initial input on the plan was solicited from the Gulf of Mexico, South Atlantic, and Caribbean FMCs. An EM/ER Implementation Plan Committee, comprised of fishery management council and NMFS representatives, reviewed a draft plan in November and each regional FMC reviewed a revised plan at meetings in December 2014 and January 2015. Additional input was obtained from stakeholders and constituents during a public comment period from January 9-February 9, 2015. Appendix 1 summarizes public comments received as well as NMFS responses to those public comments.

Table 1. Timeline of electronic reporting and electronic monitoring implementation and testing in the Southeast Region, 2000-present.

2000

- Bluefin Data LLC develops electronic reporting system for Louisiana commercial seafood dealers to report their purchases. Electronic reporting via trip tickets later expanded to other Gulf of Mexico states.

2003

- Vessel monitoring systems required for South Atlantic rock shrimp (SAFMC 2003)

2004

- Phase I testing of shrimp ELBs begins (Cole et al. 2005)
- Electronic reporting via trip tickets expanded to North Carolina

2006

- Vessel monitoring systems required for Gulf of Mexico commercial reef fish vessels (GMFMC 2005a)

2007

- Commercial red snapper IFQ program implemented; IFQ dealers required to report electronically via Web-based system; IFQ allocation transfers completed electronically (GMFMC 2006)
- Gulf of Mexico shrimp vessels selected by NMFS to report are required to participate in the ELB program to collect shrimp effort data (GMFMC 2005b).

2008

- Electronic monitoring pilot study conducted onboard Gulf of Mexico longline vessels (Pria et al. 2008)

2009

- Southeast Region Headboat Survey begins testing a personal computer (PC)-based ER system for headboats.

2010

- Commercial grouper-tilefish IFQ program implemented; IFQ dealers required to report electronically via Web-based system; IFQ share and allocation transfers completed electronically (GMFMC 2009)

2011

- iSnapper pilot study begins testing recreational ER via a iPhone/iPad application (Stunz et al. 2014)

2012

- Tablet and phone-based ELB pilot testing begins for headboats participating in the Southeast Region Headboat Survey.
- Electronic monitoring pilot study conducted onboard commercial snapper-grouper bandit reel vessels (Baker 2012).
- Gulf of Mexico Shareholder's Alliance begins testing EM on Gulf of Mexico Fishing Vessels (Tate 2012)
- Electronic reporting via trip tickets expanded to South Carolina and Georgia

2013

- Pilot testing of phone-based ELBs begins in the U.S. Caribbean (Steinback 2014).
- Mote Marine Laboratory receives NFWF funding to establish an electronic monitoring center to advance regional capacity transition to EM

2014

- A new cost-sharing program for Gulf of Mexico shrimp ELBs is implemented to collect fishing effort data. Shrimp vessels must participate if selected to report by NMFS (GMFMC 2013a).
- South Atlantic and Gulf of Mexico headboats required to report logbooks electronically (SAFMC/GMFMC 2013).
- South Atlantic and Gulf of Mexico federally permitted commercial dealers required to report purchases electronically (GMFMC/SAFMC 2013)
- Pilot testing begins to evaluate the use of ELBs for commercial vessels in the Gulf of Mexico and South Atlantic (see GMFMC August 2014 briefing book accessible at: www.gulfcouncil.org).
- Southeast Regional Office begins development of the Bluefin Tuna Individual Bycatch Program, which will track landings and bycatch of bluefin tuna in the Atlantic and Gulf of Mexico.

Goals and Objectives

The goal of this plan is to provide an operational strategy for implementing and expanding the use of EM/ER for federally managed commercial and recreational fisheries in the Southeast Region. Numerous data collection challenges currently exist in the Southeast Region. Some of the primary challenges that EM/ER may address include reducing time lags in reporting which can prevent or reduce ACL/quota overages, improving the precision of recreational catch estimates, increasing the amount of data available for estimating regulatory discards, identifying bycatch hotspots, providing catch records histories for commercial and for-hire vessels, increasing sampling efficiency, and reducing redundancies in data collection. Addressing these many challenges can help fishermen, scientists, and managers by preventing overfishing and harvest overages, improving stock assessments and scientific research, and providing greater flexibility through use of innovative management strategies.

In the Southeast, the primary focus is on expanding the use of ER to improve the quality and timeliness of fisheries data for use by managers and scientists. Greater, more immediate benefits are expected to be realized through expanded use of ER, especially if reporting accuracy and precision are improved and more timely data can be validated to reduce data collection biases. Although the Southeast Regional Office (SERO) and Southeast Fisheries Science Center (SEFSC) view EM as important to improving science and management, development and implementation of EM, especially use of video camera systems, is considered a longer-term implementation goal than ER for most fisheries. There are already many fisheries in the Southeast using VMS or pilot testing video camera systems and SERO and the SEFSC see great utility in these technologies for habitat protection, bycatch/catch estimation, and enforcement of fishery regulations.

The primary objectives of this plan are to:

1. Define regional objectives for the use of EM/ER;
2. Establish a framework for EM/ER development and implementation in the Southeast;
3. Identify challenges impeding the use of EM/ER in the region and potential solutions for overcoming those challenges;
4. Develop a prioritized list of fisheries suitable for EM/ER implementation;
5. Identify and quantify (where possible) costs and infrastructure needed for expansion of EM/ER use; and,
6. Develop a process for reviewing progress made toward EM/ER implementation.

Additionally, this plan generically discusses timelines for implementing EM/ER in various fisheries and sectors, but it is recognized that in many situations, implementation and use of EM/ER will be contingent on the feasibility of the technology and input, recommendations, and regulatory actions made by the regional FMCs. Therefore, the plan is not overly prescriptive as to when EM/ER may be implemented.

The primary goal for increasing the use of ER in the Southeast Region is to improve data timeliness, accuracy, and precision for use in management and science. This goal was also identified by each of the three regional FMCs when submitting input on this plan. More timely data are needed to aid management with monitoring catch, avoiding bycatch, setting season lengths, evaluating catch limits, and incorporating the most recent data into scientific studies and management.

In addition to expanding the use of ER, the SERO and the SEFSC are interested in exploring and expanding the use of EM. The primary goal for increasing the use of video monitoring in the Southeast Region is to improve documentation and monitoring of catch and bycatch in federally managed fisheries, and interactions with protected species, especially given limited observer coverage in many fisheries. Use of EM could increase reporting rates and result in new, innovative management strategies that seek to minimize bycatch through identification of bycatch hotspots. Benefits of such technology must be weighed against costs, potential stakeholder support/opposition, and the size and characteristics of vessels operating in each fishery.

SERO and the SEFSC are also interested in expanding the use of VMS. VMS are already used in many fisheries to aid enforcement and enhance monitoring of protected areas, special management zones, and catch share programs. The primary goal for requiring and expanding the use of VMS technology in the Southeast Region is to improve quota monitoring and tracking, especially for catch share managed fisheries, and to ensure compliance with spatial management regulations. VMS are also useful for estimating effort and catch, which is currently done in the Gulf of Mexico shrimp fishery. Similar to video camera systems, the required use of VMS must be balanced against the costs of use and stakeholder support/opposition.

In addition to the goals described above, other regional goals for EM/ER include, but are not limited to: 1) improving perceptions and stakeholder buy-in regarding the data collection process through implementation of robust, validated data collection programs; 2) increasing data accessibility for managers, scientists, fishermen, and other constituents; 3) developing standardized reporting practices and systems that reduce reporting burden and enhance quality control/quality assurance of submitted data; and 4) establishing effective partnerships with stakeholders that allow for consideration of new, innovative, and beneficial technologies, as well as a means to fund their implementation, including industry cost-sharing where appropriate.

Given the diversity of Southeast fisheries, it is recognized that sub-region and fishery specific goals will be needed for the Gulf of Mexico, South Atlantic, and Caribbean. These sub-region and fishery-specific goals will be more explicitly defined during Phase II of the framework implementation process, which is described in the next section.

Framework for EM/ER Implementation

The need for EM/ER is driven by clearly identified problems. The application of EM/ER can, in some cases, have significant costs, requiring solutions to known problems be clearly identified in order to articulate the need for EM/ER before it is pursued. Successful implementation of EM/ER requires a well-defined process. The process should outline steps for assessing EM/ER needs, development, implementation, and evaluation, with particular emphasis on whether EM/ER could augment or replace existing systems (NOAA 2013b). The process is intended to increase efficiency by streamlining and standardizing the process for EM/ER implementation, and is not intended to delay progress especially when pilot studies and extensive work has already been completed. As proposed in NOAA's draft guidance and best practices for EM/ER (NOAA 2013b), the SERO and SEFSC, in coordination with its partners, intends to use a six phase process for EM/ER consideration and development (**Figure 1**). Each of these phases, and how they will be applied, is further discussed below.

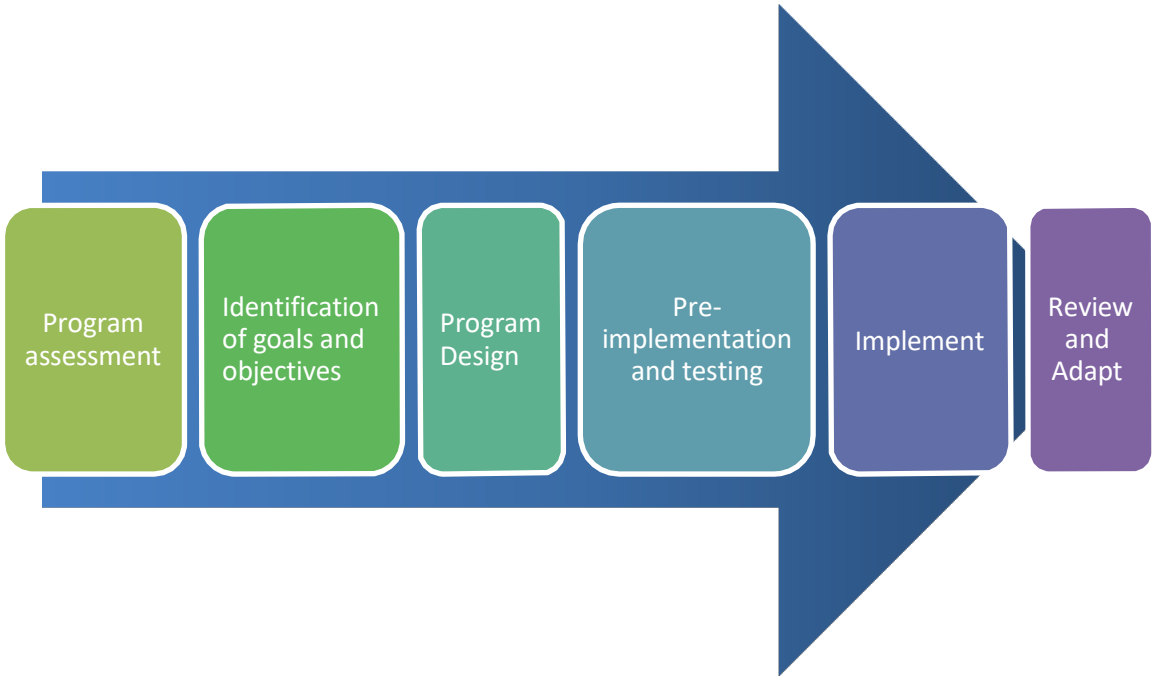

Figure 1. Phases of electronic monitoring and electronic reporting consideration and development.

Phase I – Assessment

Each fishery, as well as sectors within a fishery, have unique characteristics. EM/ER needs can vary greatly from fishery to fishery and/or sector to sector. There are a variety of different tools for monitoring and reporting, but each has strengths and weaknesses (NOAA 2013b). For each fishery or sector identified as a priority for EM or ER, the SERO and SEFSC, in coordination with

its partners, will conduct an initial assessment of monitoring tools that may be appropriate

for that particular fishery either on a voluntary or mandatory basis. Capabilities and limitations of EM/ER will be clearly identified within the context of the current monitoring system. Existing infrastructure, funding sources, critical data gaps, stakeholder support/opposition, and management objectives will all be considered during the assessment phase, and challenges impeding implementation will be identified.

It is critical that EM/ER objectives align with fishery management objectives and are not counter to scientific objectives. Stakeholders depend on accurate data for managing and assessing fish stocks, and it is important that stakeholders have confidence in the data (NOAA 2013b). The willingness of industry, state agencies, data collectors, and other stakeholders to use EM/ER will first be assessed before proceeding with further development. Stakeholder engagement in the Southeast will occur in many different ways and include: discussions at regional FMC meetings, state commission meetings, scientific panels, and stakeholder public hearings. Regional FMCs will also be encouraged to establish EM/ER advisory panels to advise on EM/ER development and implementation. Public input will be accepted through the regional FMC and NMFS rulemaking process, as well as solicited via advisory groups and scientific panels. Ultimately, costs must be realistic and affordable to the agency and stakeholders before proceeding. Consistent with the NOAA Electronic Technologies Policy (NOAA 2013a), no fishery-dependent ET program will be approved by NMFS if it creates an unfunded or unsustainable cost of implementation or operation contrary to applicable law or regulation. NMFS will work with the Councils and industry where cost sharing of monitoring costs is deemed appropriate, and develop, where applicable, transition plans from present to future funding arrangements.

