

Modifications to the Gulf For-hire Data Collection Program



Draft Generic Amendment to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico and the Fishery Management Plan for the Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region

June 2026



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA20NMF4410007.

This page intentionally blank

ABBREVIATIONS USED IN THIS DOCUMENT

ACL	annual catch limit
ACT	annual catch target
AM	accountability measures
AP	Advisory Panel
APAIS	Access Point Angler Intercept Survey
BiOp	biological opinion
CFpA	net cash flow per angler
CFR	code of federal regulations
CMP	coastal migratory pelagics
Council	Gulf Council
Councils	Gulf and South Atlantic Fishery Management Councils
DPS	distinct population segments
DWG	deep-water grouper
E.O.	Executive Order
EEZ	exclusive economic zone
EFH	Essential Fish Habitat
EFP	exempted fishing permits
EIS	economic impact statement
ESA	Endangered Species Act
FES	Fishing Effort Survey
FHS	for-hire survey
FL	fork length
FMP	Fishery Management Plan
GDP	gross domestic product
GMFMC	Gulf of Mexico Fishery Management Council
Gulf	Gulf of America (Formerly Gulf of Mexico)
Gulf Spanish mackerel	Gulf Migratory Group Spanish mackerel
HAPC	habitat areas of particular concern
HMS	Highly Migratory Species
IFQ	individual fishing quota
LA Creel	Louisiana Department of Wildlife and Fisheries' recreational creel survey
LDWF	Louisiana Department of Wildlife and Fisheries
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammals Protection Act
mp	million pounds
MRIP	Marine Recreational Information Program

NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OY	optimum yield
PAH	polycyclic aromatic hydrocarbons
ppt	parts per thousand
PS	producer surplus
Reef Fish FMP	Fishery Management Plan for the Reef Fish Resources in the Gulf
Secretary	Secretary of Commerce
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
South Atlantic Council	South Atlantic Fishery Management Council
SRD	Science and Research Director
SRHS	Southeast Regional Headboat Survey
TL	total length
TNR	trip net revenue
TPWD	Texas Parks and Wildlife Department
USCG	United States Coast Guard
VMS	vessel monitoring system
ww	whole weight

TABLE OF CONTENTS

Abbreviations Used in this Document	ii
Table of Contents	iv
List of Tables	vi
List of Figures	viii
Chapter 1. Introduction	1
1.1 Background	1
1.2 Current For-Hire Data Collection Programs	3
1.2.1 Charter Vessel Data Collection Programs	3
1.2.2 Southeast Region Headboat Survey	10
1.3 History of the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) program	12
1.4 Purpose and Need	18
1.5 Management History	19
Chapter 2. Management Alternatives	21
2.1 Action 1: Establish Frequency and Mechanism of Data Reporting for For-hire Vessels ..	21
2.2 Action 2: Modify Frequency and Mechanism of Data Reporting for Southeast Region Survey Headboats	25
2.3 Action 3: Trip Notification and Effort Reporting Requirements	27
2.4 Action 4: Establish Reporting of Economic Data for For-hire Vessels	29
Chapter 3. Affected Environment	32
3.1 Description of the Physical Environment	32
3.2 Description of the Biological/Ecological Environment	37
3.2.1 Fish Populations	37
3.2.2 Protected Species and Protected Species Bycatch	44
3.3 Description of the Economic Environment	45
3.3.1 Reef Fish and CMP For-hire Component	46
3.4 Description of the Social Environment	54
3.4.1 Description of the For-hire Component of the Recreational Sector	54
3.4.2 Social Vulnerability	58
3.5 Description of the Administrative Environment	59
3.5.1 Federal Fishery Management	59
3.5.2 State Fishery Management	59
3.5.3 Enforcement	60
Chapter 4. Environmental Consequences	61

4.1 Action 1: Establish Frequency and Mechanism of Data Reporting for For-hire Vessels ..	61
4.1.1 Effects on the Physical/Biological/Ecological Environment.....	61
4.1.2 Effects on the Economic Environment	62
4.1.3 Effects on the Social Environment	63
4.1.4 Effects on the Administrative Environment	65
4.2 Action 2: Modify Frequency and Mechanism of Data Reporting for Southeast Region Headboat Survey	66
4.2.1 Effects on the Physical/Biological/Ecological Environment.....	66
4.2.2 Effects on the Economic Environment	67
4.2.3 Effects on the Social Environment	67
4.2.4 Effects on the Administrative Environment	69
4.3 Action 3: Trip Notification and Effort Reporting Requirements	69
4.3.1 Effects on the Physical/Biological/Ecological Environment.....	69
4.3.2 Effects on the Economic Environment	70
4.3.3 Effects on the Social Environment	70
4.3.4 Effects on the Administrative Environment	71
4.4 Action 4: Establish Reporting of Economic Data for For-hire Vessels	71
4.4.1 Effects on the Physical/Biological/Ecological Environment.....	71
4.4.2 Effects on the Economic Environment	71
4.4.3 Effects on the Social Environment	72
4.4.4 Effects on the Administrative Environment	73
4.5 Cumulative Effects	73
Chapter 5. References	76
Chapter 6. List of Preparers and Reviewers	87
Chapter 7. Agencies, Organizations and Persons Consulted.....	88
Appendix A. INvestigation of For-hire Landings in the Gulf of America	89
Appendix B. Headboat Collaborative Pilot Study	97
Appendix C. Technical Subcommittee Report	105
Appendix D. Technical Data Committee September 2016 Minimum Data Elements	129

LIST OF TABLES

Table 1.1.1. Mean annual estimate and percent of landings in pounds (lb) whole weight (ww) by sector in the Gulf from 2019-2023.....	3
Table 1.2.1.1. Required MRIP FHS trip effort reporting elements for charter vessels.....	4
Table 1.2.1.2. Information collected in the APAIS of recreational anglers that is conducted at public marine fishing access points.	5
Table 1.2.1.3. Number of charter vessels that held a valid and renewable federal Gulf for-hire permit by homeport state from 2016-2024.	6
*Indicates preliminary data.....	6
Table 1.2.1.4. Recent annual FHS and APAIS values	7
Table 1.2.1.5. Information collected from charter vessel operators by Louisiana’s LA Creel program.	8
Table 1.2.1.6. Information collected from anglers on charter vessels in the Texas Parks and Wildlife creel survey.....	9
Table 1.2.1.7. Annual (2019-2023) estimated for-hire effort from the state of Louisiana collected from the LA Creel program	10
Table 1.2.2.1. Required data reporting elements for SRHS headboats.	11
Table 1.2.2.2. The number of SRHS headboat vessels reporting landings to SRHS by Gulf state from 2019-2024.	11
Table 1.2.2.3. The annual number of SRHS trips taken and number of trips intercepted in the Gulf by dockside samplers from 2019-2023.....	12
Table 1.3.1. Charter For-hire Data Collection AP proposed program objectives to reestablish a Gulf charter data collection program	16
Table 1.3.2. List of suggested trip declaration and logbook data fields to be retained from the original Gulf SEFHIER program.	17
Table 1.3.3. List of AP recommended fields and the data field name in the previous Gulf SEFHIER program declaration and logbook.	17
Table 1.3.4. Additional field needed in the trip declaration, including justification.	18
Table 1.3.5. Additional fields needed in the logbook, including justification.....	18
Table 3.2.1.1. Species of the Reef Fish FMP grouped by family	40
Table 3.3.1.1. Number of for-hire vessels (charter and headboat) that held a Gulf reef fish for-hire permit by vessel homeport state	46
Table 3.3.1.2. Number of for-hire vessels (charter and headboat) that held a Gulf CMP for-hire permit by vessel homeport state.....	46
Table 3.3.1.3. Number of for-hire vessels (charter and headboat) that held a Gulf reef fish for-hire permit or a Gulf CMP for-hire permit by vessel homeport state.....	47
Table 3.3.1.4. Gulf charter vessel reef fish target trips, by state.....	48
Table 3.3.1.5. Gulf charter vessel reef fish catch trips, by state.	48
Table 3.3.1.6. Gulf charter vessel CMP target trips, by state.....	49
Table 3.3.1.7. Gulf charter vessel CMP catch trips, by state.	49
Table 3.3.1.8. Gulf charter vessel reef fish and CMP directed trips (i.e., any of the species were targeted or caught), by state.	49
Table 3.3.1.9. Gulf headboat angler days and percent distribution by state (2020 through 2024).	50

Table 3.3.1.10. Trip economics for offshore trips by Gulf charter vessels and Southeast headboats in 2017 (2025\$).....	52
Table 3.3.1.11. Estimated average annual economic impacts (2020-2024) from federal charter trips that targeted Gulf reef fish, by state, using state-level multipliers. All monetary estimates are in 2025 dollars in thousands.....	53
Table 3.3.1.12. Estimated average annual economic impacts (2020-2024) from federal charter trips that targeted Gulf CMP species, by state, using state-level multipliers. All monetary estimates are in 2025 dollars in thousands.....	53
Table 3.4.1.1. Top homeports by number of Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels.....	55
Table 3.4.1.2. Top homeports by number of charter vessels with Gulf coastal migratory pelagics and/or reef fish for-hire permits.....	56
Table 3.4.1.3. Top homeports by number of SRHS headboats with landings.	56
Table 3.5.2.1. Gulf state marine resource agencies and Web pages	60

LIST OF FIGURES

Figure 1.1.1. Description of terms for categorizing vessel types addressed in this amendment ...	2
Figure 1.1.2. Jurisdictional boundaries of the Gulf (purple), South Atlantic (gray), Mid-Atlantic (yellow), and New England (orange) Fishery Management Councils.....	2
Figure 3.1.1. Mean annual sea surface temperature derived from the Advanced Very High-Resolution Radiometer Pathfinder Version 5 sea surface temperature data set.	33
Figure 3.1.2. Map of HAPCs and Environmental Sites of Special Interest.	35
Figure 3.2.1. Two components of the biological environment described in this amendment.....	37
Figure 3.3.1.1. Gulf headboat angler days by month and year (2020-2024)	50
Figure 3.4.1.1. Recreational fishing engagement and reliance for top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels, and SRHS headboats.....	57
Figure 3.4.2.1. Social vulnerability indices top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels, and SRHS headboats. Source: SERO, Community Social Vulnerability Indicators Database 2022.	58

CHAPTER 1. INTRODUCTION

1.1 Background

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires the National Marine Fisheries Service (NMFS) and regional fishery management councils to end overfishing, rebuild overfished stocks, and achieve, on a continuing basis, the optimum yield (OY) from federally managed fish stocks. These mandates are intended to ensure fishery resources are managed for the greatest overall benefit to the nation, particularly with respect to providing food production, recreational opportunities, and protecting marine ecosystems.

Accurate information about catch, effort, and discards is necessary to achieve OY from federally managed fish stocks. The recreational fishing sector includes both private and for-hire components. Within the for-hire component, both charter vessels and headboats are issued federal Gulf¹ for-hire permits (hereinafter referred to as for-hire permits) under the Fishery Management Plans (FMPs) for the Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) and Coastal Migratory Pelagic (CMP) Resources in the Gulf of Mexico and Atlantic Region (CMP FMP). The regulations at 50 C.F.R. § 622.2 provide general definitions of “charter vessel” and “headboat.” The main difference between these vessels, as defined, is whether they hold a valid certificate of inspection (COI) issued by the U.S. Coast Guard (USCG) to carry more than six passengers: specifically, headboats hold a COI while charter vessels do not.

However, for purposes of reporting fisheries data, the NMFS Southeast Fisheries Science Center (SEFSC) selects a limited number of vessels to participate in the Southeast Region Headboat Survey (SRHS), based on more detailed criteria that are intended to capture the larger capacity for-hire vessels. These criteria are:

- 1) Vessel licensed to carry greater than or equal to 15 passengers.
- 2) Vessel is federally permitted.
- 3) Vessel charges primarily per angler (i.e., by the “head”).

Therefore, for the purpose of this amendment, **for-hire** vessels are those who possess a Gulf federal for-hire permit. Within that distinction, a vessel can be classified as a headboat or charter vessel depending on a particular determination by the USCG regarding passenger occupancy. A vessel without a valid COI to carry more than six passengers is defined as a **charter vessel**. A headboat is permitted to carry more than 6 passengers at a time. In addition to the USCG definition, some headboats are selected by the SEFSC’s to participate in the SRHS and will be referred to herein as **SRHS headboats**. However, some USCG defined headboats do not participate in the SRHS. In these cases, those vessels will be described as **charter vessels**. The polygon indicates the two categories of vessels that are considered charter vessels for the purpose of this amendment (Figure 1.1.1). Many vessels carry additional for-hire permits in the South Atlantic/Atlantic and for Highly Migratory Species (HMS) permit (Figure 1.1.2).

¹ The Gulf of Mexico was renamed the Gulf of America pursuant to Executive Order 14172, and Secretary of the Interior Order No. 3423. All geographical references to the Gulf of America or “the Gulf” in this Framework Action refer to the same body of water known as the Gulf of Mexico in the specific regulations at 50 CFR part 622.

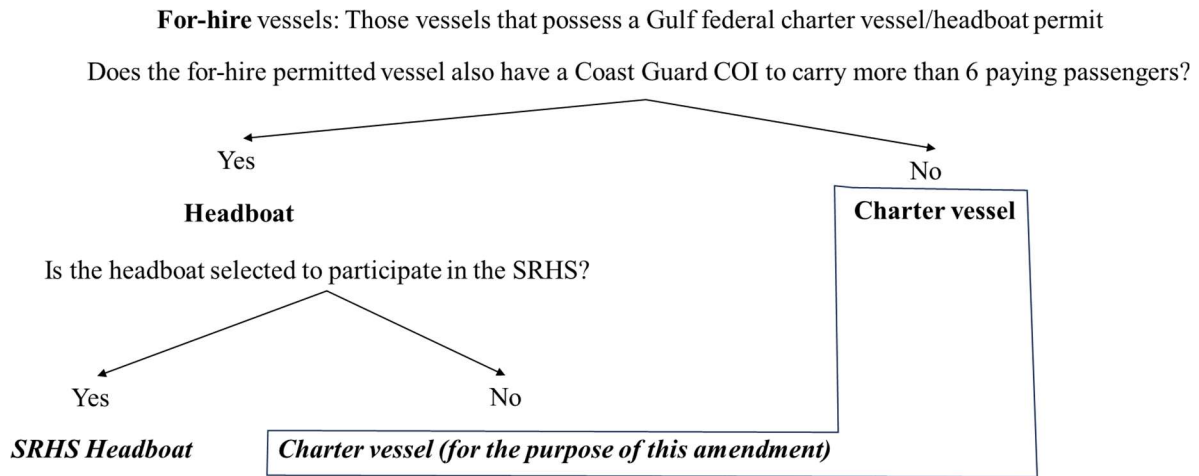


Figure 1.1.1. Description of terms for categorizing vessel types addressed in this amendment. The polygon indicates the two categories of vessels that are considered charter vessels herein.



Figure 1.1.2. Jurisdictional boundaries of the Gulf (purple), South Atlantic (gray), Mid-Atlantic (yellow), and New England (orange) Fishery Management Councils. Note: the Atlantic Region for CMP species includes the South Atlantic and Mid-Atlantic Council areas.

The for-hire component of the recreational sector harvests a substantial proportion of the annual catch limit (ACL) for several federally managed fish species in the Gulf. Table 1.1.1 shows average sector-specific landings for federally managed reef fish and CMP species for the most recent five years (2019-2023). Recreational private sector landings are generated from the Marine Recreational Information Program (MRIP) Fishing Effort Survey (FES), LA Creel Survey and the Texas Parks and Wildlife (TPWD) Survey. Recreational for-hire landings estimates are generated from the SRHS for headboats and MRIP’s For-Hire Survey (FHS) for

charter vessels. A more detailed description of for-hire landings as well as some selected species-specific results are available in Appendix A.

Table 1.1.1. Mean annual estimate and percent of landings in pounds (lb) whole weight (ww) by sector in the Gulf from 2019-2023.

Fleet/Sector	5-year Average Landings (lb ww)	Percent of total landings
Commercial	16,166,650	28.6
For-hire	7,638,079	13.6
Private	32,687,028	57.8

The Council’s intent with the new reporting program is to have a regular 5-year review once this amendment and rule are effective to discuss ways to improve the program and take any necessary actions to accomplish these agreed upon improvements. In addition, this review would be used for developing new goals for the program. The content of the review will be determined by Council in cooperation with NMFS and will be used to inform any possible program modifications to address management and stock assessment needs.

1.2 Current For-Hire Data Collection Programs

The Gulf Council (Council) is considering alternatives that would require electronic reporting of fishing trip information from all for-hire vessels possessing a federal Gulf for-hire reef fish or a federal Gulf for-hire CMP permit. The Council recognizes that improved data reporting in these fisheries could reduce the likelihood that ACLs are exceeded, and accountability measures are triggered. Data elements collected using electronic logbooks are also likely to improve estimates of bycatch and discard mortality rates for many federally managed finfish species in the Gulf. The goal of this program is to create a one stop reporting program for the for-hire fleet regardless of the Gulf state that the owner / operator is homeported. Below is a detailed description of the current data collection programs for the for-hire fleet occurring in each Gulf state.

1.2.1 Charter Vessel Data Collection Programs

Federal Marine Recreational Information Program For-Hire Survey and Access-Point Angler Intercept Survey

Final MRIP for-hire estimates for the eastern Gulf (Mississippi, Alabama, and Florida) are the product of estimated effort from the MRIP For-hire Survey (FHS) and catch estimates generated from MRIP’s Access-Point Angler Intercept Survey (APAIS) under the program’s for-hire mode. For the for-hire mode, state managed APAIS samplers interview individual anglers on charter vessels while the MRIP FHS interviews the for-hire vessel operators. While MRIP categorizes participants in this data collection program as “for-hire”, this amendment will address these vessels as charter throughout.

To assess fishing effort in the for-hire component, MRIP samplers contact charter vessel operators (a weekly sample of 10% of the fleet) by telephone to conduct the FHS for fishing effort (Table 1.2.1.1). Charter vessel operators are required to report all trips taken during selected weeks (effort only) whenever they are selected to participate in the MRIP survey. The FHS has a stratified design, with for-hire vessels as sampling units, and is stratified by state, sub-state region (applicable to Florida only), vessel type (charter or headboat [as defined by the USCG]), and sample week within the two-month wave. The sample week is Monday through Sunday. Prior to the sample selection, the sample frame is sorted by three additional variables, creating three additional implicit strata: business county, vessel length, and permit type. The business county variable is the county from which the vessel operates. In addition to these three variables, a uniform random variable is created and used to order vessels within the business county, vessel length, and permit type groups. Sample selection is then systematically done without replacement at the stratum level (by vessel type, state, sub-state region [in Florida], sample week, and by the implicit strata from the sample frame sorting process: business county, vessel length, and permit type). The FHS has a fixed sampling rate of 10% within strata. In addition, there is a minimum sample size requirement of three vessels from each stratum.

Table 1.2.1.1. Required MRIP FHS trip effort reporting elements for charter vessels.

Reporting Elements
Number of vessel trips with paying passengers in the sample week
Date of each vessel trip
Mode of each vessel trip (charter or headboat)
State/county and site where vessel trip returned
Distance from shore where each vessel trip occurred
Area fished
Number of anglers who fished on each vessel trip
Hours of actual fishing activity
Method of fishing (e.g., casting, drifting, trolling)
Target species
The return time for each vessel trip

Data source: MRIP Survey Design and Statistical Methods for Estimation of Recreational Fisheries Catch and Effort document.²

To assess catch, APAIS uses a voluntary dockside intercept survey to collect information on landings and discards (Table 1.2.1.2). The APAIS program collects catch data from individual anglers returning to public fishing access sites (e.g., boat ramps, piers, beaches, jetties, bridges or marinas). Trained interviewers administer the survey and collect data on the number and disposition (e.g., harvested or released) of each fish species caught, length and weight

² <https://www.fisheries.noaa.gov/resource/document/mrip-survey-design-and-statistical-methods>

measurements of individual fishes, and angler-specific information about the fishing trip. Data are collected monthly and are used to calculate catch rates (mean catch per angler trip) every two months as preliminary wave estimates, and then at the end of each year as final annual estimates.

Table 1.2.1.2. Information collected in the APAIS of recreational anglers that is conducted at public marine fishing access points.

Reporting Elements
Location
Mode (shore, private, rental boat, for-hire vessel)
General area fished (i.e., inland, state territorial sea, or federal exclusive economic zone)
Species identification
Total number of each species by disposition (e.g., observed harvest [Type A], reported harvest [Type B1], and released alive [Type B2])
Length and weight of individual fishes (when possible)
Area fished
Fishing mode

The APAIS applies a time-space sampling method (i.e., sampling at predetermined fishing access sites during specific date and time intervals), with a stratified, multi-stage cluster design. This type of design maximizes sampling efficiency and the spatiotemporal extent of the survey. The sample frame for this target population consists of a list of fishing access sites, which have been clustered (by both level of fishing pressure and geographic location) and crossed with a date-time calendar. Site-day-times are selected in proportion to their fishing pressure. APAIS sampling is stratified across time, geographically (by sub-region of the coast, state and sub-state region) and by site groups based on primary fishing mode. Temporally, there are four strata: year, month, kind-of-day (i.e., weekdays, weekends, holidays), and time interval (i.e., day intervals 8 AM-2 PM and 2 PM-8 PM, night intervals of 2 AM-8 AM and 8 PM-2 AM, and peak interval of 11 AM-5 PM). MRIP surveyors sample at high activity sites more frequently, but include low activity sites to obtain a representative sample and capture variation in fishing activity. When any recreational fisherman is encountered the location, mode (e.g. shore, private, or for-hire), general area fished, fish species, number of fish, disposition of angler’s catch (e.g. observed harvest, report harvest, or released alive) is recorded. When possible, the length and weight of harvested fish is also documented. The number of charter vessels with a valid and renewable Gulf for-hire permit by homeport state from 2016 through 2020 are provided in Table 1.2.1.3.

Table 1.2.1.3. Number of charter vessels that held a valid and renewable federal Gulf for-hire permit by homeport state from 2016-2024.

Year	AL	FL	LA	MS	TX	Non- Gulf	Total
2016	135	813	124	35	244	35	1,386
2017	142	820	122	33	228	31	1,376
2018	140	829	125	32	219	22	1,367
2019	148	840	117	31	206	21	1,363
2020	152	832	114	29	209	18	1,354
2021*	159	828	111	24	203	19	1,344
2022*	157	835	100	22	191	17	1,322
2023*	159	834	86	24	189	17	1,309
2024*	157	833	82	25	186	16	1,299

*Indicates preliminary data.

To improve MRIP FHS response rates, an advance letter is mailed to the representatives of all selected vessels one week before the reference week (i.e., two weeks before the phone interview). The letter details the dates of the reference week that representatives will be asked about during the interview, the contact information of the organization conducting FHS interviews, and a log sheet with the questions that will be asked. Respondents are encouraged to complete the log sheet prior to the call, as it may reduce the potential for recall bias and decrease the time needed to complete the survey over the phone. Cooperation levels are defined as follows: either cooperative, where the vessel representative responds to telephone interviews, or non-cooperative, where the vessel representative does not respond or refuses to participate. To enforce the mandatory reporting requirement to FHS for charter vessels in the Gulf, permit holders who refuse to participate in the survey are notified by letter of their obligation to report as a condition for permit renewal. However, if a charter vessel operator cannot be contacted after seven attempts for a selected week, the final interview status is “unsuccessful contact” (Table 1.2.1.4). Vessel representatives that are non-cooperative are kept in the sample frame but are automatically coded as a refusal and are not actually contacted if selected for sampling. The percent of selected vessels that are unable to be contacted by phone may be quite high in some strata. The vessel directory is updated regularly based on input from APAIS samplers, state FHS coordinators and vessel representatives. The directory can also be updated with information obtained during the telephone survey.

For-hire fishing effort is estimated in numbers of angler trips per sub-region, state (and sub-state region in Florida), two-month wave, vessel type, and fishing area (inshore, nearshore, and offshore). To get a total effort wave estimate, the effort estimate component is corrected by two other estimate components – the coverage adjustment calculated from APAIS and a reporting error from a validation study conducted in conjunctions with FHS. The FHS wave estimates are summed to produce cumulative and total annual effort estimates. More details on the estimation can be found in the MRIP Survey Design and Statistical Methods for Estimation of Recreational Fisheries Catch and Effort document.

Table 1.2.1.4. Recent annual FHS and APAIS values. The number of trips intercepted by APAIS, and FHS number of trips reported by phone sampling 10% of the program participants in Mississippi, Alabama, and Florida, number of FHS vessels selected for the phone survey, FHS response rate (operator agreed and answered the survey), FHS percentage of contacted charter vessel operators that refused the survey, and FHS percent of operators who could not be contacted by the MRIP sampler.³

Year	APAIS trips sampled	FHS raw reported trips	Vessels selected	Response rate	Refusal rate	Non-contact rate
2019	1,262	6,329	10,523	57%	13%	29%
2020	1,047	6,840	12,570	63%	11%	25%
2021	1,872	6,004	10,338	60%	11%	29%
2022	1,620	4,827	10,335	58%	9%	32%
2023*	2,264	4,659	10,113	62%	6%	32%

* Those data reported for 2023 are considered preliminary and were pulled by Gulf States Marine Commission on March 12, 2024.

Final MRIP for-hire estimates for the eastern Gulf (Mississippi, Alabama, and Florida) are the product of estimated effort from the MRIP FHS and catch rates generated from APAIS. These regional estimates are reported in six two-month waves and annual timeframes. Catch estimates multiple the catch rates from APAIS by the wave total effort estimates from FHS. The voluntary reporting of dockside landings, no-access to private landings sites, and telephone survey refusal rate contribute to uncertainty in for-hire estimation. Increasing the reporting frequency along with enhanced data collection and validation could improve quota monitoring, stock assessments, and catch and discard estimates. It should be noted that Mississippi and Alabama will be moving to the same sampling and effort frame as LA Creel in 2026 forward for private anglers and state guide boats. However, unlike the LA Creel program the MS and AL Creel programs do not currently plan to incorporate for-hire data collection. The dock side validation sampling frame will be maintained in Mississippi and Alabama.

State of Louisiana LA Creel Program and Texas Parks and Wildlife creel survey

Since 2014, Louisiana generates weekly estimates of catch and effort through their LA Creel program (Table 1.2.1.5). LA Creel uses a combination of data collected dockside (access point survey) and through weekly phone and email effort surveys to estimate recreational saltwater fish harvests. The LA Creel program consists of biologists conducting interviews at public fishing sites, with charter captains and groups of saltwater anglers about their fishing activities. LA Creel provides weekly recreational fishery information to aid in the management of Louisiana’s fishery resources. It is composed of an on-site access-point survey and two weekly effort surveys stratified across five basins. The access point survey provides estimated catch rates per trip. One effort survey generates estimated private angler effort in the form of total angler trips and the other does the same for charter trips. Licensed private anglers are stratified

³ <https://www.fisheries.noaa.gov/s3/2023-05/MRIP-Survey-Design-Statistical-Methods-April-2023.pdf>

across geographical regions and Louisiana’s Recreational Offshore Landings Permit (ROLP) holders, while licensed charter captains are stratified between those with and without ROLP permits. Using licensed anglers provides a clearly defined angler frame with high quality contact information, while stratifying within this frame allows LA Creel to account for differences in fishing activity across the state. Access point survey assignments are randomly drawn based on fishing pressures weighted by the types of activities present and the total angler activity. LA Creel boasts production of weekly landings at the basin level on just a two-week delay, which can reduce recall bias and provide near real time landings estimates that can be used in monitoring recreational quotas and identifying impacts to recreational landings from short term events. LA Creel contacts for-hire captains via telephone at random, with a goal of reaching 30% of captains who fish offshore (those who hold a ROLP) and 10% who fish inshore (who do not hold a ROLP). During red snapper season, LA Creel contacts 100% of captains who hold offshore permits.⁴

Table 1.2.1.5. Information collected from charter vessel operators by Louisiana’s LA Creel program.

Reporting Elements
Number of trips per day
Trip length
Date of trip
Area fished (basin where majority of fish were harvested)
Public or private launch used
Number of paying clients
Primary and secondary target species
Harvest by species
Discards by select species

Texas Parks and Wildlife Department (TPWD) conducts their own creel survey to estimate private and charter landings in Texas.⁵ TPWD Sport-boat Angling Survey uses dockside interviews at recreational boat access sites to generate catch and effort estimates for finfish species caught by private boat and charter operators off the Texas coast. Texas reports recreational data in high (May 15 through November 20) and low (November 21 through May 14) activity periods. Creel surveys are conducted from 10 AM to 6 PM at specified boat-access sites along the Texas coast. Over 1,000 surveys are scheduled annually on randomly selected weekdays and weekends in proportion to the amount of fishing activity at each site. Charter vessel catch and effort data in Texas are monitored by the Texas Parks and Wildlife Department's Coastal Creel Survey (Table 1.2.1.6). This is a field-intercept survey of boat-based fishing, including for-hire vessels. This survey estimates fishing effort and catch (harvest only) on a seasonal (high-use and low-use) basis.

⁴ https://www.lafisheriesforward.org/wp-content/uploads/2024/02/LFF_FastFacts_LaCREEL_2024-01-ADA.pdf

⁵ <https://tpwd.texas.gov/fishboat/fish/didyouknow/coastal/creel.phtml>

Table 1.2.1.6. Information collected from anglers on charter vessels in the Texas Parks and Wildlife creel survey.

Reporting Elements
Species identification
Trip start time
Total number of each species caught
Length individual fishes (6 fish of each species)
Number of anglers
Angler county of residence
Bay of Gulf area fish caught
Bait and gear used
Target species

Like all surveys, both the Louisiana and Texas state surveys have inherent uncertainty. Both LA Creel and the TPWD survey are only conducted in their state and therefore cannot generate Gulf-wide estimates. LA Creel is comparable in survey methodology to the MRIP design. The TPWD survey only produces landings estimates and reports every six-months. This time frame limits in-season monitoring for short fishing seasons (e.g., weeks or months). Both state effort surveys, like APAIS, are also limited to intercepting anglers at public access points and their willingness to answer dockside interview questions, and in the case of LA Creel, the effort (telephone survey) portion of the program (Table 1.2.1.7).

Table 1.2.1.7. Annual (2019-2023) estimated for-hire effort from the state of Louisiana collected from the LA Creel program. LA Creel effort estimates are calculated in angler trips (column 2). The annual average number of anglers per for-hire trip was calculated using vessel captains reports to the LA Creel telephone effort survey (column 3). This provided an approximate estimate of the annual number of for-hire vessel trips (column 4). Column 5 is the number of for-hire trips sampled that were also contacted by the effort telephone surveyors within the same week and then tabulated for the entire year. The annual number of conducted telephone surveys is represented in column 6. Of those conducted surveys (highlighted in gray), the table also presents the percentages of those survey where a for-hire captain accepted and completed the survey (column 7), the captain was unable to be reached by phone; and therefore, did not complete the survey (column 8), and the percentage of surveys where the captain was successfully contacted by phone but refused to participate in the survey (column 9).

Year	Estimated Charter Angler Trips	Average Anglers per boat	Annual Estimated Vessel Trips	Trips Sampled Dockside	Number of Telephone Surveys	Responded	No contact	Refused
2019	168,571	3.54	47,628	176	5,729	68%	31%	1%
2020	115,424	3.70	31,200	166	5,617	70%	29%	1%
2021	163,233	3.33	48,970	251	6,148	66%	28%	1%
2022	162,620	3.29	49,459	146	5,218	68%	30%	2%
2023	177,812	3.30	53,828	193	6,282	65%	34%	1%

1.2.2 Southeast Region Headboat Survey

As explained above, the SEFSC selects the larger capacity for-hire vessels that charge primarily by angler to report fisheries data via the SRHS. Reporting effort and landings information is mandatory in the SRHS (Table 1.2.2.1).

Table 1.2.2.1. Required data reporting elements for SRHS headboats.

Reporting Elements
Vessel name/Vessel number
Captain's name
Departure date and time
Return date and time
Trip type (charter, headboat, commercial, or private recreational)
Number of anglers and paying passengers
Number of crew
Fuel used (gallons)
Price per gallon
Depths Fished (feet)-Min/Max/Primary
Fishing location (latitude/longitude, degrees, minutes)
Species - numbers kept and released (for released, number descended or vented)

The number of SRHS headboat vessels reporting landings to the SRHS by Gulf state between 2019 and 2023 are provided in Table 1.2.2.2. Participants in the SRHS can be intercepted dockside by samplers that collect biological samples and validate effort and logbooks upon returning from a fishing trip. On average, approximately 9% of trips were intercepted by dockside samplers from 2019-2024 (Table 1.2.2.3).

Table 1.2.2.2. The number of SRHS headboat vessels reporting landings to SRHS by Gulf state from 2019-2024.

Year	AL	FL	LA/MS	TX	Total
2019	10	41	5	16	72
2020	9	39	4	16	68
2021	9	40	4	17	70
2022	8	40	4	16	68
2023	8	41	3	16	68
2024	7	42	2	17	68

Table 1.2.2.3. The annual number of SRHS trips taken and number of trips intercepted in the Gulf by dockside samplers from 2019-2023.

Year	# Trips	# Trips Sampled	% Trips sampled
2019	9,488	997	11%
2020*	7,905	146	2%
2021*	10,514	295	3%
2022*	9,838	570	6%
2023	8,954	642	7%
		5-year average	6%

*Years when the number of sampled trips was limited due to safety restrictions from the COVID pandemic.

1.3 History of the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) program

The development of any data collection program requires a suite of data fields to collect pertinent fisheries information, a means to validate the accuracy of the collected data, a final estimation procedure, and a mechanism to enforce program compliance. These elements are needed to increase precision and accuracy of collected effort and catch information, interpret program results, and reduce estimate uncertainty. For example, a dockside intercept by an independent surveyor can be used to validate a logbook report completed by a for-hire vessel operator. When these survey design components are integrated they can produce outputs that can be used for stock assessments (e.g., index for a model), management needs (e.g., in-season monitoring or season duration projection analysis), or both.

To increase the accuracy, precision, and timeliness to for-hire data collection in the Gulf, the Council approved an amendment to the Reef Fish FMP and CMP FMP in May 2017 titled, “Modifications to Charter Vessel and Headboat Reporting Requirements” to mandate federally permitted reef fish and CMP for-hire owners and operators to electronically report fishing effort and catch information. This amendment was developed based, in part, on recommendations from a technical subcommittee that was convened in 2014 to develop recommendations to implement electronic reporting for the for-hire vessels in the Gulf and U.S. South Atlantic. The subcommittee was charged with investigating methods to increase the timelines of catch estimates for in-season monitoring, increase the temporal and spatial precision of catch estimates for monitoring, provide vessel-specific catch histories for management, reduce biases associated with catch statistics, and increase stakeholder buy-in and trust around data collection. The report by this group (Appendix C) revealed the trade-offs and limitations on several key aspects of electronic reporting in the for-hire fisheries, such as participation requirements, survey versus census requirement, reporting frequency, data collection applications, accountability measures, validation and estimation requirements, and calibration to existing data stream requirements.

Additionally, in September 2016 the Data Collection Technical Committee identified a minimum number of essential data elements that would be needed to achieve program goals (Appendix D).