Phase II – Identification of Monitoring Program Goals and Objectives

Clearly defined objectives are essential to successful development of catch monitoring systems. Too often, constituents and managers focus on tools for collecting data electronically before focusing on what information is needed to enhance management of the fishery. Additionally, objectives can vary greatly depending on whom you ask, making it complicated for those designing EM/ER data collection systems and tools to have a clear understanding of what is being accomplished.

Goals and objectives for EM/ER will be developed in coordination with the regional FMCs, state partners and commissions (e.g., ACCSP, GSMFC), enforcement, stakeholders, scientific committees, advisory panels, data analysts, and scientists. Data needs will be identified based on management plan objectives, scientific needs, and fleet/fishery characteristics. Each fishery management plans (FMP's) management objectives should be reviewed with ER/EM in mind, and new or modified objectives should be created to support increased use of EM/ER.

Phase III – Program Design

Based on the goals and objectives identified during Phase II, comparative analyses will then be conducted to assess the tradeoffs of different EM/ER systems and how they compare with

existing data collection programs. Data flows will need to be mapped to compare and contrast existing and newly proposed EM/ER systems. Costs, data timeliness and quality, ease of use, enforceability, and industry support, as well as many other factors, will be evaluated to assess the most appropriate options for EM/ER. Strong at-sea and/or dockside validation of catch and effort will be a key consideration for ER to ensure statistically sound and scientifically robust catch and effort estimates can be produced. Once an EM/ER system has been selected for development, a plan for testing and evaluating the EM/ER applications and overall program will also be developed. The pilot test plan will estimate costs and potential challenges, as well as define end-points for testing and steps to achieve full implementation if pilot testing is successful.

The SERO and SEFSC will work with the regional FMCs at this stage in the process and identify any needed regulatory changes for EM/ER programs. We also intend to work with industry members, other stakeholders, and EM/ER vendors to build buy-in, establish trust, identify infrastructure needs, develop regulations, and ensure quality data are collected (Lowman et al. 2014). Prior to implementation, regulatory changes will be made, as needed. Long-term archival storage of the data and how it will be handled for future use will also be considered by information technology staff, managers, and data users. A preferred EM/ER tool will then be selected based on cost considerations, input received, and the strengths and weaknesses of each tool in relation to the goals and objectives defined during Phase II.

The program design selected will need to be scientifically sound and statistically valid as NMFS is required to use the best scientific information available for collecting data per National Standard 2 of the Magnuson-Stevens Fishery Conservation Act. EM/ER data collection approaches must be unbiased and there is a need for information to be consistent with historical time series for use in determining the status of stocks. Any fishery-dependent survey or sampling approach developed should be statistically and scientifically certified for use, and a plan for calibrating new data collection methods to old methods should be determined prior to implementation, as needed. Alternative methods for reporting, such as paper-based reports, should also be identified for use in the event of technological problems or catastrophic events.

Phase IV – Pre-implementation

Once an EM/ER tool and program design has been selected, hardware/software and other information technology equipment will need to be purchased. Costs for program development and implementation will need to be determined during Phase III, including available infrastructure that can support new programs and who will pay for the costs of EM/ER. Funding will be needed for infrastructure and to hire agency personnel and/or contractors to support implementation of the EM/ER program. Presuming adequate funding is available, installation of EM/ER equipment will then commence with necessary testing of equipment.
Data management, quality control/quality assurance procedures, and handling practices will also be defined and contingencies will be established for EM/ER equipment failure (NOAA 2013b). Costs will also be further refined during this phase and any necessary adjustments to

long-term funding needs will be identified.

Pre-implementation should also involve pilot testing. Pilot studies allow for EM/ER equipment and technologies to be tested, and provide an opportunity for modifications and changes prior to full-scale implementation. It is important to involve stakeholders in this stage of the process to gather feedback based on their experience in the pilot, as well as recommendations they think will improve the final product. Pilot studies also can be used to assess if management goals and scientific needs are met, before mandating EM/ER use. For instance, the Gulf Headboat Collaborative is currently testing an allocation-based catch share system that uses VMS and ER technology to track fishing activity and catches. The program is conducted as a pilot, with approximately $^{1}/_{5}$ of the headboat fleet participating. ACCSP is also funding development and reporting of logbooks via handheld tablets. ACCSP is partnering with the Rhode Island Department of Fish and Wildlife and Rhode Island Party Charter Boat Association on the project. Results from these and other pilots will help inform the Councils, NMFS, and stakeholders as to the utility of EM/ER for use in for-hire fisheries and allocation-based management systems. If successful, these and other pilot studies will serve as a useful basis for longer-term management strategies considered by regional FMCs.

Phase V – Implementation

During the implementation phase, final regulatory changes will be made. Customer service contacts will also be identified to help EM/ER users troubleshoot problems and resolve questions. Personnel (contractors, agency employees) will be properly trained to assist fishermen and dealers with reporting and monitoring requirements. Staff will collect feedback from industry members and vendors to resolve any unforeseen issues and make any needed refinements to the system. Infrastructure will also be expanded based on available funding to support data collected. Initial input, feedback, and results received post-implementation will also be conveyed to the regional FMCs, stakeholders, and other user groups.

Phase VI – Review and Adaption

In the final phase, performance of the EM/ER program will be evaluated. Performance will be evaluated based on identified goals and metrics specified for evaluation. Initially, reviews will happen more frequently, especially for new EM/ER programs, in order to provide more frequent updates and feedback to the regional FMCs, their Advisory Panels and Scientific and Statistical Committees, and stakeholders regarding program performance. Review of established performance measures for ER/EM programs should be done in conjunction with stakeholders and any adjustments should be made based on identified performance measures (see Assessing Implementation Plan Progress section). Thereafter, periodic reviews of EM/ER programs will be conducted to ensure goals are still being met, funding is adequate, and stakeholder satisfaction remains high.

Technological Capabilities

Numerous electronic technologies are already used in the Southeast Region for reporting and monitoring. Below is a brief description of existing technological capabilities, as well as other technologies that are currently being tested throughout the Southeast Region. Additional information on implementation and testing of various EM/ER technologies in the Southeast Region is contained in **Table 1**.

Electronic Reporting Systems

There are a variety of ways electronic reports are collected from fisheries in the Southeast. These include personal computer based software programs, Web-based software, and applications available on tablets and smart phones. Beginning in early 2014, headboats in the Gulf of Mexico and South Atlantic were required to submit trip-level logbooks electronically. Electronic logbook reports are required on a weekly basis and may be submitted via the Web or smart phone/tablet applications. In August 2014, dealers purchasing federally managed species were required to submit electronic trip tickets using software developed by Bluefin Data LLC or through Standard Atlantic Fisheries Information System (SAFIS) software developed and maintained by the Atlantic Coastal Cooperative Statistics Program (ACCSP). Additionally, a Web-based system is used to report commercial dealer landings and conduct share and allocation transfers for the Gulf of Mexico Red Snapper and Grouper-Tilefish Individual Fishing Quota (IFQ) programs.

Electronic logbooks are also required in the Gulf of Mexico shrimp fishery to collect fishing effort and location information. Gulf shrimp permit holders are required to participate in the program if selected. Shrimp vessels selected to report have data recording devices with global position system (GPS) units that record a vessel's location every 10 minutes. Data are automatically transmitted to NMFS via a cellular phone connection. Vessel speeds are estimated between data points to determine the vessels fishing activity, which can then be used to calculate shrimp fishing effort and bycatch. Costs of the program are shared with shrimp vessel owners. One-time costs to the government for shrimp electronic logbooks (ELBs) were approximately $2 million dollars and reoccurring costs are approximately $313,000 annually (GMFMC 2013c). One-time installation costs for ELB installation were paid for by the government. Reoccurring costs to the shrimp fishermen for data transmission service fees are approximately $120,000 annually.

In addition to the mandatory ER programs discussed above there are also several pilot studies underway or recently completed to test the use of logbooks and other ER systems in commercial and recreational fisheries. These include, but are not limited to, a Web-based logbook pilot study of Gulf of Mexico for-hire vessels funded by the Marine Recreational Information Program (MRIP) in 2010-11 (Donaldson et al. 2013), a smart phone/tablet application (iSnapper) funded by the Marine Fisheries Initiative (MARFIN) grant program to test ER in for-hire and private fisheries (Stunz et al. 2014), and a phone-based reporting system

(Digital Deck) to test ER in U.S. Caribbean fisheries (Steinback 2014). In 2013 and 2014, several Gulf of Mexico states implemented or began testing new voluntary or mandatory ER systems for collecting red snapper recreational catch data, and Florida intends to begin a new collection program for recreationally caught reef fish in 2015 (see August 2014 GMFMC briefing book available at: www.gulfcouncil.org). North Carolina will also implement a for-hire electronic logbook program beginning in 2015.

Video Camera Systems

Electronic video monitoring systems consist of a control box, sensors (e.g., GPS, hydraulic pressure transducer, and a winch rotation sensor), and cameras. The control box continuously records sensor data, as well as provides feedback on system operations (Pria et al. 2008). Video images are captured with cameras typically during fishing operations, and may be triggered to go on or off when winches rotate or hydraulic pressure changes. After video imagery is captured, it is viewed to enumerate and identify landed and discarded catch.

Video camera systems are currently not required in any federally managed fishery in the Southeast Region. Two pilot studies were conducted on commercial vessels in the Gulf of Mexico and South Atlantic. Pria et al. (2008) conducted an EM pilot study onboard Gulf of Mexico longline vessels. The study compared catch identification between observer and EM methods. Comparisons showed good agreement (>80%) between observer and EM methods, but identification discrepancies were observed for some species. EM was not able to reliably determine catch discarding due to inconsistent catch handling and limited camera views. Overall, study results indicated EM was useful for collecting fishing activity, spatial-temporal data, and assessing catch composition, but further work was needed to reliably determine catch disposition data.

In the South Atlantic, Baker (2012) examined the use of video cameras onboard commercial snapper-grouper bandit reel vessels. Results of the study were similar to those of Pria et al. (2008). Observer count data matched well with EM video count data, but species identification was less accurate. Many species important to the snapper-grouper fishery were difficult for the EM video reviewers to identify. The results indicated that EM monitoring could augment existing data collection programs provided steps were taken to improve catch counts and species identification.

A third study conducted by Tate (2012) and Batty et al. (2014) is still ongoing. The study is evaluating the use of EM in the Gulf of Mexico bandit reel and longline fishery, and preliminary results are similar to those of the studies discussed above. This project demonstrated that EM could be used to reliably document fishing effort and retained catch, but that major changes to camera installation would be required to accurately record discarded fish.

A related National Fish and Wildlife Foundation project by Mote Marine Laboratory (Sarasota, Florida) is also underway with the intent of establishing an EM center for the commercial reef fish fishery. Another project also recently began in 2014 that is piloting the use of camera

systems onboard five Southwest Florida shrimp vessels to accurately account for sawfish and other large marine bycatch in shrimp trawl fisheries (J. Carlson, SEFSC, pers. comm.)

Vessel Monitoring Systems

VMS are satellite-based systems installed on fishing vessels to monitor vessel movement and activity. VMS systems consists of a mobile transceiver unit placed on the vessel, a communications service provider that supplies the wireless link between the vessel's unit and the NMFS Office of Law Enforcement (OLE), and a secure OLE facility where staff can monitor compliance. The data are kept secure and confidential and are only accessible by staff with clearance to access confidential VMS data. The system is programmed to send a signal once an hour 24-hours a day and 7 days a week, but can be turned off under certain circumstances if the vessel owner applies for a power down exemption.

In the Southeast, VMS are required on Gulf reef fish vessels, South Atlantic rock shrimp vessels, and various Highly Migratory Species (HMS) vessels. There are currently five type-approved VMS units for use by fishermen. Units range in price from $2,300 to $3,800. Additional costs include installation and monthly service charges which average $45 to more than $60 depending on the service provider. Currently, NMFS has a reimbursement program for fishermen purchasing VMS units to comply with fishery management regulations.

In the Southeast, VMS are used by federal fishery managers and law enforcement to monitor fishing activity and enforce spatial-area closures and gear-restricted areas. Additionally, they can be used by enforcement and the Coast Guard to locate vessels in the event of emergencies, thereby enhancing safety-at-sea. VMS data have also been used in some instances to assess the impacts of proposed regulations, such as spatial area closures. VMS provides detailed location information, but fishing activity must often be predicted using vessel speeds or a combination of other trip/area specific variables. Data collected currently through VMS include hail out notifications (e.g., gear, type of fishing) when a vessel leaves port and hail in notifications (e.g., time of landing, landing amounts, dealer, vessel identification) when a vessel returns to port. VMS units are also capable of collecting data similar to an electronic logbook. The Gulf of Mexico IFQ programs and Headboat Collaborative pilot program allow vessels to electronically submit hail in notifications prior to landing via VMS. The hail-in notifications include vessel name, landing location, to which dealer they will be selling fish, time of landing, and pounds landed by species or share category. At their June 2014 meeting, the Gulf of Mexico Fishery Management Council expressed interest in using VMS for EM/ER in the for-hire fleet.

Other Technologies

The automated information system (AIS) is a tracking system used on ships and by vessel traffic services. AIS is a maritime navigation safety communications system that is currently mandatory for vessels 65 feet or more in length. It is being used by the U.S. Coast Guard to improve national security and maritime safety. AIS is not compatible with VMS as it uses

different reporting rates and communication systems. However, AIS may be a cost-effective alternative to VMS that could be used in the future to monitor fishing activity in the Southeast. AIS, in addition to other satellite tracking systems, is currently being used to combat illegal fishing activity in other areas of the world (Skirble 2015).

Fisheries Suitable for EM/ER in the SE Region

The Gulf of Mexico, South Atlantic, and Caribbean FMCs manage hundreds of species in 19 FMPs. These species are harvested by both commercial and recreational fishermen. Some species managed by FMPs are suitable for EM/ER, while EM/ER is not needed for others (e.g., federal harvest for red drum and corals, except octocoral, is prohibited). Additionally, EM and/or ER is already extensively used in some fisheries (e.g., Gulf of Mexico shrimp) and modes (Gulf of Mexico and South Atlantic headboats), reducing the need for further development or implementation. **Tables 2-3** summarize current monitoring and reporting requirements by FMP, region, and sector (commercial, recreational). They also identify fisheries potentially suitable for EM or ER. A more detailed description of Southeast Region fisheries potentially suitable for EM/ER is provided below and summarized in **Figure 2**. This list was developed with input from each of the regional FMCs. A variety of factors were considered when selecting fisheries suitable for EM/ER. These factors included economic value of the fishery, existing regional FMC and stakeholder support for EM/ER, the extent of EM/ER pilot research already conducted, potential costs, and existing infrastructure to support expansion of EM/ER. Region-wide priorities for EM/ER are also discussed. Prioritization of the list will be reviewed and discussed annually with the regional FMCs.

Gulf of Mexico

Reef Fish and Coastal Migratory Pelagics (CMP) – The Reef Fish and CMP FMPs contain more than 30 species of snappers, groupers, jacks, hogfish, triggerfish, cobia, and mackerels. Reef fish and CMP account for a majority of the ACL's monitored in the Gulf of Mexico and many reef fish managed under the commercial IFQ programs. Additionally, many of these species co- occur and are caught and discarded as bycatch while fishing for other target species. Electronic reporting is already required of dealers purchasing reef fish and CMP, and headboats are required to report trip-level logbooks of landings and discards. Commercial logbooks are currently submitted via paper, but there is an ongoing pilot study to test at-sea vessel electronic logbooks (ELBs; Pierce 2014). There is also growing interest in the monitoring of recreational catches in the for-hire sector using ELBs. Because many reef fish species co-occur, there is also a need to monitor the abundance and species composition of fish that are not retained by commercial and recreational fishermen. The Gulf of Mexico and South Atlantic FMCs have established a technical subcommittee, which provided recommendations on an electronic reporting system for charter vessels in late 2014 (GMFMC/SAFMC 2014). Additionally, efforts are underway to improve recreational catch estimation of red snapper, with many states conducting pilot studies in 2014 (see August 2014 GMFMC briefing book available at: www.gulfcouncil.org). Electronic reporting improvements are the primary priority for reef fish and CMPs. Improvements and development of ER include:

1. Pilot testing and developing ELBs for commercial reef fish and CMPs (as well as HMS) to obtain more timely and finer spatial resolution data,

2. Development and implementation of an ER system for federally permitted charter vessels, including the potential use of VMS (as supported by the Gulf of Mexico FMC); and,
3. Continued pilot testing and development of various state based electronic reporting systems for monitoring red snapper and other reef fish catches of private anglers.

Given the video monitoring challenges discussed earlier in this plan, particularly with identification of species and enumeration of bycatch, EM is not foreseen to be a viable option for replacing onboard observers. However, EM use in the reef fish and CMP fisheries may aid catch accounting and identification of interactions with marine mammals and sea turtles.

Shrimp - The Gulf of Mexico shrimp fishery is one of the nation's most economically valuable fisheries (GMFMC 2013a). Shrimp vessels are required to carry ELBs, if selected by NMFS. Fishing effort data collected from ELBs is critical to assessment of shrimp stocks and a key component for estimating juvenile red snapper bycatch mortality attributable to the shrimp fishery. Recently, a cost-sharing program for shrimp vessel ELBs was implemented in the Gulf of Mexico (GMFMC 2013a). No additional needs for shrimp ELBs are foreseen at this time.

However, expanded use of EM may be warranted. A 2012 Biological Opinion recommended NMFS better assess the impacts of incidental take in fisheries (NMFS 2012). The Biological Opinion also indicated that NMFS must have a plan to increase observer effort for the shrimp trawl fishery in south and southwest Florida where sawfish interactions are most likely to occur using standard observer protocols and/or using EM. There is some observer coverage in southwest Florida; however, EM could serve as an alternative to observers for documenting sea turtle and sawfish interactions in the shrimp trawl fishery. Pilot testing is currently underway to test the use of camera systems for accurately accounting for smalltooth sawfish interactions onboard Southwest Florida shrimp vessels (J. Carlson, SEFSC, pers. comm.)

Table 2. Summary of the existing monitoring tools currently implemented in *commercial fisheries* of the Southeast Region. Green cells indicate fisheries where electronic technologies have already been implemented and regulated programs are in place. Fisheries where additional Electronic Reporting (ER) and Electronic Monitoring (EM) could potentially be suitable are noted, and yellow cells indicate those fisheries that have been identified as the highest priority for implementation.

Region	Fishery	Current Requirements						Additional ER Potentially Suitable?	VMS or EM Potentially Suitable?
		Dealer Electronic Reporting	Paper logbooks/reports	Electronic Logbooks/reports	VMS	Video	Observers		
Caribbean	Reef Fish	N	Y	N	N	N	N	elogbook - pilot testing began in 2014	
	Queen Conch	N	Y	N	N	N	N		
	Spiny Lobster	N	Y	N	N	N	N		
	Corals and Reef Associated Plants and Invertebrates	Harvest and possession prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity							
Gulf of Mexico	Reef Fish	Y	Y	N	Y	N	Y	elogbook - pilot testing in 2015	EM for protected resource interactions; reef fish bycatch
	Shrimp	N	N	Y	N	N	Y		
	Aquaculture	Y	N	Y	N	N	N	Proposed regulations	
	Red Drum	Y	N	N	N	N	N		
	Corals	N	Y	N	N	N	N		
Gulf of Mexico and South Atlantic	Coastal Migratory Pelagics	Y	Y	N	N	N	Y	elogbook - pilot testing in 2015	
	Spiny Lobster	Y	N	N	N	N	N		
South Atlantic	Snapper-Grouper	Y	Y	N	N	N	N	elogbook - pilot testing in 2015; wreckfish ITQ online system	Pingers or VMS in black sea bass pot fishery; EM for snapper-grouper bycatch
	Shrimp	Y - Rock Shrimp Only	N	N	Y - Rock Shrimp Only	N	N		EM for rock shrimp to link location specific catch/bycatch to VMS data
	Dolphin-Wahoo	Y	Y	N	N	N	N	elogbook - pilot testing in 2015	
	Golden Crab	Y	Y	N	N	N	N	elogbook	Pingers for crab traps
	Sargassum	N	N	N	N	N	Y		
	Corals	N	Y	N	N	N	N		

Table 3. Summary of the existing monitoring tools currently implemented in *recreational fisheries* of the Southeast Region. Green cells indicate fisheries where electronic technologies have already been implemented and regulated programs are in place. Fisheries where additional Electronic Reporting (ER) and Electronic Monitoring (EM) could potentially be suitable are noted, and yellow cells indicate those fisheries that have been identified as the highest priority for implementation.

Region	Fishery	Current Requirements					Additional ER Potentially Suitable?	EM Potentially Suitable?
		Paper logbooks/reports	Electronic Logbooks	VMS	Video	Observers		
Caribbean	Reef Fish	N	N	N	N	N		
	Queen Conch	N	N	N	N	N		
	Spiny Lobster	N	N	N	N	N		
	Corals and Reef Associated Plants and Invertebrates	Harvest and possession of corals is prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity; harvest of aquarium trade species allowed.						
Gulf of Mexico	Reef Fish	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter; pilot testing electronic apps for private sector	VMS, if used in conjunction with electronic reporting or catch share program; pilot testing VMS in Headboat Collaborative
	Shrimp	Shrimp are not recreationally harvested in the Gulf of Mexico EEZ						
	Aquaculture	Proposed for commercial purposes only.						
	Red Drum	N	N	N	N	N		
	Corals	Live rock harvested for commercial purposes. Harvest and possession of corals prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity.						
Gulf of Mexico and South Atlantic	Coastal Migratory Pelagics	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Spiny Lobster	N	N	N	N	N		
South Atlantic	Snapper-Grouper	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Shrimp	Shrimp are not recreationally harvested in the South Atlantic EEZ						
	Dolphin-Wahoo	Y - Headboat only	Y - Headboat only	N	N	N	eLogbooks for charter	
	Golden Crab	Golden crabs are not recreationally harvested in the South Atlantic EEZ						
	Sargassum	Sargassum is not recreationally harvested in the South Atlantic EEZ						
	Corals	Live rock harvested for commercial purposes. Harvest and possession of corals prohibited except with Federal permit for scientific research, exempted fishing, or exempted educational activity.						

South Atlantic

Snapper-Grouper and Coastal Migratory Pelagics – The South Atlantic FMC manages more than 50 species of snappers, groupers, mackerels, and other reef fish. Similar to the Gulf of Mexico, these species account for a majority of the ACLs monitored in the South Atlantic. Many of these species co-occur and are caught and discarded as bycatch while fishing for other target species. In the past several years, the South Atlantic FMC has approved new regulations to improve data timeliness in the South Atlantic, including ER by dealers and headboats. These regulations are intended to assist NMFS in monitoring ACLs and prevent, to the extent practicable, overages from occurring. With the exception of dealers and headboats, ER is not currently being done in other aspects of the snapper-grouper and CMP fisheries. Regulations require that the owner or operator of a vessel for which a commercial permit for South Atlantic snapper-grouper has been issued, who is selected to report by the Science and Research Director (SRD) must participate in the NMFS-sponsored ELB and/or video monitoring reporting program as directed by the SRD.

The South Atlantic FMC is also interested in implementing ELBs in the charter and commercial sectors of the Snapper-Grouper and CMP fisheries to improve assessments and data timeliness, and there is a need to modernize the wreckfish individual transferable quota (ITQ) program, which currently relies on paper-based coupons. Electronic reporting improvements are the primary priority for snapper-grouper and CMPs in the South Atlantic. Improvements and development of ER include:

1. Pilot testing and developing ELBs for commercial snapper-grouper and CMPs (as well as HMS) to obtain more timely and finer spatial resolution data;
2. Development and implementation of an ER system for federally permitted charter vessels;
3. Including wreckfish in the SERO Web-based catch share reporting system; and,
4. Pilot testing and development of various state-based electronic reporting systems for monitoring red snapper and other reef fish catches of private anglers.

Bycatch is also a major component to many snapper-grouper and CMP stock assessments, and better documentation of bycatch is needed. Bycatch reporting is a component of ER systems for headboats and could be included in ELBs and other ER systems developed for snapper-grouper and CMP fisheries. NMFS and the Gulf and South Atlantic Fisheries Foundation conduct a limited amount of observer coverage in the South Atlantic, so bycatch estimation in the commercial snapper-grouper and CMP fisheries relies primarily on self-reported discard logbooks. Better documentation of discards and discard mortality, potentially through the use of video EM, would improve the information used in stock assessments. However, as discussed previously, EM must overcome the challenges of species identification and enumeration of bycatch to be useful for science and management.

Lastly, there is potential for EM to better inform site selection and monitoring of spatial-area closure actions. For example, the South Atlantic FMC is interested in exploring the using of EM

to monitor black sea bass pots and fishing activity. Pingers on pots, tablets with GPS, or VMS could potentially be used. Use of EM could aid the South Atlantic FMC and NMFS in monitoring where fishing activity occurs in relation to spatial-area closures. Any such use of EM would be contingent on the regulations proposed by the South Atlantic FMC, and FMP objectives.

Golden Crab – There are only 11 permitted vessels that participate in the golden crab fishery. The fishery is managed with permit, gear, and area restrictions, as well as a 2 million pound ACL. In recent years, less than 50% of the ACL has been harvested. Golden crab vessels are also required to maintain logbooks, but there are often significant lags in data reporting and data entry. Data timeliness could be greatly improved and data entry costs could be reduced through implementation of ELBs in the golden crab fishery. Additionally, the South Atlantic FMC is interested in exploring the use of trap gear pingers to differentiate trap locations from vessel location, as traps are often deployed near habitat areas of particular concern (HAPC) or other closed areas.