Initially the Gulf and South Atlantic Fishery Management Council (Councils) developed a joint amendment to implement for-hire electronic reporting in the southeast region. As the intended requirements began to differ between the Councils, the joint amendment was separated into two amendments, one for each region. Gulf federal for-hire permit holders were required to submit electronic trip declarations for every trip (e.g., dock to dock) the vessel made on water, submit a logbook for every for-hire fishing trip prior to offloading fish, land only at approved landing locations, and have an operational NOAA Fisheries type approved Vessel Monitoring System (VMS) to log vessel positional data. The Gulf program also used a dockside survey to estimate total catch and effort that would account for un-reported trips and mis-reported or un-reported catch. The South Atlantic Southeast For-hire Integrated Electronic Reporting (SEFHIER) program requires weekly reporting for federally permitted fishermen in the Atlantic and does not have a declaration or VMS requirement. Owners and operators of vessels that have both a federal South Atlantic and a Gulf for-hire permit were required to meet the Gulf SEFHIER program's more stringent program requirements. Owners and operators of vessels that have both a Greater Atlantic or Mid-Atlantic and a Gulf federal for-hire permit were required to report to the Gulf SEFHIER program. Each amendment was implemented with separate rulemaking in January 2021; however, the United State Court of Appeals for the Fifth Circuit set aside the Gulf SEFHIER final rule in February 2023.

Dual permitted vessels that had both a federal Gulf for-hire and a Gulf commercial reef fish permit had to meet the reporting requirements of both the for-hire permit and the commercial reef fish permit. The Gulf SEFHIER trip declaration form was a combination of fields typically found in a declaration and fields found in a pre-landing notification (commonly called hail-in and hail-out forms, respectively). The commercial reef fish requires a separate declarations and pre-landing notifications. Due to these differences, the SEFHIER declaration form have different data fields than the commercial reef fish forms. Additionally, the SEFHIER declaration data, which could be submitted from an application, was not able to be accepted by the VMS system that contained the commercial data due to security concerns. Therefore, dual permitted (commercial and for-hire) vessels had to declare their trip to each program separately. This created unnecessary burden on dual commercial reef fish and for-hire permitted vessels, and the agency was working towards technical solutions to resolve this burden while keeping the data systems secure. The type of trip taken determined what logbook was submitted and where the information was sent. Neither program required a logbook for the other sector. The South Atlantic SEFHIER program requires a "Did Not Fish" report when there is no fishing by that vessel for that week within the for-hire sector. Commercial vessels are required to submit "Did Not Fish" reports monthly, when no fishing occurs within the commercial sector. Therefore, a vessel that did not fish in either the for-hire or the commercial fishery for a month had to submit four for-hire Did Not Fish reports and one commercial Did Not Fish report. Did Not Fish reports are used analytically to determine latent activity within a sector and determine compliance within a sector and should not be combined across sectors.

Prior to this amendment, an exempted fishing permit (EFP) was authorized to evaluate the viability of an allocation-based management strategy for improving the conservation of marine

resources and economic stability and performance of the headboat fleet.⁶ This EFP utilized an electronic reporting system to track all transactions in real-time and utilize the federal commercial reef fish VMS. For headboat vessels that participated in this program, the VMS hardware and software was used to submit trip declarations, submit pre-landing notifications, and track positioning of the vessels. The VMS enabled a transparent monitoring system for the selected vessels. Vessels were also required to land only at approved landing sites. The final report's conclusions acknowledged the challenges and successes of the program. The report found that there was a learning curve for captains in using the VMS hardware/software system to submit declarations and pre-landing notifications. Despite the low participation level, this program required staff at state agencies to send weekly e-mails to remind captains to submit their information in the time required. The report also acknowledged that biological samples of sufficient sample size by region were needed to adequately convert numbers of fish caught into pounds of fish. Insufficient sample sizes by region would reduce the certainty of the estimate for pounds landed, especially as many quotas are in pounds of fish and not the number of fish. Port agents and law enforcement officers and agents provided feedback about the program, highlighting the benefit of having email notification of declarations and pre-landing notifications, the benefit of landing locations, and estimated the number of fish on board (as opposed to an estimated weight). This program used a 1-hour notification for pre-landing information, which was deemed insufficient by law enforcement based on breadth of the areas they cover. Law enforcement suggested future programs adopt a 3-hour notification window or combining together the declaration with critical pre-landing notification.

The Gulf SEFHIER program was implemented in two phases, requiring trip reporting beginning on January 4, 2021, and then requiring VMS units by March 1, 2022. The trip reporting phase required all for-hire vessels not in the SRHS to report to the Gulf SEFHIER program. Vessels in SRHS were still required to report to the SRHS program but had the additional SEFHIER reporting requirements to submit declarations, submit logbooks prior to offload, and land only at approved landing locations. NMFS created technical specifications for vendors to create applications for use within the SEFHIER program. All software vendors needed to have their SEFHIER application type approved by NMFS before it could be used in the Gulf SEFHIER program. Type approval included rigorous testing of the application to ensure it met the technical requirements. A NMFS collaborative partner group and a software vendor application were approved for use: Atlantic Coastal Cooperative Statistical Program's eTRIPS/Mobile – version 2 application and Bluefin Data's VESL application. As part of the type approval, vendors were required to maintain 24/7 customer service help for their application users. The eTrips/Mobile application is based on requirements to meet several federal and state partners' needs for data collection, and changes to the form are made via committee and consensus. Both trip reporting software applications (VESL and eTRIPS/Mobile) are free to download on a mobile device. In addition to the software applications that could be installed on phones or tablets, the agency also authorized the use of forms submitted through a VMS unit. Based on the technology and transmission process and costs, these forms were less interactive than software applications. Despite this, many fishermen chose to submit information through their VMS units.

⁶ https://noaa-sero.s3.amazonaws.com/drop-files/cs/hbc_pilot_final_report_final.pdf

Prior to the implementation of the VMS portion of the program, the agency worked to ensure that cellular VMS systems were able to be approved for use under the VMS program. Allowance of cellular units, often referred to as store and forward units, was finalized in 2020.⁷ VMS units needed to be selected and purchased by the permit holder, for every for-hire permitted vessel. There is a VMS reimbursement program available to federal permit holders from The Pacific States Marine Fisheries Commission (PSMFC), in collaboration with NOAA Fisheries. This reimbursement program is subject to availability of funds. More information can be found on the PSMFC website, at psmfc.org/program/vessel-monitoring-system-reimbursement-program-vms. The reimbursement program requires the VMS unit to be installed by an approved VMS vendor, to qualify for the reimbursement. This reimbursement program prioritized reimbursement funding to Gulf for-hire permitted vessels through April 30th, 2022, at which point prioritization were processed in the order they were received. Initially the reimbursement amount was \$3,100, but due to a reduction in the reimbursement funding NOAA's Office of Law Enforcement released a Fishery Bulletin in April of 2022 stating that the "maximum reimbursable amount for the purchase of VMS units in programs that allow cellular VMS units" (including SEFHIER) would be \$950.⁸ The reduced reimbursement allocation still allowed permit holders to get fully reimbursed for two of the available cellular VMS units.

Once the Gulf SEFHIER program was implemented, two major concerns from program participants were brought to the Council. The first was apprehension among the industry that should their VMS unit incur an unexpected malfunction it would result in the vessel being unable to move on the water until the VMS unit was repaired – potentially resulting in a loss of revenue for the for-hire operator. While the satellite units have been in use since 2007 in the commercial fishery with low rates of failure, the cellular VMS units were new to the agency and this sector, with unknown rates of failure. In response, the Council and NMFS developed a framework action that would allow for an exemption to the VMS requirement in the event of an unanticipated VMS failure.⁹ A second concern was raised regarding the requirement that a vessel must declare every time the vessel intends to move on water (i.e., from dock to dock).

This included trips for non-fishing activities (e.g., obtaining fuel, ice). Program participants argued that the objective of the program was monitoring for-hire fishing effort and that non-fishing declarations were overly burdensome. To address this issue, the Council and NMFS developed a second framework action that only required a federal for-hire vessels to declare for any type of fishing or chartered activity.¹⁰ Both of these framework actions had been approved by the Council and transmitted to NMFS for review but had not been implemented before the program was set aside by the United States Court of Appeals for the Fifth Circuit Court on February 23, 2023.

The court concluded that based on the evidence in the administrative record the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) did not authorize

⁷ <https://www.govinfo.gov/content/pkg/FR-2020-07-08/pdf/2020-14600.pdf>

⁸ <https://www.fisheries.noaa.gov/bulletin/noaa-fisheries-announces-changes-vms-reimbursement-program>

⁹ https://gulfcouncil.org/wp-content/uploads/VMS-Failure-FA_FINAL_9.8.22.pdf

¹⁰ <https://gulfcouncil.org/wp-content/uploads/F-4a-Abbr-FA-Trip-Declaration-Mods-1.20.23.pdf>

NMFS to require the 24-hour 7-day-per-week VMS for this program because it was duplicative of the requirements for logbooks and declarations and there was no enforcement issue (e.g., non-compliance) to require a system to verify self-reported data. The Court also noted that the agency did not show that the monetary and privacy costs outweighed the benefits of having VMS. The Court also noted that the agency did not show data to determine that the for-hire industry was a closely-regulated industry, unlike the commercial industry. For closely-regulated industries, it may not be necessary to conduct a search for this location data. The Court also concluded that the rule was not promulgated in compliance with the Administrative Procedure Act because NMFS failed to address comments that raised privacy concerns under the Fourth Amendment to U.S. Constitution and did not provide proper notice that the logbook would require the type of economic data required in the final rule.¹¹ Due to this ruling, the regulations that were in effect prior to the implementation of the Gulf SEFHIER program currently apply and vessels that hold only a federal Gulf for-hire permit are not required to report to SEFHIER or use a VMS. Gulf for-hire permitted vessels selected to report to the SRHS program are still required to report to SRHS as they did prior to implementation of SEFHIER (i.e., weekly electronic reports). The MRIP for-hire telephone survey (along with APAIS; in the states of Mississippi, Alabama, and Florida), LA Creel, and the Texas Parks and Wildlife creel survey are still in place.

In April 2023, the Council decided to start work on a new amendment to reinstate some version of the Gulf SEFHIER program.¹² To aid in this effort, the Council established an Ad-hoc Charter For-hire Data Collection Advisory Panel (AP) and established a charge for the group.¹³ The AP convened January 10-11, 2024, and made a series of recommendations to the Council.¹⁴ The AP recommended several program goals and objectives as modified from the 2014 Technical Report and these objectives were approved by the Council at their January 2024 meeting (Table 1.3.1).

Table 1.3.1. Charter For-hire Data Collection AP proposed program objectives to reestablish a Gulf charter data collection program. The Council has reviewed and approved the below program objectives.

Proposed objectives for new charter data collection program
Increase the timeliness of catch estimates for in-season monitoring
Increase the temporal (and/or spatial) precision of catch estimates for monitoring
Reduce biases associated with collection of catch and effort data
Increase stakeholder trust and buy-in associated with data collection

Additionally, during the Council’s January 2024 meeting, the Council made several motions that would maintain a number of the same components from the original Gulf SEFHIER program,

¹¹ The Court considered the plaintiffs argument that the VMS requirement violated the Fourth Amendment and expressed concerns, based on the evidence in the record, about the requirement as applied to for-hire vessels but did not rule on this issue.

¹² https://gulfcouncil.org/wp-content/uploads/GMFMC_Motions-Report_Apr2023-FINAL.pdf

¹³ <https://gulfcouncil.org/wp-content/uploads/04.-Council-charge-to-AP.pdf>

¹⁴ https://gulfcouncil.org/wp-content/uploads/AdHocCharterForHireAP_meeting-summary_1_16_24.pdf

consistent with the Ad-hoc Charter For-hire Data Collection AP recommendations. These components include requiring trip declarations and logbooks (Table 1.3.2), maintaining the same trip-level reporting frequency and the same considerations for at-sea safety (where a logbook could be completed within 30 minutes of docking, but before offloading catch). However, the AP recommended that trip declarations be required only for for-hire fishing trips.

Table 1.3.2. List of suggested trip declaration and logbook data fields to be retained from the original Gulf SEFHIER program. These data fields were endorsed by the Ad-hoc Charter For-hire Data Collection AP and subsequently recommended by the Council.

Trip Declaration Data Fields	Logbook Data fields
Vessel registration number	Actual start and return date/time
Captain's name	Angler and passenger count
Departure date and time	Crew count
Estimated return data and time	General area fished
Departure location	Average depth fished
Trip type	Individual species data (whether kept or discarded)
	Whether fishing occurred (Yes/No)
	Primary gear used
	Primary target species

The field names defined in Table 1.3.2 represent the AP's recommendation; however, several of these recommendations have slightly different names than those data fields used in the former Gulf SEFHIER program. The AP was largely supportive of retaining the trip declaration and logbook data fields and it is highly likely that any new Gulf for-hire data collection program would largely retain the names of these data fields of the original SEFHIER program. Therefore, while the function of many of the AP's recommended data fields is the same, program participants will see a slightly different name on the trip declaration and logbook report. Table 1.3.3 provides a list of how several of the AP's recommended data field will appear on the trip declaration and logbook forms.

Table 1.3.3. List of AP recommended fields and the data field name in the previous Gulf SEFHIER program declaration and logbook. The names used in the original Gulf SEFHIER program will likely be retained in the new for-hire data collection program.

AP Recommended Field	Name new program will use
Departure Location	Landing Location
Crew Count	Number of Crew
General Area Fished	Primary Area Fished
Average Depth Fished	Primary Fishing Depth
Individual Species Data	(Catch is reported at the species level – both retained and discarded)
Whether Fishing Occurred	Trip Activity (did fishing occur? yes/no)

Although the AP only recommended the fields listed in Table 1.3.1, some fields are missing that are needed for either administrative purposes (e.g., the ability for the compliance algorithm to match a declaration to a logbook), or to estimate fishing effort. These additional fields are listed in Tables 1.3.4 and 1.3.5, along with justification.

Importantly, although a field may be necessary for administrative purposes, some reporting software vendors may develop an application that pulls information from the declaration into the logbook. If the application is working in this way, the individual would not need to enter data for the field in both the declaration and logbook.

Table 1.3.4. Additional field needed in the trip declaration, including justification.

Field	Justification
Trip Activity	Trip activity (intended fishing: Yes/No) informs whether a logbook is expected, and is used by NOAA Fisheries to automate compliance tracking

Table 1.3.5. Additional fields needed in the logbook, including justification.

Field	Justification
Registration Number	Needed for administrative purposes, as part of criteria needed to automate matching a declaration to the corresponding logbook for compliance tracking purposes
Captain's Name	Needed for administrative purposes, as part of criteria needed to automate matching a declaration to the corresponding logbook for compliance tracking purposes
Trip Type	Needed for administrative purposes, as part of criteria needed to automate matching a declaration to the corresponding logbook for compliance tracking purposes
Fishing Hours	Critical for estimating fishing effort
End Port/Landing Location	Since it may differ from the intended Landing Location provided in the declaration
Start Port	Allows for quantification of trip starting point to ending point, and is required in eTRIPS mobile 2 for their other partners (i.e., a one stop reporting requirement)

1.4 Purpose and Need

The *purpose* of this amendment is to improve the accuracy, precision, and timeliness of landings, discards, and fishing effort data from federally permitted for-hire vessels within the recreational sector of the Gulf reef fish and CMP fisheries. Improvements would increase stakeholder trust and buy-in associated with data collection. Another purpose is to collect economic information related to the operational costs and earning of federally permitted for-hire vessels participating in the Gulf reef fish and CMP fisheries.

The *need* for this action is to improve management and monitoring of the federally permitted for-hire component of the recreational sector of Gulf reef fish and CMP fisheries to prevent overfishing while achieving, on a continuing basis, the OY.

1.5 Management History

Reef Fish Fishery

The following amendments to the Reef Fish FMP contain actions that pertain to the for-hire component of the recreational sector, including permit and reporting requirements.

Amendment 11 (1994) to the Reef Fish FMP required that charter vessels and headboats fishing in the exclusive economic zone (EEZ) off the Gulf states have federal permits when fishing.

Amendment 20 (2003) to the Reef Fish FMP/Amendment 14 to the CMP FMP established a three-year moratorium on the issuance of charter vessel/headboat permits for reef fish and CMP in the EEZ off the Gulf states. The purpose of this moratorium was to limit future expansion in the recreational for-hire component while the Council monitored the impact of the moratorium and considered the need for a more comprehensive effort management system for the for-hire fleet. NMFS' promulgation of the regulations implementing Reef Fish Amendment 20/CMP Amendment 14 established an effective date of December 26, 2002, for-hire operators in the EEZ off the Gulf states to have a valid limited access "moratorium permit," in place of the prior open access charter vessel/headboat permit. From this date, limited access permits would be required for for-hire vessels to legally engage in fishing activities in the EEZ off the Gulf.

On December 17, 2002, NMFS published an Emergency Rule that deferred implementation of the permit moratorium from December 26, 2002, until June 16, 2003, because the final rule implementing the permit moratorium contained an error regarding eligibility. This error needed to be resolved before the moratorium could take effect to ensure that no qualified participants were wrongfully excluded. The emergency automatically extended the expiration date of valid or renewable "open access" permits for reef fish and CMP until June 16, 2003. The emergency rule included additional measures that extended deadlines for issuance of "moratorium permits" and the appeal process.

Amendment 25 (2005a) to the Reef Fish FMP/Amendment 17 to the CMP FMP established a limited access system on charter vessel/headboat permits for reef fish and CMP that extended the 3-year permit moratorium. Permits are renewable and transferable in the same manner as currently prescribed for such permits. The Council will have periodic review at least every 10 years on the effectiveness of the limited access system.

Amendment 30B (2008) to the Reef Fish FMP required that all vessels with federal commercial or charter vessel/headboat permit for reef fish comply with federal reef fish regulations, if those regulations are more strict than state regulations, when fishing in state waters.

Amendment 34 (2012) to the Reef Fish FMP addressed crew size limits for dual-permitted vessels. Dual-permitted vessels are vessels with both a charter/headboat reef fish permit and a

commercial reef fish permit. The amendment eliminated the earned income qualification requirement for the renewal of commercial reef fish permits and increased the maximum crew size, when operating as a commercial vessel, from three to four.

Framework Action (2013) modified the frequency of headboat reporting to a weekly basis (or at intervals shorter than a week if notified by the SRD) via electronic reporting, with reports due by 11:59 p.m., local time, the Sunday following a reporting week. If no fishing activity occurs during a reporting week, an electronic report so stating must be submitted for that week.

Amendment 40 (2014) was approved in April 2015. This amendment divided the recreational red snapper quota into two component sub-quotas, with the federal for-hire component allocated 42.3% of the recreational quota and the private angling component allocated 57.7% of the red snapper recreational quota. This division sunsets three calendar years after implementation. Season closures are determined separately for each component based on the component's annual catch target (ACT). The final rule to implement this amendment published on April 22, 2015.

CMP Fishery

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

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

Amendment 14 (2003) to the CMP FMP/Amendment 20 to the Reef Fish FMP established a 3-year moratorium on the issuance of charter vessel/headboat permits. See discussion above for Amendment 20 to the Reef Fish FMP, which describes the amendment and corresponding Emergency Rule.

Amendment 17 (2005a) to the CMP FMP/Amendment 25 to the Reef Fish FMP established a limited access system on charter vessel/headboat permits for reef fish and CMP permits. Permits are renewable and transferable in the same manner as currently prescribed for such permits. The Council will have a periodic review at least every 10 years on the effectiveness of the limited access system.

Framework Action (2013) modified the frequency of headboat reporting to a weekly basis (or at intervals shorter than a week if notified by the SRD) via electronic reporting, with reports due by 11:59 p.m., local time, the Sunday following a reporting week. If no fishing activity occurs during a reporting week, an electronic report so stating must be submitted for that week.

Amendment 20A (2013) to the CMP FMP prohibited the sale of recreationally caught king and Spanish mackerel with the following exceptions: 1) the sale of fish caught on for-hire trips on dual-permitted vessels in the Gulf region, and 2) the sale of fish caught in state-permitted tournaments in both the Gulf and Atlantic regions and donated to a state or federally permitted dealer, as long as the proceeds from the dealer sale are donated to charity.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1: Establish Frequency and Mechanism of Data Reporting for For-hire Vessels

This action only applies to vessels issued a valid Gulf for-hire permit for reef fish or Gulf coastal migratory pelagic (CMP) species, that *do not* participate in the National Marine Fisheries Service (NMFS) Southeast Region Headboat Survey (SRHS).

Alternative 1: No Action. The owner or operator of a charter vessel or headboat issued a valid Gulf for-hire permit for reef fish or CMP species, or whose vessel fishes for or harvests such reef fish or CMP species in or from state waters adjoining the applicable Gulf or Gulf exclusive economic zone (EEZ), and who is selected to report by the NMFS through the Marine Recreational Information Program (MRIP), or the state of Louisiana’s LA Creel program, or Texas Parks and Wildlife Creel survey voluntarily report catch information when requested by a dockside surveyor.

Preferred Alternative 2: Require that the owner or operator of a charter vessel or headboat issued a valid Gulf for-hire permit for reef fish or Gulf CMP species to submit trip, catch, and effort information for *each trip* via electronic reporting (via NMFS approved software). If fish are harvested during the trip, electronic reporting is required prior to offloading fish. If fishing did not occur within a weekly period, a “Did Not Fish” report would be required to be submitted.

Alternative 3: Require that the owner or operator of a charter vessel or headboat issued a valid Gulf for-hire permit for reef fish or CMP species to submit trip, catch, and effort information for *each trip daily* within 24 hours of trip end via electronic reporting (via NMFS approved software). If fishing did not occur within a weekly period, a “Did Not Fish” report would be required to be submitted.

Discussion:

Alternative 1 (No Action) would maintain the reporting requirements of the three charter for-hire data collection programs within the Gulf. The details of these current data collection programs are outlined in Chapter 1.2. LA Creel provides weekly estimates of catch in the for-hire component, while MRIP generates 2-month “wave” estimates, and Texas Parks and Wildlife provides 6-month catch estimates for the for-hire component. The three programs have a dockside intercept component to verify catch by a program sampler. Sampling sites are selected using a probabilistic survey design approach based on high use or low use areas. No private landings sites are sampled in these programs and submission of catch data is voluntary for the angler. Dockside intercepts are conducted on the fishing angler and not necessarily the charter vessel owner or operator.

The timeliness level of catch estimation in **Alternative 1** (ranging from weekly to 6 months) is less than that considered in either **Preferred Alternative 2** or **Alternative 3** (trip-level or daily,

respectively). As data timeliness, precision, and accuracy have been identified as goals for a new Gulf charter for-hire data collection program, an increase in reporting frequency would best achieve this objective. **Preferred Alternative 2** and **Alternative 3** would require the owner or operator of a charter vessel that has been issued a for-hire permit for Gulf reef fish or Gulf CMP species to submit fishing reports (i.e., logbooks) electronically via a NMFS-approved software application at the specified frequencies. Requiring logbooks would add technological complexity compared to the status quo (**Alternative 1**), and some form of trip validation (e.g. dockside intercepts) would still be needed to estimate any mis- or non-reporting in the self-reported logbook data. However, trip level reporting is anticipated to greatly improve the precision and timeliness of landings estimates for annual catch limit (ACL) monitoring.

Preferred Alternative 2 would require vessel owners or operators with a for-hire permit for Gulf reef fish or Gulf CMP species to submit a logbook for each trip. The logbook would need to be submitted electronically and received by NMFS prior to offload of the fish. If no fish are retained on a for-hire fishing trip, a logbook form would still have to be submitted within 30 minutes of arriving at the dock (end of the trip). If more than one for-hire fishing trip occurred on a single day, logbook would need to be submitted before offloading fish at the end of each trip. Under **Preferred Alternative 2**, the reported catch of a charter vessel can be verified a dockside intercept surveyor or port agent when the vessel returns to the dock and offloads fish, improving the likelihood of capturing the mis- and non-reporting uncertainty in the self-reported logbook data. Once a logbook is submitted in the software application, it becomes locked and therefore the submitter would no longer have the ability to modify the submitted logbook after being interviewed, which improves the likelihood of estimating any mis- and non-reporting in the self-reported logbook data. **Preferred Alternative 2** requires reporting of logbooks before offloading catch every trip. This should improve data quality and accuracy by reducing recall bias, improve stakeholder confidence in the final estimates of catch and effort, and reduce uncertainty associated with these data when used in science or management applications. To accomplish trip-level reporting, federal for-hire permit holders would need to have a NMFS-approved software reporting application on their mobile device or personal computer (PC) to submit the logbook.

Alternative 3 would require for-hire fishing trip reporting by vessel owners and operators at daily level, rather than a trip level as stipulated in **Preferred Alternative 2**. The Gulf Council's (Council) Charter For-hire Ad hoc Advisory Panel (AP) discussed the possibility of reporting frequencies other than before offload for each for-hire fishing trip. Several AP members advocated for the trip level reporting frequency, rather than daily or weekly reporting. They indicated that, during the busy summer months especially, logbook data can be difficult to tabulate during multi-trip days or over the course of a week. The volume of catch can be substantial over several trips which may result in longer intervals of time to fill out multiple logbook forms, all at the end of the day (for example). Additionally, several AP members reported that memory retention was better when considering catch at a trip level, which not only lessened the amount of time to complete the logbook but also increased the accuracy of their data reporting.

In 2020, NMFS implemented a fishery management plan (FMP) amendment developed by the South Atlantic Fishery Management Council (South Atlantic Council) that requires charter

vessels with South Atlantic federal for-hire permits, while operating as a charter vessel to submit fishing records to NMFS weekly, or at intervals shorter than a week if notified by NMFS via electronic reporting (via NMFS approved hardware and software) (85 FR 10331 Feb. 24, 2020). Weekly reporting represents a level of precision that is difficult to directly input into a stock assessment analysis and is more uncertain when informing management advice such as season duration projections. For these reasons, and those recommended by the AP, the Gulf Council does not consider weekly reporting frequency as a reasonable alternative because it would not achieve the data collection program’s purpose and need.

A South Atlantic federal for-hire vessel permittee who is also subject to electronic reporting requirements in other regions is required to comply with the federal electronic reporting program that is more stringent, regardless of where they are fishing. This requirement was put in place to prevent vessels with multiple federal for-hire permits from more than one region having to report to multiple systems. Because the Gulf reporting requirements considered in this action would require trip-level or daily reporting, the Gulf requirements may be considered more stringent than the South Atlantic weekly reporting requirements if the same data elements are required. Under those circumstance, vessels issued both Gulf and South Atlantic federal for-hire permits would be able to comply with both programs by complying with the Gulf requirements. Greater Atlantic Regional Fishery Office (GARFO) federally permitted vessels or vessels with a federal permit from any other region possessing a Gulf for-hire reef fish or CMP permit would be required to submit two logbooks: one in accordance with GARFO (or other region) requirements and one in accordance with the Gulf for-hire reef fish or CMP permit reporting requirements. However, few Gulf-federally permitted vessels travel the distance necessary to fish in areas other than the South Atlantic. In the future, these systems and fishing record requirements may become exchangeable but, until such time, these vessels would be required to report to different programs separately. Alternatively, dual permit holders (e.g. dual GARFO and federally permitted, non-SRHS, for-hire vessels) could use a software reporting application that supports “one-stop-reporting” (OSR), like e-TRIPS Mobile, and only need to submit one logbook to meet all their permit requirements.

If a vessel owner who was issued a Highly Migratory Species (HMS) for-hire 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 in addition to any HMS reporting requirements. NMFS has proposed modifying or expanding reporting requirements for Atlantic HMS, as described in a proposed rule published on September 6, 2024.¹⁵ The reporting requirements for the HMS for-hire permits selected as preferred alternatives in the proposed rule differ from those proposed within this amendment. Vessel owner/operators that holds both a Gulf for-hire and a HMS for-hire permit would be subject to the most stringent regulation associated with either permit. For example, depending on which alternatives are ultimately implemented, a vessel owner/operator who possesses both of these permits could be required to report their catch logbook prior to offload (the Gulf For-hire permit regulations are more stringent on reporting timing) and report economic data every trip (the HMS for-hire permit regulations are more stringent on the frequency of reporting timing). Currently, owners or operators of HMS for-hire permitted vessels must call in or electronically report all bluefin tuna

¹⁵ <https://www.federalregister.gov/documents/2024/09/06/2024-19892/atlantic-highly-migratory-species-electronic-reporting-requirements>

landings and dead discards, all non-tournament landings of Atlantic blue marlin, Atlantic white marlin, roundscale spearfish, and Atlantic sailfish, and all non-tournament and non-commercial landings of North Atlantic swordfish to NMFS within 24 hours of completing a trip. In the ANPR, NMFS considered an electronic logbook requirement for owners or operators of vessels with HMS for-hire permits, as well as timing requirements for submission of electronic logbooks.

“Did Not Fish” reports

“Did Not Fish” reports (DNFs) are used to analytically determine activity/non-activity and compliance within a sector and should not be combined across sectors. For program participants holding only a Gulf federal for-hire permit, DNFs will be submitted for an entire week of no fishing, which begins on a Monday and runs through the following Sunday (fishing week). If a fisherman knows in advance, they will not fish during the fishing week, the program participant may submit the DNF for that week up to 30 days in advance of that fishing week. If a fisherman realizes partly through a week that no fishing will occur they may submit that week's DNF at any point of time during the week for that fishing week. If a fisherman has not fished during the fishing week and has not submitted a DNF, they must submit a DNF by the following Tuesday for the preceding week or be considered out of reporting compliance. If a fisherman fishes on at least one day of the fishing week, then they do not need to submit a DNF for that fishing week. The SRHS already requires a weekly “inactivity report” to be submitted by the Tuesday following a fishing week (Monday to Sunday), as does the South Atlantic SEFHIER program.

Both the South Atlantic SEFHIER program and SRHS allow vessel owners or operators to submit a DNF up to a 30-days in advance, if the owner/operator knows in advance that they will not be fishing for at least the next 30-day period. Should a fishing trip occur after a weekly DNF has been submitted (or even if 30 days' worth of DNFs have been submitted), a logbook is still required for any for-hire fishing trips and will supersede any DNFs for the fishing week that the logbook falls into. For vessels that hold both Gulf and South Atlantic for-hire permit, submitting a DNF provides compliance for both the Gulf and South Atlantic SEFHIER and SRHS programs.

Commercial vessels are required to submit DNFs monthly, when no fishing occurs within the commercial sector. Therefore, a vessel that did not fish in either the for-hire or the commercial fishery for a month has to submit a for-hire DNF to SEFHIER and a separate DNF to satisfy their commercial fishing permit to the southeast Logbook program. NMFS estimates that it will take about 2 minutes to complete and submit a DNF. NMFS expects reporting time to decrease as familiarity with the software increases.

DNFs are necessary to validate periods of non-fishing activity. Establishing a period of non-fishing activity aids in improving the accuracy and precision of effort estimation for the fleet. DNFs also aid in assessing the level of compliance for logbook reporting. Non-reporting of trips (due to an omission error or willing non-compliance) is also considered an issue when estimating catch from logbook reports. This extra level of effort validation compliments the hail-in/out combination and provides more certainty in the data being reported from the program.

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

This action only applies to vessels issued a valid federal for-hire permit for reef fish or Gulf CMP species that *do participate* in the SRHS.

Alternative 1: No Action. The owner or operator of a headboat issued a valid federal for-hire permit for reef fish or Gulf CMP species, or whose vessel fishes for or harvests such reef fish or CMP species in or from state waters adjoining the applicable Gulf or Gulf EEZ, and who is selected to report by NMFS 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 NMFS) 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. Information to be reported is indicated on the form and its accompanying instructions.

Preferred Alternative 2: Require that the owner or operator of a headboat issued a valid for-hire permit for reef fish or Gulf CMP species to submit fishing records for *each trip* via electronic reporting (via NMFS approved software). If fish are harvested during the trip, electronic reporting is required prior to offloading fish.

Alternative 3: Require that the owner or operator of a charter vessel or headboat issued a valid for-hire permit for reef fish or Gulf CMP species to submit *daily* fishing records via electronic reporting (via NMFS approved software).

Discussion:

Alternative 1 (No Action) would continue to require the owner or operator of a federally permitted headboat with a Gulf for-hire for reef fish or CMP permit to submit logbooks weekly (or at intervals less than a week if requested by NMFS), due 7 days after the end of each week (Sunday). This requirement was implemented through the Framework Action to Modify Headboat Reporting Requirements in the Gulf and South Atlantic (GMFMC 2013b). The SRHS represents a relatively long-term data collection program within the Gulf and has been used as a fishery-dependent index to inform several species stock assessments. However, the SRHS is limited to only small number of vessels which meet the program's definition of a headboat and are included in the survey. Since headboats represent a fraction (~1%) of all Gulf federally permitted charter for-hire vessels and are unique in their operations (taking large numbers [some up to ~ 100] of paying passengers on a single trip), and additional data collection survey extended to other participants in the industry is desirable for fishery management.

Preferred Alternative 2 would require the owner or operator of a federally permitted headboat with a Gulf for-hire for reef fish or CMP permit to submit a logbook for each trip to NMFS prior to offloading fish. If no fish are retained on a for-hire trip, the logbook would have to be submitted within 30 minutes of arriving at the dock (end of the trip). If more than one trip

occurred on a single day, the logbook would need to be submitted before offloading fish at the end of each trip.

Preferred Alternative 2 would offer the greatest ability to prevent ACL overages and minimize errors associated with recall bias. Under **Preferred Alternative 2**, a dockside intercept surveyor or port agent may interview the vessel after the logbook has been submitted, improving the likelihood of capturing the mis- and non-reporting uncertainty in the self-reported logbook data. Although, **Preferred Alternative 2** offers headboat operators the least flexibility in how and when they prepare and submit their trip reports and could be burdensome during periods of peak activity or inclement weather, it should improve data quality and accuracy, improve stakeholder confidence in the final estimates of catch and effort, and reduce uncertainty associated with these data when used in science or management applications.

Alternative 3 would require the owner or operator of a federally permitted headboat with a Gulf for-hire for reef fish or CMP permit to submit a daily, electronic report to NMFS by noon the day following each for-hire fishing trip. **Alternative 3** could reduce the likelihood of exceeding ACLs and reduce recall error compared to **Alternative 1** but would not result in as much of a reduction relative to **Preferred Alternative 2**. **Alternative 3** would add additional burden and reduce flexibility in comparison to **Alternative 1**; however, increased memory recall (therefore quicker completion of logbooks) and increased likelihood of capturing mis- or non-reporting through the dockside intercepts (done by Port Agents, for SRHS) may be better realized in **Preferred Alternative 2** with trip level reporting.

2.3 Action 3: Trip Notification and Effort Reporting Requirements

Alternative 1: No Action. There are currently no trip notification requirements for federally permitted reef fish or Gulf CMP species for-hire vessels. A vessel issued a federal commercial reef fish permit is required to submit a trip notification and declare the intent of the trip.

Alternative 2: Require that the owner or operator of a charter vessel or headboat issued a valid for-hire federal permit for reef fish or Gulf CMP species submit a trip declaration for trips that will be engaging in any type of for-hire fishing or for-hire activity.

Option a: Charter vessels

Option b: SRHS Headboats

Preferred Alternative 3: Require that the owner or operator of a charter vessel or headboat issued a valid federal for-hire permit for reef fish or Gulf CMP species submit a trip declaration for trips that will be engaging in any type of for-hire fishing activity.

Preferred Option a: Charter vessels

Preferred Option b: SRHS Headboats

Discussion:

Action 3 considers adding a requirement to provide a notification to NMFS declaring the intent to initiate a for-hire trip, return from a for-hire trip, or both. This action is anticipated to provide better estimates of effort with an improved validation process as compared to the current MRIP phone survey (charter vessels) and SRHS (headboats). This action is also anticipated to better inform law enforcement officers when a for-hire vessel is leaving the dock as well as the type of trip based on the declaration at hail-out. Under **Alternative 1** (No Action), federally permitted for-hire vessels do not have any trip notification requirements.

Alternative 2 would require trip declarations for trips engaging in any type of fishing or any chartered activity. Fishing trip types would include commercial, for-hire, and private recreational fishing activities, as well as trips fishing for bait. Chartered activity would include any other activity with paying passengers¹⁶ on board the vessel, such as sunset or dolphin cruises. **Alternative 2** would provide the for-hire fleet the flexibility to complete non-fishing non-chartered activities without needing to submit a declaration. Requiring declarations for trips engaging in fishing or any chartered activity would also assist in determining fleet characteristics (e.g., percentage of time for other activities like cruises to supplement business or commercial activity) and decreases the administrative burden for a charter for-hire data collection program through use of automation to identify non-compliance.

¹⁶ In the definition of “charter fishing” the Magnuson-Stevens Fishery and Conservation Management Act refers to “passenger for hire” as defined in 46 U.S. Code § 2101. That “means a passenger for whom consideration is contributed as a condition of carriage on the vessel, whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person having an interest in the vessel.” Consideration means “an economic benefit, inducement, right, or profit including pecuniary payment accruing to an individual, person, or entity, but not including a voluntary sharing of the actual expenses of the voyage, by monetary contribution or donation of fuel, food, beverage, or other supplies.”

Preferred Alternative 3 would require a trip declaration only when engaging in fishing activities. As in **Alternative 2**, fishing trip types would include commercial, for-hire, and private recreational fishing activities, as well as trips fishing for bait. However, in **Alternative 2** a declaration would need to be submitted any time a trip occurs with a paying passenger on board (including for a sunset cruise or dolphin watching), while in **Preferred Alternative 3** a declaration would only need to be submitted when at least one paying passenger is participating in commercial, for-hire or private recreational fishing activities.

A mandatory trip declaration prior to leaving the dock (**Alternative 2** and **Preferred Alternative 3**) would improve effort estimates as it would directly tabulate the number of fishing trips in comparison to **Alternative 1**, which relies on a sample of the fleet, is subject to assumptions that the sample represents the behavior of the entire fleet and is associated with uncertainty when expanding the sample estimates to the behavior of the entire fleet. Timeliness in data collection is a main objective of the Council's for-hire data collection program; therefore, mandatory declarations that improve estimates of effort, aid law enforcement, and improve the likelihood of dockside intercepts to capture non- and mis- reporting is necessary to achieve the program's purpose and need.

During the implementation of the original Gulf SEFHIER program, several participants raised concerns with the Council that the trip declaration, which was required every time the vessel left a dock, was overly burdensome. To address this issue, the Council developed a framework action to modify the trip declaration, but that action was not implemented because the Gulf SEFHIER program was set aside (see Section 1.3). The language reflected in **Alternative 2** is the same language approved by the Council in the previous framework action. This alternative, in addition to providing the benefits noted above relative to the status quo (**Alternative 1**), would also address a previous issue from the Gulf SEFHIER program and account for this situation during the development of a new for-hire data collection program.

2.4 Action 4: Establish Reporting of Economic Data for For-hire Vessels

This action only applies to vessels issued a valid Gulf for-hire permit for reef fish or CMP species, that do not participate in the NMFS SRHS.

Alternative 1: No Action. There is currently no requirement for the reporting of economic data for federally permitted reef fish or Gulf CMP species for-hire vessels. Currently, a dually-permitted for-hire vessel issued a federal commercial reef fish permit is required to submit an economic data survey to the commercial program for one year if selected.

Alternative 2: Require that the owner or operator of a charter vessel or headboat issued a valid federal for-hire permit for reef fish or Gulf CMP species submit economic data as part of the logbook when the vessel is engaging in any type of chartered fishing or chartered activity.

Preferred Alternative 3: Require that the owner or operator of a charter vessel or headboat issued a valid federal for-hire permit for reef fish or Gulf CMP species submit economic data as part of the logbook when the vessel is engaging in any type of chartered fishing or chartered activity, if selected. Annually, a stratified random sampling design of permitted vessels will be used for selecting vessels that are required to report economic data. The Southeast Fisheries Science Center will determine the strata (based on previous years' data and minimum sample sizes by strata) sufficient for providing scientific and management advice.

Discussion:

Alternative 1 would not require any level of economic data reporting relative to **Alternative 2** and **Preferred Alternative 3**. Relative to **Alternative 2** and **Preferred Alternative 3**, **Alternative 1** would result in the least burden because owners or operators would not be required to report any information in addition to the trip declaration and logbook. However, **Alternative 1** would not allow for the collection of any economic data to inform the effects analysis for comparing fishery management plan amendment alternatives, the allocation of disaster relief funds, or science-based fisheries management in general (e.g., optimum yield, allocation). Hence, such data would need to be collected in a different manner or survey, possibly leading to alternative burden hours. Also, the NMFS would incur further costs to create a separate data collection program or platform to collect the economic data. Finally, the absence of any owner or operator reported economic data would create an issue for disaster requests. If the states do not have the requisite revenue data for a fishery to demonstrate how much revenue has decreased because of an alleged disaster, then the state cannot include such losses in their request.

Both **Alternative 2** and **Preferred Alternative 3** allow for the collection of economic data; and therefore, require more burden on the captain or operator. The intent is to ask three additional economics questions (trip fee, fuel used in gallons, and price of fuel used per gallon) as part of each logbook. The trip fee and fuel information would inform the assessment of economic effects of management measures. The anticipated additional time burden of completing these three economic questions in the logbook would be minor for each trip. However, these

economic data are essential for informing the economic effects portion of policy documents, allocating disaster relief funding, and science-based fisheries management in general (e.g., optimum yield, allocation).

Alternative 2 and **Preferred Alternative 3** allow for the collection of economic data and are a vast improvement over the status quo of no systematic economic data collection in the Gulf for-hire sector. **Alternative 2** is a census. Hence, any aggregation or summary statistics of the data, i.e., “results”, are facts without sampling uncertainty (other biases are possible due to non-response). This represents the best data that can be collected. In comparison, **Preferred Alternative 3** only collects data from a subset of vessels leading to a smaller dataset. When analyzing these data, sample statistics are used to estimate population results. The results are random variables with sampling uncertainty. At a given confidence level, e.g., 95%, the population mean (or total) will lie within a margin of error, or confidence interval, around the sample mean (or extrapolated total), e.g., sample data provides results such as “with 95% certainty, the mean charter fee in the Gulf is between \$900 and \$1100.” In general, the smaller the sample size, the larger the margin of error or confidence interval becomes.

Alternative 2 would be the most time intensive for the for-hire sector as it would require all captains to complete the trip fee, fuel used in gallons, and price of fuel used per gallon questions for each for-hire fishing trip. The trip fee question elicits revenue, i.e., gross income, for a for-hire trip. It is not possible to derive individual level net revenue, i.e., profit or the operator’s income, based on these three questions alone, as most costs are not be collected on the logbook form, e.g., crew pay and all fixed costs for the vessel. This additional information would come from other sources (e.g., annual cost surveys).

Preferred Alternative 3 collects data from a sample of vessels and therefore reduces program participants’ burden hours while still collecting the economic data needed. By taking a statistical sampling approach (vs. the census approach of **Alternative 2**), only a portion of vessels are required to provide economic data at a given time. On the downside, as mentioned above, results based on sample data are estimates with statistical uncertainty attached. It should be noted that sampling at the trip level instead of the vessel level would be statistically preferable but cannot be implemented due to technological constraints in electronic reporting applications at this time. Sampled vessels will be required to provide economic data on all their eligible trips for a one-year period. The additional burden hours imposed on selected vessels is equivalent to those under **Alternative 2** during the year they are selected for, while additional burden hours for non-selected vessels are zero. Over multi-year periods, the estimated annual burden hours per vessel will tend toward the sampling fraction times the burden hours under **Alternative 2**. As an illustration (assuming a vessel is selected once within a 5-year period), with a 20% vessel sample fraction, a vessel making 200 trips per year over 5 years would be expected to provide economic data on 200 of the 1000 trips taken, but all the expected burden would occur in the single year they are selected (1 out of 5).

For **Preferred Alternative 3**, the Southeast Fisheries Science Center will develop a method for vessel stratification and determine the minimum sample size for each vessel stratum in a manner motivated by- and sufficient for- providing data-based scientific and management advice for this sector. During the first year of a logbook, a 20% simple random sample of permitted vessels will

be selected for economic reporting. In subsequent years, the previous years' logbook data will be used to develop a stratification of vessels, guided by anticipated management needs and a desire to minimize the overall sample size. The strata will be iteratively developed over the first few years of the program as the Center learns more about this fishery. Strata might be defined on permit or vessel characteristics (from the permit application), on activity levels or species caught during the last year(s), on areas fished, or on state, port, or other variables available for the full population. A stratification design requires that every vessel be uniquely assigned to one (and only one) stratum.

In a stratified random sampling design, a different sample size can be selected for each stratum, allowing the researcher to minimize the overall sample size while maintaining a given level of statistical precision. Beyond that, working with strata allows for the over- and under-sampling of particular vessel strata and, by extension, sub-populations of trips. The anticipated sampling design will have two components. The annual "base sample" will collect only enough data (lower sample size) to annually generate results for the overall population, and the major sub-populations thereof. The second component will focus on collecting enough data (more than the "base sample") for one smaller sub-population to ensure that meaningful results can be generated for this sub-population (enough statistical precision to be meaningful). Each year, the focus will shift to a different smaller sub-population, selected based on anticipated management need. This multi-year "rotation" of focus across the fishery will ensure that economic results will be available for many sub-elements of the population, while keeping reporting burden lower, though at the cost of not having annual updates of the results for smaller subgroups (snapshots instead of time-series). This approach is very similar to the one currently employed by the Center in the commercial sector of the federal GOM fisheries.

The Center does not anticipate sampling, at the aggregate, more than 20% of the vessels in any one year, and possibly less. The "base sample" might be 10% or less, but only last year's reported data will provide enough information to make an informed sample size determination for the subsequent year. It should be noted that vessels assigned to a small strata might face higher inclusion probabilities (up to certainty, i.e., census) in those years that this particular strata is the object of study.

In summary, the choice of census or sample should be driven by judgments about the tradeoff between burden hours and privacy of the respondents versus the precision of the economic result. In any case, collecting the fee data together with the logbook has extensive benefits at minimal costs over **Alternative 1**.

CHAPTER 3. AFFECTED ENVIRONMENT

3.1 Description of the Physical Environment

General Description of the Physical Environment

The physical environment for Gulf of America (Gulf) reef fish is detailed in the Environmental Impact Statement (EIS) for the Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004), Generic EFH Amendment 3 (GMFMC 2005b), and the Generic Annual Catch Limit/Accountability Measure (ACL/AM) Amendment (GMFMC 2011a), which are hereby incorporated by reference and summarized below.

The physical environment for Coastal Migratory Pelagic (CMP) species in this action is discussed below and in further detail in Amendment 18 (GMFMC and SAFMC 2011). Amendment 18 discusses the Gulf and South Atlantic physical habitat for CMP species and is hereby incorporated by reference. Amendment 18 is hereby incorporated by reference for addressing Essential Fish Habitat (EFH), Habitat Areas of Particular Concern (HAPC), and adverse effects of fishing in the CMP fishery.

The Gulf has a total area of approximately 600,000 square miles (1.5 million km²), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel (Figure 3.1.1).

Oceanographic conditions are affected by the Loop Current, discharge of freshwater into the northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf. The Gulf includes both temperate and tropical waters (McEachran and Fechhelm 2005). Gulf water temperatures range from 54° F to 84° F (12° C to 29° C) depending on time of year and depth of water. Mean annual sea surface temperatures ranged from 73° F through 83° F (23-28° C), including bays and bayous (Figure 3.1.1), between 1982 and 2009, according to satellite-derived measurements (NODC 2011).¹⁷ In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

¹⁷ <http://accession.nodc.noaa.gov/0072888>

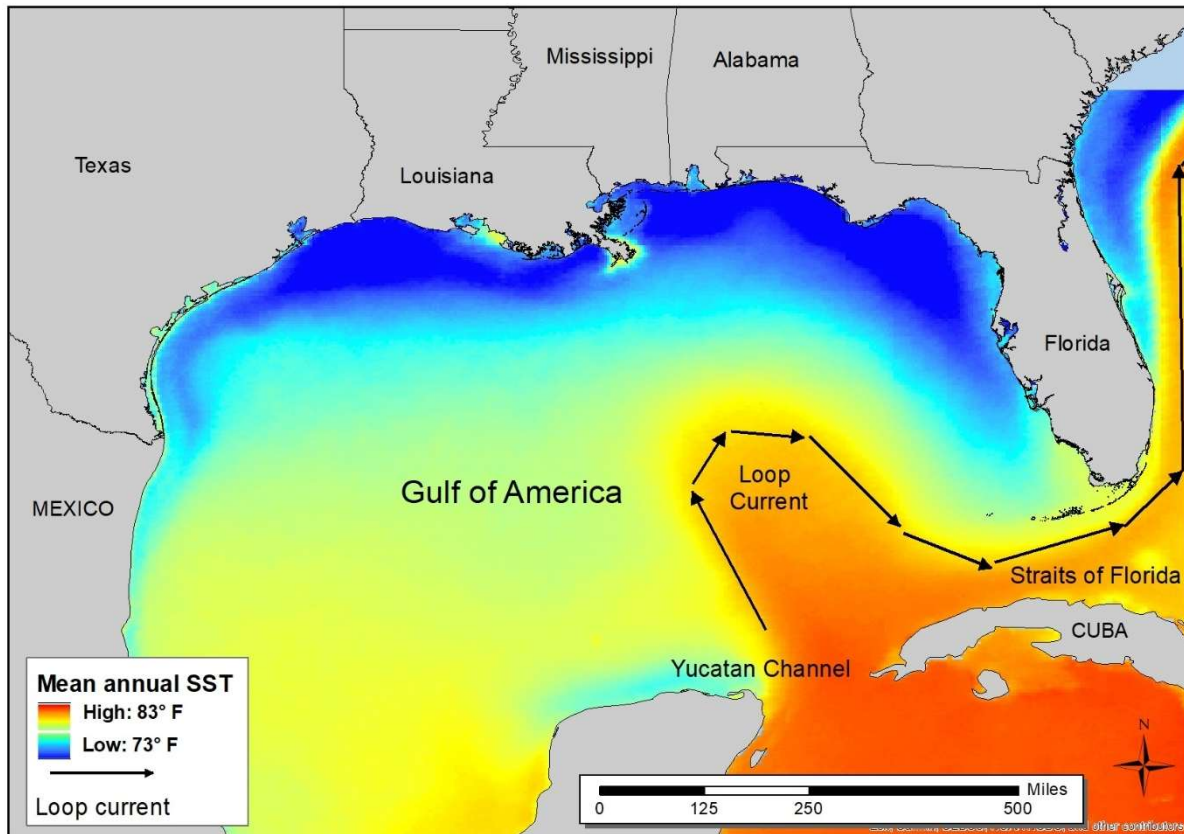


Figure 3.1.1. Mean annual sea surface temperature derived from the Advanced Very High-Resolution Radiometer Pathfinder Version 5 sea surface temperature data set.¹⁸

General Description of the Reef Fish and CMP Physical Environment

In general, reef fish and CMP species are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. Both reef fish and CMP species groupings generally have a planktonic larval stage that lives in the water column and feeds on zooplankton and phytoplankton (GMFMC 2004). As juvenile and adults, CMP species remain largely within the water column and are capable of moving seasonally throughout much of the Gulf following schools of bait fish in temperate and tropical waters. Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf (less than 100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. For example, some juvenile snapper (e.g., mutton, gray, red, dog, lane, and yellowtail snappers) and grouper (e.g., goliath, red, gag, and yellowfin groupers) are associated with inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems.

¹⁸ <https://www.ncei.noaa.gov/products/climate-data-records/pathfinder-sea-surface-temperature>

Description of HAPCs and Environmental Sites of Special Interest

Detailed information pertaining to HAPCs is provided in Generic Amendment 3 (GMFMC 2005b) and Amendment 9 to the Fishery Management Plan (FMP) for the Coral and Coral Reefs of the Gulf, U.S. Waters (GMFMC 2018). Detailed information pertaining to the Gulf area closures and marine reserves is provided in Amendment 32 to the FMP for the Reef Fish Resources in the Gulf (Reef Fish FMP; GMFMC 2011b). There are environmental sites of special interest that are discussed in the Generic EFH Amendment (GMFMC 2004) that are relevant to reef fish management. These documents are hereby incorporated by reference. Visualization of these areas are shown in Figure 3.1.2.

The following area closures include gear restrictions that may affect targeted and incidental harvest of reef fish and CMP species.

Longline/Buoy Gear Area Closure – Permanent closure to use of these gears for reef fish harvest inshore of 20 fathoms (36.6 meters) off the Florida shelf and inshore of 50 fathoms (91.4 meters) for the remainder of the Gulf, and encompasses 72,300 square nautical miles (nm²) or 133,344 km² (GMFMC 1989). Bottom longline gear is prohibited inshore of 35 fathoms (54.3 meters) during the months of June through August in the eastern Gulf (GMFMC 2009), but is not depicted in Figure 3.1.2.

Madison-Swanson and Steamboat Lumps Marine Reserves – No-take marine reserves (total area is 219 nm² or 405 km²) sited based on gag spawning aggregation areas where all fishing is prohibited except surface trolling from May through October (GMFMC 1999; 2003).

The Edges Marine Reserve – All fishing is prohibited in this area (390 nm² or 1,338 km²) from January through April and possession of any fish species is prohibited, except aboard a vessel in transit with fishing gear stowed as specified. The provisions of this do not apply to highly migratory species (GMFMC 2008).

Tortugas North and South Marine Reserves – No-take marine reserves (185 nm²) cooperatively established by Florida, the National Ocean Service, the Gulf of Mexico Fishery Management Council (Council), and the National Park Service in Generic Amendment 2 Establishing the Tortugas Marine Reserves (GMFMC 2001). Only a small portion (13 nm²) of the Tortugas North Marine Reserve is in federal waters while the entire Tortugas South Marine Reserve (54.5 nm²) is in federal waters.

Reef and bank areas designated as HAPCs in the northwestern Gulf: East and West Flower Garden Banks, Stetson Bank, and McGrail Bank – These are pristine coral areas protected by preventing the use of some fishing gear that interacts with the bottom and prohibited use of anchors (totaling 80.4 nm²). Subsequently, three of these areas were established as marine sanctuaries (East and West Flower Garden Banks and Stetson Bank). Bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots on coral reefs are prohibited in the East and West Flower Garden Banks, McGrail Bank, and on significant coral resources on Stetson Bank (GMFMC 2005b). Sonnier Bank, MacNeil Bank, 29 Fathom, Rankin Bright Bank,

Geyer Bank, Bouma Bank, Rezak Sidner Bank, Alderice Bank, and Jakkula Bank (totaling 183 nm²) are other areas that have been designated as HAPCs but currently have no regulations associated with them. A weak link in the tickler chain of bottom trawls on all habitats throughout the Gulf exclusive economic zone (EEZ) is required. A weak link is defined as a length or section of the tickler chain that has a breaking strength less than the chain itself and is easily seen as such when visually inspected. An education program for the protection of coral reefs when using various fishing gears in coral reef areas for recreational and commercial fishermen was also developed.

Florida Middle Grounds HAPC – Pristine soft coral area (348 nm² or 644.5 km²) that is protected by prohibiting the following gear types: bottom longlines, trawls, dredges, pots and traps (GMFMC and SAFMC 1982).

Pulley Ridge HAPC – A portion (101 nm²) of the HAPC (2,300 nm² or 4,259 km²) where deep-water hermatypic coral reefs are found is closed to anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots is prohibited (GMFMC 2005b).

Alabama Special Management Zone – For vessels operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, or a vessel with such a permit fishing for Gulf reef fish, fishing is limited to hook-and-line gear with no more than three hooks per line and spearfishing gear. Nonconforming gear is restricted to recreational bag limits, or for reef fish without a bag limit, to 5% by weight of all fish aboard (GMFMC 1993).

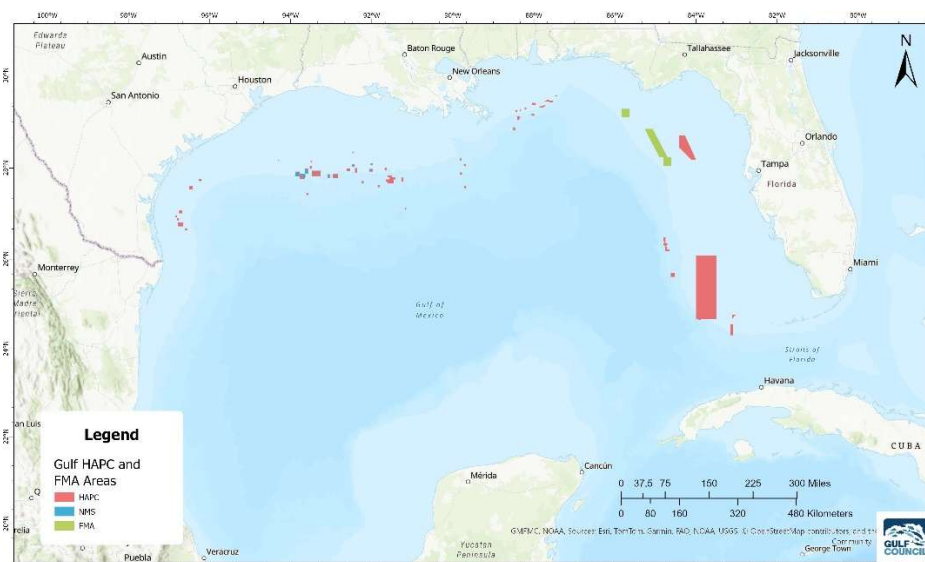


Figure 3.1.2. Map of HAPCs and Environmental Sites of Special Interest.

Northern Gulf Hypoxic Zone

A large hypoxic zone forms every summer in the northern Gulf. It is the result of allochthonous materials and runoff from agricultural lands resulting in increasing nutrient inputs to multiple rivers. These tributaries feed into the Mississippi River, which disperses to the Gulf, and creates a temperature and salinity dependent layering of waters. The nutrient rich fresh waters from the

Mississippi create seasonal, large algal blooms at the surface that eventually die, sink to the bottom, and decompose. This creates the oxygen-poor, hypoxic, bottom water layer unless front or storm events occur, which allows for mixing of the layers (Rabalais and Turner 2019). Mapping of the hypoxic zone began in 1985. For 2021, the extent of the hypoxic area was 6,334 square miles, almost triple what it was in 2020 (2,116 square miles), but still less than the extent of the 2017 hypoxic area (8,776 square miles). The changes in hypoxic area can be attributed to changing amounts of river discharge and its associated nutrient load and storm events. The major factor for the reduced size in 2020 was the active storm season with Hurricane Hanna passing right over the zone, allowing for mixing of the waters. The 2021 hypoxia area was higher than the 5-year hypoxic area average (5,408 square miles) and much larger than the 1,930 square mile goal set by the Interagency Mississippi River and Gulf of America Hypoxia Task Force to be reached by 2035.¹⁹ The hypoxic conditions in the northern Gulf directly impact less mobile benthic macroinvertebrates (e.g., polychaetes) by influencing density, species richness, and community composition (Baustian and Rabalais 2009; Breitburg et al. 2018). However, more mobile macroinvertebrates and demersal fishes are able to detect lower dissolved oxygen levels and move away from hypoxic conditions. Therefore, these organisms are indirectly affected by limited prey availability and constrained available habitat (Baustian and Rabalais 2009; Craig 2012).

Environmental Variability

Projections predict increases in sea-surface temperature and sea level; decreases in sea-ice cover; and changes in salinity, wave climate, and ocean circulation (Intergovernmental Panel on Climate Change). These changes are likely to affect plankton biomass and fish larvae abundance that could adversely impact fish, marine mammals, seabirds, and ocean biodiversity. Kennedy et al. (2002) and Osgood (2008) have suggested global climate variation could affect temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; change precipitation patterns and cause 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 influence the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs. The National Oceanic and Atmospheric Association (NOAA) Climate Web Portal predicts the average sea surface temperature in the Gulf will increase by approximately 2°C for 2006-2100 compared to the average sea surface temperature from 1956-2005.

Deepwater Horizon MC252 (DWH) Oil Spill Incident

The DWH oil spill in 2010 affected at least 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 DWH oil spill on the physical environment are expected to be significant and may be long-term. Oil was dispersed on the surface, and because of the heavy use of dispersants (both at the surface and at the wellhead), oil was 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 as were non-floating tar balls. Whereas suspended and

¹⁹ <http://gulfhypoxia.net>

floating oil degrades over time, tar balls are persistent in the environment and can be transported hundreds of miles.

Surface or submerged oil during the DWH event could have restricted the normal processes of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column, thus affecting the long-standing hypoxic zone located west of the Mississippi River on the Louisiana continental shelf. In addition, microbes in the water that break down oil and dispersant also consume oxygen, which could lead to further oxygen depletion. Zooplankton that feed off algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow. For additional information on the Deepwater Horizon MC252 oil spill and associated closures²⁰.

3.2 Description of the Biological/Ecological Environment

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

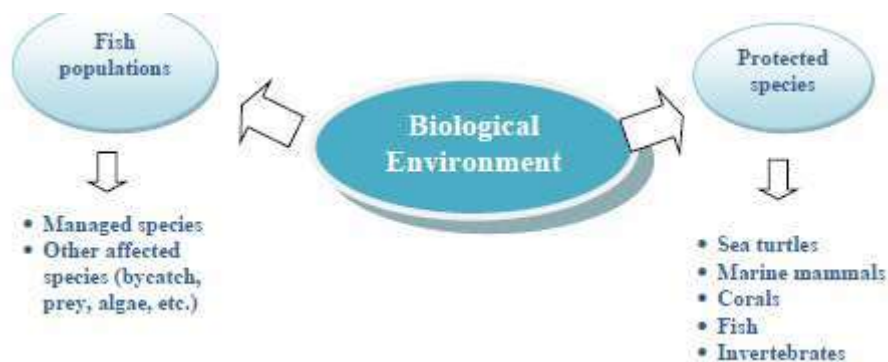


Figure 3.2.1. Two components of the biological environment described in this amendment.

3.2.1 Fish Populations

Reef Fish

The reef fish species affected by this amendment are managed under the FMP for Reef Fish Resources of the Gulf. A complete description of the life history characteristics of these species can be found in GMFMC (2011a).

In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages can be found in more detail in GMFMC (2004). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation. Juvenile and adult reef fish are typically demersal and are usually associated with bottom topographies on the continental shelf (less than 328 feet; less than

²⁰ <https://darrp.noaa.gov/oil-spills/deepwater-horizon>

100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. Juvenile red snapper are common on mud bottoms in the northern Gulf, particularly from Texas to Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981). More detail on hard bottom substrate and coral can be found in the FMP for Corals and Coral Reefs (GMFMC and SAFMC 1982).

Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 31 species (Table 3.2.1.1). Stock assessments and stock assessment reviews have been conducted for 13 species and can be found on the Council²¹ and SEDAR²² websites. The assessed species are:

- Red Snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013; SEDAR 31 Update 2014)
- Vermilion Snapper (Porch and Cass-Calay 2001; SEDAR 9 2006b; SEDAR 9 Update 2011a; SEDAR 45 2016)
- Yellowtail Snapper (Muller et al. 2003; SEDAR 3 2003; O’Hop et al. 2012)
- Mutton Snapper (SEDAR 15A 2008; SEDAR 15A Update 2014)
- Gray Triggerfish (Valle et al. 2001; SEDAR 9 2006a; SEDAR 9 Update 2011b; SEDAR 43 2015)
- Greater Amberjack (Turner et al. 2000; SEDAR 9 2006a; SEDAR 9 Update 2010; SEDAR 33 2014b; SEDAR 33 Update 2016)
- Hogfish (Ault et al. 2003; SEDAR 6 2004b; SEDAR 37 2013)
- Red Grouper (NMFS 2002; SEDAR 12 2007; SEDAR 12 Update 2009; SEDAR 42 2015)
- Gag (Turner et al. 2001; SEDAR 10 2006; SEDAR 10 Update 2009; SEDAR 33 2014a)
- Black Grouper (SEDAR 19 2010)
- Yellowedge Grouper (Cass-Calay and Bahnick 2002; SEDAR 22 2011b)
- Tilefish (Golden) (SEDAR 22 2011a)
- Atlantic Goliath Grouper (Porch et al. 2003; SEDAR 6 2004a; SEDAR 23 2011; SEDAR 47 2016)

The National Marine Fisheries Service (NMFS) Office of Sustainable Fisheries updates its Status of U.S. Fisheries Report to Congress on a quarterly basis utilizing the most current stock assessment information²³. The most recent update can be found at: <https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-reports>. The status of both assessed and unassessed stocks as of the writing of this amendment is shown in Table 3.2.1.1.

Definition of Overfishing

²¹ www.gulfcouncil.org

²² www.sefsc.noaa.gov/sedar

²³ <https://www.fisheries.noaa.gov/national/sustainable-fisheries/status-stocks-reports>

In January 2012, the Generic ACL/AM Amendment (GMFMC 2011a) became effective. Under this amendment, in years when there is a stock assessment, overfishing is defined as the current fishing mortality rate reported in the assessment exceeding the maximum fishing mortality threshold. In years when there is no stock assessment, overfishing is defined as the catch exceeding the overfishing limit (OFL). Because the overfishing threshold is now re-evaluated each year instead of only in years when there is a stock assessment, this status for reef fish could change on a year-to-year basis.

Table 3.2.1.1. Species of the Reef Fish FMP grouped by family.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
Gray Triggerfish	<i>Balistes capriscus</i>	Rebuilding, no overfishing
Family Carangidae – Jacks		
Greater Amberjack	<i>Seriola dumerili</i>	Overfished, no overfishing
Lesser Amberjack	<i>Seriola fasciata</i>	Unknown
Almaco Jack	<i>Seriola rivoliana</i>	Unknown
Banded Rudderfish	<i>Seriola zonata</i>	Unknown
Family Labridae - Wrasses		
Hogfish (West Florida Stock)	<i>Lachnolaimus maximus</i>	Not overfished, no overfishing
Family Malacanthidae - Tilefishes		
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	Not overfished, no overfishing
Blueline Tilefish	<i>Caulolatilus microps</i>	Unknown
Goldface Tilefish	<i>Caulolatilus chrysops</i>	Unknown
Family Serranidae - Groupers		
Gag	<i>Mycteroperca microlepis</i>	Not overfished, no overfishing
Red Grouper	<i>Epinephelus morio</i>	Not overfished, no overfishing
Scamp	<i>Mycteroperca phenax</i>	Unknown
Black Grouper	<i>Mycteroperca bonaci</i>	Not overfished, no overfishing
Yellowedge Grouper	* <i>Hyporthodus flavolimbatus</i>	Not overfished, no overfishing
Snowy Grouper	* <i>Hyporthodus niveatus</i>	Unknown
Speckled Hind	<i>Epinephelus drummondhayi</i>	Unknown
Yellowmouth Grouper	<i>Mycteroperca interstitialis</i>	Unknown
Yellowfin Grouper	<i>Mycteroperca venenosa</i>	Unknown
Warsaw Grouper	* <i>Hyporthodus nigritus</i>	Unknown
**Atlantic Goliath Grouper	<i>Epinephelus itajara</i>	Unknown
Family Lutjanidae - Snappers		
Queen Snapper	<i>Etelis oculatus</i>	Unknown
Mutton Snapper	<i>Lutjanus analis</i>	Not overfished, no overfishing
Blackfin Snapper	<i>Lutjanus buccanella</i>	Unknown
Red Snapper	<i>Lutjanus campechanus</i>	Rebuilding, no overfishing
Cubera Snapper	<i>Lutjanus cyanopterus</i>	Unknown
Gray Snapper	<i>Lutjanus griseus</i>	Unknown
Lane Snapper	<i>Lutjanus synagris</i>	Unknown
Silk Snapper	<i>Lutjanus vivanus</i>	Unknown
Yellowtail Snapper	<i>Ocyurus chrysurus</i>	Not overfished, no overfishing
Vermilion Snapper	<i>Rhomboplites aurorubens</i>	Not overfished, no overfishing
Wenchman	<i>Pristipomoides aquilonaris</i>	Unknown

**Atlantic goliath grouper is a protected grouper and benchmarks do not reflect appropriate stock dynamics. In 2013, the common name was changed from goliath grouper to Atlantic goliath grouper by the American Fisheries Society to differentiate from the Pacific goliath grouper, a newly named species (American Fisheries Society 2013).

Bycatch

The reef fish fishery is multi-species and handlines are a popular gear type. Handline gear is not selective; therefore, the vulnerability of the reef fish fishery to bycatch is high. Bycatch can negatively impact the ability of a stock to maintain itself at a level where fishing can be optimized.

Population and ecosystem effects resulting from changes in the bycatch of other species of fish and invertebrates are difficult to predict. As discussed in Amendment 30B (GMFMC 2008), snappers, greater amberjack, gray triggerfish and other reef fishes are commonly caught in association with red grouper. Two of these species are in rebuilding plans (red snapper and gray triggerfish) with the stocks improving. Regulatory discards significantly contribute to fishing mortality in all of these reef fish fisheries.

Various studies to help gauge bycatch from the directed reef fish fishery (commercial or recreational) have been implemented over time, including use of logbooks, port sampling, observers and fishery independent studies.

CMP Species

A description of the biological environment can be found in Amendment 18 to the CMP FMP (GMFMC and SAFMC 2011), Amendment 20B (GMFMC and SAFMC 2014), and Amendment 26 to the CMP FMP (GMFMC and SAFMC 2016). A summary of this information is provided below.

Status of CMP Fish Stocks

Both the Gulf and Atlantic king mackerel were assessed in SEDAR 38 (2014). The SEDAR 38 assessment determined that Gulf and Atlantic king mackerel were not overfished and were not experiencing overfishing. Both the Gulf and Atlantic Spanish mackerel were assessed in SEDAR 28 (2012, 2013). The assessments determined that Gulf and Atlantic Spanish mackerel were not overfished and were not experiencing overfishing. Both the Gulf and Atlantic migratory groups of cobia were assessed by SEDAR 28 in 2013. The SEDAR 28 stock assessment for Atlantic migratory group cobia (2013c) determined that the stock is not overfished or experiencing overfishing.

King Mackerel

King mackerel (*Scomberomorus cavalla*) is a marine pelagic species that is found throughout the western Atlantic from the Gulf of Maine to Brazil, including the Gulf and Caribbean Sea, and from the shore to 200 m (656 ft) depths. The habitat of adults is the coastal waters out to the edge of the continental shelf. Within the area, the occurrence of king mackerel is governed by temperature and salinity. They are seldom found in water temperatures less than 20°C and generally prefer higher salinity 36 parts per thousand (ppt) or less.

Adults are migratory, and the CMP FMP of the Gulf and Atlantic Region recognizes two migratory groups (Gulf and Atlantic). Typically, adult king mackerel are found in the southern

climates (south Florida and extreme south Texas/Mexico) in the winter and farther north in the summer; however, some king mackerel overwinter in deeper waters off the mouth of the Mississippi River, and off the coast of North Carolina. Food availability and water temperature are likely causes of these migratory patterns. King mackerel live up to 26 years for females and 23 years for males (GMFMC and SAFMC 1985; MSAP 1996; Brooks and Ortiz 2004).