Shrimp – Unlike the Gulf of Mexico, the use of ELBs is not required in the South Atlantic shrimp Fishery. Regulations require that the owner or operator of a vessel that fishes for shrimp in the South Atlantic exclusive economic zone or in adjoining state waters, or that lands shrimp in an adjoining state, must provide information for any fishing trip, as requested by the SRD, including, but not limited to, vessel identification, gear, effort, amount of shrimp caught by species, shrimp condition (heads on/heads off), fishing areas and depths, and person to whom sold.
Like the Gulf of Mexico shrimp fishery, expanded use of EM may be warranted for the South Atlantic shrimp fishery. A 2012 Biological Opinion recommended NMFS better assess the impacts of incidental take of sea turtles in shrimp fisheries (NMFS 2012). The Biological Opinion also indicated that NMFS must have a plan to increase observer effort for the shrimp trawl fishery in south and southwest Florida where sawfish interactions are most likely to occur using standard observer protocols and/or using EM. Electronic monitoring could serve as an alternative to observers for documenting sea turtle and sawfish interactions in the shrimp trawl fishery.

Rock Shrimp – There are approximately 100 federally permitted vessels with limited access South Atlantic rock shrimp permits, and another 100 federally permitted vessels with open access rock shrimp permits that can shrimp off North and South Carolina. Vessels have been required to carry a VMS since 2003. Vessel monitoring systems were required to enhance enforcement and protect critical habitat, such as the Oculina HAPC. The South Atlantic FMC is interested in expanding the use of EM to link location-specific catch and bycatch data to VMS data. This will aid the South Atlantic FMC and shrimp industry in better evaluating the impacts and trade-offs of spatial-area closures on shrimp harvest and coral protection.

Dolphin-Wahoo - Commercial fishers are required to report paper-based logbooks for dolphin-wahoo, while commercial dealers and headboats are required to report purchases and catches of dolphin-wahoo electronically on a weekly basis. Recreational charter and private landings are collected by MRIP, which surveys anglers and captains using a combination of dockside

intercepts and phone calls to estimate catch and fishing effort. Similar to snapper-grouper and CMP species, it is a priority to pilot test and develop ELBs for commercial fisheries to obtain more timely and finer spatial resolution data and to develop and implement an ER system for federally permitted charter vessels, in accordance with recommendations made by the Gulf of Mexico and South Atlantic FMC's Technical Subcommittee.

US Caribbean

Commercial Fisheries – Commercial landings are reported by fishermen via catch record logbooks. In the U.S. Virgin Islands, catch records are recorded on a monthly basis and are submitted weeks to months after fishing has occurred. In many instances, catch records are not submitted until the time of permit renewal (July of each year), resulting in less reliable data. Commercial logbook reporting in the Gulf of Mexico and South Atlantic has also experienced similar problems with lags in logbook reporting.

Commercial landings from Puerto Rico come from self-reported fisher logbooks. Commercial landings from Puerto Rico have been incompletely reported and expansion factors are required to estimate unreported landings (SEDAR 2009). Often, expansion factors are large and result in commercial landings being expanded by 50% or more (SEDAR 2009). Late reporting and lags in data entry also result in commercial landings being made available six months to years after the fishing year has ended, making ACLs difficult to monitor. For example, only Puerto Rico landings through 2012 were available to project 2014 season lengths and determine if ACLs had been exceeded (SERO 2014).

Steinback (2014) has been evaluating the use of smart phone-based ER for submitting catch record data by U.S. Caribbean commercial fishers. The Digital Deck ER platform is being tested by fishers in Puerto Rico and the U.S. Virgin Islands and the software allows agencies to access, review, and approve catch records submitted. Given the delays in reporting discussed above, ER use in the U.S. Caribbean commercial fisheries could provide more timely data for ACL monitoring. In particular, the Puerto Rico deepwater snapper unit 2 complex could greatly benefit from more timely and accurate reporting. Puerto Rico has already established a limited entry program for deepwater snapper fishermen. In recent years, the ACL for deepwater snapper unit 2 has been exceeded by a significant amount, requiring the season to be shortened. In-season, near real-time ER would aid fishers and managers in monitoring the ACL for this complex and could allow NMFS and the Caribbean FMC to use new management strategies (e.g., in-season fishery management and accountability measures) to decrease management and scientific uncertainty and increasing stakeholder support.

Recreational Sector – Currently, there is no program to collect recreational landings in the U.S. Virgin Islands and for-hire and private vessel landings and effort in Puerto Rico are estimated by MRIP through a combination of dockside intercept and phone surveys. The Caribbean FMC is interested in exploring the use of EM/ER in the recreational sector. At this time, ER in Caribbean FMC managed recreational fisheries are viewed as a low priority compared to

enhancements in commercial reporting and development of a recreational data collection program for the U.S. Virgin Islands.

Electronic Monitoring – There are limited applications for use of EM in the U.S. Caribbean. EM is often used to monitor bycatch, but there are few size limits for federally managed U.S. Caribbean species. Also, many vessels are too small and too exposed to carry either VMS or video EM equipment. Use of EM is considered a very low priority for U.S. Caribbean fisheries.

Region-Wide

In addition to specific regional fisheries where EM/ER may be suitable, there are also many needs that are not fishery specific for enhancing and improving efficiency during sampling and data processing. There is a need to explore the feasibility of alternative data collection systems to improve data capture efficiency and accuracy; and ensure success of future fisheries management and research goals and objectives. Electronic technology can be used to increase sampling efficiency, eliminate redundancies in reporting through data standardization, and increase quality control and quality assurance through automated error checking.

Dockside Sampling/Observers – Improvements in both sampling efficiency and integration of data are needed when conducting observer and dockside data collection in the Southeast. For instance, electronic measuring boards are currently used to collect headboat data. Trip and sample information are stored and later downloaded to a database for use, saving port agents time entering data. Electronic measuring boards have been tested for commercial uses and the SEFSC is beginning to explore use of handheld computers or tablets to link electronic measuring boards to other devices, such as scales, cameras, and bar code readers. A tablet application has already been developed for the shark observer program but work is still needed to make it more practical for field use. There is interest in expanding the use of handheld electronic devices for commercial and recreational data entry to improve data timeliness and accuracy.

Recreational Data Collection – Recreational fishermen account for a majority of the harvest for many key species (Coleman et al. 2004) and there is significant need to improve the precision of recreational catch statistics. In the Southeast, recreational catches are monitored with a variety of surveys, including MRIP, the Southeast Headboat Survey, and creel surveys conducted by Texas and Louisiana. There are also numerous pilot projects either underway or that have been recently completed (Baker and Oeschger 2011; Donaldson et al. 2013; see August 2014 Gulf of Mexico FMC briefing book available at: www.gulfcouncil.org) looking at the use of ER for collecting catch and effort data in private and for-hire fisheries. As discussed above, the Gulf of Mexico and South Atlantic FMCs are interested in pursuing use of ER and potentially VMS (at least for Gulf of Mexico vessels and headboats involved in catch share programs) to monitor fishing activity and catches. The SERO and SEFSC will continue to support the FMC's and their Technical Subcommittee as they move forward with recommendations for ER in the for-hire sector. Both voluntary and mandatory reporting approaches should be considered, and

methods should be further developed to integrate self-reported data into

analyses and assessments, where applicable. Also, innovative approaches and human-dimension analysis should be used to get private anglers interested in reporting data.

There is a need to improve data timeliness of recreational data, especially for headboats. Headboats are now required to report on a weekly basis and reports may be submitted via the Web or smart phone/tablet applications. Currently, in-season headboat landing estimates of major federally-managed species are available based on periodic data requests. NMFS is interested in expanding the availability of in-season landings data to all species managed with ACLs. Processes for quality control/quality assurance of in-season data and enhancements to data estimation and deliver procedures are needed to provide in-season landing estimates more real-time (within 1-2 months of reporting).

Improving private recreational data collection in the Southeast Region is also a high priority. Over the past several years, NMFS and Gulf of Mexico states have met to discuss, review, and develop pilot studies and new sampling programs designed to collect catch and effort data for red snapper and/or other managed fish species. Pilot studies are underway to evaluate the use of self-reported catch data via smartphone and tablet applications. NMFS will continue to support these data collection efforts and will coordinate with the Office of Science and Technology and MRIP consultants to review new sampling approaches. (?) Any new survey design should be reviewed by expert consultants prior to implementation and ideally should be pilot tested alongside existing data collection surveys for purposes of calibration.

Data Standardization/Redundancies – NMFS, in collaboration with its partners, is also interested in better standardizing data, and eliminating reporting redundancies, where applicable. For instance, bottlenecks exist for integrating and standardizing age/growth data collected and are housed across multiple databases. Standardization and better integration of electronic data will increase efficiency and reduce staff processing time to reconcile datasets.

Another area ripe for improvement is integration of data collected during biological sampling. Trip level information is collected along with biological data during dockside and observer sampling. Often, considerable time is spent linking biological samples to trip level data collections. Electronic technologies, such as bar code scanners, represent a technological solution for automatically linking information for a trip, saving staff time and resulting in enhanced standardization and integration of data collections.

Finally, another area in need of improvement is the reporting redundancies that currently exist in the Southeast Region. Whenever possible, requirements and software should be standardized across fisheries, including HMS, so that fishermen can use the same EM/ER hardware and software in multiple jurisdictions. Coordination with states is essential so that state and federal data collection programs are not duplicative or in conflict with each other. Reporting redundancies exist primarily in commercial fisheries where dealers and fishermen are required to report via logbooks, trip tickets, and catch share programs. These redundancies place a greater burden on industry when reporting, and are often challenging to reconcile across

multiple data sets. In 2014, the Greater Atlantic Region initiated a fishery-dependent data visioning project, which was a collaborative effort among government, industry, private institutions, and academia to better understand the data needs of the fishing industry and other stakeholders. The process is providing a holistic review of fishery dependent data collection methods and systems throughout the region with the goal of cataloguing current data needs and uses, data system strengths and weaknesses, and future data system needs. The Southeast Region would benefit from a similar process that brings together industry, state partners and commissions (e.g., ACCSP, GSMFC), and other interested stakeholders. Additional work is needed to map existing data flows to determine where redundancies exist and how data reporting, validation, storage, and analysis can be made more efficient.

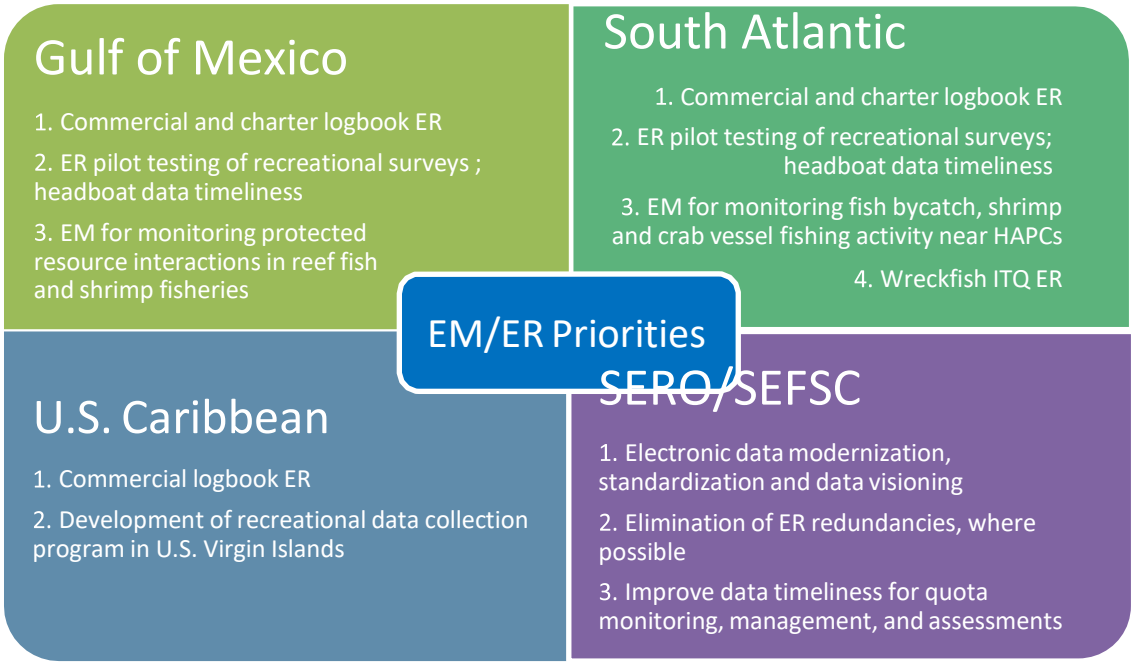

Figure 2. Southeast Region EM/ER Priorities for the Gulf of Mexico, South Atlantic, U.S. Caribbean and Southeast Regional Office/Southeast Fisheries Science Center.

Challenges Impeding EM/ER Implementation

The use of electronic technologies in the Southeast Region has increased greatly in recent years, but several challenges still remain that impede broader use of EM/ER. These challenges fall into six primary categories: 1) costs/infrastructure, 2) lack of regulatory authority, 3) size and extent of fleets, 4) communication and collaboration among multiple data collection partners, 5) calibration with old data collection methods, and 6) stakeholder support or opposition (**Figure 3**).