Adults are known to spawn in areas of low turbidity, with salinity and temperatures of approximately 30 ppt and 27°C, respectively. There are major spawning areas off Louisiana and Texas in the Gulf (McEachran and Finucane 1979); and off the Carolinas, Cape Canaveral, and Miami in the western Atlantic (Wollam 1970; Schekter 1971; Mayo 1973). Spawning occurs generally from May through October with peak spawning in September (McEachran and Finucane 1979). Eggs are believed to be released and fertilized continuously during these months. Fifty percent of females are sexually mature between 450 to 499 mm (17.7 to 19.6 inches standard length (SL) in length and most are mature by the time they are 800 mm (35.4 inches SL, or by about age 4. Fifty percent of males are sexually mature at age 3, at a length of 718 mm SL (28.3 inches). Females in U.S. waters, between the sizes of 446 – 1,489 mm SL (17.6 to 58.6 inches) are estimated to release 69,000 – 12,200,000 eggs throughout the spawning season each year.

Larvae of king mackerel have been found in waters with temperatures between 26 – 31° C (79 – 88° F). This larval developmental stage has a short duration. King mackerel can grow up to 0.54 – 1.33 mm SL (0.02 to 0.05 inches) per day. This shortened larval stage decreases the vulnerability of the larvae and is related to the increased metabolism of this fast-swimming species. Juveniles are generally found closer to shore than adults and occasionally in estuaries.

Spanish Mackerel

Spanish mackerel (*Scomberomorus maculatus*) are migratory and move into specific areas to spawn, and mature at age 1-2 years. They primarily eat other fish species (herring, sardines, and menhaden) and to a lesser extent crustaceans and squid at all life stages (larvae to adult). They are eaten primarily by larger pelagic predators like sharks, tuna, and bottlenose dolphin.

Spanish mackerel is also a pelagic species occurring in depths up to 75 meters (225 feet) but primarily found in depths of 20 meters (60 feet) or less. They occur in coastal zones of the western Atlantic from southern New England to the Florida Keys and throughout the Gulf of Mexico (Collette and Russo 1979). Adults usually are found from the low-tide line to the edge of the continental shelf, and along coastal areas. They inhabit estuarine areas (especially higher salinity areas) during seasonal migrations, but are considered rare and infrequent in many Gulf estuaries.

Spawning occurs along the inner continental shelf from April to September (Powell 1975). Eggs and larvae occur most frequently offshore over the inner continental shelf at temperatures between 20°C (68°F) and 32°C (89.6°F) and salinities between 28 and 37 ppt. They are found frequently in water depths from 9 meters (27 feet) to about 84 meters (252 feet), but are most common in less than 50 meters (150 feet).

Juveniles are most often found in coastal and estuarine habitats and at temperatures greater than 25°C (77°F) and salinities greater than 10 ppt. Although they occur in waters of varying salinity, juveniles appear to select marine salinity levels and generally are not considered estuarine-dependent. Like king mackerel, adult Spanish mackerel are migratory, generally moving from wintering areas of south Florida and Mexico to more northern latitudes in spring and summer. Spanish mackerel generally mature at age 1 to 2 and have a maximum age of approximately 11 years (Powell 1975).

Cobia

The cobia is a member of the family Rachycentridae. The body is dark brown to silver, paler on the sides and grayish white to silvery below, with two narrow dark bands extending from the snout to base of caudal fin. These dark bands are bordered above and below by paler bands. Young cobia have pronounced dark lateral bands, which tend to become obscured in the adult fish. Most fins are deep brown, with gray markings on the anal and pelvic fins. The body is elongate and torpedo-shaped with a long, depressed head. The eyes are small and the snout is broad. The lower jaw projects past the upper jaw. The skin looks smooth with very small embedded scales.

Bycatch

Details of previous bycatch estimates in the Spanish mackerel, and king mackerel portion of the CMP fishery can be found in Appendix F (Bycatch Practicability Analysis) of Amendment 26 to the CMP FMP (GMFMC 2016) and is hereby incorporated by reference and summarized below. Most Spanish mackerel are harvested using hook-and-line gear. Discards in the commercial sector are relatively low (less than 1%), including the gillnet component, while discards in the recreational charter (26%) and headboat (9%) are higher, with recreational private discards (47%) being much higher. Due to how the fishery is prosecuted for this species, little bycatch of other finfish species occurs. For Spanish mackerel, SEDAR 81 (2023) used the following discard mortality rate of 10% for the commercial sector utilizing hook-and-line gear, 100% for commercial gillnet, and 20% for the recreational private, headboat, and charter. Commercial discard mortality recommended for shrimp trawl use is 100%. There is no evidence that the Gulf Spanish mackerel portion of the CMP fishery is adversely affecting seabirds.

For cobia, SEDAR 28 (2020) used a discard mortality rate of 5% for the hook-and-line gear (both commercial and recreational sectors), and 51% for gillnets. SEDAR 38 (2019) provided estimates of release mortality for king mackerel of 20% for the private and charter sectors, 22% release mortality for the headboat sector, 25% release mortality for commercial hooked gear fisheries, and 100% for trawl by-catch for both the Gulf and Atlantic. Most king mackerel and cobia are harvested using hook-and-line gear; however, king mackerel are also commercially harvested by gillnets in the Southern Zone off southern Florida. Gillnets are the primary gear for Spanish mackerel. Discards in the commercial sector are relatively low for all three CMP species, and while discards of cobia in the private recreational sector are very high, the discard mortality rate is very low for this species using hook-and-line gear (SEDAR 28 2020).

3.2.2 Protected Species and Protected Species Bycatch

NMFS manages marine protected species in the Southeast region under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). A brief summary of these two laws and more information is available on NMFS Office of Protected Resources website.²⁴ ESA-listed species or Distinct Population Segments (DPS) of marine mammals, sea turtles, fish, and corals occur in the exclusive economic zone (EEZ) of the Gulf. There are numerous stocks of marine mammals managed within the Southeast region. All marine mammals in U.S. waters are protected under the MMPA.

The five whale species that may be present in the Gulf (blue, sperm, North Atlantic right whale, sei, fin, and Rice's²⁵) are listed as endangered under the ESA. Rice's whales are the only resident baleen whales in the Gulf. Manatees, listed as threatened under the ESA, also occur in the Gulf and are the only marine mammal species in this area managed by the U.S. Fish and Wildlife Service.

Sea turtles, fish, and corals that are listed as threatened or endangered under the ESA occur in the Gulf. These include the following: five species of sea turtles (Kemp's ridley, loggerhead (Northwest Atlantic Ocean DPS), green (North Atlantic DPS), leatherback, and hawksbill); five species of fish (Gulf sturgeon, smalltooth sawfish, Nassau grouper, oceanic whitetip shark, and giant manta ray); and six species of coral (elkhorn, staghorn, lobed star, mountainous star, boulder star, and rough cactus). Critical habitat designated under the ESA for smalltooth sawfish, Gulf sturgeon, corals, and the Northwest Atlantic Ocean DPS of loggerhead sea turtles occur in the Gulf, though only loggerhead critical habitat and coral critical habitat occurs in federal waters. Critical habitat has been proposed in the Gulf for the North Atlantic DPS of green sea turtles.

On April 6, 2016, NMFS and the U.S. Fish and Wildlife Service published a final rule (81 FR 20057) removing the range-wide and breeding population ESA-listings of the green sea turtle and listing eight DPSs as threatened and three DPSs as endangered. The North Atlantic DPS of green sea turtle occurs in the Gulf and is listed as threatened. In addition, on June 29, 2016, NMFS published a final rule (81 FR 42268) listing Nassau grouper as threatened under the ESA. NMFS has reinitiated consultation on the FMP to address these listings. In a memorandum dated September 29, 2016, NMFS determined that fishing under the Reef Fish FMP during the re-initiation period is not likely to jeopardize the continued existence of the North Atlantic DPS of green sea turtles or Nassau grouper.²⁶

²⁴ <https://www.fisheries.noaa.gov/about/office-protected-resources>

²⁵ The Rice's whale (*Balaenoptera ricei*) was previously classified as the Gulf Bryde's whale but was later identified as morphologically and genetically distinct from other whales under the Bryde's whale complex, warranting classification as a new species of baleen whale living in the Gulf.

²⁶ The memo also addressed the South Atlantic DPS of green sea turtle because at that time, NMFS thought that individuals from that DPS would be found in the Gulf based on a study that found that approximately 5% of the turtles sampled off the Atlantic coast of Florida came from the South Atlantic DPS. However, with additional research, NMFS has determined that South Atlantic juveniles are not likely to be occurring in U.S. mainland coastal waters in anything more than negligible numbers.

On January 22, 2018, NMFS published a final rule (83 FR 2916) listing the giant manta ray as threatened under the ESA. On January 30, 2018, NMFS published a final rule (83 FR 4153) listing the oceanic whitetip shark as threatened under the ESA. In a memorandum dated March 6, 2018, NMFS revised the request for re-initiation of consultation on the Reef Fish FMP to address the listings of the giant manta and oceanic whitetip. In that memorandum, NMFS also determined that fishing under the Reef Fish FMP during the extended re-initiation period will not jeopardize the continued existence of the giant manta ray, oceanic whitetip shark, Nassau grouper, or the North Atlantic and South Atlantic DPSs of green sea turtles.

NMFS published a final rule on April 15, 2019, listing the Gulf Bryde's whale (now Rice's whale, see footnote 14 above) as endangered. In a memorandum dated June 20, 2019, NMFS revised the re-initiation request to include the Gulf Bryde's whale (Rice's whale) and determined that fishing under the Reef Fish FMP during the re-initiation period will not jeopardize the continued existence of any of the newly listed species discussed above.²⁷

There is no information to indicate marine mammals and birds rely on CMP species for food, and they are not generally caught by fishermen harvesting CMP species. The primary gear in the Gulf CMP fishery used to harvest CMP species is hook-and-line. This gear is classified in the proposed 2025 MMPA List of Fisheries as a Category III fishery (89 FR 77789, September 24, 2024), meaning the annual mortality and serious injury of a marine mammal resulting from the fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The Gulf CMP gillnet component of the CMP fishery is classified as a Category II fishery. This classification indicates an occasional incidental mortality or serious injury of a marine mammal stock resulting from the fishery (1-50 % annually of the potential biological removal). The gillnet portion of the CMP fishery has no documented interaction with marine mammals; NMFS classifies the gillnet portion of the CMP fishery as Category II based on analogy (similar risk to marine mammals) with other gillnet fisheries. Additionally, there is no evidence that the Gulf Spanish mackerel portion of the CMP fishery as a whole is adversely affecting seabirds.

The most recent biological opinion (BiOp) for the fishery management plan (FMP) was completed on September 30, 2011. The BiOp determined the operation of the Gulf reef fish fishery managed under the Reef Fish FMP is not likely to adversely affect ESA-listed marine mammals or coral and was not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish. Since issuing the opinion, in memoranda dated September 16, 2014, and October 7, 2014, NMFS concluded that the activities associated with the Reef Fish FMP are not likely to adversely affect critical habitat for the Northwest Atlantic Ocean loggerhead sea turtle DPS and four species of corals (lobed star, mountainous star, boulder star, and rough cactus).

3.3 Description of the Economic Environment

²⁷ The official change to the name has no effect on NMFS's conclusion that the activities associated with the Reef Fish FMP will not jeopardize the continued existence of the species during the revised reinitiation period.

This amendment would only impact the for-hire component of the Gulf recreational sector, and thus, that is the only component addressed in this section.

3.3.1 Reef Fish and CMP For-hire Component

The for-hire mode component of the recreational sector is composed of charter vessels and headboats (also called party boats). Charter vessels generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person. The type of service, from a vessel- or passenger-size perspective, affects the flexibility to search different fishing locations during the course of a trip and target different species because larger concentrations of fish are required to satisfy larger groups of anglers.

Permits

For anglers to fish for or possess reef fish species in or from the Gulf EEZ on for-hire vessels, those vessels are required to have a Gulf for-hire permit for reef fish (Gulf reef fish for-hire permit). The total number of valid or renewable Gulf reef fish for-hire permits remained constant from 2020 to 2021, then steadily decreased from 2021-2024, with an overall reduction of approximately 2% (Table 3.3.1.1). For anglers to fish for or possess CMP species in or from the Gulf EEZ on for-hire vessels, those vessels are required to have a Gulf for-hire permit for CMP (Gulf CMP for-hire permit). The total number of valid or renewable Gulf CMP for-hire permits increased from 2020 to 2021, then steadily decreased through 2024, with an overall reduction of approximately 3% (Table 3.3.1.2). On average, there were a total of 1,324 for-hire vessels that had either a Gulf reef fish or Gulf CMP for-hire permit during the period (Table 3.3.1.3).

Table 3.3.1.1. Number of for-hire vessels (charter and headboat) that held a Gulf reef fish for-hire permit by vessel homeport state.

Year	AL	FL	LA	MS	TX	NonGulf	Total
2020	145	803	111	29	194	12	1,294
2021	155	805	111	24	188	11	1,294
2022	157	818	99	22	177	11	1,284
2023	160	818	86	24	172	12	1,272
2024	154	818	83	25	174	11	1,265
Average	154	812	98	25	181	11	1,282

Source: NMFS SERO.

Note: Includes RCG and HRCG permitted-vessels.

Table 3.3.1.2. Number of for-hire vessels (charter and headboat) that held a Gulf CMP for-hire permit by vessel homeport state.

Year	AL	FL	LA	MS	TX	NonGulf	Total
2020	143	799	109	28	204	22	1,305
2021	153	804	109	23	200	19	1,308
2022	155	815	98	22	188	17	1,295

Year	AL	FL	LA	MS	TX	NonGulf	Total
2023	158	815	84	24	182	17	1,280
2024	154	812	81	25	182	16	1,270
Average	153	809	96	24	191	18	1,292

Source: NMFS SERO.

Note: Includes CHG and HCHG permitted-vessels.

Table 3.3.1.3. Number of for-hire vessels (charter and headboat) that held a Gulf reef fish for-hire permit or a Gulf CMP for-hire permit by vessel homeport state.

Year	AL	FL	LA	MS	TX	NonGulf	Total
2020	151	825	112	28	207	22	1,345
2021	159	828	111	24	202	19	1,343
2022	156	835	100	22	192	17	1,322
2023	159	834	86	24	189	17	1,309
2024	157	833	82	25	186	16	1,299
Average	156	831	98	25	195	18	1,324

Source: NMFS SERO.

Note: Includes RCG, HRCG, CHG, and HCHG permitted-vessels.

Although the 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 used by the Southeast Region Headboat Survey (SRHS) and is selected to report by the Science Research Director of the SEFSC, it is determined to operate primarily as a headboat and is required to submit harvest and effort information to the SRHS. During 2024, 73 Gulf headboats were registered in the SRHS (R. Cheshire, NMFS SEFSC, pers. comm. 2025). The majority of these headboats were located in Florida (44), followed by Texas (18), Alabama (7), and Mississippi/Louisiana (4).

Angler Effort

Recreational effort estimates are derived from the Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

- Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or the second primary target for the trip. The species did not have to be caught.
- Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
- Total recreational trips - The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

Other measures of effort are possible, such as directed effort (the number of individual angler trips that targeted or caught a particular species or species in the species group). Given the subject nature of this action, the following discussion focuses on charter mode target, catch, and directed trips estimates for reef fish and CMP species in the Gulf. Data from MRIP, the Louisiana Department of Wildlife and Fisheries (LDWF) Recreational Creel Survey, and the Texas Parks and Wildlife Department (TPWD) Marine Sport-Harvest Monitoring Program were used to generate these estimates.

The majority of Gulf charter vessel effort for reef fish and CMP species was consistently recorded in Florida across all categories. Reef fish target effort showed a general upward trend through 2024 for most states, though Mississippi reached its five-year peak at the start of the period in 2020 (Table 3.3.1.4). Reef fish catch effort was more varied; while Alabama and Texas peaked late in the period, effort in Florida and Louisiana peaked earlier in 2021 and showed more fluctuation or decline by 2024 (Table 3.3.1.5). Conversely, CMP target effort was notably more volatile across the Gulf States from 2020-2024, and Louisiana reported no target trips for CMP species at all (Table 3.3.1.6). In Florida and Louisiana, CMP catch trips reached five-year lows in 2024, continuing a general decline in those states (Table 3.3.1.7). Total directed effort for both reef fish and CMP species combined peaked in 2021 for Florida and in 2023 for Alabama (Table 3.3.1.8). Mississippi reported significantly lower and more sporadic directed effort for reef fish and CMP species than the other states (Table 3.3.1.8). Comparable combined directed effort data were not available for Louisiana or Texas.

Table 3.3.1.4. Gulf charter vessel reef fish target trips, by state.

	Alabama	Florida	Louisiana	Mississippi	Texas	Total
2020	38,252	196,779	6,550	1,657	2,192	245,430
2021	49,034	251,830	8,207	566	3,757	313,394
2022	50,447	272,412	6,756	328	5,323	335,266
2023	67,978	325,523	9,806	1,325	4,619	409,251
2024	64,075	288,133	10,105	378	7,619	370,310
Average	53,957	266,935	8,285	851	4,702	334,730

Source: MRIP database, SERO, NMFS (April 2026) for AL, FL and MS; LDWF Recreational Creel Survey for LA; TPWD Marine Sport-Harvest Monitoring Program for TX.

Table 3.3.1.5. Gulf charter vessel reef fish catch trips, by state.

	Alabama	Florida	Louisiana	Mississippi	Texas	Total
2020	62,854	582,453	11,404	2,315	10,939	669,965
2021	81,090	638,408	27,598	864	9,852	757,812
2022	69,746	635,237	18,708	749	9,556	733,996
2023	89,363	634,241	26,228	1,731	13,623	765,186
2024	86,508	551,738	17,067	1,238	14,936	671,487
Average	77,912	608,415	20,201	1,379	11,781	719,689

Source: MRIP database, SERO, NMFS (April 2026) for AL, FL and MS; LDWF Recreational Creel Survey for LA; TPWD Marine Sport-Harvest Monitoring Program for TX.

Table 3.3.1.6. Gulf charter vessel CMP target trips, by state.

	Alabama	Florida	Louisiana	Mississippi	Texas	Total
2020	5,039	52,690	0	1	418	58,148
2021	3,820	35,302	0	190	412	39,724
2022	10,958	72,125	0	0	249	83,332
2023	7,538	62,049	0	2,760	639	72,986
2024	12,200	35,259	0	38	98	47,595
Average	7,911	51,485	0	598	363	60,357

Source: MRIP database, SERO, NMFS (April 2026) for AL, FL and MS; LDWF Recreational Creel Survey for LA; TPWD Marine Sport-Harvest Monitoring Program for TX.

Table 3.3.1.7. Gulf charter vessel CMP catch trips, by state.

	Alabama	Florida	Louisiana	Mississippi	Texas	Total
2020	31,968	193,135	2,550	3,032	4,644	235,329
2021	24,631	189,744	3,121	1,893	2,466	221,855
2022	23,012	154,519	2,630	2,004	1,777	183,942
2023	31,401	155,136	3,126	5,169	3,054	197,886
2024	33,595	111,124	1,720	716	2,805	149,960
Average	28,921	160,732	2,629	2,563	2,949	197,794

Source: MRIP database, SERO, NMFS (April 2026) for AL, FL and MS; LDWF Recreational Creel Survey for LA; TPWD Marine Sport-Harvest Monitoring Program for TX.

Table 3.3.1.8. Gulf charter vessel reef fish and CMP directed trips (i.e., any of the species were targeted or caught), by state.

	Alabama	Florida	Louisiana	Mississippi	Texas
2020	76,775	669,793	N/A	4,733	N/A
2021	87,581	722,684	N/A	2,723	N/A
2022	80,987	711,121	N/A	2,491	N/A
2023	102,228	702,526	N/A	5,985	N/A
2024	93,914	597,418	N/A	1,984	N/A
Average	88,297	680,708	N/A	3,583	N/A

Source: MRIP database, SERO, NMFS (April 2026) for AL, FL and MS.

Similar analysis of recreational effort is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of effort by the headboat mode are provided in terms of angler days, or the total number of standardized full-day angler trips.²⁸ Headboat angler days across the Gulf increased substantially in 2021 and then decreased steadily through 2024 (Table 3.3.1.9). On average (2020 through 2024), Florida accounted for the majority of

²⁸ Headboat trip categories include half-, three-quarter-, full-, and 2-day trips. A full-day trip equals one angler day, a half-day trip equals .5 angler days, etc. Angler days are not standardized to an hourly measure of effort and actual trip durations may vary within each category.

headboat angler days reported, followed by Texas. Alabama, Mississippi, and Louisiana combined accounted for only a small percentage (Table 3.3.1.9). Headboat effort in terms of angler days for the entire Gulf tended to be concentrated most heavily during the summer months of June through August (Figure 3.3.1.1).

Table 3.3.1.9. Gulf headboat angler days and percent distribution by state (2020 through 2024).

	Angler Days				Percent Distribution		
	FL	AL-MS-LA	TX	Total	FL	AL-MS-LA	TX
2020	126,794	14,819	51,498	193,111	65.66%	7.67%	26.67%
2021	181,632	17,041	71,344	270,017	67.27%	6.31%	26.42%
2022	149,368	18,263	62,705	230,336	64.85%	7.93%	27.22%
2023	149,735	15,757	58,279	223,771	66.91%	7.04%	26.04%
2024	146,544	12,874	57,074	216,492	67.69%	5.95%	26.36%
Average	150,815	15,751	60,180	226,745	66.48%	6.98%	26.54%

Source: NMFS SRHS (2024).

*Headboat data from Alabama, Mississippi, and Louisiana are combined for confidentiality purposes.

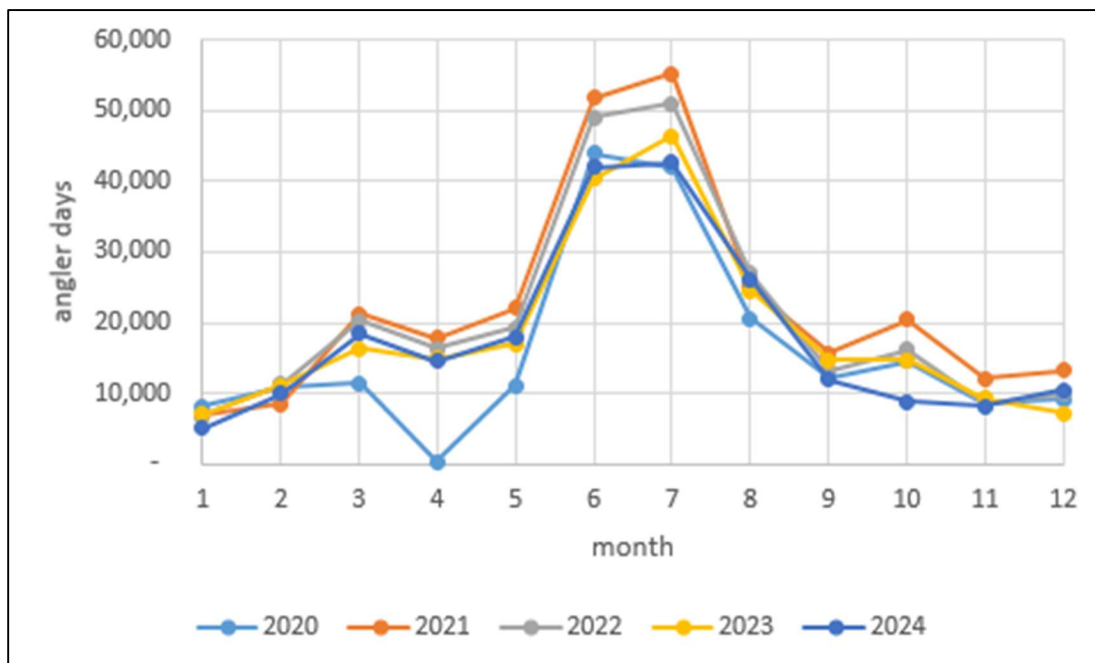


Figure 3.3.1.1. Gulf headboat angler days by month and year (2020-2024).

Source: NMFS SRHS (2024).

Economic Value

Economic value for the for-hire component of the recreational sector can be measured in many ways. According to Savolainen et al. (2012), the average charter vessel operating in the Gulf is estimated to receive approximately \$110,000 (2025\$) in gross revenue and \$33,000 (2025\$) in

net income (gross revenue minus variable and fixed costs) annually. The average headboat is estimated to receive approximately \$335,000 (2025\$) in gross revenue and \$98,000 (2025\$) in net income annually. More recent estimates of average annual gross revenue for Gulf headboats are provided in Abbott and Willard (2017) and D. Carter, SEFSC, pers. comm. 2018. Abbott and Willard (2017) suggest that Savolainen, et al.'s estimate of average annual gross revenue for headboats may be an underestimate, as data in the former suggest that average gross revenue in 2009 for the vessels in their sample was about \$592,000 (2025\$). Further, their data suggest average annual gross revenue per vessel had increased to about \$715,000 (2025\$) by 2014. However, Abbott and Willard's estimates are based on a sample of 17 headboats that chose to participate in the headboat collaborative program in 2014, while the Savolainen, et al. estimates are based on a random sample of 20 headboats. The headboats that participated in the collaborative program may be economic highliners, in which case Abbott and Willard's estimates would overestimate average annual gross revenue for Gulf headboats. D. Carter, SEFSC, pers. comm. 2018 recently estimated that average annual gross revenue for Gulf headboats was approximately \$530,000 (2025\$) in 2017. This estimate is likely the best current estimate of annual gross revenue for Gulf headboats, as it is based on a relatively large sample of 63 boats, or more than 90% of the active fleet, and is more recent.

However, gross revenues overstate the annual economic value and profits generated by for-hire vessels. Economic value for for-hire vessels can be measured by PS per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of revenue, costs, and trip net revenue (TNR) for trips taken by headboats and charter vessels in 2017 are available from Souza and Liese (2019). After accounting for transactions fees, supply costs, and labor costs, net revenue per trip was 42% of revenue for Gulf charter vessels and 54% of revenue for Southeast headboats,²⁹ or \$966 and \$2,244 (2025 dollars), respectively (Table 3.3.1.10). When TNR is divided by the number of anglers on a trip, it represents cash flow per angler (CFpA), which approximates producer surplus per angler trip. The estimated CFpA value for an average Gulf charter angler trip is \$176 (2025\$) and the estimated CFpA value for an average Gulf headboat angler trip is \$80 (2025\$; Souza and Liese 2019). Estimates of CFpA for individual reef fish or CMP species or species group target trips, in particular, are not available.

²⁹ Southeast headboats include headboats operating either the Gulf or South Atlantic. Souza and Liese (2019) state "the sample size available for headboats is limited (n=30) and, hence, the results are presented at an overall SE aggregation."

Table 3.3.1.10. Trip economics for offshore trips by Gulf charter vessels and Southeast headboats in 2017 (2025\$).

	Gulf Charter Vessels	Southeast Headboats*
Revenue	100%	100%
Transaction Fees (% of revenue)	3%	6%
Supply Costs (% of revenue)	27%	19%
Labor Costs (% of revenue)	27%	22%
Net Revenue per Trip including Labor Costs (% of revenue)	42%	54%
Net Revenue per Trip	\$966	\$2,244
Average # of Anglers per Trip	5.5	28.2
Trip Net Cash Flow per Angler Trip	\$176	\$80

Source: Souza and Liese (2019).

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. Note, 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 analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for Gulf reef fish and CMP species on federal charter trips were calculated using average trip-level impact coefficients derived from the 2022 Fisheries Economics of the U.S. report (NMFS 2024) and underlying data provided by the National Oceanic and Atmospheric Administration Office of Science and Technology. Economic impact estimates in 2022 dollars were adjusted to 2025 dollars using the annual, not seasonally adjusted, gross domestic product (GDP) implicit price deflator provided by the U.S. Bureau of Economic Analysis.

Business activity (economic impacts) for the recreational sector is characterized in the form of jobs (full- and part-time), income impacts (wages, salaries, and self-employed income), output impacts (gross business sales), and value-added impacts (contribution to the GDP in a state or region). Estimates of the average annual economic impacts (2020-2024) resulting from charter trips that targeted Gulf reef fish are provided in Table 3.3.1.11. Estimates of the average annual economic impacts (2020-2024) resulting from charter trips that targeted Gulf CMP species are provided in Table 3.3.1.12. The individual impacts metrics contained within these tables (e.g., sales and income) should not be added together because this would result in double counting. The average impact coefficients, or multipliers, used in the model are invariant to the “type” of effort (e.g., target or catch) and can therefore be directly used to measure the impact of other effort measures such as Gulf reef fish catch trips. To calculate the multipliers from Table 3.3.1.11 or 3.3.1.12, simply divide the desired impact measure (value-added impact, sales impact, income impact, or employment) associated with a given state and mode by the number of target trips for that state and mode.

The estimates provided in Table 3.3.1.11 and Table 3.3.1.12 only apply at the state-level. Addition of the state-level estimates to produce a regional (or national) total may underestimate the actual amount of total business activity, because state-level impact multipliers do not account for interstate and interregional trading. It is also important to note that these economic impacts estimates are based on trip expenditures only and do not account for durable expenditures. Durable expenditures cannot be reasonably apportioned to individual species or species groups. As such, the estimates provided in these tables may be considered a lower bound on the economic activity associated with those federal charter trips.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered by MRIP in the Southeast, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.1.11. Estimated average annual economic impacts (2020-2024) from federal charter trips that targeted Gulf reef fish, by state, using state-level multipliers. All monetary estimates are in 2025 dollars in thousands.

	FL	AL	MS	LA	TX
	Charter Mode				
Target Trips	266,935	53,957	851	8,285	4,702
Value Added Impacts	\$185,258	\$22,563	\$131	\$5,594	\$3,627
Sales Impacts	\$293,420	\$39,422	\$221	\$9,817	\$6,000
Income Impacts	\$126,287	\$16,296	\$81	\$4,030	\$2,307
Employment (Jobs)	2,544	461	3	118	50

Table 3.3.1.12. Estimated average annual economic impacts (2020-2024) from federal charter trips that targeted Gulf CMP species, by state, using state-level multipliers. All monetary estimates are in 2025 dollars in thousands.

	FL	AL	MS	LA	TX
	Charter Mode				
Target Trips	51,485	7,911	598	0	363
Value Added Impacts	\$35,731	\$3,308	\$92	\$0	\$280
Sales Impacts	\$56,593	\$5,780	\$155	\$0	\$463
Income Impacts	\$24,358	\$2,389	\$57	\$0	\$178
Employment (Jobs)	491	68	2	0	4

National-level multipliers must be used to account for interstate and interregional trading when calculating a national total of economic impacts. Between 2020 and 2024, and using national-level multipliers, federal charter trips that targeted Gulf reef fish generated employment, income, value-added, and output (sales) impacts of 3,467 jobs, \$180.8 million, \$271.8 million, and \$459 million per year, respectively, on average. Federal charter trips that targeted Gulf CMP species

generated employment, income, value-added, and output (sales) impacts of 621 jobs, \$32.4 million, \$48.7 million, and \$82.3 million per year, respectively, on average.

3.4 Description of the Social Environment

This amendment affects the management of the federally permitted for-hire vessels within the recreational sector of the Gulf coastal migratory pelagics and reef fish fisheries. The following description presents baseline information on fishing participants and fishing communities. This description includes the current status of the fishery in order to present the communities that are expected to be primarily affected by the actions in this amendment because they are the most engaged in and/or reliant on federal for-hire fishing and is used to inform the social effects. Community level data are presented whenever possible in order to meet the requirements of National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which requires the consideration of the importance of fishery resources to human communities when changes to fishing regulations are considered.

3.4.1 Description of the For-hire Component of the Recreational Sector

Description of the For-Hire Component

Charter vessels and headboats must have a Gulf for-hire permit for coastal migratory pelagics or reef fish in order to fish for and keep these species when fishing with passengers in Gulf federal waters. Coastal migratory pelagics and reef fish for-hire permits are limited access and therefore no new permits can be issued; however, permits may be purchased from existing permit holders and transferred. The distinction between headboats and charter vessels, as detailed in Section 1.1, lies in the possession of a valid U.S. Coast Guard certificate of inspection (COI) and for the purposes of the reporting requirements, headboats are only those selected to be in the SRHS. The Coast Guard COI certificate allows headboats to transport more than six passengers, whereas charter vessels do not hold this documentation. Commonly known as six-packs due to their typical capacity of six passengers, charter vessels base their fees on the entire boat. Headboats have a larger passenger capacity than charter vessels, usually carrying 15 to over 100 passengers and charge by the individual angler, or head. The length of trips for charters and headboats range from part day trips to full day trips. Charter and headboat passengers can include local residents or tourists. Tourism is an economic driver throughout the Gulf, and the availability of recreational fishing on charter and headboats is a major attraction for visitors to coastal areas in the region.

Permits

For-hire for coastal migratory pelagics and/or reef fish permits are issued to vessels with homeports in Florida (average of 62.8% of for-hire vessels from 2020-2024), Texas (14.7%), Alabama (11.8%), Louisiana (7.4%), and Mississippi (1.9%, SERO Permit Office). Vessels with homeports in other states (Alaska, Delaware, Montana, North Carolina, New Jersey, New York, Ohio, Oklahoma, Rhode Island, South Carolina, Virginia, and Wisconsin) also hold for-hire

permits, but these states represent a smaller percentage of the total number of vessels with permits.

For-hire permits are held by those with homeports in 205 communities (SERO Permit Office, 2024). The communities with the most for-hire vessels are located in Florida, Alabama, Texas, and Louisiana (Table 3.4.1.1). The communities with the most for-hire vessels are Destin, Florida (8.2% of for-hire vessels), Orange Beach, Alabama (8.1%), and Panama City, Florida (3.9%).

Table 3.4.1.1. Top homeports by number of Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels.

State	Community	Vessels
FL	Destin	107
AL	Orange Beach	105
FL	Panama City	51
TX	Galveston	49
FL	Naples	47
FL	Key West	40
LA	Venice	36
FL	Crystal River	34
TX	Port Aransas	34
FL	St. Petersburg	31
TX	Freeport	31
FL	Pensacola	30
FL	Panama City Beach	29
FL	Clearwater	28
FL	Sarasota	26

Source: SERO Permit Office, 2024.

Charter Vessels

The majority of vessels with Gulf for-hire permits are charter vessels (see Table 1.2.1.3 for a description of charter vessels including the number of charter vessels per year and number of charter vessels by homeport state). Some headboats do not participate in the SRHS and are included as charter vessels in the following analysis.

Charter vessels with a Gulf coastal migratory pelagics and/or reef fish for-hire permit have homeports in 202 communities (SERO Permit Office, 2024). Communities with the most charter vessels with Gulf for-hire permits are located in Florida, Alabama, Texas, and Louisiana (Table 3.4.1.2). The homeports with the most charter vessels with a Gulf or-hire permit are Destin, Florida and Orange Beach, Alabama (each with 8.1% of charter vessels) and Naples, Florida and Panama City Florida (each with 3.6% of charter vessels).

Table 3.4.1.2. Top homeports by number of charter vessels with Gulf coastal migratory pelagics and/or reef fish for-hire permits.

State	Community	Vessels
FL	Destin	100
AL	Orange Beach	100
FL	Naples	45
FL	Panama City	45
TX	Galveston	44
FL	Key West	39
LA	Venice	36
FL	Crystal River	34
TX	Freeport	30
FL	Pensacola	30
FL	St. Petersburg	30
FL	Panama City Beach	29
TX	Port Aransas	26
FL	Clearwater	24
FL	Sarasota	24

Source: SERO Permit Office, 2024.

SRHS Headboats

SRHS headboats make up a small proportion of vessels with Gulf for-hire permits (see Table 1.2.2.2 for a description of SRHS headboat vessels reporting landings including the number of headboat vessels per year and number of headboat vessels by state).

SRHS headboats with a Gulf coastal migratory pelagics and/or reef fish for-hire permit and reporting landings have homeports in 29 communities (SEFSC SRHS and SERO Permit Office, 2024). Communities with the most SRHS headboats are located in Texas, Florida, and Alabama (Table 3.4.1.3). The homeports with the most SRHS headboats are Port Aransas, Texas (12.1% of SRHS headboats), Destin, Florida (10.6%), and Panama City, Florida (9.1%).

Table 3.4.1.3. Top homeports by number of SRHS headboats with landings.

State	Community	Vessels
TX	Port Aransas	8
FL	Destin	7
FL	Panama City	6
AL	Orange Beach	5
TX	Galveston	5
FL	Clearwater	4
FL	Tarpon Springs	4

Source: SEFSC SRHS and SERO Permit Office, 2024.

Recreational Engagement and Reliance

Because limited data are available concerning how communities are engaged and reliant on specific species in the recreational sector, indices were created using secondary data from permit and infrastructure information for the southeast recreational fishing sector at the community level (Jepson and Colburn 2013, Jacob et al. 2013). Recreational fishing engagement is represented by the number of recreational vessels designated as “recreational” by homeport and owner’s address and the number of recreational fishing survey sites in a particular community. Fishing reliance includes the same variables as fishing engagement, divided by population. Factor scores of both engagement and reliance were plotted by community.

Figure 3.4.1.1 displays the recreational engagement and recreational reliance values for the top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels with for-hire permits, and SRHS headboats as identified in Tables 3.4.1.1, 3.4.1.2, and 3.4.1.3. Two thresholds of one and one-half standard deviation above the mean were plotted to help determine a threshold for significance. Communities are presented in alphabetical order by state and community name and all included communities demonstrate high levels of recreational engagement, although this is not specific for for-hire fishing. Because the analysis used discrete geo-political boundaries, Panama City and Panama City Beach had separate values for the associated variables. Calculated independently, each still ranked high enough to appear in the top list, suggesting a greater importance for recreational fishing in that area. The communities of Orange Beach, Alabama; Crystal River, Destin, and Key West, Florida; Venice, Louisiana; and Port Aransas, Texas demonstrate the highest reliance on recreational fishing.

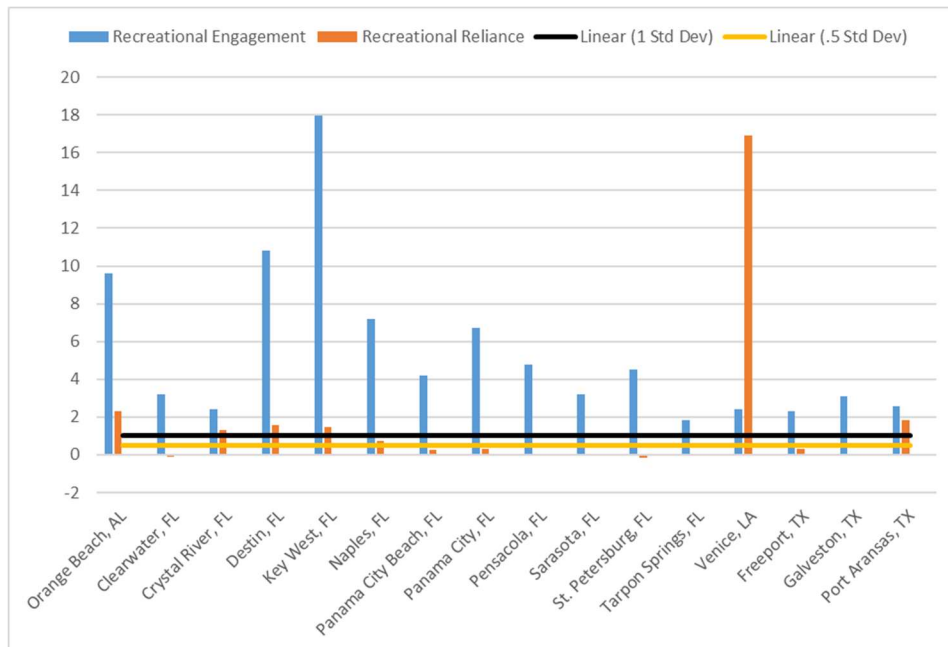


Figure 3.4.1.1. Recreational fishing engagement and reliance for top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels, and SRHS headboats.

Source: SERO, Community Social Vulnerability Indicators Database 2022.

3.4.2 Social Vulnerability

A suite of indices were created using census data to examine the social vulnerability of coastal communities. The three indices are poverty, population composition, and personal disruption. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community’s vulnerability. Poverty includes poverty rates for different groups; population composition includes more single female-headed households, households with children under the age of five, minority populations, and those that speak English less than well; and personal disruption includes disruptions such as higher separation rates, higher crime rates, and unemployment. Increased rates in the indicators are signs of populations experiencing vulnerabilities. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

Figure 3.4.2.1 provides social vulnerability rankings for place-based communities identified as the top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels with for-hire permits, and SRHS headboats included in Tables 3.4.1.1, 3.4.1.2, and 3.4.1.3. One community exceeds the threshold of one standard deviation above the mean for at least one of the indices (Venice, Louisiana). This community would be the most likely to exhibit vulnerabilities to social or economic disruption resulting from regulatory change.

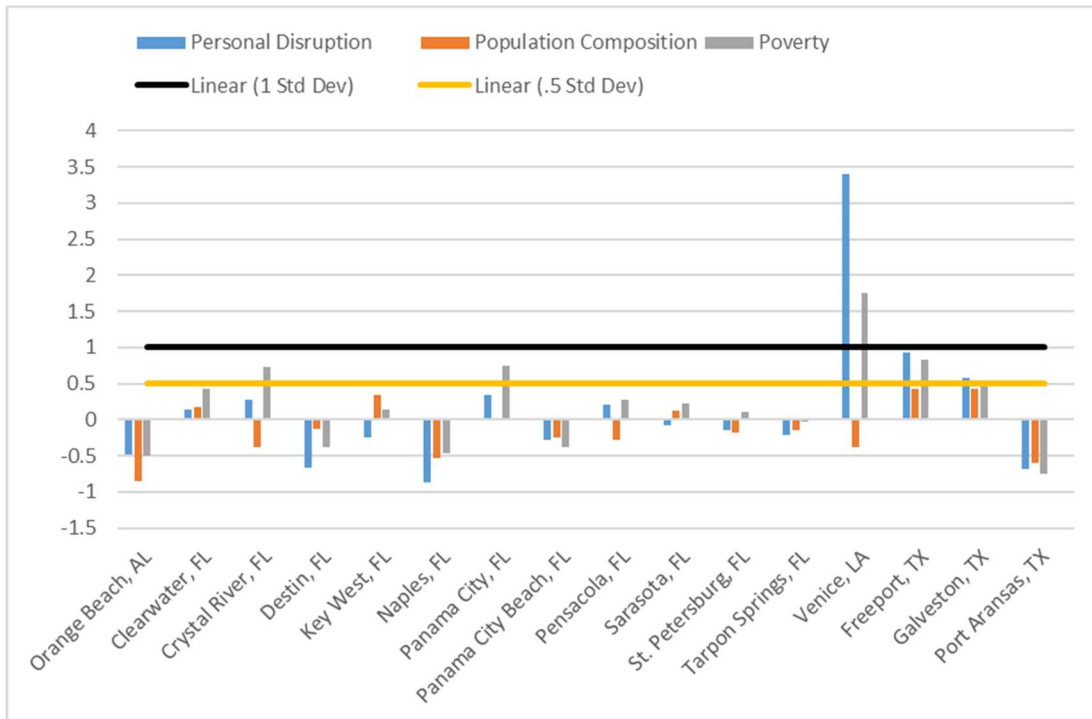


Figure 3.4.2.1. Social vulnerability indices top homeports for Gulf for-hire for coastal migratory pelagics and/or reef fish permitted vessels, charter vessels, and SRHS headboats. Source: SERO, Community Social Vulnerability Indicators Database 2022.

The description of fishing activities presented above highlights the communities most involved in Gulf for-hire fishing. It is expected that the impacts from the regulatory action in this amendment, positive or negative, will likely affect those communities.

3.5 Description of the Administrative Environment

3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act 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 vested with Secretary of Commerce (Secretary), who reviews and implements fishery management plans prepared by the eight regional Fishery Management Councils that represent the expertise and interests of constituent states. In most cases, the Secretary has delegated this authority to NMFS.

The Gulf Council (Council) is responsible for making recommendations on fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the seaward boundary of the states Alabama, Florida, Louisiana, Mississippi, and Texas as those boundaries are defined by law. The Council has seventeen voting members: one from NMFS; one each from the state fishery agencies of Florida, Alabama, Mississippi, Louisiana and Texas; and 11 public members appointed by the Secretary.

The public is also involved in the fishery management process through participation on advisory panels and through Council meetings, which, with few exceptions, are open to the public. The Councils use Scientific and Statistical Committees to review the data and science being used in assessments and fishery management plans and amendments. In addition, the regulatory process to implement management changes is in accordance with the Administrative Procedure Act, in the form of “notice and comment” rulemaking.

3.5.2 State Fishery Management

The purpose of state representation at the Council level 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 state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf states exercises legislative and regulatory authority over their respective state’s natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states’ natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each

state's primary regulatory agency for marine resources is provided on their respective Web pages (Table 3.5.2.1).

Table 3.5.2.1. Gulf state marine resource agencies and Web pages.

State Marine Resource Agency	Web Page
Alabama Marine Resources Division	http://www.outdooralabama.com/
Florida Fish and Wildlife Conservation Commission	http://myfwc.com/
Louisiana Department of Wildlife and Fisheries	http://www.wlf.louisiana.gov/
Mississippi Department of Marine Resources	http://www.dmr.ms.gov/
Texas Parks and Wildlife Department	http://tpwd.texas.gov/

The Gulf states are also involved in the management of marine fisheries through the Gulf States Marine Fisheries Commission (GSMFC). This commission was created to coordinate state regulations and develop management plans for interstate fisheries. The GSMFC does not possess any regulatory authority.

3.5.3 Enforcement

Both the NOAA Fisheries Office for Enforcement (OLE) and the USCG have the authority and the responsibility to enforce 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 grant 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.

NOAA General Counsel issued a revised Southeast Region Magnuson-Stevens Act Penalty Schedule (http://www.gc.noaa.gov/documents/Penalty%20Policy_FINAL_07012014_combo.pdf) in June 2003, which addresses all Magnuson-Stevens Act violations in the Southeast Region.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action 1: Establish Frequency and Mechanism of Data Reporting for For-hire Vessels

4.1.1 Effects on the Physical/Biological/Ecological Environment

Electronic reporting for all charter vessels would yield positive, indirect biological effects by enabling more real-time tracking of for-hire landings. Timelier data helps prevent fishermen from exceeding annual catch limits (ACLs), which reduces the likelihood of overfishing and supports healthier fish stocks. Furthermore, these data would be used to improve stock assessments inputs, and ultimately provide fishery managers with more robust scientific advice to better sustainably manage the stock.

Catch reporting is crucial for quota monitoring of all fishing sectors including the for-hire component of the recreational fishing sector. Any method of estimating charter vessels landings, as explained in Section 1.2.1, can result in a high degree of uncertainty. **Alternative 1** (No Action) would continue the status quo. **Preferred Alternative 2** and **Alternative 3** could provide positive effects to managed stocks by increasing the frequency of reporting, which can reduce the likelihood of exceeding the ACLs, thus reducing the likelihood of overfishing. Greater amberjack is currently overfished, and any overages are deducted from the allowable harvest the following fishing year. Red snapper and Gag grouper are not overfished but are still rebuilding to the target biomass levels. In the case of Greater amberjack and Gag grouper, recreational fishing season durations have been greatly reduced to a few weeks as result of substantial quota decreases to rebuild the stocks. However, especially for species under a rebuilding plan, simply lowering the ACL the following year may not offset the adverse impacts of an 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. For overfished stocks, overages may also prevent achieving the rebuilding target and optimum yield (OY). The “Did Not Fish” report required under **Preferred Alternative 2** and **Alternative 3** is expected to reduce uncertainty by categorizing periods of no fishing, as reported by the angler, rather than having to make some assumption about non-reporting of catch by the participant. As a result, effort estimates that are then used to calculate total for-hire catch will be less uncertain and more likely to be incorporated into stock assessment models than estimates where period of non-fishing are not quantifiable.

Preferred Alternative 2 would require reports to be submitted electronically for each trip, prior to offload, while **Alternative 3** would require reporting each trip daily within 24 or trip end via electronic reporting. Although both **Preferred Alternative 2** and **Alternative 3** would require reporting more frequently and electronically than the current requirements. **Preferred Alternative 2** would allow for dockside validation of actual catch which may reduce uncertainty in harvest data, resulting in a positive impact on managed stocks.

Alternative 1, Preferred 2, and Alternative 3 are unlikely to result in any adverse impacts on non-targeted species or protected species such as endangered or threatened whales, sea turtles, corals, or habitat areas of popular concern. All alternatives, including **Preferred Alternative 2**, would modify reporting requirements for the for-hire sector, but are not expected to change current fishing practices or result in any indirect adverse impacts. Modifying the reporting requirements is not expected to result in any changes to the amount of bycatch in the for-hire industry, although it may result in more accurate reporting of bycatch. It is unlikely any alternative would result in increased or modified fishing effort in the reef fish or coastal migratory pelagic (CMP) species; therefore, no adverse biological impacts on non-targeted species or protected species are expected from this action.

4.1.2 Effects on the Economic Environment

Alternative 1 (No Action) would maintain current reporting requirements for federally permitted for-hire vessels not in the Southeast Region Headboat Survey (SRHS) and would therefore not be expected to result in direct economic effects. However, **Alternative 1** would forgo opportunities to improve data collection in the for-hire sector and biological benefits that would be expected to result from more accurate data, thereby, resulting in adverse indirect economic effects.

Preferred Alternative 2 and **Alternative 3** would require federally permitted for-hire vessels that do not participate in the SRHS survey to submit fishing records (i.e., logbooks, DNFs, and declarations) via electronic reporting using National Marine Fisheries Service (NMFS) approved software. **Preferred Alternative 2** would require the submission of fishing records for each trip prior to offloading. Because most charter trips are half-day trips, **Preferred Alternative 2** could require multiple submissions in a single day. In contrast, **Alternative 3** requires a single submission per day. Because shortening the reporting frequency from weekly to daily reporting or reporting for each trip would be expected to result in marked improvements in the data collected and that these improvements would result in more effective management, e.g., improved quota monitoring, **Preferred Alternative 2** would be expected to result in the greatest economic benefits, followed by **Alternative 3**.

Costs expected to be associated with the design, establishment, and administration of an electronic data collection program for the for-hire sector will be incurred either by NMFS or by the for-hire sector. Costs to the agency would include start-up expenditures at the inception of the program as well as reoccurring costs. Initial software development expenditures and salaries and benefits for enforcement agents are examples of start-up and reoccurring expenditures borne by the government, respectively. Start-up costs and reoccurring costs to the federal government are detailed in the administrative effects section.

Costs borne by the for-hire fleet would include the burden on the vessel operators' time. Between 2020 and 2024, the average number of Gulf charter reef fish and CMP directed angler trips (i.e., any of the species were targeted or caught) for Alabama, Florida, and Mississippi totaled 772,588 (Table 3.3.1.8). For this analysis, this average is supplemented with charter reef fish (Table 3.3.1.5) and CMP (Table 3.3.1.7) catch angler trips in Louisiana and Texas. Therefore, the Gulf-wide average number of for-hire angler trips is estimated at 810,148.

Assuming that the totality of these trips occurred on federally permitted vessels and that these vessels typically carry an average of 3 to 6 anglers per trip, a total of 135,025 to 270,050 for-hire trips were taken. It is also assumed that these trips occurred in federal waters and are therefore subject to the reporting requirements under consideration. Assuming a 10-minute per trip time burden to complete and submit fishing records, the estimated total time burden would range from 22,504 hours to 45,008 hours. Based on the Bureau of Labor Statistics May 2023 average hourly wage for first line supervisors in fishing of \$29.23 per hour³⁰ (2023 dollars), the estimated total annual cost to for-hire vessels associated with the electronic reporting requirement ranges approximately from \$657,797 to \$1.316 million. However, it is noted that these estimates are not expected to represent new labor costs resulting from additional hires. Rather, the reporting burden would be expected to be borne by vessel operators and/or their existing employees. These estimates are based on reporting after each trip (**Preferred Alternative 2**). It is expected that **Alternative 3**, which also requires trip level reporting but on a daily basis, would result in comparable time burden and associated reporting costs. All cost figures presented in this section are included to provide an order of magnitude for costs expected to be incurred. As NMFS and the Council refine the data collection program to implement, it is likely that these estimates will be revised.

4.1.3 Effects on the Social Environment

Action 1 would affect for-hire vessel operators who do not currently submit electronic fishing reports through the SRHS, which are referred to in this document as charter vessels. Under **Alternative 1**, 10% of these vessels would continue to be randomly surveyed on a weekly basis through MRIP's For-Hire Survey, while charter vessels in Louisiana and Texas would participate in their state's respective recreational data collection program. Unlike SRHS data, these for-hire surveys estimate effort, not catch. Without fishing records from charter vessels, the for-hire fleet would not have the benefits of improved fishery-dependent data.

Preferred Alternative 2 and **Alternative 3** would require all charter vessels with a Gulf for-hire permit to submit fishing records electronically via NMFS approved software. If operators did not fish during a weekly period, they would be required to submit a "Did Not Fish" report. Each of these alternatives would be expected to result in greater direct, short-term negative effects compared to **Alternative 1**, as charter vessel operators must initiate action to submit trip, catch, and effort information to NMFS. These negative effects could be associated with the added time and burden for operators to learn the reporting requirements and become comfortable using the electronic reporting platform. Charter industry participants who were active when the earlier iteration of the SEFHIER program was in place (January 2021-February 2023) may already be familiar with electronic logbooks and some of the questions that will be asked. However, there will be differences between the logbooks in this and the earlier iteration of the SEFHIER program. It is expected that these short-term effects related to becoming familiar with the platform will be minimal, due to the familiarity that many in the charter fleet might already have had with electronic reporting. Still, there will be a continuing time burden to report at the trip level (**Preferred Alternative 2**) or daily (**Alternative 3**).

³⁰ [First-Line Supervisors of Farming, Fishing, and Forestry Workers](#)

The “Did Not Fish” report could also be inconvenient for some charter operators, particularly those who do not operate their vessels on a full-time basis. These reports are able to be submitted up to 30 days in advance. If a vessel operator works in the charter industry for three months a year, for example, they would be required to submit “Did Not Fish” reports each month for the remaining nine months.

Compared to the earlier implementation of the SEFHIER program, where fishing records were not defined prior to the implementation of the program, the questions asked of participants can be anticipated for this updated SEFHIER program as potential data fields are listed in this document (Table 1.3.2-1.3.4). Many participants would also have memory of answering the questions in the earlier SEFHIER program. Participants in this new iteration would have a better sense of the burden on their time. While short-term negative effects would be expected to result as operators must compile the required information and submit it electronically, under **Preferred Alternative 2** and **Alternative 3**, the reported information would be expected to result in broad long-term social benefits by providing more complete information on for-hire fishing compared to **Alternative 1**.

Although **Preferred Alternative 2** and **Alternative 3** would both require reporting the same number of trips, the frequency of reporting varies between the alternatives. While the greatest direct, short-term negative effects could be expected from the most frequent reporting requirement (**Preferred Alternative 2**), the data provided is expected to be more accurate than electronic fishing records submitted less frequently. Increased frequency in reporting under **Preferred Alternative 2** and **Alternative 3** may have some direct negative effects on charter vessel owners and captains because businesses may need to assign additional time or staff to submit reports. In terms of additional time and staff requirements, **Alternative 1** would be the least burdensome. On the other hand, greater long-term benefits would be expected from timelier reporting under **Preferred Alternative 2** or **Alternative 3**.

Because **Preferred Alternative 2** would require trip reports to be submitted prior to offloading fish once the vessel has landed, this alternative would have the greatest short-term direct burdens, including the rush to report in the window of time between the completion of a trip and offloading. This would also result in the greatest long-term benefits, as landings data are reported virtually in real time and able to be directly validated by NMFS. Some charter operators objected to submitting fishing records prior to landing due to safety concerns. Charter operators would need to ensure that clients do not depart the vessel with their catch upon landing, prior to the submission of the fishing record. This could affect the relationship between vessel operators and customers, who could have less interaction as vessel operators will be obligated to complete reporting while still with customers. Customers could also experience delays in departing the boat, as they wait for the completion of reporting. **Preferred Alternative 2** would be expected to result in greater direct effects on for-hire operators making more than one trip a day, as they would be required to make a report for each trip prior to offloading fish.

Requiring all charter vessels to report electronically and more frequently (**Preferred Alternative 2** and **Alternative 3**) is expected to result in broad long-term social benefits. Many charter operators, along with others in the recreational sector, support improving the collection of landings data for timelier quota monitoring. Further, requiring all charter vessels to report would

result in broad social benefits by increasing the sample size of landings reports compared with MRIP's estimates. The lag time in data collection and analysis of recreational landings is currently inadequate for monitoring quotas in-season. Assuming compliance from fishery participants, more frequent and timely reporting would be expected to contribute to improved quota monitoring in the long-term. Improvements in reporting could make it less likely that an ACL would be exceeded, triggering any associated accountability measures (AMs), which would negatively impact charter businesses and associated communities. However, improved reporting could also result in ACLs that are not being met now, being met in the future because of better reporting, and AMs being triggered. Triggering AMs can have significant direct and indirect effects on charter operators and fishermen because they usually impose some restriction on harvest, during either the current or the following season. Early closures and quota overage adjustments (AMs, which in turn increase the likelihood of an earlier closure in the following year) are directly linked to the limitations in NMFS's ability to close the harvest of a species quickly enough to avoid triggering an overage adjustment. Although the negative effects of AMs are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing altogether. Although the proposed reporting requirements may not prevent AMs from being triggered, these requirements would be expected to provide additional information to better forecast in-season closures and to minimize the effects of post-season AMs.

4.1.4 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 of how data are currently collected. **Preferred Alternative 2**, and **Alternative 3** would increase the administrative burden on NMFS staff as they would need to process electronic records submitted to the SRD. In order of administrative impacts to NMFS, **Preferred Alternative 2** would have the highest administrative impact with trip level reporting, then **Alternative 3** with daily reporting.

Currently, as a condition of the permit, vessel owners or operators are required to meet the reporting requirements associated with their permit (CFR 50 Section 622.5). With electronic reporting, it would be much easier to track those who are not meeting the reporting requirements of their permits and those permit holders who are delinquent in reporting would not be able to legally harvest or possess fish until their reporting was up to date. **Preferred Alternative 2**, and **Alternative 3**, and would be expected to provide positive benefits to law enforcement to monitor and maintain reporting compliance.

The budgetary implications and potential costs to NMFS are discussed in Figure 2.4.1 of this document. Additionally, Appendix F, the Technical Subcommittee Report (2014), has further details of estimated costs to the agency. It is expected that **Preferred Alternative 2**, and **Alternative 3**, would result in additional costs for monitoring compliance and validating trip activity. Additional infrastructure and personnel is expected to be necessary to maintain and process these data.

4.2 Action 2: Modify Frequency and Mechanism of Data Reporting for Southeast Region Headboat Survey

4.2.1 Effects on the Physical/Biological/Ecological Environment

Alternative 1 (No Action) requires the owner or operator of a headboat vessel for which a Gulf for-hire reef fish or CMP permit has been issued, or whose vessel fishes for or lands such reef fish or CMP species in or from state waters adjoining the applicable Gulf exclusive economic zone (EEZ) must submit an electronic fishing record for all fish harvested on each trip, via the SRHS, if selected by the SRD. 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.

Preferred Alternative 2 and **Alternative 3**, relative to **Alternative 1** (No Action), could provide positive effects to managed stocks by increasing the frequency of reporting, which can reduce the likelihood of exceeding the ACLs, thus reducing the likelihood of overfishing. Greater amberjack is currently overfished, and any overages are deducted from the allowable harvest the following fishing year. Red snapper and Gag grouper are not overfished but are still rebuilding to the target biomass levels. In the case of Greater amberjack and Gag grouper, recreational fishing season durations have been greatly reduced to a few weeks as result of substantial quota decreases to rebuild the stocks. However, especially for species under a rebuilding plan, simply lowering the ACL the following year 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. For overfished stocks, overages may also prevent achieving the rebuilding target and OY.

Preferred Alternative 2 provides the opportunity for dockside validation of actual catch which would reduce uncertainty in harvest data and provide for positive benefits. **Alternative 1** and **Alternative 3** do not provide the opportunity for dockside validation of harvest, and therefore would not provide as great of benefit to harvest data quality as **Preferred Alternative 2**. **Preferred Alternative 2** would provide an increased frequency of reporting from the all the other alternatives and would not be expected to result in any adverse effects to the physical, biological, or ecological environments.

Alternative 1, **Preferred Alternative 2**, and **Alternative 3** are unlikely to result in any adverse impacts on protected species such as endangered or threatened whales, sea turtles, corals, or habitats of particular concern. All alternatives including **Preferred Alternative 2** would modify reporting requirements for headboats but would not be expected to change current fishing practices or result in any indirect adverse impacts. Modifying the reporting requirements is not expected to result in any changes to the amount of bycatch in the charter industry. It is unlikely any alternative would result in increased or modified fishing effort in the reef fish or CMP fisheries; therefore, no adverse biological impacts on protected species would be expected from this action.

4.2.2 Effects on the Economic Environment

Alternative 1 (No Action) would not affect SRHS headboat operators, Gulf reef fish or CMP species because it would maintain current reporting requirements for SRHS headboats participating in the SRHS. Therefore, **Alternative 1** would not be expected to result in direct economic effects. However, **Alternative 1** would continue to allow for a time lag in the collection of landings information. Therefore, **Alternative 1** would forgo opportunities to improve SRHS headboat data collection and biological benefits that would be expected to result from more accurate data, thereby, resulting in adverse indirect economic effects.

Preferred Alternative 2 and **Alternative 3** would require SRHS headboats to submit fishing records via electronic reporting for each trip before offloading and daily, respectively. Because most SRHS headboats predominantly run multiple trips per day, **Preferred Alternative 2** would likely be expected to require more than one submission in a single day. Therefore, in terms of time necessary to complete the requests, **Preferred Alternative 2** and **Alternative 3** are expected to be comparable. However, because reporting after each trip is expected to be more accurate than daily reports due to the minimization of potential recall bias or omissions, **Preferred Alternative 2** is expected to result in more benefits than **Alternative 3**.

Costs to be borne by SRHS headboat operators would result from the increased opportunity costs of time due to the additional time required to complete and submit fishing records for each trip, either before offloading the fish (**Preferred Alternative 2**) or daily (**Alternative 3**). Because trip-level submissions are expected to be more time consuming than daily reports, **Preferred Alternative 2** is expected to result in higher opportunity costs than **Alternative 3**.

For NMFS, costs to administer these data collection efforts would not be expected vary. Because it is expected that shortening the reporting frequency from weekly to daily reporting (or reporting for each trip) would result in noticeable improvements in the data collected and that these improvements would result in more effective and timely management, **Preferred Alternative 2** would be expected to result in the greatest economic benefits, followed by **Alternative 3**. The potential benefits that would be expected to result from the proposed changes are expected to outweigh the costs that would be incurred by industry and NMFS. The net economic effects expected to result from these alternatives, which cannot be quantified at this time, would be determined by the relative magnitude of benefits expected and costs incurred to implement and administer these data collection efforts.

4.2.3 Effects on the Social Environment

Action 2 would directly affect the headboat operations that participate in the SRHS (SRHS Headboats). SRHS Headboats are currently required to submit trip reports electronically on a weekly basis. This time interval could be further decreased to less than a week if requested by NMFS. Although that authority already exists under **Alternative 1** (No Action), it is likely that these SRHS headboats would continue to be required by NMFS to submit trip reports on a weekly basis, thereby forgoing the potential long-term benefits of more timely landings information from an increase in reporting frequency.

Additional effects would not be expected from retaining **Alternative 1**, for which SRHS headboat operators have seven days to submit their electronic report following the previous week's fishing trips. The effects of increasing the frequency of trip report submission on SRHS headboat operators would be similar to the expected effects on charter vessels, as described in Section 4.1.4, with the exception that SRHS headboats currently maintain trip reports and submit the reports electronically. In general, some negative effects would likely be associated with any added time and staff burden for SRHS headboat owners, operators, and crew to meet the increased timeliness to submit reports. Comparing **Preferred Alternative 2** and **Alternative 3**, this reporting burden would be less under **Alternative 3**, which provides more time to report and more under **Preferred Alternative 2** which would require the most prompt submission of fishing records following a fishing trip (before offloading begins).

Compared with **Alternative 1**, requiring SRHS headboats to report sooner following fishing activities (**Preferred Alternative 2** and **Alternative 3**) is expected to result in broad social benefits by improving quota monitoring, as discussed in Section 4.1.4. Generally, SRHS headboat operators, along with many others in the recreational sector, support improving the collection of landings data for timelier quota monitoring. The lag time in data collection and analysis of recreational landings is currently inadequate for monitoring quotas in-season. Thus, the improvements to the recreational data set would benefit SRHS headboat operators and their passengers in constraining catches for species with in-season closures. The less time that passes between fishing trips and the submission of trip reports would be expected to result in more accurate reporting. Requiring SRHS headboats to submit a trip report electronically before offloading fish once the vessel has landed (**Preferred Alternative 2**) would be associated with positive direct effects as landings data are reported virtually in real time and can be validated.

While there could be some safety issues with a requirement to submit fishing records before landing, the large capacity of SRHS headboats is generally associated with a greater number of crew; thus, there would not be a single operator responsible for securing the vessel and monitoring passengers, as may occur on a charter vessel. On the other hand, **Preferred Alternative 2** would correspond with the greatest short-term, direct negative effects among the alternatives, as the captain and crew of these large capacity vessels would need to complete the trip reports independent of dockside staff assistance, and submit the trip report before offloading begins, or allow dockside staff to board the vessel to assist with the reporting, while prohibiting the offloading of fish by passengers until the report is completed and submitted. SRHS headboat operators and crew would need to ensure that passengers do not depart the vessel with their catch upon landing prior to the submission of the fishing record, which may affect the disembarking procedures of some vessels. Given the greater number of passengers on SRHS headboats than charter vessels, this may be a greater issue for SRHS headboats. Finally, **Preferred Alternative 2** would be expected to result in greater negative direct effects on SRHS headboat operators making more than one trip a day, as they would be required to make a report for each trip prior to offloading fish. This could delay the time between passengers disembarking one trip and boarding the next.

4.2.4 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 of how data are currently collected, **Preferred Alternative 2** and **Alternative 3** would increase the administrative burden on NMFS. In order of administrative impacts to NMFS, **Preferred Alternative 2** would have the highest administrative impact with trip level reporting, then **Alternative 3** with daily reporting, and **Alternative 1** with mandatory weekly reporting. **Alternative 1**, the no action alternative would result in no increase in administrative burden on NMFS.

Currently, as a condition of the permit, vessel owners or operators are required to meet the reporting requirements associated with their permit (CFR 50 Section 622.5). With increased frequency of electronic reporting under **Preferred Alternative 2** and **Alternatives 3**, it could be easier to track those who are not meeting the reporting requirements of their permits and those permits holder who are delinquent in reporting would not be able to legally harvest or possess those species. **Preferred Alternative 2** and **Alternative 3** would be expected to provide positive effects to law enforcement to monitor reporting compliance.

The reporting frequencies in Action 1 and Action 2 would increase the administrative burden if the Gulf Council (Council) recommended, and NMFS implemented, different preferred alternatives for charter vessels and headboat vessels. By requiring the same reporting frequency for both types of vessels it would be expected to have less of an administrative burden to the NMFS and Law Enforcement having to enforce one frequency requirement.

4.3 Action 3: Trip Notification and Effort Reporting Requirements

4.3.1 Effects on the Physical/Biological/Ecological Environment

The requirement to hail-out or hail-in would not directly affect the biological or physical environment but may have an indirect effect if used to aid in the prioritization of staff to conduct dockside intercepts more efficiently that could further improve the collection of catch and effort fishery data from for-hire vessels, as well as biological sampling.

Currently there is no trip notification requirement for a vessel possessing a for-hire permit in the Gulf (**Alternative 1** No Action). However, any dual-permitted for-hire vessel with a commercial reef fish permit is required to notify NMFS when embarking on a fishing trip and, if landing species under the individual fishing quota program, prior to landing at the dock. The notification requirements in **Options a** and **b** in **Alternative 2** and **Preferred Options a** and **b** in **Preferred Alternative 3** and would provide biological benefits to reef fish and CMP species by providing more accurate data through an increase in catch validation when program participants are engaged in for-hire fishing. This data could be used when conducting stock assessments and analyzing season closures. Therefore, **Options a** and **b** in **Alternative 2** and **Preferred Options a** and **b** in **Preferred Alternative 3** would be expected have greater positive benefits than **Alternative 1**, by improving the data used in stock assessments and management decision tools, when undertaking for-hire fishing trips. **Options a** and **b** in **Alternative 2** and **Preferred**

Options a and b in Preferred Alternative 3 would not alter the manner in which the reef fish or CMP fisheries are operated, and therefore would not be expected to result in any adverse impacts to the physical, biological or ecological environment, including target species, non-target species, and habitat.

4.3.2 Effects on the Economic Environment

Alternative 1 (No Action) would maintain current reporting requirements for for-hire vessels. Therefore, **Alternative 1** would not be expected to result in direct economic effects. However, by failing to require trip declarations, **Alternative 1** would not contribute to improving data collection in the for-hire sector and would, as a result, result in indirect adverse economic effects by forgoing biological benefits that would be expected to result from more accurate data.

Alternative 2 is expected to result in for-hire data improvements by requiring federally permitted charter vessels (**Option a**) and SRHS headboats (**Option b**) to submit trip declarations for for-hire fishing trips and for trips with other for-hire activities. Trip declarations are expected to strengthen data validation and increase the accuracy of the data collected. Therefore, **Alternative 2** is expected to result in economic benefits due to biological benefits that would be expected to result from more accurate for-hire data. These economic benefits are also expected from **Preferred Alternative 3**, but this alternative would limit trip declarations to for-hire fishing trips. Minor additional time burden to federally permitted for-hire operators, which are expected to be smaller under **Preferred Alternative 3**, are associated with trip declarations. Benefits expected to result from data improvements are expected to be greater than the relatively small-time burden necessary to submit trip declarations.

4.3.3 Effects on the Social Environment

Additional effects would not be expected from **Alternative 1** (No Action) as no changes would be made to the trip notification requirements. Currently, only reef fish or CMP permitted for-hire vessels that also possess a commercial reef fish permit (i.e., dual-permitted vessels) are required to notify NMFS before departing the dock indicating the purpose of the trip. If such a vessel indicates to NMFS that it is departing on a for-hire trip, these vessels are not required to provide notification before their return unless they are landing species managed under the individual fishing quota program. Compared to **Alternative 1**, some effects would result for charter vessels (**Option a**) and headboats (**Option b**) under **Alternative 2** and **Preferred Alternative 3**. Both alternatives would require charter vessels (**Option a**) and headboats (**Option b**) to submit trip declarations before leaving the dock.