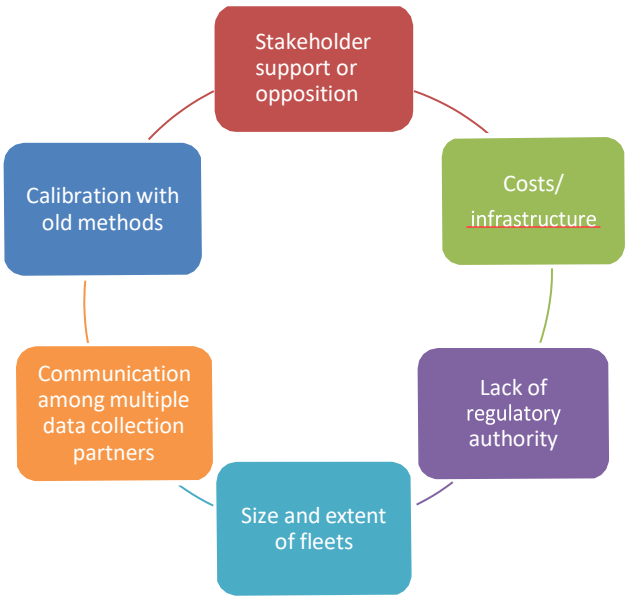

Figure 3. Challenges impeding EM/ER use in the Southeast Region.

Costs can be incurred by the agency, state and local governments, as well as fishermen. Although applications and Web sites for reporting catch are generally free or inexpensive, and are readily available for use on computers and smartphones, there are many other costs that apply to electronic data collections. Costs to fishermen may include initial purchase of EM/ER equipment, EM/ER equipment maintenance, and monthly service fees. Costs to the agency for various sampling methods and survey designs can vary greatly depending on the level of dockside validation for catch, effort validation, and required infrastructure. Infrastructure needed for managers and scientists to store and process data includes: data storage and processing, quality control and quality assurance conducted once data are submitted, and the electronic tools selected to report. Additionally, there are often increased costs associated with enforcement, especially if regulatory requirements are placed on when and how data are to be provided.

Regulations also constrain use of EM/ER in the Southeast Region. Often there is a lack of regulatory authority to either implement or enforce EM/ER. Many regulations currently refer to paper-based reporting requirements, may not contain standardized reporting requirements

(where applicable), and may be insufficient for ensuring accurate and timely data (e.g., regulations needed for reporting delinquency, reporting frequency and timeliness). Also, some states may have stricter recording laws than federal recording laws, and there may be aspects of EM and ER requirements that cannot be enforced by state law enforcement officers.

Technical and scientific challenges also exist. The size and geographic extent of fishing fleets in the Southeast is very large, especially for the recreational sector. There are also multiple data collection partners (GulfFIN, ACCSP, states, and NMFS), and current data collection efforts in many instances rely heavily on state partners to collect commercial and recreational data. Better coordination and communication among partners is critical to improving data collection programs as well as fostering an environment of cooperation rather than competition. Such collaboration will also eliminate inefficiencies, redundancies, and delays when developing EM/ER products. Given the multiple partners, it is critical to have buy-in from all data collection partners and ensure that ownership and oversight of any new EM/ER reporting system is clearly defined. There are also challenges with calibrating old methods of data collection with new EM/ER methods. Calibration of data is critical to ensure data can be incorporated into time series used for assessments, which requires running surveys at the same time, resulting in additional costs.

Lastly, there is often mixed industry support for EM/ER and willingness to participate may vary greatly across constituencies. Buy-in often varies by region, organization, and the level of reporting burden that may be placed on the industry.

Infrastructure and Costs

Costs and infrastructure present a major challenge when modifying, developing, and implementing EM/ER systems. Costs are a significant concern to many fishermen, as well as NMFS, and it is important to understand the burden on the government, industry, and other partners when establishing new EM/ER requirements. This section discusses existing infrastructure in the Southeast Region, as well as at the GSMFC and ACCSP. Based on NOAA EM/ER guidance and best practices (NOAA 2013b), infrastructure needs extend beyond EM/ER hardware and also encompass needed personnel for developing and maintaining EM/ER. Given there is likely to be no large influx of government funds to support EM/ER on a continuing basis (NOAA 2013b), other options for funding EM/ER are also be discussed, including redirection of existing government funds and cost-sharing with industry.

NMFS recognizes that infrastructure expansion and development should not fall solely on the agency. Where applicable, development of standards for collecting necessary data should be developed. This will allow NMFS to utilize the expertise of third-party vendors with expertise in software development and data collection design. It will also allow NMFS to utilize existing infrastructure and services that potentially can be expanded through existing partners, such as ACCSP and the GSMFC.

Current Infrastructure

Southeast Fisheries Science Center – The SEFSC collects and aggregates landings, bycatch, and catch-effort data from fisheries managed by the Gulf of Mexico, South Atlantic, and Caribbean FMCs and coastal and oceanic species managed by the HMS Division of NOAA Fisheries. Commercial landings of federally managed species are collected electronically in cooperation with state partners and the regional Fisheries Information Networks (GSMFC, ACCSP). The SEFSC collects commercial vessel reports on catch and fishing effort and deploys observers on vessels in some fisheries for use in bycatch estimation and catch rate monitoring. The SEFSC collects electronic catch and effort information from the headboat fishery from North Carolina through Texas and integrates those data with information on recreational fisheries collected by the Texas Parks and Wildlife Department and the NOAA Fisheries MRIP program. The SEFSC uses the recreational and commercial information to conduct research and to support fisheries management.

Southeast Regional Office - The SERO collects and aggregates landings data and quota share transactions for the Gulf of Mexico red snapper and grouper-tilefish IFQ programs, and the South Atlantic wreckfish ITQ program. SERO also is responsible for monitoring and tracking quota for the Gulf Headboat Collaborative exempted fishing permit, which is currently being pilot tested through December 2015. In addition, SERO processes and issues permits and is currently developing an online Web-based system for permit renewal. SERO information technology programmers are responsible for maintaining the existing catch share Web-based systems, building new catch share electronic data collection systems, developing mobile

applications, and for designing and developing a Web-based system for permit renewal. SERO also has a team of customer service staff responsible for the day-to-day administration and oversight of the Gulf of Mexico and South Atlantic catch share programs, including data auditing of landing transactions. Funding support for administration, enforcement, and monitoring of Gulf of Mexico catch share programs is provided through collection of cost recovery fees from IFQ fishermen.

Office of Law Enforcement – OLE oversees NOAA Fisheries' VMS program. At the SERO, a VMS program manager and technicians monitor and track vessel activity in coordination with law enforcement agents and officers, and catch share program staff. OLE staff in the Southeast are responsible for monitoring South Atlantic rock shrimp, Gulf of Mexico reef fish, and Atlantic HMS. They also conduct customer service and coordinate VMS software updates with vendors.

Atlantic Coastal Cooperative Statistics Program – ACCSP provides standardized, centralized systems to collect and manage commercial dealer and trip reports, and for-hire trip reports through the SAFIS. SAFIS has several applications (eDR, e1-Ticket, eTRIPS, eLogbooks) available to Atlantic coast harvesters, dealers, and anglers. Each application is developed based on common standards agreed upon by all program partners with adjustments made to better meet partner's reporting requirements. After review, these data are made available for fishery monitoring and management purposes.
SAFIS provides a number of alternate mechanisms to input data that include PC systems (Primarily Trip Ticket – a Bluefin product) and flat file upload from dealer based systems. Recently, ACCSP has developed a mobile version (available on tablets only) of the SAFIS eTRIPS application.

In addition, ACCSP maintains the Data Warehouse that contains comprehensive commercial landings and catch and effort data as well as some biological sampling and copies of the recreational landings and effort estimates MRIP. These data are derived from SAFIS after quality assurance and quality control measures, as well as many other data sources, and are used for stock assessment and other purposes. ACCSP staff collaboratively develop and maintain information systems to support electronic reporting with multi-faceted data flows, and provides current and historic fishery statistics to state and federal government agencies and the public. ACCSP and its partner agencies share the benefits of centralized processing and distributed data ownership. ACCSP employs 10 staff plus contract support as needed to support the data systems infrastructure and other functions.

Gulf Fisheries Information Network (GulfFIN) – The Gulf States Marine Fisheries Commission **(**GSMFC) coordinates the development and management of the GulfFIN Data Management System that supports recreational and commercial data collected by state partners in the Gulf of Mexico. The GSMFC coordinates the collection and management of commercial landings data from the Gulf of Mexico through an electronic trip ticket collection system. Commercial dealers are provided software from Bluefin Data Inc. (a contractor to GSMFC). State and federal partners receive commercial landings data electronically through this reporting system. Additionally, the GSMFC provides for the conduct of the MRIP survey in Mississippi,

Alabama, and Florida for shore, for-hire, and private modes. It provides coordination of the survey including the field intercept survey of shore, for-hire and private boat anglers to estimate angler catch using the existing MRIP methodology, and entry of the data. The GSMFC also takes an active role in the coordination of state partner research through MRIP. In 2010-2011, a pilot electronic logbook program for the for-hire fleet was tested in the Gulf of Mexico. GSMFC coordinated with Florida and Texas to collect and manage the electronic data provided by for-hire captains. Data were submitted via a web tool and delivered to GSMFC for quality control and analysis. Data were shared with both partner states and federal partners for analyses to determine the successfulness of the pilot program. GSMFC is committed to providing support for all recreational and commercial electronic data programs that might be needed by state and federal partners in the Gulf of Mexico.

Costs

Despite the extensive amount of infrastructure currently in place, there are still additional costs that must be considered when implementing or expanding EM/ER. Costs may include, but are not limited to costs for: infrastructure (databases, archival data storage, hard drives), data collection tools and maintenance, data validation, quality control/quality assurance and review, and personnel. As mentioned earlier, costs must be realistic and affordable to the agency and stakeholders before proceeding. No fishery-dependent EM/ER program will be approved by NMFS if it creates an unfunded or unsustainable cost of implementation or operation (NOAA 2013a).

During public input on this plan many stakeholders requested more detailed EM/ER costs be added. However, given the wide array of EM/ER technology currently available, as well as the rapid changes in technology occurring, and the varying purpose and scope of EM/ER programs, it is difficult to quantify the absolute costs associated with implementation of specific EM/ER programs in this plan. NMFS believes it is most appropriate to identify specific costs associated with EM/ER development during Phases III and IV of the framework implementation process. The following section describes general categories of costs that will be considered during EM/ER development. When EM/ER costs are considered, they should be compared to existing reporting and monitoring costs. For instance, paper-based reporting requirements may be more costly and burdensome to NMFS and industry, and moving to ER may result in cost savings. This will allow for potential cost savings (or cost reassignment) or increases to be clearly identified. It will also allow for economic, social, and/or biological benefits to be compared and conveyed to the regional FMCs, industry, and other stakeholders. Costs and challenges from other regions and areas, where applicable, should also be explored and the cost burden on all entities should be critically evaluated. The costs and design for any EM/ER program should be scaled to the program's objectives to identify what is most important to achieve.

In evaluating costs, NMFS should consider establishing data standards and auditing data, rather than serving as a software developer. This could allow for cost savings by reducing upfront

costs for development, maintenance, and upgrades. NMFS, or other partners, would then accept data, validate it as it comes in, and store the data for use.
Electronic Reporting – Costs for ER include hardware, software, field and customer service personnel, and data analysts. Hardware and software allow for input, storage, and transmission of data and are required for both the data providers (e.g., fishermen, dealers) and data receivers (e.g., NMFS, ACCSP, GSMFC, third-party vendors). Hardware includes laptops, computers, and servers for entering or receiving data, while software is required for data entry via tablets, computers, VMS, and mobile devices. Hard drives and databases are necessary for archival storage of collected data. ER start-up costs may include purchase of hardware and development of software. Longer term costs would include hardware maintenance and software upgrades.

Field and customer service personnel are often overlooked by industry participants wanting ER. They are needed to validate data, answer questions, conduct training, and troubleshoot problems. Information technology personnel are also needed for maintaining servers and databases. Costs for analysis and IT maintenance include staff or contractor salaries, training, and travel to conduct outreach with industry partners. Start-up costs may also include bulk mailings to program participants.

Video Monitoring – Similar to ER, video monitoring requires hardware, field personnel, and data analysts to collect, retrieve, review, and analyze catch data. Additional law enforcement may be needed to review and monitor violations associated with EM. Software may also be needed to automate image review. Costs include video camera hardware and cables, sensors, hard drives for data storage, and costs for installation, maintenance, and repair of video camera systems. Start-up costs include video camera installation, which is typically done by a third- party contractor.

Field personnel are needed to install software, retrieve hard drives, conduct outreach with industry, and ensure proper installation of video monitoring systems. Once data are retrieved, analytical staff must review and analyze video data and enter results into databases. Costs associated with personnel include salaries, travel, and training.

Vessel Monitoring Systems – Costs for VMS are described in the Technological Capabilities section of this document. Costs include purchase and installation of the VMS unit by a certified marine technician, as well as transmission costs, which are typically paid for by industry. OLE VMS technicians are needed to monitor fishing activity, conduct customer service, and troubleshoot problems. Additional law enforcement and U.S. Coast Guard resources are also needed to respond to potential violations associated with monitoring of VMS data. There are also costs associated with software development, such as reporting forms.

Funding sources for EM/ER

Several potential funding sources exist for EM/ER implementation. These include funds from

the NMFS' observer program, MRIP program, Fisheries Information System, bycatch reduction funds, catch share funds, and EM/ER budget line. Funding for new or ongoing projects is also available through a competitive grant application process to ACCSP. And NMFS is authorized to collect up to 3 percent of the ex-vessel value of fish harvested for administration, enforcement, and monitoring of catch share programs. There may also be cost savings resulting from reduced reporting burdens or fewer at-sea observer days due to EM/ER implementation. This would allow existing data collection funds to be shifted to support new EM/ER activities.