In the original Gulf SEFHIER program, every time a vessel left the dock, the owner or operator was required to submit a trip declaration. None of the alternatives for this action would require that a charter vessel or headboat submit a trip declaration every time they leave the dock. Neither of these alternatives require a trip declaration when a charter vessel is used for personal use including personal fishing activity. Both **Alternative 2** and **Preferred Alternative 3** restrict the trip declaration requirement to for-hire activity. However, **Alternative 2** is more expansive than **Preferred Alternative 3** in determining what type of trip requires a trip declaration.

Alternative 2 requires a trip report when the permitted vessel is used for any for-hire activity. There could be long-term benefits of this alternative, in that it could provide more robust data on the economics of the charter industry by providing data on supplementary income. **Preferred Alternative 3** could be experienced as beneficial for the owner or operator as it would require them to declare a smaller number of trips. The charter industry had expressed concern that the earlier SEFHIER program produced data that was invasive, not immediately relevant to fishing, or burdensome. By restricting the trip declaration requirement only to for-hire fishing trips, **Preferred Alternative 3**, could be experienced as the less invasive alternative, and greater compliance and stakeholder support could be expected.

4.3.4 Effects on the Administrative Environment

Preferred Alternative 3 would require that the owner or operator of a charter vessel or headboat issued a valid federal for-hire permit for reef fish or Gulf CMP species submit a trip declaration as part of the logbook when the vessel is engaging in any type of chartered fishing activity. The trip declaration provision outlined in **Alternative 2** and **Preferred Alternative 3**, are required to validate the effort estimates from the program and would not result in an administrative burden. However, **Alternative 1** would require additional analysis to try and estimate effort estimates and/or link catch logbooks to fishing trips which would cause more of a burden on the administrative environment relative to **Alternative 2** and **Preferred Alternative 3**.

4.4 Action 4: Establish Reporting of Economic Data for For-hire Vessels

4.4.1 Effects on the Physical/Biological/Ecological Environment

The requirement for program participants to report economic information about their for-hire fishing trips would not have any impact on the physical, biological, or ecological environment.

4.4.2 Effects on the Economic Environment

Alternative 1 (No Action) would not require the collection of economic data. Therefore, **Alternative 1** would not be expected to result in direct economic effects. However, **Alternative 1** would be expected to result in adverse indirect economic effects because it would forgo benefits expected to result from the collection of economic data.

Alternative 2 and **Preferred Alternative 3** would improve for-hire data collection by collecting economic data. By collecting trip fees, fuel used in gallons, and price of fuel used per gallon, these alternatives will provide valuable information that are expected to result in improved economic analyses included in regulatory actions, e.g., economic effects of resource allocation. **Alternative 2** and **Preferred Alternative 3** will also provide needed information to inform the fisheries disaster determination process and improve the distribution of disaster relief funding to the for-hire sector. Although preliminary steps such as the collection of receipts and the retrieval of electronic transactions may be associated with small increases in the time burden, the

completion of the three economic questions is anticipated to result in a negligible time burden per for-hire trip for captains and/or operators. Because **Alternative 2** requires the completion of the economic questions from all federally permitted for-hire vessels and for all chartered activities (census), it is expected to result in a greater time burden to the for-hire sector than **Preferred Alternative 3**, which would collect the data from a stratified sample of vessels. For both **Alternative 2** and **Preferred Alternative 3**, economic benefits expected to result from the collection of economic data are expected to outweigh the minor adverse economic effects that would be associated with the time burden borne by the for-hire sector.

4.4.3 Effects on the Social Environment

In Action 4, **Alternative 1** would not require the reporting of economic data for any charter or headboat vessel. **Alternative 2** and **Preferred Alternative 3** both would result in the collection of economic data from the for-hire industry to be used by NMFS to help inform management decisions, and by states for disaster declarations. **Alternative 2** would require the owner or operator for all federally permitted vessels in the for-hire industry to report their economic data while **Preferred Alternative 3** would require only randomly sampled vessels to participate.

Surrounding the development of electronic reporting programs in the for-hire industry, stakeholders have expressed concern about the collection of economic data. Part of the purpose and need of the original SEFHIER document was to improve socioeconomic data (GMFMC 2017) though the questions asked in logbooks were not specified. Socioeconomic data, if not specified, can be difficult to anticipate and could include fields that are qualitative, subjective, demographic, or pose confidentiality challenges. In both **Alternative 2** and **Preferred Alternative 3** these questions are narrowed and specified as relating to trip fee, fuel used in gallons, and price of fuel used per gallon. As these questions are relatively quick to answer and could potentially be auto-filled—if for example, trip fee or fuel costs are consistent—the time-based burden will not be substantial. However, stakeholders and members of the Charter for-Hire Data Collection Advisory Panel have expressed concerns about the collection of trip fee information, and this was not initially recommended to be part of logbooks in part because “vessel operator may not have this information available prior to hitting dock” (Appendix C, Table 3).

There is no social data available on the way that trip fees for charter vessels are negotiated between charter operators and customers. Many charter operators do not advertise their fees on their website, as a competitive business practice and because fees can be contingent upon a range of factors. The costs included in the trip fee may vary across region and could vary depending upon the relationship between operator and customer. Further, it is possible that fees are not decided, and money is not transferred until after the trip. As such, it could be challenging for charter vessel operators to submit information on trip fees as part of their logbooks. This burden will likely not be experienced for the headboat industry, where pay is typically more standardized. By providing a census amongst federally permitted for-hire vessels, **Alternative 2** could have more long-term benefits to the fishery than the more limited survey data that would be made available as a result of **Preferred Alternative 3**. However, by decreasing the burden for participants, **Preferred Alternative 3** could receive more stakeholder buy-in, while receiving economic data that is still rigorous. It is possible that with **Preferred Alternative 3**, the

participants randomly selected in the first year of the program to answer these economic questions might experience more burden than participants in later years. Although randomly selected, the experience of having to answer questions not required by most of the industry could initially be felt as unfair.

Although the questions asked of participants as a result of this action are specifically economic, they can be used to develop stronger socioeconomic analysis of Gulf fisheries. The collection of socioeconomic data and analysis is necessary to ensure the sustained participation and reduce adverse effects on fishing communities as specified in National Standard 8 of the Magnuson-Stevens Act. It is also possible that the economic data made available could be used for the allocation of disaster relief funds. Many fishing communities in the Gulf have historically experienced challenges in receiving federal disaster assistance following hurricanes (Agar et al. 2020, Dyer and McGoodwin 1999, Ingles 2007), particularly as vessels and infrastructure are often uninsured and the value of loss can be challenging to account for. Although this survey could serve as an additional data source to value loss it is not yet clear how that could be utilized by the various federal and state agencies in charge of disaster assistance.

4.4.4 Effects on the Administrative Environment

Alternative 2 would not add any administrative burden beyond those of administering the reporting under Action 1 because the economic questions would be included in all of the reports. **Preferred Alternative 3** would increase the administrative burden because the Southeast Fisheries Science Center would need to develop a method for vessel stratification and determine the minimum sample size for each vessel stratum in a manner motivated by- and sufficient for- providing data-based scientific and management advice for this sector. During the first year of a logbook, a 20% simple random sample of permitted vessels would be selected for economic reporting. In subsequent years, the previous years' logbook data would be used to develop a stratification of vessels, guided by anticipated management needs and a desire to minimize the overall sample size. The strata would be iteratively developed over the first few years of the program as the Center learns more about this fishery. Strata might be defined on permit or vessel characteristics (from the permit application), on activity levels or species caught during the last year(s), on areas fished, or on state, port, or other variables available for the full population. A stratification design requires that every vessel be uniquely assigned to one (and only one) stratum.

4.5 Cumulative Effects

Cumulative effects are those effects that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions (RFFA), regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative effects can result from individually minor, but collectively significant actions that take place over a period of time. The cumulative effects analysis in this environmental assessment evaluates the following five criteria.

1. The area in which the effects of the proposed action will occur - The affected area of these proposed actions encompasses the state and federal waters of the Gulf, as well as Gulf communities that are dependent on reef fish and CMP fishing. For more information about the area in which the effects of this proposed action would occur, please see Chapter 3, Affected Environment, which describes these important resources as well as other relevant features of the human environment.

2. The impacts that are expected in that area from the proposed action - The proposed actions would establish electronic reporting for the charter component of the for-hire industry, modify the reporting timing of vessels reporting to the SRHS, require a trip declaration for all federally for-hire permitted vessels embarking on a for-hire fishing trip, and require reporting of economic information, if selected. The environmental consequences of the proposed actions are analyzed in Sections 4.1, 4.2, and 4.3, and are not expected to be significant. The combined actions are not expected to have significant effects on the physical environment, as they are not expected to alter how the CMP or reef fish fishery is prosecuted (Sections 4.1.1, 4.2.1, and 4.3.1). These measures are expected to have non-significant but positive effects on the biological environment because the actions would allow for more timely monitoring of reef fish and CMP species being harvested by the for-hire sector (Section 4.1.2, and 4.2.2). Regulatory discards are expected to remain unchanged as the purpose of this document is to improve data collection rather than modifying fishing seasons, size limits, or bag limits. The actions are not expected to significantly affect the economic, social, or administrative environment (Economic, social, and administrative sections throughout Chapter 4), adversely or beneficially.

3. Other past, present and future RFFAs that have or are expected to have impacts in the area - There are numerous actions under development in the Gulf annually. Many of these activities are expected to have impacts associated with them and are listed below.

Other fishery related actions - Other pertinent actions for reef fish and CMP species are summarized in the history of management (Section 1.3). Currently, there are several present and RFFAs that are being considered by the Council for the Reef Fish FMP or implemented by NMFS, which could affect reef fish stocks. These include Amendment 58A, which proposes to revise shallow-water grouper management measures; Amendment 59A, which would revise permit requirements for participation in the Grouper-Tilefish commercial IFQ programs; Amendment 59B, which would revise active participation requirements in the Grouper-Tilefish commercial IFQ programs; Amendment 60, which would address commercial IFQ programmatic distributional issues; Amendment 62, which would modify red grouper catch limits; and Amendment 63, which would establish a quota bank for red grouper. Two framework actions are also being developed: a reef fish framework that proposes to modify the shallow-water grouper catch limits and recreational fishing season ahead of Amendment 58A; and a generic framework that addresses essential fish habitat. Lastly, NMFS developed an emergency rule to increase the red grouper catch limits for 2025. Descriptions of these actions can be found on the Council's Website.

Non-fishery related actions - Actions affecting the reef fish fishery have been described in previous cumulative effects analyses. An important event includes impacts of the Northern Gulf Hypoxic Zone (See Sections 3.1 and 3.2) and the Deepwater Horizon MC252 Oil Spill. DWG

species, while mobile, have an unknown susceptibility to hypoxic conditions and effects from the Deepwater Horizon oil spill on this species complex have not been analyzed, so any effects from the Northern Gulf Hypoxic Zone on DWG species are unknown.

4. The impacts or expected impacts from these other actions - The cumulative effects from managing the reef fish and CMP fishery have been analyzed in multiple other actions. They include a detailed analysis of the reef fish and CMP fishery, cumulative effects on non-target species, protected species, and habitats in the Gulf. Overall, bycatch of protected species in the reef fish and CMP fishery are negligible and effects to habitat are minimized due to the gear types used for harvest (Section 3.2). The effects of this action are positive, as they will ultimately improve the accuracy and timeliness of data collection for the for-hire component of the recreational fishing sector.

5. The overall impact that can be expected if the individual impacts are allowed to accumulate - These actions, combined with other past actions, present actions, and RFFAs, are not expected to have significant beneficial or adverse effects on the physical and biological environments. Any effects are expected to be positive but are not expected to substantially change the way the reef fish or CMP fishery are prosecuted (Sections 4.1.1, 4.1.2, 4.2.1, 4.2.2, 4.3.1, and 4.3.2). Because it is unlikely there would be any changes in how the fishery is prosecuted, these actions, combined with past actions, present actions, and RFFAs, are not expected to have significant adverse effects on public health or safety.

6. Summary - The proposed actions are not expected to have individual significant effects on the physical, biological, economic, or social environments. Any effects of the proposed action, when combined with other past actions, present actions, and RFFAs are not expected to be significant. The cumulative social and economic effects of past, present, and future amendments may be described as increasing fishing opportunities, resulting in positive social and economic impacts. The proposed actions in this environmental assessment are expected to result in important long-term benefits to fishing communities and associated businesses.

CHAPTER 5. REFERENCES

- Abbott, J.K., and D. Willard. 2018. Rights-based management for recreational for-hire fisheries: Evidence from a policy trial. *Fisheries Research*. 196. 106–116 pp.
- Agar, J. J., M. Shivrani., & D. Matos-Caraballo. (2020). The Aftermath of Hurricane María on Puerto Rican Small-Scale Fisheries. *Coastal Management*, 48(5), 378–397.
<https://doi.org/10.1080/08920753.2020.1795967>
- Ault, J. S., S. G. Smith, G. A. Diaz, and E. Franklin. 2003. Florida hogfish fishery stock assessment. University of Miami, Rosenstiel School of Marine Science. Contract No. 7701 617573 for Florida Marine Research Institute, St. Petersburg, Florida.
- Baustian, M.M. and N.N. Rabalais. 2009. Seasonal composition of benthic macroinfauna exposed to hypoxia in the northern Gulf of Mexico. *Estuaries and Coasts* 32:975–983.
- Breitburg, D., L.A. Levin, A. Oschiles, M. Gregoire, F.P. Chavez, D.J. Conley, V. Garcon, D. Gilbert, D. Gutierrez, K. Isensee, G.S. Jacinto, K.E. Limburg, I. Montes, S.W.A. Naqvi, G.C. Pitcher, N.N. Rabalais, M.R. Roman, K.A. Rose, B.A. Seibel, M. Telszewski, M. Yasuhara, and J. Zhang. 2018. Declining oxygen in the global ocean and coastal waters. *Science* 359(6371).
<https://doi.org/10.1126/science.aam7240>
- Bjorndal, K.A. (1997) Foraging Ecology and Nutrition of Sea Turtles. In: Lutz, P.L. and Musick J.A., Eds., *The Biology of Sea Turtles*, CRC Press, Boca Raton, FL, 199-231.
- Brooks, E.N. and M. Ortiz. 2004. Estimated von Bertalanffy growth curves for king mackerel stocks in the Atlantic and Gulf of Mexico. SFD-2004-00#. National Marine Fisheries Service, Southeast Fisheries Science Center, Sustainable Fisheries Division, Miami.
- Camilli, R., C.M. Reddy, D.R. Yoerger, B.A.S. Van Mooy, M.V. Jakuba, J.C. Kinsey, C.P. McIntyre, S.P. Sylva, and J.V. Maloney. 2010. Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon. *Science* 330(6001):201-204.
- Carls, M. G., S. D. Rice, and J. E. Hose. 1999. Sensitivity of fish embryos to weathered crude oil: Part I. Low-level exposure during incubation causes malformations, genetic damage, and mortality in larval Pacific herring (*Clupea pallasii*). *Environmental Toxicology and Chemistry* 18(3): 481–493.
- Cass-Calay, S. L., and M. Bahnick. 2002. Status of the yellowedge grouper fishery in the Gulf of Mexico. Contribution SFD 02/03 – 172. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- Craig, J.K. 2012. Aggregation on the edge: Effects of hypoxia avoidance on the spatial distribution of brown shrimp and demersal fishes in the Northern Gulf of Mexico. *Marine Ecology Progress Series* 445:75–95

Dyer, C. L., & J.R. McGoodwin. (1999). Tell Them We're Hurting": Hurricane Andrew, the Culture of Response, and the Fishing Peoples of South Florida and Louisiana. In A. Oliver-Smith & S. Hoffman (Eds.), *The Angry Earth: Disaster in Anthropological Perspective*. Routledge.

GMFMC and SAFMC. 1982. Fishery Management Plan Final Environmental Impact Statement For Coral and Coral Reefs. 5401 West Kennedy Boulevard, Suite 881, Tampa, Florida 33609 and South Atlantic Fishery Management Council, One Southpark Circle, Suite 306 Charleston, South Carolina 29407. 332 p.

GMFMC and SAFMC. 1985. Final amendment 1 fishery management plan, environmental impact statement, for coastal migratory pelagic resources (mackerels). Gulf of Mexico Fishery Management Council. Tampa, Florida. and South Atlantic Fishery Management Council. North Charleston, South Carolina. 204 pp.

GMFMC and SAFMC. 2011. Final amendment 18 to the fishery management plan for coastal migratory pelagic resources in the Gulf of Mexico and Atlantic regions including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida; South Atlantic Fishery Management Council. North Charleston, South Carolina. 399 pp.

GMFMC and SAFMC. 2013. Amendment 20A to the fishery management plan for the coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic, including environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis: coastal migratory pelagics sale and permit provisions. Gulf of Mexico Fishery Management Council. Tampa, Florida; South Atlantic Fishery Management Council. North Charleston, South Carolina. 171 pp.

GMFMC. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico and environmental impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida.

GMFMC. 1988. Amendment number 2, and environmental assessment, and regulatory impact review, and initial regulatory flexibility analysis to the fishery management plan for the red drum fishery of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida. 43 pp.

GMFMC. 1989. Amendment 1 to the reef fish fishery management plan includes environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 356 pp.

GMFMC. 1995. Amendment 11 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico. Includes regulatory impact review and environmental assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida. 92 pp.

GMFMC. 2001. Generic amendment addressing the establishment of Tortugas Marine Reserves in the following fishery management plans of the Gulf of Mexico: Coastal migratory pelagics fishery management plan (Amendment 13), coral and coral reefs fishery management plan (Amendment 4), red drum fishery management plan (Amendment 4), reef fish fishery management plan (Amendment 19), shrimp fishery management plan (Amendment 12), spiny lobster fishery management plan (Amendment 7), stone crab fishery management plan (Amendment 8). Includes an IRFA, RIR, and a FSEIS. Gulf of Mexico Fishery Management Council, Tampa, Florida. 194 pp.

GMFMC. 2003. Corrected amendment for a charter vessel/headboat permit moratorium amending the FMPs for: Reef fish (Amendment 20) and coastal migratory pelagics (Amendment 14) (Including EA/RIR/IRFA). Gulf of Mexico Fishery Management Council. Tampa, Florida. 164 pp.

GMFMC. 2004. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: Shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico of Mexico and South Atlantic. Volume 1. Gulf of Mexico Fishery Management Council. Tampa, Florida. 682 pp.

GMFMC. 2005a. Final amendment to the FMPs for: Reef fish (Amendment 25) and coastal migratory pelagics (Amendment 17) for extending the charter vessel/headboat permit moratorium (including SEIS/RIR/IRFA). Gulf of Mexico Fishery Management Council, Tampa, Florida. 111 pp.

GMFMC. 2005b. Final generic amendment number 3 for addressing essential fish habitat requirements, habitat areas of particular concern, and adverse effects of fishing in the following fishery management plans of the Gulf of Mexico: Shrimp fishery of the Gulf of Mexico, United States waters, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, coastal migratory pelagic resources (mackerels) in the Gulf of Mexico and South Atlantic, stone crab fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coral and coral reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida. 106 pp.

GMFMC. 2008. Reef Fish Amendment 30B: Gag – End Overfishing and Set Management Thresholds and Targets; Red Grouper – Set Optimum Yield, Total Allowable Catch, and Management Measures; Area Closures; and Federal Regulatory Compliance. Gulf of Mexico Fishery Management Council, 2203 North Lois Avenue, Suite 1100, Tampa, Florida 33607.

GMFMC. 2011a. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico Fishery Management Council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 378 pp.

GMFMC. 2011b. Final reef fish amendment 32 – gag grouper – rebuilding plan, annual catch limits, management measures. Red grouper – annual catch limits, management measures, and grouper accountability measures, including final environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 406 pp.

GMFMC. 2012. Reef fish amendment 34: Commercial reef fish permit requirements and crew size on dual-permitted vessels in the Gulf of Mexico. Including draft environmental assessment, regulatory impact review, and regulatory flexibility act analysis Gulf of Mexico Fishery Management Council, Tampa, Florida. 62 pp.

GMFMC. 2013. Framework action to the fishery management plans for reef fish resources of the Gulf of Mexico and coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic headboat electronic reporting requirement, including, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 45 pp.

GMFMC. 2014. Final amendment 40 to the fishery management plan for the reef fish resources of the Gulf of Mexico recreational red snapper sector separation, including final environmental impact statement, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 304 pp.

GMFMC. 2017. Final generic amendment to the fishery management plans for the reef fish resources of the Gulf of Mexico and coastal migratory pelagic resources in the Gulf of Mexico and Atlantic region: Modifications to charter vessel and headboat reporting requirements, including environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 185 pp.

GMFMC. 2018. Coral habitat areas considered for habitat area of particular concern designation in the Gulf of Mexico. Final amendment 9 to the fishery management plan for the coral and coral reefs of the Gulf of Mexico, U.S. Waters, including final environmental impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida. 317 pp.

Goodman, R., 2003. Tar balls: The end state. *Spill Science & Technology Bulletin* 8(2):117-121.

Gore, R. H. 1992. *The Gulf of Mexico: A treasury of resources in the American Mediterranean*. Pineapple Press. Sarasota, Florida.

Haensly, W. E., J. M. Neff, J. R. Sharp, A. C. Morris, M. F. Bedgood, and P. D. Beom 1982. Histopathology of *Pleuronectes platessa* from Aber Wrac'h and Aber Benoit, Brittany, France: long-term effects of the Amoco Cadiz crude oil spill. *Journal of Fish Disease* 5:365-391.

Harper, J. 2003. *Exxon Valdez Oil Spill Trustee Council Gulf of Alaska ecosystem monitoring project final report. Shore zone mapping of the Outer Kenai Coast, Alaska*. Gulf of Alaska Ecosystem Monitoring Project 02613. Coastal and Ocean Resources, Inc. Sidney, British Columbia. <http://www.evostc.state.ak.us/Store/FinalReports/2002-02613-Final.pdf>

Hazen, T.C., E.A. Dubinsky, T.Z. DeSantis, G.L. Andersen, Y.M. Piceno, N. Singh, J.K. Jansson, A. Probst, S.E. Borglin, J.L. Fortney, W.T. Stringfellow, M. Bill, M.E. Conrad, L.M. Tom, K.L. Chavarria, T.R. Alusi, R. Lamendella, D.C. Joyner, C. Spier, J. Baelum, M. Auer, M.L. Zemla, R. Chakraborty, E.L. Sonnenthal, P. D'haeseleer, H.N. Holman, S. Osman, Z. Lu, J.D. van Nostrand, Y. Deng, J. Zhou, and O.U. Mason. 2010. Deep-sea oil plume enriches indigenous oil-degrading bacteria. *Science* 330(6001):204-208.

Heintz, R. A., J. W. Short, and S. D. Rice. 1999. Sensitivity of fish embryos to weathered crude oil: Part II. Increased mortality of pink salmon (*Oncorhynchus gorbuscha*) embryos incubating downstream from weathered Exxon *Valdez* crude oil. *Environmental Toxicology and Chemistry* 18(3):494–503.

Hose, J.E., M.D. McGurk, G.D. Marty, D.E. Hinton, E.D Brown, and T.T. Baker. 1996. Sublethal effects of the (Exxon Valdez) oil spill on herring embryos and larvae: morphological, cytogenetic, and histopathological assessments, 1989–1991. *Canadian Journal of Fisheries and Aquatic Sciences* 53: 2355-2365.

Ingles, P. (2007). Any Port in the Storm: The Effects of Hurricane Katrina on Two Fishing Communities in Louisiana. *NAPA Bulletin*, 28(1), 69–86.
<https://doi.org/10.1525/napa.2007.28.1.69>

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2013. Development and evaluation of social indicators of vulnerability and resiliency for fishing communities in the Gulf of Mexico. *Marine Policy* 37:86-95.

Jepson, M. and L. L. Colburn. 2013. Development of social indicators of fishing community vulnerability and resilience in the U.S. Southeast and Northeast Regions
Kennedy, V.S., R.R. Twilley, J.A. Kleypas, J.H. Cowan, and S.R. Hare. 2002. Coastal and marine ecosystems & global climate change: Potential effects on U.S. resources. Pew Center on Global Climate Change, Arlington, Virginia. 52 pp.
https://www.c2es.org/site/assets/uploads/2002/08/marine_ecosystems.pdf

Khan, R. A. and J. W. Kiceniuk. 1984. Histopathological effects of crude oil on Atlantic cod following chronic exposure. *Canadian Journal of Zoology* 62:2038-2043.

Khan R.A. and J.W. Kiceniuk. 1988. Effect of petroleum aromatic hydrocarbons on monogeneids parasitizing Atlantic cod, *Gadus morhua*. *Bulletin of Environmental Contamination and Toxicology* 41: 94-100.

Khan, R. A. 1990. Parasitism in marine fish after chronic exposure to petroleum hydrocarbons in the laboratory and to the Exxon *Valdez* Oil Spill. *Bulletin of Environmental Contamination and Toxicology* 44:759-763.

Kiceniuk J. W. and R. A. Khan. 1987. Effect of petroleum hydrocarbons on Atlantic cod, *Gadus morhua*, following chronic exposure. *Canadian Journal of Zoology* 65:490-494. Khan 1990

- Kujawinski, E.B., M.C. Kido Soule, D.L. Valentine, A.K. Boysen, K. Longnecker, and M.C. Redmond. 2011. Fate of dispersants associated with the *Deepwater Horizon* Oil Spill. *Environmental Science and Technology* 45:1298-1306.
- Mayo, D.A. 1973. Rearing, growth, and development of the eggs and larvae of seven scombrid fishes from the Straits of Florida. Ph.D. Thesis, University of Miami, Coral Gables, Florida. 138 pp.
- Mendelssohn, I. A., G. L. Andersen, D. M. Baltz, R. H. Caffey, K. R. Carman, J. W. Fleeger, S. B. Joye, Q. Lin, E. Maltby, E. B. Overton, and L.P. Rozas. 2012. Oil impacts on coastal wetlands: Implications for the Mississippi River Delta ecosystem after the *Deepwater Horizon* oil spill. *BioScience* 62: 562–574.
- McEachran, J.D. and J.D. Fechhelm. 2005. *Fishes of the Gulf of Mexico, Vol. 2. Scorpaeniformes to Tetraodontiformes*. University of Texas Press, Austin, Texas.
- MSAP. 1996. 1996 report of the mackerel stock assessment panel. Gulf of Mexico Fishery Management Council, Tampa, Florida. 54 pp.
- Muller, R. G., M. D. Murphy, J. de Silva, and L. R. Barbieri. 2003. Final report submitted to the National Marine Fisheries Service, the Gulf of Mexico fishery management council, and the South Atlantic fishery management council as part of the southeast data, assessment, and review (SEDAR) iii. Florida Fish and Wildlife Conservation Commission, FWC-FMRI Report: IHR 2003-10. Florida Fish and Wildlife Research Institute. St. Petersburg, Florida.
- Murawski, S. A., W. T. Hogarth, E. B. Peebles, and L. Barbieri. 2014. Prevalence of external skin lesions and polycyclic aromatic hydrocarbon concentrations in Gulf of Mexico fishes, post-Deepwater Horizon. *Transactions of the American Fisheries Society* 143(4):1084-1097
- NMFS. 2024. Fisheries Economics of the United States, 2022. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-248A, 28 p.
- NOAA. 2010. Deepwater Horizon Oil: Characteristics and concerns. NOAA Office of Response and Restoration, Emergency Response Division, Silver Spring, Maryland. 2 pp.
http://www.sarasota.wateratlas.usf.edu/upload/documents/DeepwaterHorizonOil_CharacteristicsAndConcerns_NOAA.pdf
- NODC. 2011. 4 km NODC/RSMAS AVHRR Pathfinder v5 Seasonal and Annual Day-Night Sea Surface Temperature Climatologies for 1982-2009 for the Gulf of Mexico (NODC Accession 0072888). <http://accession.nodc.noaa.gov/0072888>
- O’Hop, J., M. Murphy, and D. Chagaris. 2012. The 2012 stock assessment report for yellowtail snapper in the South Atlantic and Gulf of Mexico (SEDAR 27). Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida.

- Osgood, K. E., editor. 2008. Climate impacts on U.S. living marine resources: National Marine Fisheries Service concerns, activities and needs. U.S. Dep. Commerce, NOAA Technical Memo. NMFSF/SPO-89. NOAA Office of Science and Technology, Silver Spring, Maryland. 118 pp. <https://spo.nmfs.noaa.gov/sites/default/files/tm89.pdf>
- Porch, C.E. and S.L. Cass-Calay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico: Assessment 5.0. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, FL. 40 p + figures.
- Porch, C. E., A. M. Eklund, and G. P. Scott. 2003. An assessment of rebuilding times for goliath grouper. Contribution: SFD 2003-0018. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- Powell, D. 1975. Age, growth and reproduction in Florida stocks of Spanish mackerel, *Scomberomus maculatus*. Florida Marine Research Publication 5. 21 pp.
- Rabalais, N.N. and R.E. Turner. 2019. Gulf of Mexico hypoxia: Past, present, and future. *Limnology and Oceanography Bulletin* 28(4):117-124.
- Rico-Martínez, R., T.W. Snell, and T.L. Shearer. 2013. Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A® to the *Brachionus plicatilis* species complex (Rotifera). *Environmental Pollution* 173:5-10.
- Savolainen, M.A., R.H. Caffey, and R.F. Kazmierczak, Jr. 2012. Economic and attitudinal perspectives of the recreational for-hire fishing industry in the U.S. Gulf of Mexico. Center for Natural Resource Economics and Policy, LSU AgCenter and Louisiana Sea Grant College Program, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, LA. 171 pp. www.laseagrant.org/wp-content/uploads/Gulf-RFH-Survey-Final-Report-2012.pdf
- SEDAR 3. 2003. Complete stock assessment report of yellowtail snapper in the southeastern United States – SEDAR 3, Assessment report 1. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 6. 2004a. SEDAR report 1 - the goliath grouper in southern Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 6. 2004b. SEDAR report 2 the hogfish in Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 7 Update. 2009. Update stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 9. 2006a. Stock assessment report 1 of SEDAR 9: Gulf of Mexico gray triggerfish. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 9. 2006b. Stock assessment report 2 of SEDAR 9: Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 9 Update. 2011a. SEDAR update stock assessment of vermilion snapper in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 9 Update. 2011b. SEDAR update stock assessment of gray triggerfish in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 10. 2006. Gulf of Mexico Gag Grouper Stock Assessment Report 2. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 10 Update. 2009. Stock assessment of gag in the Gulf of Mexico. – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 12 Update. 2009. Stock assessment of red grouper in the Gulf of Mexico – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 15A. 2008. Stock assessment report 3 (SAR 3) South Atlantic and Gulf of Mexico mutton snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 15A Update. 2015. Stock assessment of mutton snapper (*Lutjanus analis*) of the U.S. South Atlantic and Gulf of Mexico through 2013. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.

- SEDAR 28. 2013. South Atlantic Spanish mackerel stock assessment Report. Southeast Data, Assessment and Review, North Charleston, South Carolina. 444 pp.
- SEDAR 28. 2013. Gulf of Mexico Spanish mackerel stock assessment report. Southeast Data, Assessment and Review, North Charleston, South Carolina. 712 pp.
- SEDAR 28. 2013. Gulf of Mexico cobia stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. 616 pp.
- SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 31 Update. 2015. Stock assessment of red snapper in the Gulf of Mexico 1872 – 2013 - with provisional 2014 landings. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 33. 2014a. Gulf of Mexico gag stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 33. 2014b. Gulf of Mexico greater amberjack stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 33 Update. 2016a. Stock assessment update report Gulf of Mexico greater amberjack (*Seriola dumerili*). SEDAR, North Charleston SC. 148 pp.
- SEDAR 37. 2014. The 2013 stock assessment report for hogfish in the south Atlantic and Gulf of Mexico. Florida Fish and Wildlife Conservation Commission, St. Petersburg, Florida. 241 p. + appendices.
- SEDAR 42. 2015. Gulf of Mexico red grouper stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 43. 2015. Gulf of Mexico gray triggerfish stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 45. 2016. Final stock assessment report: Gulf of Mexico vermilion snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- SEDAR 47. 2016. Final stock assessment report: Southeastern U.S. goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
- Schekter, R. C. 1971. Food habits of some larval and juvenile fishes from the Florida current near Miami. Master's Thesis, University of Miami, Coral Gables, Florida. 85 pp.
- Sindermann, C.J. 1979. Pollution-associated diseases and abnormalities of fish and shellfish: a review. Fisheries Bulletin 76: 717-749.

Solangi, M.A. and R.M. Overstreet. 1982. Histopathological changes in two estuarine fishes, *Menidia beryllina* (Cope) and *Trinectes maculatus* (Bloch and Schneider), exposed to crude oil and its water-soluble fractions. *Journal of Fish Disease* 5: 13-35.

Souza, Philip M., Jr. and C. Liese. 2019. Economics of the Federal For-Hire Fleet in the Southeast - 2017. NOAA Technical Memorandum NMFS-SEFSC-740, 42 p.

Stjernholm, M., D. Boertmann, A. Mosbech, J. Nymand, F. Merkel, M. Myrup, H. Siegstad, and S. Potter. 2011. Environmental oil spill sensitivity atlas for the Northern West Greenland (72°-75° N) coastal zone. National Environmental Research Institute, Aarhus University, Aarhus, Denmark. NERI Technical Report no. 828. 214 pp.
<http://www.dmu.dk/Pub/FR828.pdf>

Swedmark, M., A. Granmo, and S. Kollberg. 1973. Effects of oil dispersants and oil emulsions on marine animals. *Water Research* 7(11):1649-1672.

Synder, S.M., E.L. Pulster, D.L. Wetzel, and S.A. Murawski. 2015. PAH exposure in Gulf of Mexico demersal fishes, post-Deepwater Horizon. *Environmental Science and Technology*. 49(14): 8786–8795. <https://gulfseagrant.files.wordpress.com/2015/09/oil-spill-seminar-gulf-seafood-synder.pdf>

Tarnecki, J.H. and W.F. Patterson III. 2015. Changes in Red Snapper Diet and Trophic Ecology. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science* 7: 135–147.

Turner, S. C., N. J. Cummings, and C. P. Porch. 2000. Stock assessment of Gulf of Mexico greater amberjack using data through 1998. SFD-99/00-100. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Turner, S. C., C. E. Porch, D. Heinemann, G. P. Scott, and M. Ortiz. 2001. Status of the gag stocks of the Gulf of Mexico: assessment 3.0. August 2001. Contribution: SFD-01/02-134. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Valle, M., C. Legault, and M. Ortiz. 2001. A stock assessment for gray triggerfish, *Balistes capriscus*, in the Gulf of Mexico. Contribution: SFD-01/02-124. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Weisberg, R.H., L. Zheng, Y. Liu, S. Murawski, C. Hu, and J. Paul. 2014. Did *Deepwater Horizon* hydrocarbons transit to the West Florida Continental Shelf? *Deep Sea Research Part II: Topical Studies in Oceanography* 129:259-272. <http://dx.doi.org/10.1016/j.dsr2.2014.02.002>

Whitehead, A., B. Dubansky, C. Bodinier, T. Garcia, S. Miles, C. Pilley, V. Raghunathan, J. L. Roach, N. Walker, R.B. Walter, C. D. Rice, and F. Galvez. 2012. Genomic and physiological footprint of the Deepwater Horizon oil spill on resident marsh fishes. *Proceedings of the National Academy of Sciences* Dec 2012, 109 (50) 20298-20302

Wollam, M.G. 1970. Description and distribution of larvae and early juveniles of king mackerel, *Scomberomorus cavalla* (Cuvier), and Spanish mackerel, *Scomberomorus maculatus* (Mitchell); (Pisces: *Scombridae*) in the western North Atlantic. Technical Series, No. 61. Florida Department of Natural Resources, Marine Research Laboratory, St. Petersburg, Florida. 35 pp.