In addition to government funding of EM/ER, consideration should also be given to sharing EM/ER costs with industry and agency partners, including but not limited to, the regional FMCs, states, Commissions, and ACCSP. NMFS is committed to working with the Councils, states, commissions, and industry where cost sharing of EM/ER is deemed appropriate, and develop where applicable transition plans from present to future funding arrangements. During Phase I assessment of any new or modified EM/ER program (see Framework for EM/ER Implementation section), cost sharing with industry should be considered. Costs that could be shared include, but are not limited to, purchase of hardware and software, labor costs for EM/ER administration, and transmission costs. In the Southeast Region, cost sharing is already occurring in Gulf of Mexico catch share programs, the Gulf of Mexico shrimp ELB program, and VMS programs. For catch share programs, fishermen pay cost recovery fees to support program administration, monitoring, and enforcement. In the Gulf of Mexico shrimp fishery, South Atlantic rock shrimp VMS program, and Gulf of Mexico reef fish VMS program, the government purchased ELBs or VMS units and fishermen pay for monthly transmission fees.

Funding Requirements

In order to implement EM, ER, or VMS, funding support would be needed for the following activities:

- Purchase of video monitoring and/or VMS hardware (if not cost-shared with industry);
- Contractor or full-time employee (FTE) positions for ER and/or EM software development;
- Contract with VMS vendors for software development;
- Contractors or FTE positions for field personnel to conduct outreach and validation of ER data;
- FTE positions for law enforcement agents/officers and Joint Enforcement Agreements with states to enforce EM/ER requirements;
- Contract for EM provider company to install, retrieve, and support deployment of video cameras on commercial fishing vessels
- Infrastructure support (i.e., servers, IT personnel, archival data storage, etc.) for NMFS or one of its data collection partners (ACCSP, GSMFC) to build capacity to handle ER and/or EM data.

Timelines for Implementation

A primary key to successful EM/ER implementation is identifying clear timelines, expectations, and objectives (Lowman et al. 2014). Involving all stakeholders in the EM/ER implementation process is extremely important. Although NMFS may have the authority to implement EM/ER in some situations, implementation in many cases will be contingent on stakeholder buy-in and regulatory actions taken by the regional FMCs and in some cases state legislatures. **Table 4** summarizes general timelines for implementing EM/ER priorities in the Southeast Region over the next three years. These timelines are not overly prescriptive as implementation is contingent on numerous factors that may prevent or limit implementation, including but not limited to costs, infrastructure, and regulatory impediments. More detailed timelines for EM/ER implementation will be developed on a fishery and sector specific basis through the framework process outlined earlier in this document.

During the annual review of this document with regional FMCs, timelines will be revisited and new priorities will be added. This will allow for timeline modifications due to unforeseen circumstances or faster implementation than previously expected. It will also allow for removal of completed priorities and the addition of new priorities, particular those related to electronic monitoring.

Table 4. Timelines for EM/ER implementation in the Southeast Region.

Region	Priority	Implementation Timeline				
		pre-2014	2014	2015	2016	2017
Gulf and S. Atl	For-hire charter e-logbooks	Pilot-tested logbooks in Gulf of Mexico (2010-11)	Convene Technical Subcommittee; recommend design	Revise regulations; identify funding; develop software and infrastructure	Continue 2015 development, as needed; Begin implementation; Develop software acceptance criteria and data standards	Initial implementation; Coordination with FIN partners
Gulf and S. Atl	Commercial e-logbooks		Begin recruiting participants for pilot-testing	Pilot testing and infrastructure development	Revise regulations; Develop software acceptance criteria	Initial implementation; Coordination with FIN partners
Gulf and S. Atl	ER recreational surveys for red snapper and/or reef fish	FL begins specialized red snapper survey on east coast for 2012 recreational fishing season; LA implemented a quota monitoring system for red snapper in 2013	LA Creel implemented; AL, MS, and TX pilot test electronic reporting surveys for red snapper; meetings held with states and survey design experts to recommend improvements to surveys	LA Creel side-by-side benchmarking with MRIP; Texas A&MCC begins ER panel survey; Florida begins NFWF study to estimate reef fish landings and effort; AL, MS, and TX continue pilot studies; NC logbook program begins	Benchmarking and certification completed for LA; benchmarking begins for other state surveys	Modify processes for integrating estimates from state programs for use in quota monitoring
Gulf and S. Atl	Video monitoring of reef fish and protected resources	Several EM studies completed in Gulf and S. Atl (2008-2014); work ongoing at Mote Marine Lab	Pilot study begins for testing EM on shrimp vessels to monitor protected species bycatch	Determine feasibility of using EM on a sample of vessels and determine what improvements are needed	Work with vendors to make needed changes; Begin revising regulations to accommodate EM in SE fisheries; Begin developing software acceptance criteria and data standards	Finalize regulations and standards and coordinate with FIN partners.
Gulf and S. Atl	Headboat data timeliness	Paper-based reporting prior to 2014; ER pilot testing conducted before making ER mandatory	ER becomes mandatory - weekly reporting, but landings data only available upon request in-season	Landings estimates will be available in two month waves; 45 days after the end of a wave. Pilot test submission of logbooks via VMS.	Modify processes for producing in-season landing estimates in more real-time	Initial implementation of all ER advances for quota monitoring

Table 4 (cont'd). Timelines for EM/ER implementation in the Southeast Region.

Region	Priority	Implementation Timeline				
		pre-2014	2014	2015	2016	2017
S. Atl	Wreckfish ITQ	Paper-based coupon system currently in place		Assess regulatory changes needed to require ER; begin amend regulations	Amend regulations; Build online Web-based reporting and tracking system	Initial implementation
Caribbean	Commercial e-logbooks	Digital Deck begins pilot project testing electronic logbooks	Continued pilot testing of electronic logbook	Coordinate voluntary electronic submissions of logbooks with territories	Work with Caribbean FMC and territories to determine need for mandatory e-reporting for all or a sample of fishers	Revise regulations to accommodate e-logbooks
Caribbean	U.S.V.I. recreational data collection	Evaluation of recreational sampling and estimation methods	Characterize U.S. Caribbean boat-based fishery; pilot study to assess queen conch and spiny lobster catch and effort	Review outcomes of pilot studies; continue exploring development of a recreational survey in the USVI	Conduct additional pilot testing, as needed.	
Region-wide	Fishery-dependent data standardization and visioning	SEFSC data review conducted in 2013; headboat data migrated to Oracle database	Electric Edge Inc. begins review process for System Modernization Project	SERO/SEFSC and partners convene a Fishery Dependent data visioning workshop in late-2015	Begin addressing input from workshop and coordinate with states/territories to determine infrastructure of fishery independent monitoring program; Determine funding source	Determine preferred survey design; continue addressing fishery dependent data workshop recommendations.

Assessing Implementation Plan Progress

EM/ER is merely a tool intended to help better achieve fishery management objectives. The success of this plan will be contingent on steps taken by the agency, regional FMCs, commissions, ACCSP, and constituents to expand and successfully implement use of EM/ER in the Southeast Region. However, it should be recognized that EM/ER is only a tool and may not be applicable or appropriate for all fisheries.

NMFS agrees with the FMCs that success should not be measured based on the number of fisheries or FMPs using EM/ER technology. Rather, success should be based on whether or not EM/ER is:

1. Increasing the timeliness and accuracy of data for use in:
    a. Stock assessments (e.g., landings and discards);
    b. Management (e.g., ACL monitoring to prevent overages, bycatch monitoring); and,
    c. Enforcement (e.g., spatial-area closures, bycatch monitoring).
2. Aiding in achievement of FMP objectives and federal fishery mandates.

The benefits of EM/ER will be limited if FMP objectives are not achieved or if EM/ER fails to produce more timely and accurate data due to late reporting, non-standardized reporting practices, and lack of sufficient data validation.

When developing new programs, performance measures should be considered that are quantifiable. Such performance measures could include data timeliness (before and after EM/ER), data accuracy (number of data entry errors; reductions in data entry errors when checked at time of entry), data gaps filled, degree of participation, or other factors.

Annually, the progress made toward implementing EM/ER will be reviewed with each of the FMCs. This annual review will provide an opportunity for the FMCs to give input on the plan and recommend additional future priorities for EM/ER development and implementation. It will also allow objectives to be identified for improving data collection and documenting costs for EM/ER development. If FMP objectives are not being met, or data timeliness and accuracy is not being achieved, it will also serve as an opportunity to reconsider the use of EM/ER for management, science, and enforcement in particular fisheries.

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Appendix 1: Response to Public Comments

NMFS solicited public comments on this plan from January 9-February 9, 2015. The comment period was announced via regional FMC meetings and a Fishery Bulletin and distributed to constituents receiving the NMFS Southeast Regional Office's Fishery Bulletin mailing list. A total of 43 comments were received from individual fishermen, fishing organizations, and non-governmental organizations. Opposition to the plan (15 individual comments) was primarily from South Atlantic commercial and recreational fishermen who were opposed to the use of VMS and EM systems. Some opposing the use of VMS and/or EM did support the use of ER. Support for the plan (28 individual comments) came primarily from for-hire charter fishermen in the Gulf of Mexico, fishing organizations, and NGOs. Those supporting the plan generally agreed that the use of EM/ER can improve the timeliness and accuracy of catch data for use in science and management. No comments were directly received from Caribbean commercial or recreational fishermen. Below is a summary of comments received and responses to each comment:

Comment 1: Many fishermen opposed the plan, especially any requirements for VMS or video monitoring. Reasons for opposition included: Commercial fishermen are overregulated, electronic technologies are too time consuming to use, data will be publicly released and not made confidential, EM data will lead to catch shares and/or marine protected areas, fishermen cannot afford EM equipment, and EM violates privacy rights of U.S. citizens.

Response: NMFS recognizes that many constituents do not support the use of EM and/or ER. Throughout the plan, NMFS has indicated that development and implementation of EM/ER requires weighing the benefits of such technology against costs and potential stakeholder support/opposition. Any EM/ER program developed would need to follow the framework implementation process described in this document, which allows constituents, organizations, advisory panels, and regional FMCs to provide input so that their concerns can be considered and addressed. Regional FMCs will also need to decide how EM/ER data will be used for management, and whether it should or should not be used in conjunction with management approaches such as MPAs and catch shares. NMFS recognizes that it is key to having stakeholder support and buy-in for effective use of EM/ER in science and management. NMFS also must abide by strict confidentiality standards, as mandated by the Magnuson-Stevens Act, therefore preventing public release of confidential fishery data.

Comment 2: Who will pay the costs for electronic technology? The plan should include a detailed breakdown of funding for EM/ER implementation. Costs and benefits associated with EM/ER in conjunction with onboard observers should be described. The economic burden on commercial fishermen and for-hire vessels should be critically evaluated.

Response: The plan does not indicate who will pay the costs for EM/ER technology. Costs will be contingent on the program developed and could be paid for by the government, fishermen, or shared among several entities. The plan also does not include specific costs because such

costs are highly contingent on the design of an EM/ER program, are rapidly changing as new technology is developed, are contingent on the technology (hardware/software) chosen, as well as the existing or needed infrastructure to support such a program. NMFS, in conjunction with its partners, will need to clearly define EM/ER costs for each individual program/fishery during Phases III-IV of the framework implementation process, including how EM/ER will be funded an who will pay those costs. As an example, the Gulf and South Atlantic FMCs recently convened a technical subcommittee which provided recommendations and detailed cost comparisons for ER in the charter sector.

Comment 3: If VMS is required, will dually permitted vessels be required to get new VMS systems?

Response: At this time, no recommendations for requiring VMS are being made. If VMS is required in the future for a particular fishery then the need for purchasing new VMS systems for dually-permitted vessels will be dependent on the EM/ER plan design that is approved and necessary hardware and software required.

Comment 4: The plan does not discuss the impacts of EM/ER on safety at sea, does not describe economic impacts on recreational and commercial fishermen, and does not describe new regulations that will be needed if the plan is implemented.

Response: The plan does discuss some of the regulatory impediments to EM/ER. Any new regulations that will be needed will be developed in a separate plan amendment by the regional FMCs. Included in the plan amendment will be biological, social, economic, and administrative analyses that describe the benefits, costs, and impacts of any newly proposed regulations. Additionally, the plan does discuss safety at sea, in the context of VMS.

Comment 5: Ensure the EM/ER framework process is used to increase efficiency, and not delay implementation progress given the many pilot studies that have already been performed. Consider ways to streamline the process by combining steps in the process.

Response: NMFS agrees that the framework process should be used to streamline and standardize the process for EM/ER development and implementation. The framework process should not be used to delay implementation progress, especially in instances when sufficient pilot testing has already been completed. Additional text was added to the EM/ER Framework Implementation Process section to clarify this point.

Comment 6: The plan should include an increased emphasis on EM given the low onboard observer coverage for Gulf of Mexico commercial fisheries. Improved capabilities for video monitoring are needed to document catch and bycatch and move toward full catch accounting.

Response: EM is considered important for improving science and management, especially use of video camera systems to document bycatch. NMFS will continue to support pilot studies for EM in the Southeast (such as those currently occurring in the shrimp fishery), as well as work

ongoing by industry and other research institutions, such as Mote Marine Laboratory. NMFS views ER as a higher priority in the short-term that will provide more immediate benefits. This plan and implementation progress will be reassessed annually, given NMFS, constituents, and the regional FMCs an opportunity to reprioritize EM/ER implementation as programs come online. Use of EM can be costly and thus needs careful consideration from stakeholders, regional FMCs, and NMFS during development of actions as to whether benefits outweigh costs.

Comment 7: The plan should explicitly define sub-region and fishery-specific goals given the diversity of fisheries in the Southeast.

Response: NMFS agrees and intends to develop fishery-specific goals by sub-region during Phase II of the framework implementation process for EM/ER. Additional text was added to the 'Goals and Objectives' section to clarify NMFS intent.

Comment 8: The plan should recommend voluntary reporting for recreational fisheries and methods should be developed for integrating self-reported data into stock assessments. Also, innovative approaches should be developed to interest private anglers in reporting data.

Response: NMFS agrees that options for voluntary submission of data should be considered and where possible integrated into data analyses and assessments. Additional text was added to this document clarifying that both voluntary and mandatory approaches for data collection should be considered, where applicable. However, voluntary data does have limitations and potential biases that would need to be validated and resolved before such data could be used. Validation of catch and effort is essential for producing statistically and scientifically sound data.

Comment 9: NMFS should develop an EM/ER workgroup comprised of commercial, charter, and private anglers. NMFS should also develop an EM/ER governance structure similar to the existing MRIP governance structure.

Response: NMFS agrees that an EM/ER workgroup would be useful to advise on EM/ER development and implementation, but believes such a workgroup would be more appropriate as a Council advisory panel. The plan now recommends development of an EM/ER advisory panel. NMFS does not believe a governance structure similar to MRIP is necessary at this time, especially if the framework process outlined in this plan is effectively used for EM/ER implementation and stakeholder engagement. SERO and SEFSC staff will continue to coordinate with MRIP staff and consultants, when applicable, on recreational data collection methods.

Comment 10: NMFS should hold regional EM/ER workshops and encourage the regional FMCs to create and maintain advisory panels and regional committees specific to EM/ER.

Response: NMFS agrees that regional FMCs should develop EM/ER advisory panels and additional text was added to the plan recommending APs be developed. The plan also discusses

fishery-dependent data visioning, similar to what has been done in the Northeast, Such a process could be done through regional workshops and bring together industry, state partners and commissions (e.g., ACCSP, GSMFC), and other interested stakeholders to address EM/ER and other fishery-dependent data needs.

Comment 11: EM/ER best practices guidelines criteria for EM and ER need solid description, either in this document or as a separate report.

Response: NMFS agrees that EM/ER best practices are needed, but such criteria would be more appropriate in a separate document. See NOAA 2013b for more information.

Comment 12: How will public input be accepted for implementation or integration of EM/ER?

Response: Public input will be accepted through the regional FMC and NMFS rulemaking process, as well as solicited via advisory groups and scientific panels. Additional text was added to the document to clarify how public input will be accepted.

Comment 13: Identification of goals and objectives (Phase II of implementation process) could be done in conjunction with Phase I assessment.

Response: NMFS believes it is important to keep Phase I assessment of EM/ER separate and distinct from defining goals and objectives in Phase II. The framework process is consistent with draft NOAA guidance and best practices for EM/ER.

Comment 14: The implementation plan could be streamlined by designing and developing programs modeled after similar, existing programs or encompassing experience gained from previous pilot testing. As it is currently drafted, it seems that each new program will have to undergo the full 6-step process where it might not always be necessary.

Response: NMFS agrees that more streamlined processes are needed, especially when EM/ER has already undergone pilot testing. Additional text was added to the plan clarifying NMFS intent to not delay progress on EM/ER implementation when pilot studies and extensive work has already been completed.

Comment 15: A strong, viable at-sea and/or dockside validation of catch and effort is essential for producing statistically and scientifically sound data and should be emphasized more strongly in the framework process for implementation.

Response: NMFS agrees that validation of catch and effort is critical for statistically robust data collection programs. Additional emphasis was added to the plan in the EM/ER Framework Implementation Process section.

Comment 16: Shrimp trawls should be added to the list of priority fisheries for EM, including the use of underwater cameras.

Response: NMFS does not agree that EM for shrimp trawls should be given higher priority. NMFS also does not agree that underwater cameras would be useful for monitoring shrimp trawls or bycatch in many areas, due to water turbidity. NMFS is currently pilot testing EM in the Southwest Florida shrimp fishery and will continue to conduct research on the utility of EM for shrimp bycatch. Annually, NMFS will also review this plan and determine if priority fisheries need to be modified.

Comment 17: Requirements and software should be standardized across fisheries so that fishermen can use the same EM/ER in multiple jurisdictions.

Response: NMFS agrees that software and hardware requirements should be standardized to the extent practical. Data standardization and elimination of reporting redundancies are priorities identified in this plan for NMFS to address.

Comment 18: Electronic technologies should be integrated with dockside and biological sampling to streamline data entry and submittal while also more efficiently linking sampling data to trip level information.

Response: NMFS agrees that electronic technologies should be integrated with dockside and biological sampling. Improvements in both sampling efficiency and integration of data are needed when conducting observer and dockside data collection in the Southeast. NMFS has identified this as a plan priority to address.

Comment 19: The plan specifically describes costs for new EM/ER systems but does not discuss costs of maintaining 'status quo' programs, such as paper logbooks. Also, the costs of not developing EM/ER should also be analyzed.

Response: NMFS agrees that costs of 'status quo' programs should also be addressed when developing EM/ER. Additional text was added to the Costs and Infrastructure section of this plan. Costs should be compared to existing reporting and monitoring costs. For instance, paper-based reporting requirements may be more costly and burdensome to NMFS and industry, and moving to ER may result in cost savings. This will allow for potential cost savings (or cost reassignment) or increases to be clearly identified. It will also allow for economic, social, and/or biological benefits to be compared and conveyed to the regional FMCs, industry, and other stakeholders. Costs and challenges from other regions and areas, where applicable, should also be explored and the cost burden on all entities should be critically evaluated.

Comment 20: Additional information should be provided about how ER technologies could be used to improve reporting and avoid bycatch hotspots.

Response: NMFS agrees that EM/ER could be used to improve reporting and identify bycatch hotspots. Additional text was added to the Goals and Objectives section of this plan discussing the use of EM/ER for monitoring bycatch hotspots. Further management needs for bycatch

monitoring of hotspots will need to be address in coordination with the regional FMCs and stakeholders.

Comment 21: Further discussion of EM/ER as it pertains to enforcement is needed in the plan.

Response: Additional text was added throughout the plan discussing use of VMS and AIS for enforcement. Also, in the Costs and Infrastructure section, additional discussion was added discussing the burden and costs to enforcement of EM/ER.

Comment 22: Reviews should occur quarterly, not annually as proposed.

Response: NMFS will regularly monitor progress made on this plan. However, given it takes considerable time to design, develop, and implement EM/ER NMFS believes it is appropriate to evaluate plan progress on annual rather than quarterly basis.

Comment 23: Any ER program should include discard information (*e.g.*, species, size, disposition at release, release methods, predation) as well as capturing location of fishing activity. Currently, the discard information in existing data programs (*i.e.*, MRIP) are generally highly uncertain and ER programs are potentially a way of getting better discard and discard mortality estimates, in addition to better characterizing the discarded catch through the use of cell phone/camera technology.

Response: NMFS agrees that finer spatial resolution of catch and effort data are needed to improve both research and management. This should be a major consideration when developing any EM/ER program.

Comment 24: Minimum data elements and standards are needed to advance electronic reporting in the private recreational fisheries as well as the development of the infrastructure needed to warehouse and submit data for management and scientific use. It will be important to have these standards developed to help guide proposed ER programs through the implementation plan to ensure consistency and uniformity across the region.

Response: NMFS agrees and is working with state partners, the GSMFC, and ACCSP to review and update recreational data standards, as necessary.

Comment 25: Dockside sampling programs should report data electronically so that data can be more readily integrated with fishermen electronic logbooks for cross-referencing trip and catch information as part of the validation of ER programs.

Response: NMFS agrees and has identified this as a priority in the Fisheries Suitable for EM/ER section of this plan.

Comment 26: The data collected from the Southeast headboats via electronic logbooks should be made available in a more timely fashion. The targeted timeframe for doing so should be identified and prioritized in the Plan.

Response: Improving headboat data timeliness is identified as a priority in this plan. Improvements and timelines for implementation are specified in Table 4.

Comment 27: Coordinating with all levels of fishery management and data collection agencies (State, Commission, Council, NMFS, NOAA) is essential for uniformity, efficiency, and stakeholder buy-in, and to meet the EM/ER objectives.

Response: NMFS agrees that coordination among the regional FMCs, commissions, ACCSP, states, and stakeholders is key to successful EM/ER, and has emphasized this throughout the plan and framework process for implementation.

Comment 28: MRIP and States are key stakeholders that should be an integral part of development and implementation of recreational ER programs since they provide existing infrastructure and funding through that program that can be utilized for efficiency of validations, for instance.

Response: NMFS agrees. MRIP and the states are directly involved in the development of new, alternative recreational data collection programs currently being pilot tested or implemented by various Gulf and South Atlantic States. MRIP has contributed staff time and contracted with survey design experts and statisticians to assist in the development of new recreational data collection programs. MRIP has also developed a certification process for new surveys. Existing MRIP and state infrastructure should be used, whenever possible, to increase efficiency and minimize costs when developing new EM/ER programs.

Comment 29: Review of established performance measures for ER/EM programs should be done at least annually and should directly include stakeholders (e.g., appropriate Advisory Panels) and any adjustments should be made accordingly to maintain performance measures (e.g., targeted validation levels, accuracy, timeliness).

Response: NMFS agrees review of performance measures should involve stakeholders. Additional text was added to Phase VI of the Process for EM/ER Implementation section.

Comment 30: The proposed timeline is offered as a guideline rather than as a requirement. Implementation of some ET should occur as early as 2016. A clear schedule for EM/ER implementation is needed.

Response: It is difficult to specify a timeline for mandatory EM/ER because implementation is contingent on many factors, including but not limited to, the feasibility of the technology, regulatory actions made by the regional FMCs, costs, and infrastructure. Implementation as

early as 2016 is contingent on these factors being addressed. NMFS is committed to moving forward as quickly and feasibly as possible, but must be pragmatic when specifying implementation timelines and ensuring EM/ER is done right and expeditiously.

Comment 31: It might be constructive to stakeholders to see the costs or budgets associated with existing ER/EM programs (*e.g*., Headboat ELB, Shrimp ELB, commercial reef fish VMS) including all aspects of reporting and validation, but also savings gained through increased efficiencies and reduced redundancies. That could be added as an appendix to the implementation plan if feasible.

Response: NMFS agrees. Additional text was added to the plan indicating costs and data flows of existing programs should be compared with any new EM/ER proposed program. These comparisons will occur during specific development of an EM/ER program, and therefore are not included herein.

Comment 32: To manage stakeholder expectations, it should be emphasized that incorporating data from ER programs does not necessarily mean higher quality, more accurate/precise
data. These programs have to be strongly linked to validation programs or we may just be swapping one highly uncertain data stream for another, perhaps even more highly uncertain, data stream which is available faster. Any self-reported data, especially through new ER programs where potentially a much larger amount of data will be submitted, needs to be scientifically and statistically validated on a continuous basis.

Response: NMFS agrees that scientifically sound and validated data collection programs are necessary. Strong at-sea and/or dockside validation of catch and effort will be a key consideration for ER to ensure statistically sound and scientifically robust catch and effort estimates can be produced. The benefits of EM/ER will be limited if FMP objectives are not achieved or if EM/ER fails to produce more timely and accurate data due to late reporting, non- standardized reporting practices, and lack of sufficient data validation.

Comment 33: Stakeholder expectations on the timeline for implementation and use of the data generated from ER programs must be appropriately managed together with all the partners involved including the Councils, states agencies and State Marine Fisheries Commissions.

Response: NMFS agrees and will annually review this plan with stakeholders and the regional FMCs to determine progress made. Regular review will also allow for reprioritization of EM/ER and modification of timelines as necessary.

Comment 34: The plan should clearly indicate how support for EM will be increased.

Response: NMFS recognizes that support for EM is important to improve constituent buy-in

and effectiveness of data collected. NMFS will need to work with the regional FMCs, state, and Commission partners as specific plans for EM are developed. The benefits of EM for science and management will need to be clearly determined to increase stakeholder support for such technology.

Comment 35: A certification process should be developed that outlines the needed minimum data elements and program designs and standards. Adherence to these standards should be a requirement for use and incorporation into management and scientific processes.

Response: NMFS agrees that program standards should be required. The program design selected will need to be scientifically sound and statistically valid as NMFS is required to use the best scientific information available. EM/ER data collection approaches must also be unbiased and there is a need for information to be consistent with historical time series for use in determining the status of stocks. Any fishery-dependent survey or sampling approach developed should be statistically and scientifically certified for use, and a plan for calibrating new data collection methods to old methods should be determined prior to implementation.