CHAPTER 6. LIST OF PREPARERS AND REVIEWERS

PREPARERS

Name	Expertise	Responsibility	Agency
Assane Diagne	Economist	Amendment development, economic analyses	GC
Rich Malinowski	Fishery biologist	Co-Team Lead – Amendment development, biological analyses, cumulative effects analysis	SERO
Lisa Hollensead	Fishery biologist	Co-Team Lead – Amendment development, biological analyses, cumulative effects analysis	GC
Max Birdsong	Anthropologist	Social analyses	GC
David Records	Economist	Economic analyses	SERO
Christina Package-Ward	Anthropologist	Social analyses	SERO
Dominique Lazarre	Fishery biologist	Data analyses	SERO

REVIEWERS (Preparers also serve as reviewers)

Name	Expertise	Responsibility	Agency
Christopher Liese	Economist	Review	SEFSC
Mara Levy	Attorney	Legal review	NOAA GC
Michelle Masi	Biologist	Review	SERO
Jessica Stephen	Biologist	Review	SERO
Mike Travis	Economist	Review	SERO
Jennifer Lee	Biologist	Review	SERO
Adam Bailey	Technical writer and editor	Regulatory writer	SERO
Jashira Torres	Biologist	Protected Resources review	SERO
David Dale	Biologist	Essential Fish Habitat review	SERO
Carrie Simmons	Biologist	Review	GC
Kenneth Brennan	Biologist	Review	SEFSC
John Froeschke	Biologist	Review	GC
Jenny Ostroff	Biologist	Review	SERO
David Carter	Economist	Review	SEFSC
Cliff Hutt	Fisheries Management Specialist	Review	Atlantic HMS
Carrie Soltanoff	Fisheries Management Specialist	Review	Atlantic HMS
Matthew Walia	Compliance Liaison	Review	NOAA Office of Law Enforcement

GC = Gulf Council; NOAA GC = National Oceanic and Atmospheric Administration General Counsel; SEFSC = Southeast Fisheries Science Center; SERO = Southeast Regional Office of the National Marine Fisheries Service

CHAPTER 7. AGENCIES, ORGANIZATIONS AND PERSONS CONSULTED

The following have or will be consulted:

National Marine Fisheries Service

Southeast Fisheries Science Center

Southeast Regional Office

Protected Resources

Habitat Conservation

Sustainable Fisheries (including Highly Migratory Species Management Division)

NOAA General Counsel

Environmental Protection Agency

United States Coast Guard

APPENDIX A. INVESTIGATION OF FOR-HIRE LANDINGS IN THE GULF OF AMERICA

LAPP/DM Branch
NOAA Fisheries Service
Southeast Regional Office
March 2024

The Gulf Council (Council) is considering alternatives that would require electronic reporting of fishing information from for-hire vessels possessing a federal Gulf charter / headboat reef fish or federal Gulf Charter / headboat coastal migratory pelagic (CMP) permit. Improvements to data reporting in the for-hire fleet could reduce the likelihood that annual catch limits (ACLs) are exceeded or prevent accountability measures from being triggered. This report aims to quantify the proportion of reef fish and coastal migratory pelagic species harvested by the for-hire fleet in the Gulf of Mexico.

Data Sources

The Southeast Fisheries Science Center (SEFSC) generates monitoring datasets that are used to track landings for all federally managed species in the commercial and recreational sector. Commercial landings are aggregated from dealer reports and are considered a census of landings for all commercial vessels.

Landings for the recreational sector are estimated from a combination of state and federal surveys. The two state surveys that generate recreation landings estimates come from Texas and Louisiana. The Texas Parks and Wildlife Department Sport-boat Angling Survey uses dockside interviews at recreational boat access sites to generate catch and effort estimates for finfish species caught by private boat and charter operators off the Texas coast. Louisiana Department of Wildlife & Fisheries uses the combination of a dockside intercept survey and phone/email survey to estimate recreational saltwater harvests from shore, private boat and charter trips in their state (LA Creel).

Federally administered surveys generate landings estimates for all headboat vessels and landings from shore, private boat and charter vessels not covered by the Texas or Louisiana state surveys. The Southeast Regional Headboat survey produces landings estimates for species caught by headboats operating in the southeastern United States by combining dockside intercept and logbook data. Federal estimates of shore, private boat and charter anglers were initially generated by the Marine Recreational Fisheries Statistics Survey (MRFSS), which used a combination of dockside intercept survey and phone effort survey data to estimate landings. This survey was replaced by the Marine Recreational Information Program (MRIP) in 2008 to improve precision, accuracy and timeliness of recreational catch estimates. MRIP uses the Access Point Angler Intercept Survey (APAIS) to collect dockside catch data from anglers fishing from shore, private boats and charter vessels. Fishing effort data for the shore and private boat fishing modes was collected by the Coastal Household Telephone Survey (CHTS) and charter effort was estimated from data collected by the For-Hire Survey (FHS). In 2018, the CHTS was replaced by a mail

survey, the Fishing Effort Survey (FES). The changes to the federal survey over time has led to recreational landings being estimated in three different currencies associated with the major changes to the surveys. MRFSS units represent the earliest iteration of the federal survey, MRIP (CHTS) incorporates updates to the dockside APAIS and implementation of the improved CHTS phone survey, and MRIP (FES) incorporates the change from a phone to mail effort survey. The SEFSC creates three separate final recreational landings data sets that combine TPWD, LA Creel and SRHS landings estimates with either the MRFSS, MRIP (CHTS), or MRIP (FES) survey estimates. Catch limits for federally managed species are monitored with the recreational currency associated with the last stock assessment for each species.

Landings Summaries

The proportion of reef fish and coastal migratory pelagic species harvested by the for-hire fleet was calculated to show the contribution of this fleet to overall landings in the Gulf of Mexico. First, landings estimate weight units were standardized across species to a common unit, pounds whole weight. Any species with landings reported only in gutted weight were converted to whole weight with an appropriate conversion. Landings estimates were further subsetted to include the last 5 years of complete data (2019-2023) for only the species managed in the reef fish and coastal migratory pelagic fishery management plans. Landings estimates for all species in the reef fish and coastal migratory pelagic fishery management plans were pooled annually by fleet or sector to demonstrate the proportions associated with either the recreational sector or for-hire fleet in the Gulf of Mexico (**Table A1**).

Table A1. Description of annual landings aggregations by fleet and sector.

Landings Summaries
Recreational Sector vs Commercial Sector
Recreational Fleets (For-Hire and Private) vs Commercial Sector
For-Hire Fleet vs Non For-Hire Landings (Private and Commercial)

Federally managed species are monitored with various recreational currencies, but generating landings summaries with a combination of currencies may skew the relative contribution from each fleet or sector based on the number of species monitored with each currency. Instead, landings summaries were generated twice, comparing commercial landings to recreational landings using MRIP (CHTS) or MRIP (FES) units separately. The proportion of overall landings attributed to the for-hire fleets was 23.5% when using recreational estimates that incorporate MRIP (CHTS) units and 13.6% when using MRIP (FES) units (**Figure A1** and **A2**). While the different recreational units show a 10% difference in the proportion of for-hire landings, the average weight of landings are almost equal for the for-hire fleet over the last 5 years (**Table A2**).

In addition to investigating the overall contribution of landings from the for-hire fleet in the Gulf of Mexico, the landings of ten key species were reviewed. Six of the species are managed with a set allocation of landings between the recreational and commercial sector: gag, gray triggerfish, greater amberjack, king mackerel, red grouper, and red snapper. These species are economically and biologically important to both sectors, but an upper limit is placed on the total landings for

each sector. Most of these species have higher landings percentages for species caught by the commercial sector, with the exception of gray triggerfish (**Figure A3** and **A4**). Despite higher landings for the commercial sector, the for-hire fleet has higher landings than the private recreational fleet for gray triggerfish, king mackerel, and red grouper. The remaining four species investigated were gray snapper, lane snapper, Spanish mackerel, and vermilion snapper. These stocks species tended to have higher recreational landings as compared to commercial landings (**Figure A5** and **A6**). These trends hold up whether the recreational units are in MRIP (CHTS) or MRIP (FES) units.

Table A2. Mean annual estimate and percent of landings by sector / fleet in the Gulf of Mexico from 2019-2023.

Sector / Fleet	5 Year Average Landings (lb ww)	Percent of Landings (%)
<i>Landings Include MRIP (CHTS) Units</i>		
Commercial	16,166,650	49.3
For-Hire	7,647,156	23.5
Private	9,093,101	27.2
<i>Landings Include MRIP (FES) Units</i>		
Commercial	16,166,650	28.6
For-Hire	7,638,079	13.6
Private	32,687,028	57.8

Data Sources: Commercial ACL Monitoring File – April 2024, SEFSC CHTS ACL Monitoring File – April 2024, SEFSC FES ACL Monitoring File – April 2024

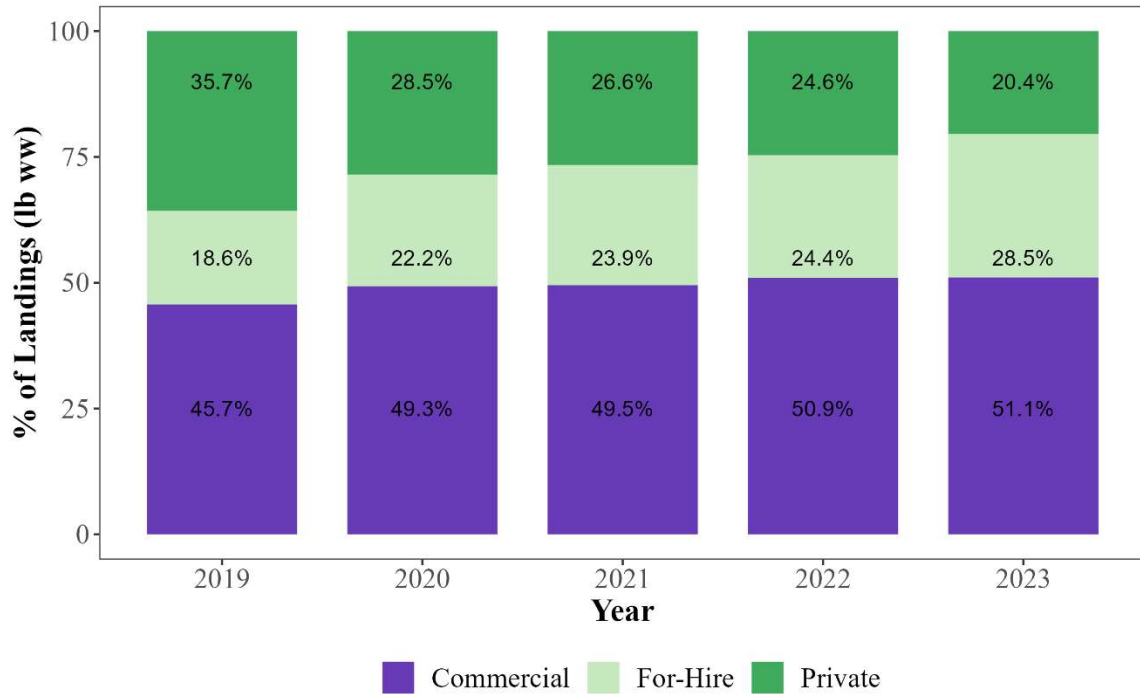


Figure A1. Percentage of annual landings by sector / fleet from 2019-2023, using recreational estimates that incorporate MRIP (CHTS) units.

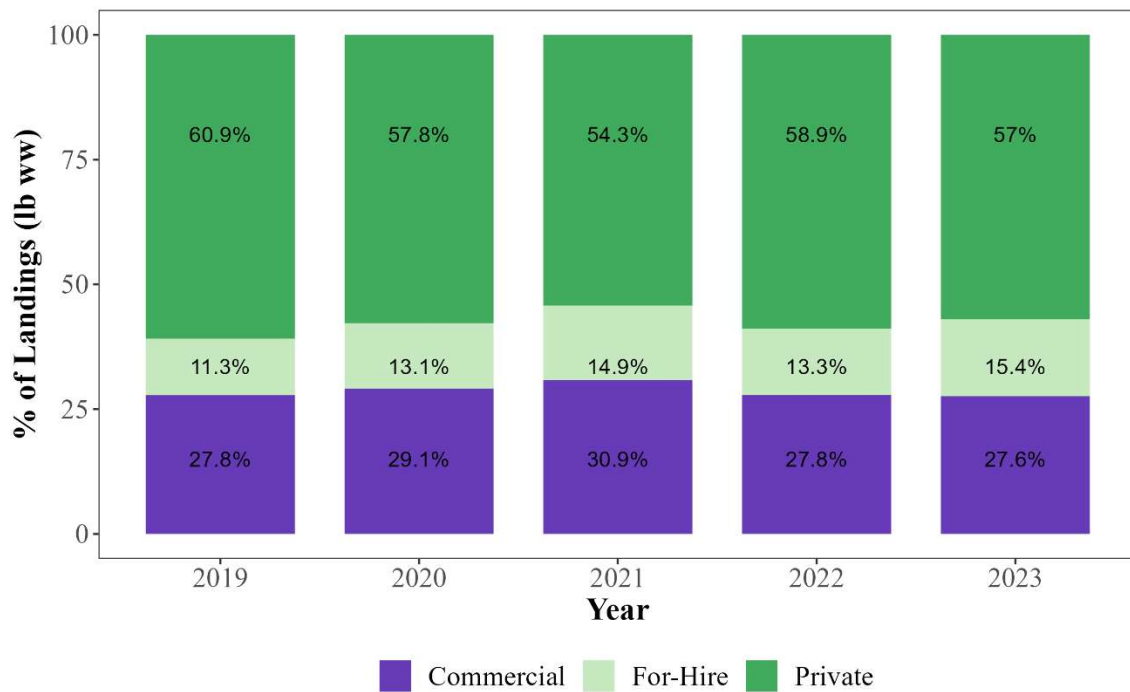


Figure A2. Percentage of annual landings by sector / fleet from 2019-2023, using recreational estimates that incorporate MRIP (FES) units.

Sector Allocation

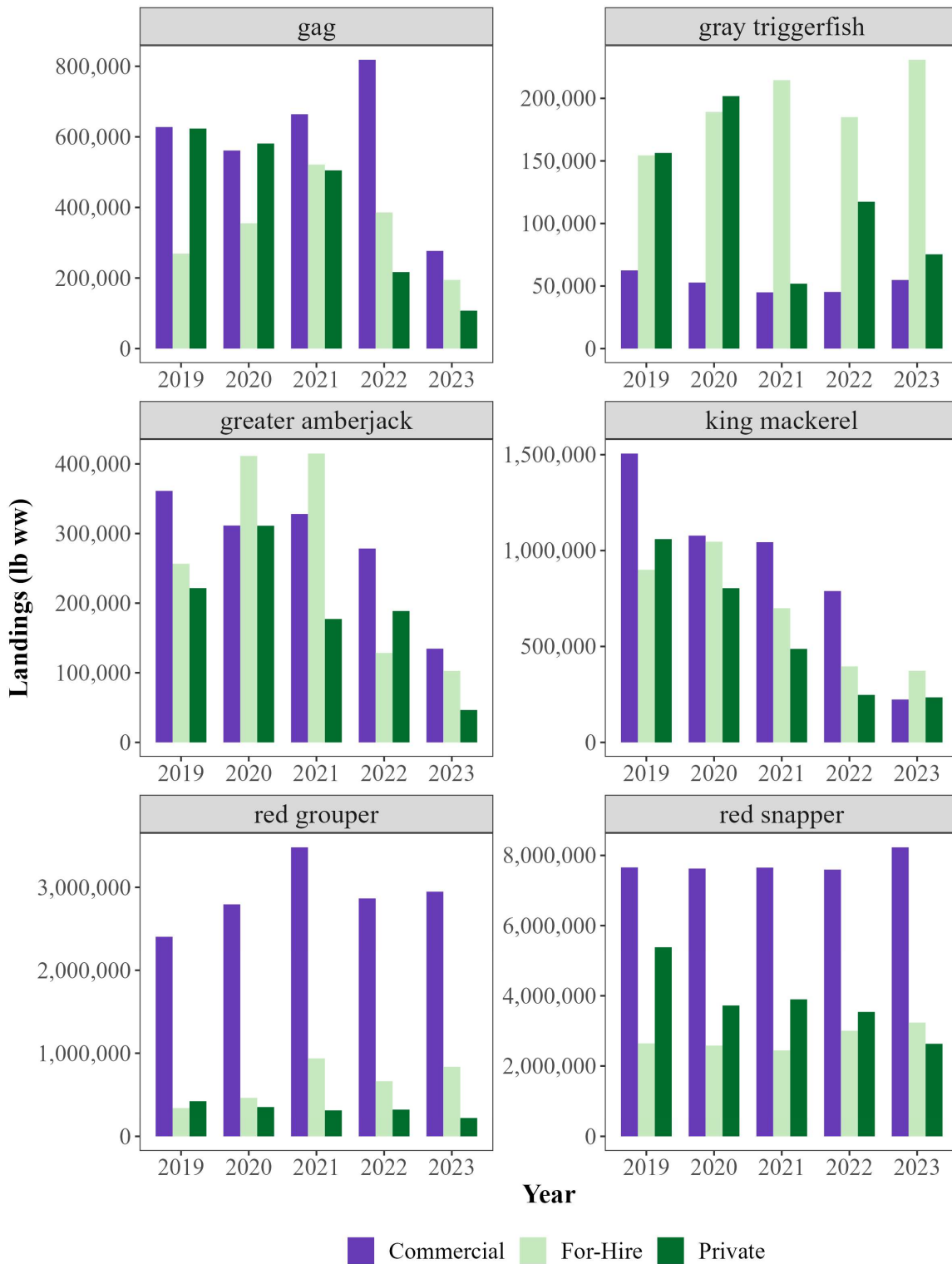


Figure A3. Annual landings by sector / fleet for key species harvested in the Gulf of Mexico and managed via sector allocation. Recreational estimates incorporate MRIP (CHTS) units.

Sector Allocation



Figure A4. Annual landings by sector / fleet for key species harvested in the Gulf of Mexico and managed via sector allocation. Recreational estimates incorporate MRIP (FES) units.

Stock

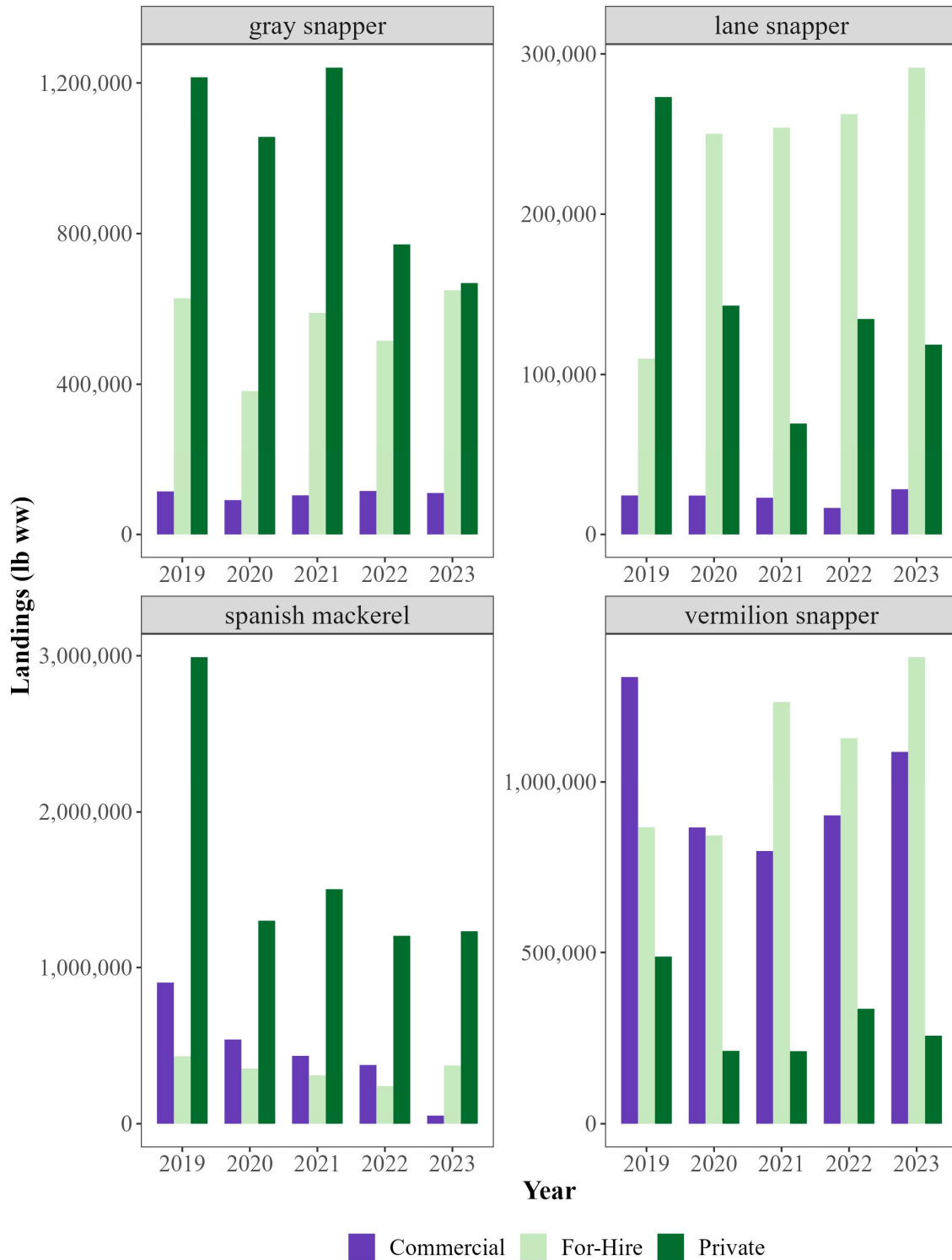


Figure A5. Annual landings by sector / fleet for key species harvested in the Gulf of Mexico and managed as stocks with a single ACL. Recreational estimates incorporate MRIP (CHTS) units.

Stock

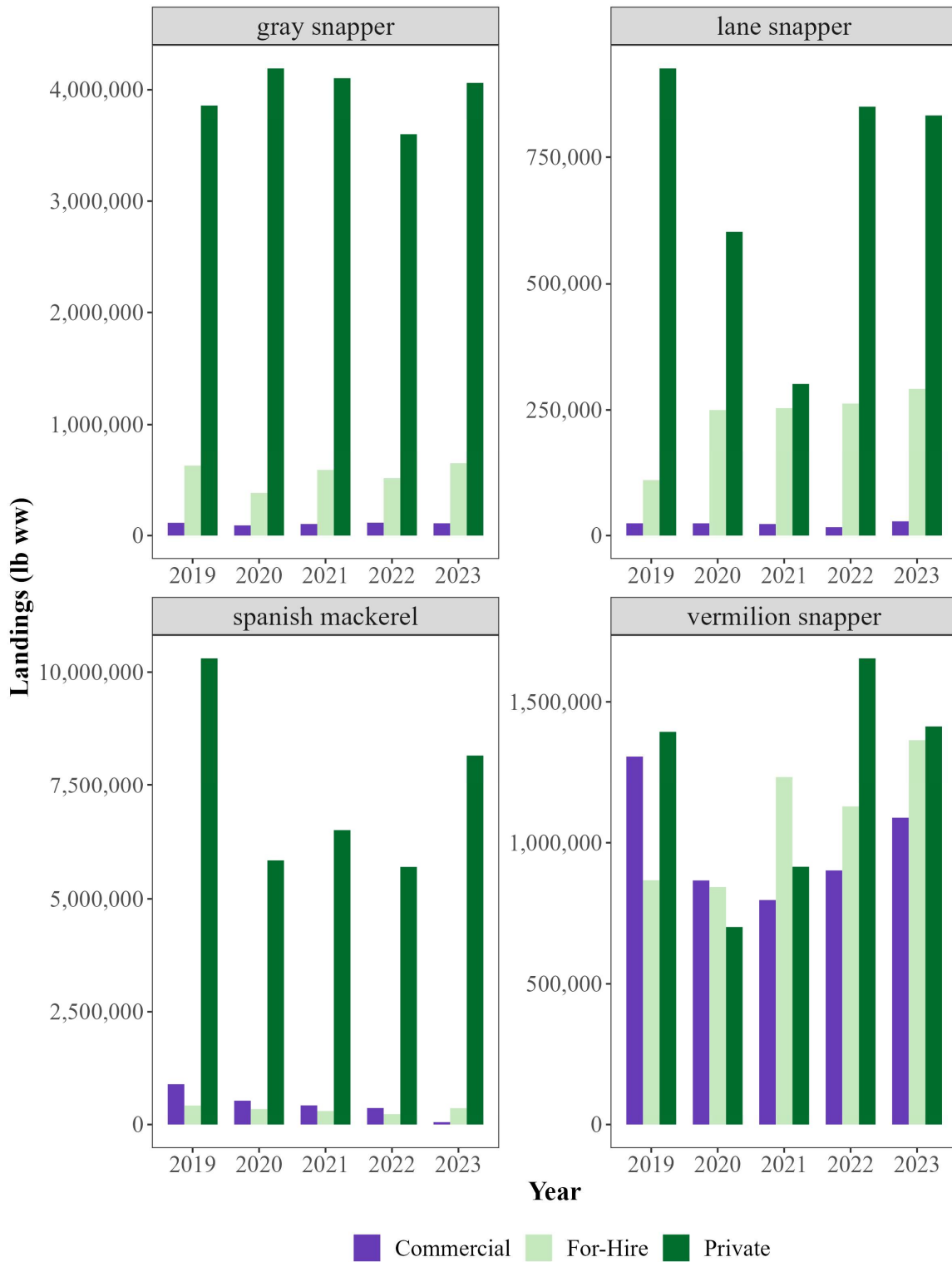


Figure A6. Annual landings by sector / fleet for key species harvested in the Gulf of Mexico and managed as stocks with a single ACL. Recreational estimates incorporate MRIP (FES) units.

APPENDIX B. HEADBOAT COLLABORATIVE PILOT STUDY

Headboat Collaborative Background

On August 26, 2013, the National Marine Fisheries Service (NMFS) announced approval and issuance of the exempted fishing permit (EFP) for the Headboat Collaborative (HBC) pilot program. The purpose of the HBC pilot program was to evaluate the viability of an allocation-based management strategy for improving the conservation of marine resources and economic stability and performance of the headboat sector. Headboats participating in the pilot program were authorized to harvest red snapper and gag using quota allocation outside the designated recreational fishing seasons (e.g., red snapper begins June 1 and gag begins July 1). The EFP proposed evaluating the efficacy of an allocation-based management system using a limited number of headboats in a 2-year pilot study. Since the EFP was neither a fishery management plan (FMP) nor a plan amendment, and was based on legal authority independent from the FMP, NMFS determined that it was not subject to referendum requirements.

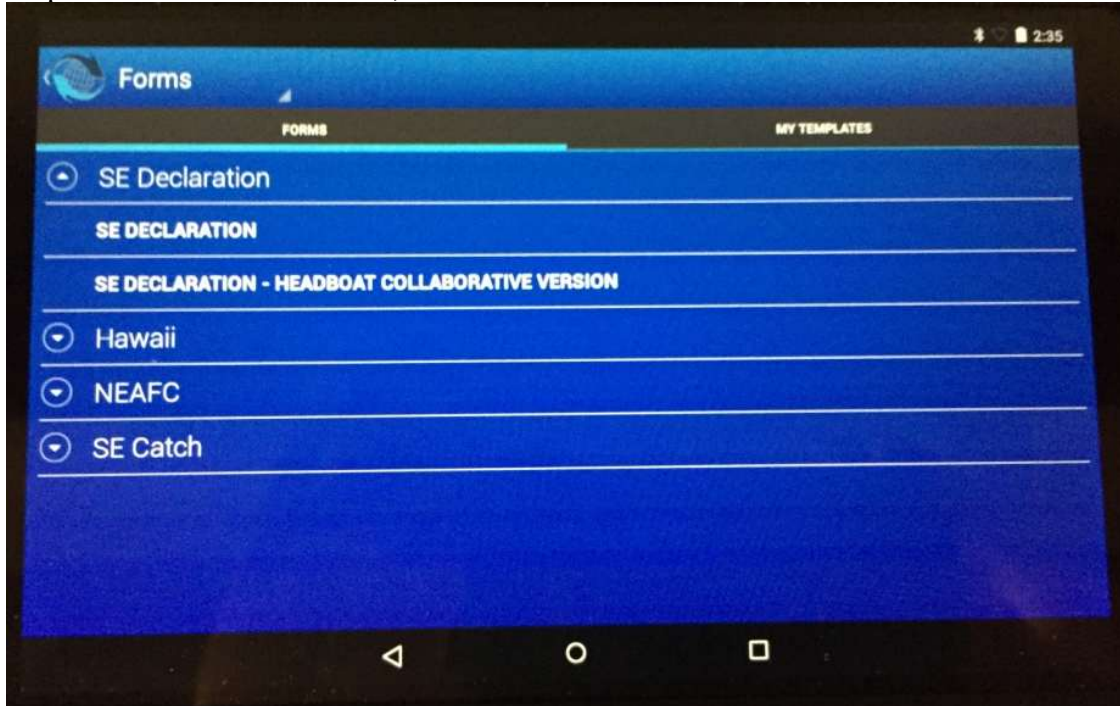
To ensure 100% catch accountability and to enable a transparent monitoring system, HBC vessels adhered to strict protocols to track each fish caught and landed during a trip. Each vessel had an operational vessel monitoring system (VMS) that allowed NMFS to track the vessel while at sea. Vessel owners were responsible for purchasing VMS units (\$1,799 per unit), coordinating installation with the vendor, and paying for monthly service costs (~\$60 per month). All vessels used the CLS America VMS unit with the Thorium tablet. CLS America built customized software forms so that HBC participants could have a simple and fast way to enter information. HBC participants submitted a VMS declaration (hail-out) through the VMS unit prior to departing on every trip, regardless of whether or not red snapper or gag were the intended target species. Participants submitted a landing notification (hail-in) through the VMS unit at least one hour prior to returning to port regardless of whether or not red snapper or gag were landed. Hail-ins contained the vessel name, landing location, time of landing, and the number of red snapper and gag landed. The hail-in requirement was intended to provide law enforcement agents/officers and port agents the opportunity to be present at the point of landing so they could monitor and enforce the HBC EFP requirements dockside. Landing conditions required that HBC vessels only land at approved landing locations. Approved landing locations ensured sites actually exist and law enforcement officers and port agents could access these sites. Landing locations must be publicly accessible by land and water.

VMS Screenshots of the HBC declaration and landing notification forms

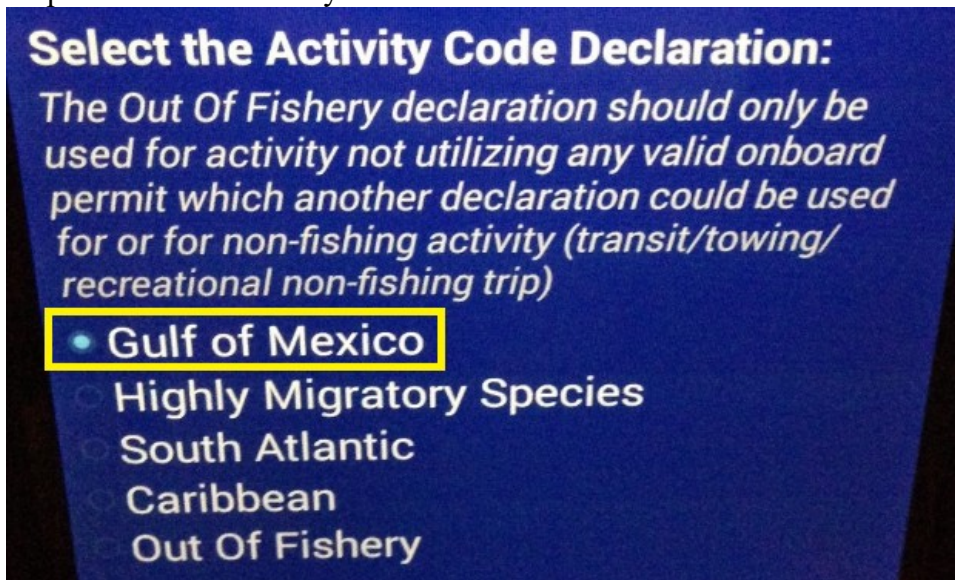
The HBC pilot study used a single VMS vendor, which created the declaration (hail-out) and landing notification (hail-in) forms based on requirements in the EFP and input from NMFS.

Declaration Screens

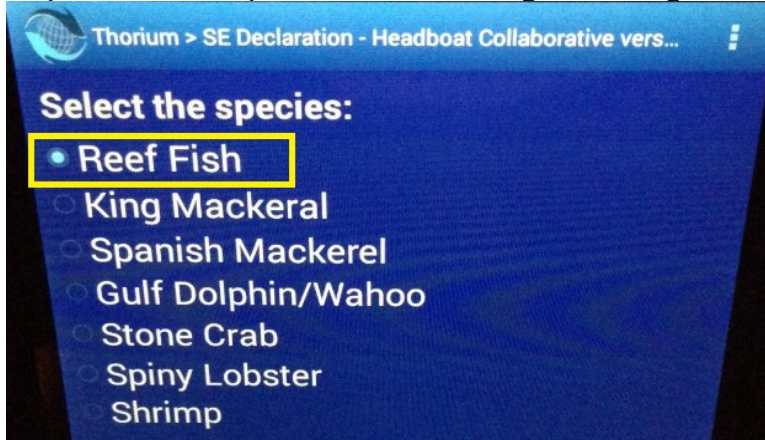
Step 1. Under SE Declaration, select the SE Declaration – Headboat Collaborative.



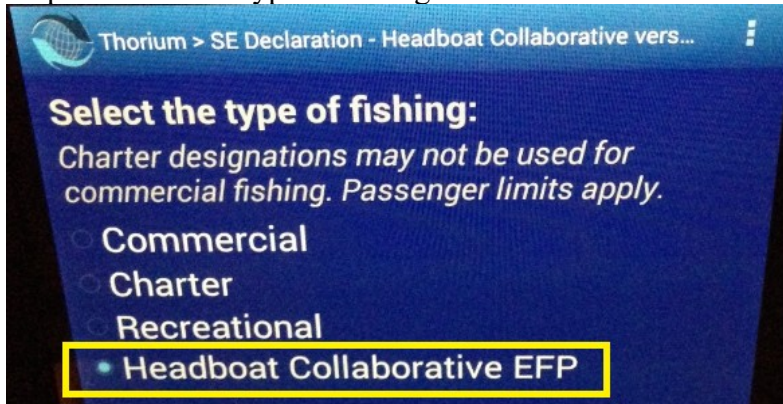
Step 2. Select the activity code for the declaration.