Comment 36: What are the implications of this program with the Gulf Council? How will management and policies need to adapt to this program? What management opportunities may arise from the implementation program? And how will EM/ER facilitate a full retention or maximized retention fishery?

Response: NMFS will work in close coordination with the regional FMCs to implement this plan and the priority EM/ER areas outlined within it. Implementation of EM/ER is expected to address several limitations of current data collection programs, including but not limited to: time lags in reporting, precision of catch estimates, additional data for estimating regulatory discards, providing catch records histories, increasing sampling efficiency, and reducing redundancies in data collection. The management opportunities that arise from EM/ER will be contingent on the goals and objectives of the regional FMC and fishery being managed, including potential use of full or maximized retention management approaches.

Comment 37: Provide further detail on how public-private partnerships can exist in a successful EM/ER program.

Response: NMFS cannot simply delegate core functions, such as data collection, essential to fulfilling our legal responsibilities. However, there are many potential opportunities that exist for successful public-private partnerships when developing and implementing EM/ER. These include, but are not limited to, experimental testing through exempted fishing permits, establishing traditional contracts with private entities for data collection, analysis, and processing, conducting EM/ER research with private entities and industry, and development of management strategies that involve a more collaborative management atmosphere between government, industry, and private entities.

APPENDIX F. BYCATCH PRACTICABILITY ANALYSIS

Background/Overview

The South Atlantic Fishery Management Council (South Atlantic Council) is required by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) §303(a) (11) to establish a standardized bycatch reporting methodology for federal fisheries and to identify and implement conservation and management measures to the extent practicable and in the following order: 1) minimize bycatch and 2) minimize the mortality of bycatch that cannot be avoided. The Magnuson-Stevens Act defines bycatch as "fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. The definition does not include fish released alive under a recreational catch-and-release fishery management program" (Magnuson-Stevens Act §3(2)). Economic discards are fish that are discarded because they are undesirable to the harvester. This category of discards generally includes certain species, sizes, and/or sexes with low or no market value.

Guidance provided at 50 CFR 600.350(d)(3) identifies the following ten factors to consider in determining whether a management measure minimizes bycatch or bycatch mortality to the extent practicable:

1. Population effects for the bycatch species.
2. Ecological effects due to changes in the bycatch of that species (effects on other species in the ecosystem).
3. Changes in the bycatch of other species of fish and the resulting population and ecosystem effects.
4. Effects on marine mammals and birds.
5. Changes in fishing, processing, disposal, and marketing costs.
6. Changes in fishing practices and behavior of fishermen.
7. Changes in research, administration, and enforcement costs and management effectiveness.
8. Changes in the economic, social, or cultural value of fishing activities and non- consumptive uses of fishery resources.
9. Changes in the distribution of benefits and costs.
10. Social effects.

The South Atlantic Council is encouraged to adhere to the precautionary approach outlined in Article 6.5 of the Food and Agriculture Organization of the United Nations Code of Conduct for Responsible Fisheries when uncertain about these factors.

Commercial Discard Rates

The increase in frequency of vessel reporting may increase the amount of discards for species that have reached their commercial sector annual catch limit (ACL). By having vessels report on daily or weekly basis versus the current basis, managers may have the ability to close the sector

in a more timely manner. A season closure could result in an increase in bycatch for those fishermen that continue to fish; however, the overall level of fishing mortality would be expected to decrease. For species that have not reached their ACL, no change in discards is expected as a result of the increase in frequency of vessel reporting as these species would most likely be retained.

Recreational Discard Rates

For species that have a sector specific recreational allocation, no change in the amount of discards is expected as a result of an enhancement of reporting by the recreational sector. A season closure could result in an increase in bycatch for those fishermen that continue to fish; however, the overall level of fishing mortality would be expected to decrease.

Sea Turtles, Smalltooth Sawfish, and Other Protected Species Bycatch

No change in sea turtle, smalltooth sawfish, or other potential protected species bycatch is expected as a result of the increase in recreational vessel reporting. The proposed action is unlikely to alter fishing in ways that would jeopardize the continued existence of any endangered or threatened species under the jurisdiction of the NMFS or result in the destruction or adverse modification of critical habitat. Protected resources are discussed in **Sections 3.2.4** of the Environmental Assessment (EA); the biological impacts are discussed in **Sections 4.1.1, 4.2.1,** and **4.3.1**.

Alternatives Being Considered to Minimize Bycatch

Reductions in dead discards can be accomplished either by reducing the number of fish discarded or reducing the release mortality rate of discards. To reduce the number of discards, management measures must limit fishing effort or change the selectivity of fishing gear in such a way that reduces the harvest of sub-legal fish. To reduce the discard mortality rate, fishing practices or areas must be changed. During the development of this amendment, the Council did not consider any measures to minimize or reduce bycatch. However, the Council is developing an Comprehensive Bycatch Reporting amendment which may propose changes to fishing gear and fishing seasons to reduce bycatch.

Practicability Analysis

Criterion 1: Population effects for the bycatch species
This amendment discusses the harvest and reporting of 60 species, and thus the net population effects on bycatch is undeterminable. However, season closures could potentially increase the amount of bycatch. A recreational season closure resulting from landings exceeding their ACL could result in an increase in the amount of bycatch should fishers continue fishing for co-occurring species. Bycatch due to management measures such as fixed closed seasons, in-season closures, and ACL payback conditions could result in loss of yield. However, better data reporting that prevents ACLs overages and allows for a species to be closed when an ACL is reached, would be expected to reduce the overall level of fishing mortality.

Criterion 2: Ecological effects due to changes in the bycatch of managed species (on other species in the ecosystem)

Relationships among species in marine ecosystems are complex and poorly understood, making the nature and magnitude of ecological effects difficult to predict. Reductions in bycatch and fishing mortality would allow stocks to increase in abundance, resulting in increased competition for prey with other predators. Consequently, it is possible that forage species and competitor species could decrease in abundance in response to in season closures resulting from ACLs being reached or exceeded. However, actions in the amendment that allow for better data reporting to prevent ACL overages and allow for a species to be closed when an ACL is reached, would be expected to reduce the overall level of fishing mortality. Thus, positive ecological effects are expected from the actions proposed in this amendment.

Criterion 3: Changes in the bycatch of other species of fish and invertebrates and the resulting population and ecosystem effects

The biological environment would benefit by the increase in the frequency of vessel reporting. Fish populations are expected to be affected in a positive manner through this amendment. The increase in the frequency of vessel reporting would assist managers in determining when species are approaching their ACL. By managing landings below their ACL, populations would be healthier and provide for a more stable environment.

Positive impacts to the biological environment include implementing accountability measures to prevent overfishing and maintaining stocks at healthy levels in a consistent and structured manner across all fishery management plans.

Criterion 4: Effects on marine mammals and birds

No effects on marine mammals and birds are expected as a result of the increase in vessel reporting. The proposed action is unlikely to alter fishing in ways that would jeopardize the continued existence of any marine mammal and bird species under the jurisdiction of NMFS or result in the destruction or adverse modification of critical habitat. Protected resources are discussed in **Section 3.2.4** of the EA; the biological impacts are discussed in **Sections 4.1.1**, **4.2.1**, and **4.3.1**.

Criterion 5: Changes in fishing, processing, disposal, and marketing costs

Reporting landings more frequently may affect costs associated with fishing operations. Implementing in-season closures would have direct impacts to fishermen. Fishermen would incur losses in revenue due to season closures and would incur greater losses in consumer surplus resulting from a seasonal closure.

Criterion 6: Changes in fishing practices and behavior of fishermen

Seasonal closures could alter angler effort, at least initially, and may affect decisions about when and where to fish. Shifts or changes in fishing locations and seasons could have an effect on fishing behavior and practices that may potentially affect the bycatch.

Criterion 7: Changes in research, administration, and enforcement costs and management effectiveness

Establishing more timely reporting requirements for vessels would be expected to increase enforcement costs and management effectiveness. The increase in the frequency of reporting would be expected to result in more opportunities for non-compliance. This may result in an increasing the burden to law enforcement.

Criterion 8: Changes in the economic, social, or cultural value of fishing activities and non-consumptive uses of fishery resources
Economic and social effects from this proposed amendment are discussed in **Section 4.1**.

Criterion 9: Changes in the distribution of benefits and costs
The actions in this amendment would increase costs associated with vessel reporting to the actual vessels themselves. As a result of increasing the amount of vessel reporting the fishing industry should benefit by not exceeding its ACLs as often, which in turns leads to closed seasons and overage paybacks.

Criterion 10: Social effects
Social effects of additional vessel permit requirements would likely be associated with any added time and financial burden for vessels and seafood businesses to meet reporting requirements that would be part of the permit responsibilities.

CONCLUSIONS
Analysis of the ten bycatch practicability factors indicates there are potential negative impacts to bycatch and bycatch mortality. However, the benefits of reducing harvest, ending overfishing, and rebuilding the stocks is estimated to outweigh the benefits of further reducing discard mortality.

The South Atlantic Council may consider in a future amendment, the practicability of implementing the management measures to reduce bycatch with respect to the overall objectives of the fishery management plans, the Magnuson-Stevens Act, the Endangered Species Act, and all other applicable laws.

Bycatch is currently considered to be reduced to the extent practicable in all fisheries subject to this amendment. However, increasing the frequency of reporting may impact bycatch. The precise impacts of these limits are currently unknown, but any potential increase in bycatch is believed to be outweighed by the benefits associated with better tracking the ACLs. Better vessel reporting, and the ability to prohibit harvest when the ACL is met is expected to decrease the overall level of fishing mortality for a species. For species that have not reached their ACL, no change in discards is expected as a result of the increase in frequency of vessel reporting as these species would most likely be retained. Further, bycatch levels and associated implications will continue to be monitored in the future and issues will be addressed based on new information.
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APPENDIX G. REGULATORY IMPACT REVIEW

APPENDIX H. REGULATORY FLEXIBILITY ACT

APPENDIX I. FISHERY IMPACT STATEMENT

APPENDIX J: SAFMC VISION BLUEPRINT 2016-2020

Excerpt of For-Hire Data Collection Items

Science

Goal - Management decisions for the snapper grouper fishery are based upon robust, defensible science that considers qualitative and quantitative data analyzed in a timely, clear, and transparent manner that builds stakeholder confidence.

Objective 1 - Promote collection of quality data to support management plans and programs considered by the Council.

Strategy 1.1 - Evaluate existing data collection, monitoring, and reporting programs affecting fisheries managed by the Council.

Priority Actions

- *Evaluate fishery dependent and independent data programs.*
- *Validate data collection programs.*
- *Identify sampling resources needed to support data programs.*

Strategy 1.2 - Encourage consistency in data collection programs that incorporates standardized methods, reporting requirements and formats across the South Atlantic region.

Priority Actions

- *Support efforts to create a uniform, efficient reporting mechanism for trip tickets and logbooks*

Objective 2 - Encourage development of mechanisms to effectively engage and collaborate with stakeholders on cooperative research, data collection and analysis.

Strategy 2.1 – Promote and expand opportunities for cooperative research and surveys in the South Atlantic region.

Priority Actions

- *Identify sources of funding (both traditional and non-traditional) for cooperative research and surveys.*
- *Improve partnerships between potential researchers and fishermen.*
- *Utilize fishing vessels and captains as alternative observer platforms.*

Strategy 2.2 - Support development of citizen science programs for data collection needs in the snapper grouper fishery.

Priority Actions

- *Support a volunteer angler training program to collect specific data to address a science or management need.*
- *Develop methods to incorporate volunteer data for use in stock assessments, and other management measures.*
- *Utilize fishing vessels and captains as alternative data collection platforms.*

Objective 4 - Support improved and expanded monitoring and reporting programs for the snapper grouper fishery.

Strategy 4.2 – Support further development of reporting mechanisms for all sectors in the snapper grouper fishery.

Priority Actions

- *Use of electronic reporting mechanisms for all sectors of the fishery (mobile apps, cellphones, web-based, etc.)*
- *Consider the use of swipecards.*
- *Establish a recreational fishing stamp/permit/license for the snapper grouper fishery.*
- *Increase dockside biological sampling for the recreational sector.*
- *Catch card reporting program for specific species.*
- *Improvements to existing logbook programs (Better resolution on logbook grids, Vessel Trip Report in discard logbook, etc.)*
- *Incentives for reporting in all sectors.*
- *Consequences for lack of reporting.*
- *Support for law enforcement to enforce reporting requirements.*
- *Increase bycatch/discard reporting.*
- *Implement Standard Bycatch Reporting Methodology*
- *Develop a model to improve discard rate estimates for all sectors.*
- *Need better data collection from dive boat operators (recreational).*

Management

Goal – Adopt management strategies for the snapper grouper fishery that rebuild and maintain fishery resources, adapt to regional differences in the fishery, and consider the social and economic needs of fishing communities.

Objective 4 - Develop management measures that reduce and mitigate discards.

Strategy 4.4 Develop management approaches that support "Best Fishing Practices" to help avoid bycatch and reduce discard mortality.

Priority Actions

- Promote opportunities for research, development, and evaluation of gear and technology to reduce bycatch (i.e., hook type/use, gear competitions, descending devices).