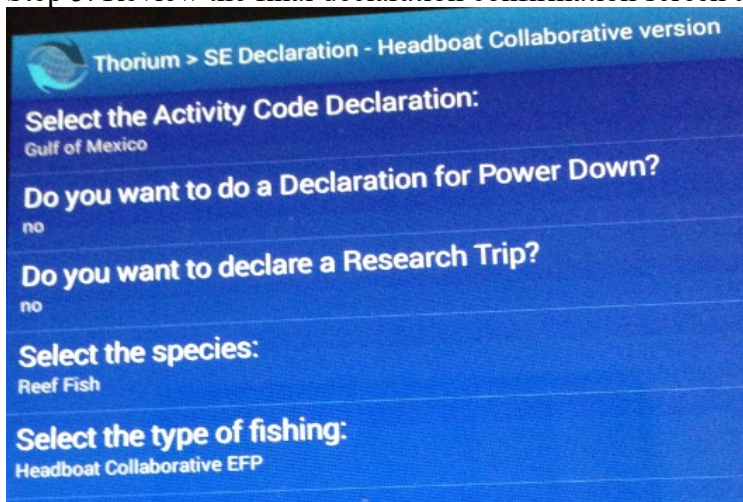
Step 3. Select the species that will be targeted during the trip.



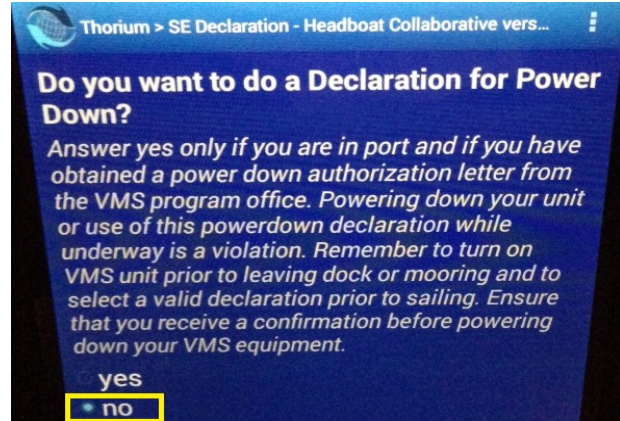
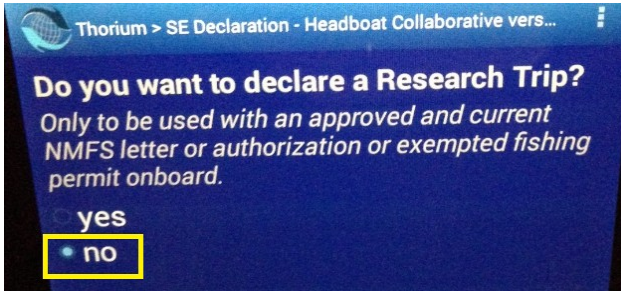
Step 4. Select the type of fishing



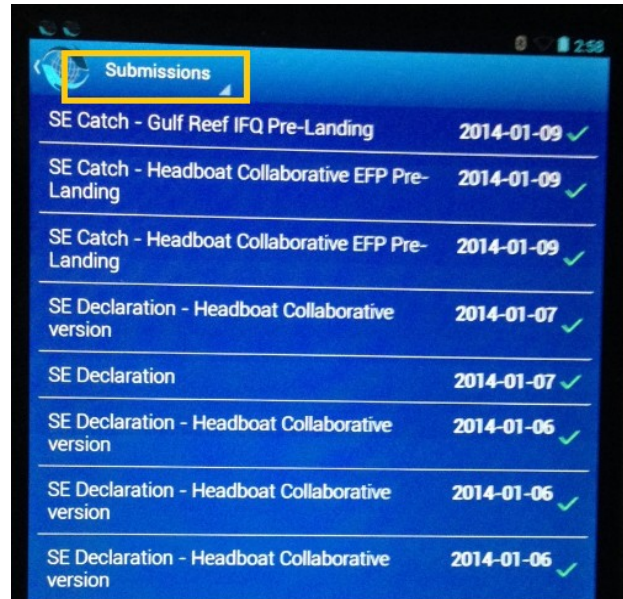
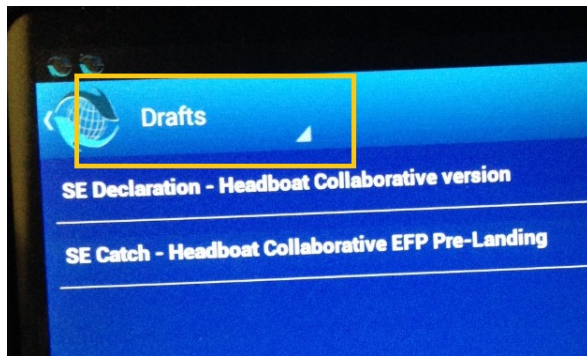
Step 5. Review the final declaration confirmation screen and select Submit.



Additional screens: Power Down exemption screen, Research trip declaration, and review submissions.

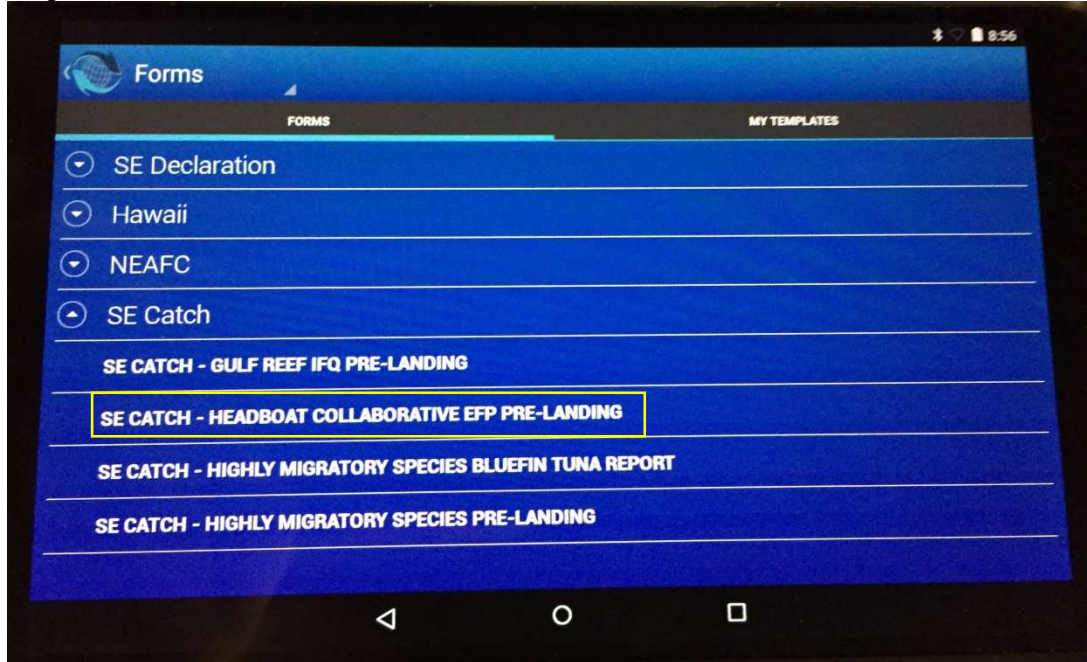


Review Submissions: Users have the ability to view unsent declarations or landing notifications. Under Submissions a green check mark will indicate if the transmission was successfully sent. If a transmission failed, a red X will be displayed.

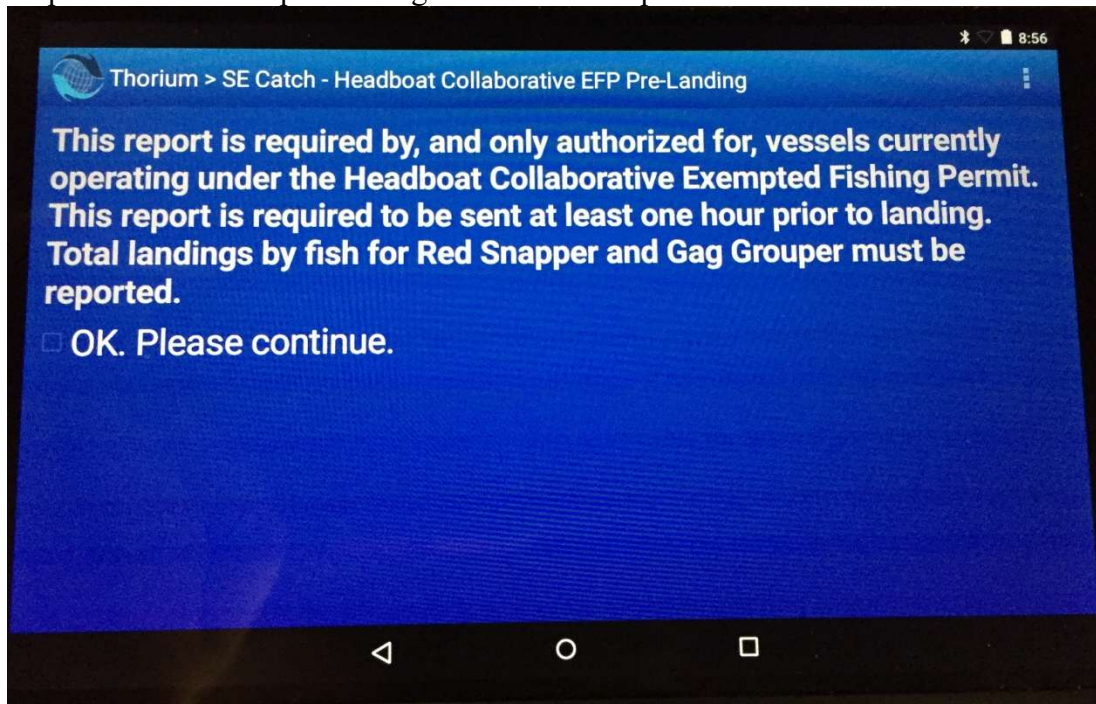


Landing Notifications Screens

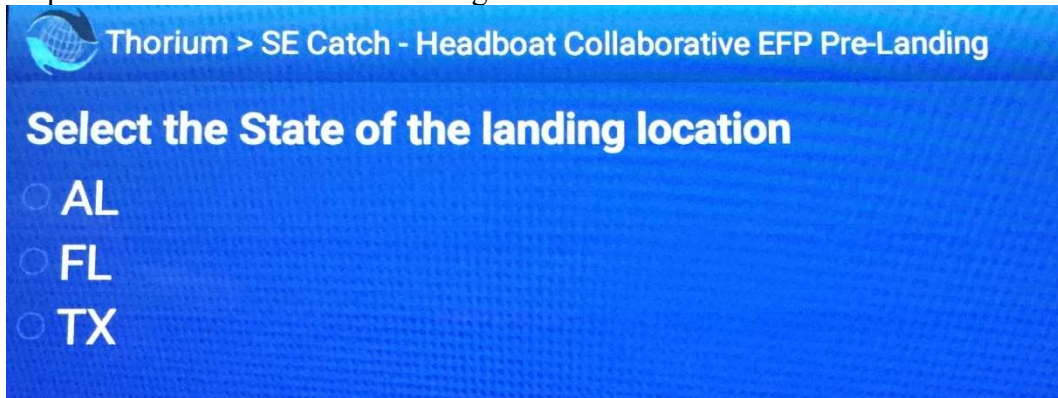
Step 1. Under SE Catch, select SE Catch – Headboat Collaborative EFP Pre-Landing.



Step 2. Reminder of pre-landing timeframe and species for the EFP.



Step 3. Select the state of the landing location.

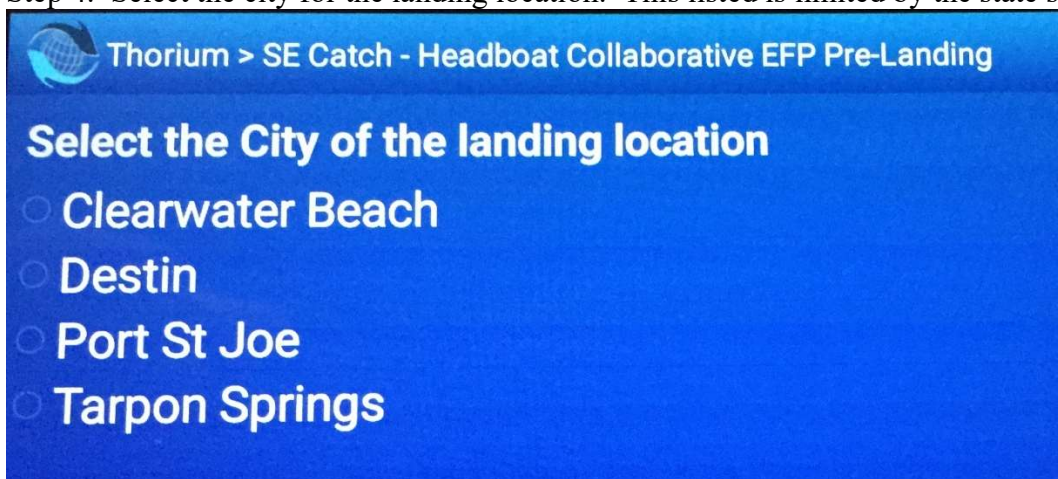


Thorium > SE Catch - Headboat Collaborative EFP Pre-Landing

Select the State of the landing location

- AL
- FL
- TX

Step 4. Select the city for the landing location. This listed is limited by the state selected.

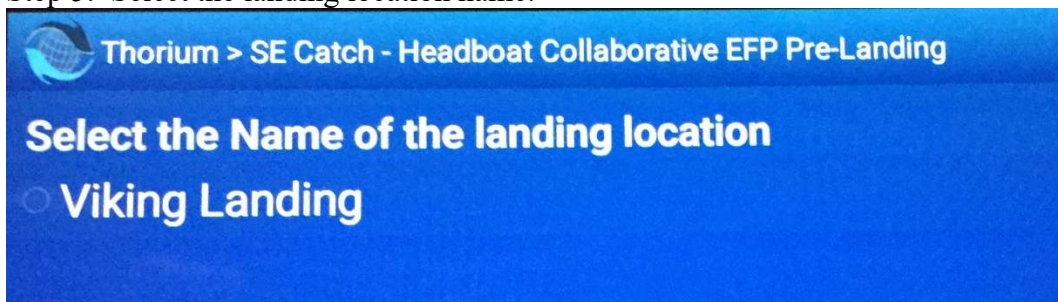


Thorium > SE Catch - Headboat Collaborative EFP Pre-Landing

Select the City of the landing location

- Clearwater Beach
- Destin
- Port St Joe
- Tarpon Springs

Step 5. Select the landing location name.

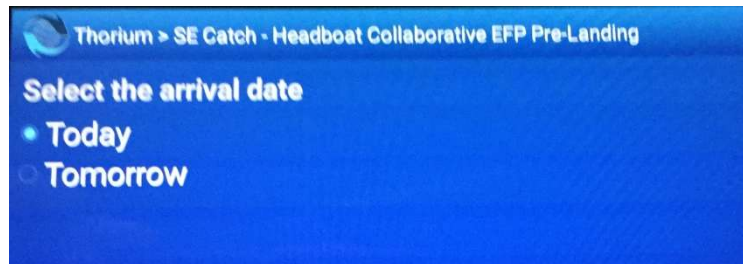
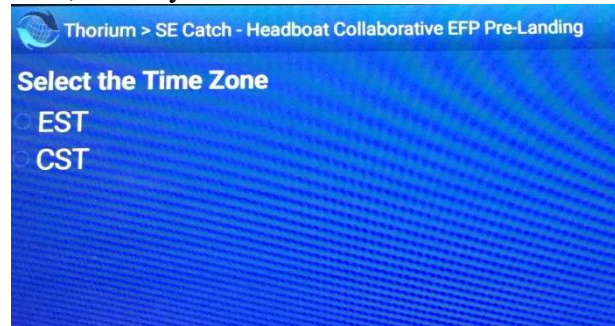
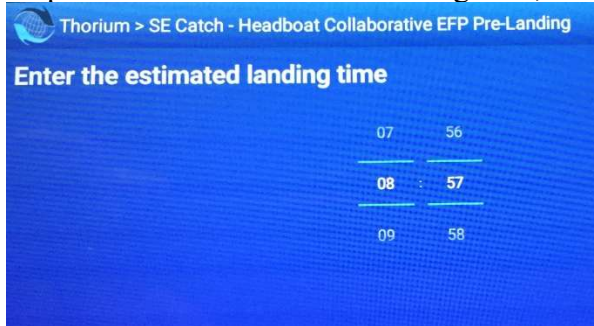


Thorium > SE Catch - Headboat Collaborative EFP Pre-Landing

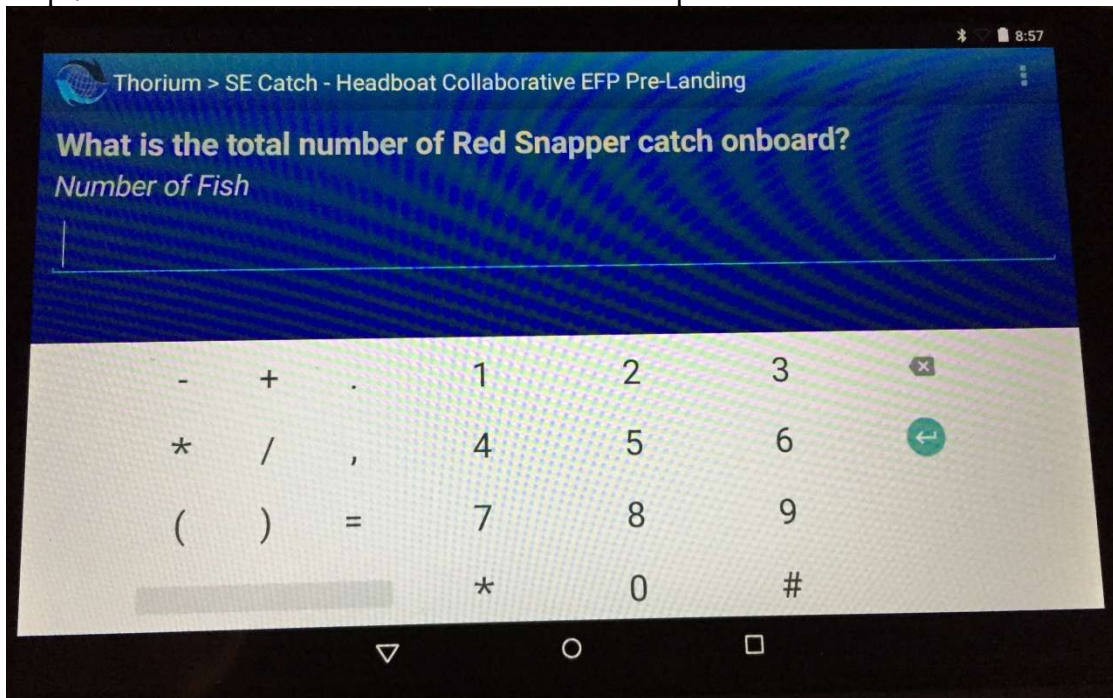
Select the Name of the landing location

- Viking Landing

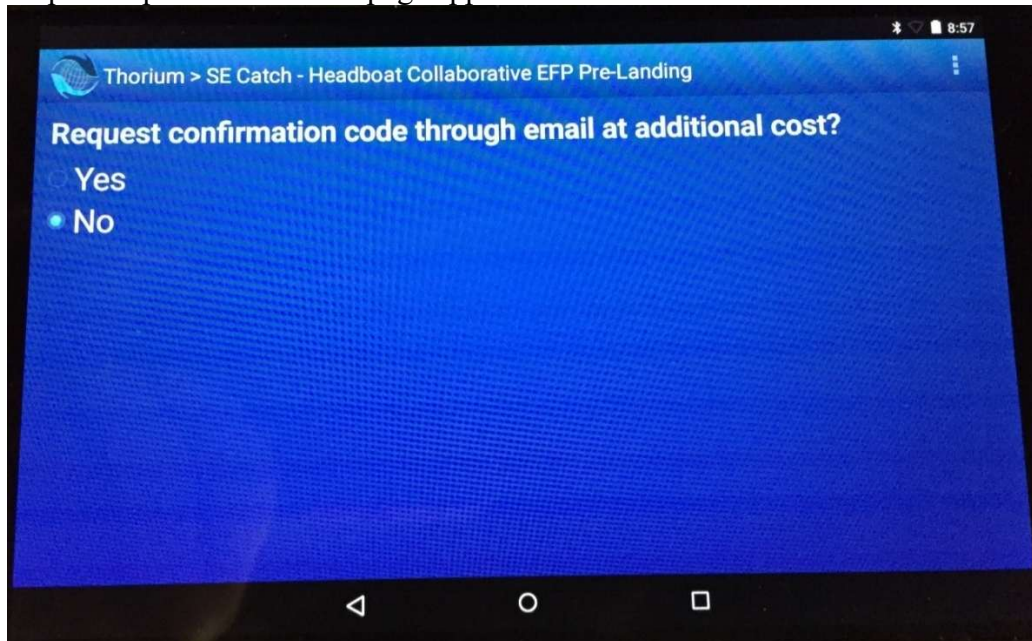
Step 6. Select the estimated landing time, time zone, and day.



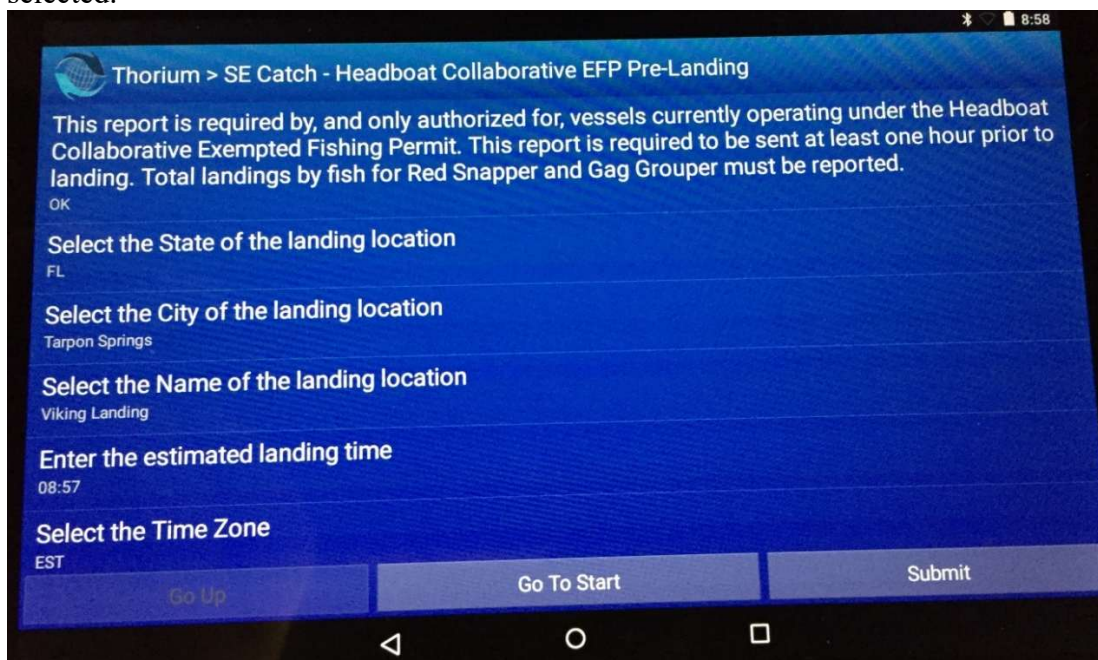
Step 7. Enter the number of fish on board for each species.



Step 8. A pre-confirmation page appears after all the information is submitted.



Step 9. The information collected is summarized and submit after the Submit button has been selected.



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



November 2014

This page intentionally blank

ABBREVIATIONS USED IN THIS DOCUMENT

ACCSP	Atlantic Coastal Cooperative Statistics Program
EEZ	Exclusive Economic Zone
ELB	electronic logbook
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
HMS	highly migratory species
MRIP	Marine Recreational Information Program
NOAA	National Oceanic and Atmospheric Administration
NCDENR	North Carolina Department of Environment and Natural Resources
NFWF	National Fish and Wildlife Foundation
NMFS	National Marine Fisheries Service
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

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 Atlantic 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). National Oceanic and Atmospheric Administration Fisheries, in coordination with the states, Atlantic Coastal Cooperative Statistics Program, and Fisheries Information Network, 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 Marine Recreational Information Program, Southeast Regional Office, Southeast Fisheries Science Center, highly migratory species, state agencies, Atlantic Coastal Cooperative Statistics Program, and Gulf Fisheries Information Network;
- 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). National Oceanic Atmospheric Administration (NOAA) Fisheries, in coordination with the states, Atlantic Coastal Cooperative Statistics Program (ACCSP), and Fisheries Information Network (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 (SRHS). 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 (TPWD) 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 (ELB) 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 ELB 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 (NFWF) 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 Gulf of Mexico and South Atlantic Fishery Management 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 vessel monitoring system (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 Marine Recreational Information Program (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/owneroperators 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 an 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 Gulf of Mexico Fishery Management Council (GMFMC) and South Atlantic Fishery Management Council (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 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 National Oceanic and Atmospheric Administration (NOAA) Fisheries, the Gulf of Mexico Fisheries Information Network (GulfFIN), and Atlantic Coastal Cooperative Statistics Program (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 it 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 Marine Recreational Information Program (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 National Marine Fishery Service (NMFS) Southeast Regional Office (SERO), and may be used as a starting point for indentifying 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 for-hire-survey (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 to 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 Gulf of Mexico Fishery Management Council (GMFMC), 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 the catch 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 National Marine Fisheries Service (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 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.

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, Southeast Regional Office (SERO), Southeast Fisheries Science Center (SEFSC), highly migratory species (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 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 (ELB) 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 Region Headboat Survey (SRHS) 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 ELB 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 National Marine Fisheries Service 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 Marine Recreational Information Program (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 allowed to harvest or possess federally managed species from

the Exclusive Economic Zone (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 National Oceanic and Atmospheric Administration (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.

APPENDIX D. TECHNICAL DATA COMMITTEE SEPTEMBER 2016 MINIMUM DATA ELEMENTS

Background

The Gulf Council (Council) is considering a generic amendment that would implement electronic reporting for federally permitted Gulf of Mexico for-hire vessels. The Council requested additional review and input from their Data Collection Technical Committee (Committee), specifically focusing on the recommended data elements that are necessary to improve fisheries and socioeconomic data in the Gulf of Mexico (Gulf) for-hire fishery. The Committee reviewed a list of data elements collected by 23 for-hire programs in the Gulf and Atlantic regions and a list of potential data elements for consideration in the Gulf for-hire fishery. The meeting focused on the review and subsequent recommendations of this committee about the data elements to be included as part of the for-hire electronic logbook program. The discussions were guided by the Council objective to keep the reporting as simple as possible, but adequate to achieve a timely and accurate estimate of catch and effort from the for-hire fleet. The Committee reviewed a list of data elements that could be incorporated in a for-hire data collection program. The Committee categorized each element into one of the following categories: Essential, Recommended, or Not Recommended.

Essential Elements

The Committee characterized 21 variables as “Essential” meaning they are necessary to achieve the minimum objectives of the program. These minimum elements are presented in **Table 1**. The Committee emphasized that the reporting requirements should be as simple as possible to complete, noting vessel operators will need to submit the fishing report before completing each trip. Many of the elements necessary to identify an individual trip (e.g., permit number, vessel number, trip type, trip identifier, and hail-out time) could be auto-completed by the reporting software at the beginning of each trip (i.e., submitted via hail-out) and would require little effort by the vessel operator. This greatly improves data quality, validation, and vessel specific effort information. Several additional variables could be configured when the software is initially installed and rarely modified. For example ‘trip type’ could be defaulted to ‘for-hire’ and only changed occasionally when other trips types are made. These variables would be specified at the beginning of each trip and would not require action from the vessel operator for the remainder of the for-hire trip. Primary target species could also be auto-populated with a default to simplify reporting. This variable is essential for stock assessments and economic analysis. While target species may change during trip due to conditions on the water, bias may exist if defined after a trip (i.e., you targeted what you caught).

Variables reported at hail-out

Expected landing time, location, and the number of anglers were recommended as variables to be provided during the hail-out prior to initiating the trip. Expected landing time and location would support increased efficiency of dockside validation and increase the sample size of biological data that is used for stock assessments and management.

At-sea reporting

The Committee recommended five variables be included in the at-sea report: species harvested, number harvested, number released, disposition of released fish, and primary depth fished (Table 1). These variables comprise the most important elements necessary to estimate harvest of the for-hire fleet. Disposition of released fish was only recommended for highly migratory species (HMS); this query could be automated to only appear when an HMS species was reported discarded. The reporting protocol would build upon existing software that would support fast, intuitive data entry that would be validated through dockside intercepts. The submission of these data would be provided during the hail-in for each trip and would complete the data submission requirements for each for-hire trip.

Recommended Data Elements

The Committee provided recommendations on a set of variables that were deemed important, yet, beyond the bare minimum need to achieve an estimate of catch and effort from the for-hire fleet. These recommended elements are available in Table 2 and generally considered supplementary (e.g., minimum and maximum depth fished) or provide additional socioeconomic information about the for-hire fishery. For example, fuel price, gallons used, and number of paying customers could be provided to better characterize economic and social impacts of for-hire fishing. However, some of these data may be collected more efficiently by a sample of the fleet (e.g., fuel price) and there was concern that too many fields may reduce reporting compliance and stakeholder support.

Data Elements Not Recommended

The Committee recommended that several data elements be removed from consideration as part of the for-hire reporting program. These elements are listed in Table 3. The rationale for removal was varied. Some elements were considered too burdensome to collect relative to the value added to the data (e.g., hook size, number of lines fished), potentially ambiguous (e.g., number of crew members fishing) or difficult to validate (e.g., charter fees). The Committee discussed that these variable could provide important information but again, was guided by the objective to focus on the minimum elements to characterize catch and effort of the fleet.

Table D1. List of essential data elements as recommended by the Technical Data Committee at their September 2016 meeting.

Variable	Description	Comments	Committee Recommended?	Submission Type
Permit Number	Federal for-hire permit number for the vessel	<i>Owner could configure initial account with all Permit Numbers; NMFS can links and validate to Vessel ID, which is easier for captain to report and easier for agent to validate</i>	Essential	Auto-complete
Vessel Number	USCG vessel id	<i>Provided by captain, could be prefilled or selected from drop down menu to save time.</i>	Essential	Auto-complete
Trip Type	Commercial/Headboat /Charter/Private/Other (incl. research trips)	<i>Helps law enforcement identify trip and associated regulations that apply</i>	Essential	Auto-complete with custom defaults
Trip Identifier	Unique identifier for current trip assigned at Hail-out; cannot obtain new trip identifier until current trip's final logbook is received.	<i>Critical to maintain data integrity and to ensure trip reports are completed in timely manner.</i>	Essential	Auto-complete

Table D1 cont. List of essential data elements as recommended by the Technical Data Committee at their September 2016 meeting.

Landing Location	Location for vessel landing, transmitted to law enforcement	<i>Critical for dockside validation; will need call service for weekends</i>	Essential	Auto-complete with custom defaults
Landing Date	Date for vessel landing, transmitted to law enforcement	<i>Critical for dockside validation; will need call service for weekends</i>	Essential	Auto-complete with custom defaults
Landing Time	Time for vessel landing, transmitted to law enforcement	<i>Estimate provided at hail-out, Actual potentially collected 30 min in advance of landing (1 hr: HBS Collaborative, 3 hr: Commercial - 1 hr window)</i>	Essential	Provide at hail-out
Primary Method of Fishing	Primary Method {troll, drift, bottom, spear} used on the trip	<i>Critical for accurate CPUE computations; gear impacts selectivity, discard rates</i>	Essential	Auto-complete with custom defaults

Table D1 cont. List of essential data elements as recommended by the technical data committee at their September 2016 meeting.

Variable	Description	Comments	Committee	Submission Type
Anglers	Number of anglers fishing on the vessel (distinct from number of passengers and crew)	<i>Critical metric for CPUE computations ([anglers+fishing crew] X fishing hours = angler-hours)</i>	Essential	Provide at hail-out
Number of Crew	Number of crew on the boat	<i>Useful for economic analysis, bag limit analysis, etc.</i>	Essential, included in current SRHS	Auto-complete with custom defaults
Hours Fished	Hours spent fishing (avg. per angler)	<i>Effort metric for CPUE computations used for stock assessment indices of abundance</i>	Essential	Auto-complete with custom defaults
Primary Target Species	Primary species targeted on trip	<i>Critical metric for CPUE computations, as not all trips targeting a species land the species, but the effort is still effort directed towards the species.</i>	Essential for stock assessments and economic analysis; target species may change during trip due to conditions on the water; however, bias may exist if defined after a trip (i.e., you targeted what you caught). Might need a few aggregate fields like "Reef Fish," "Migratory Pelagics," "HMS Pelagic Species," "Coastal Sharks," "No Intended Target." Might be useful to have software auto-populate "default" target species or carry forward selected target species from previous trip.	Auto-complete with custom defaults

Table D1 cont. List of essential data elements as recommended by the technical data committee at their September 2016 meeting.

Species	Species caught on trip	<i>Critical for ACL monitoring</i>	Essential	At-sea report
Retained Catch	Number of each species caught on trip	<i>Critical for ACL monitoring</i>	Essential	At-sea report
Released Catch	Number of each species released on trip	<i>Critical for stock assessment</i>	Essential	At-sea report
Disposition	Status of discarded species	<i>Useful for stock assessment</i>	Essential for HMS targeted species (if HMS targeted species reported as discarded, this question pops up)	At-sea report

Table D1 cont. List of essential data elements as recommended by the technical data committee at their September 2016 meeting.

Area	Area fished at set intervals from real-time or archived GPS track	<i>Important for evaluation of barotrauma, assignment of fishing to jurisdiction, evaluation of spatial management, understanding impacts of climate change on stock distribution, safety at sea</i>	Essential (Auto-populated)	Auto-complete
Primary Depth Fished	Self-reported Primary depth fished in feet (what depth was your gear? – this is the critical question for barotrauma, not the depth of the bottom)	<i>Critical to evaluation of barotrauma and associated release mortality</i>	Essential; Min, Max, and Primary Depth collected by SRHS starting in 2013.	At-sea report
Hail-out Time	Time vessel leaves dock		Required by Council	Auto-complete
Hail-in Time	Time vessel returns to dock		Required by Council	Auto-complete

Table D1 cont. List of essential data elements as recommended by the technical data committee at their September 2016 meeting.

<p>Trip Duration</p>	<p>Duration of Trip (hours)</p>	<p><i>Easily computed from Hail-out and Hail-in, but less useful than Hours Fished for CPUE computations</i></p>	<p>Could be easily calculated from Hail-in and Hail-out if needed [add Hail-in time and Hail-out time to database]; essential for continuity of data for trip type assignments for SRHS</p>	<p>Auto-complete; Based on hail-out/hail-in times</p>
-----------------------------	---------------------------------	--	---	---

Table 2. Data elements recommended by the Technical Data Committee at their September 2016 meeting.

Variable	Description	Comments	Committee Recommended?	Submission Type
Secondary Target Species	Secondary species targeted on trip	<i>Some vessels may target multiple species, especially vessels making multi-day trips.</i>	Recommended	Auto-complete with custom defaults
Min Depth Fished	Self-reported Min depth fished in feet	<i>Critical to evaluation of barotrauma and associated release mortality</i>	Recommended	At-sea report
Max Depth Fished	Self-reported Max depth fished in feet	<i>Critical to evaluation of barotrauma and associated release mortality</i>	Recommended	At-sea report
Vessel Length	Length of vessel in feet	<i>Owner could configure account with information for all vessels, NMFS can link and validate.</i>	Recommended (auto-populated)	Auto-complete
Fuel Quantity	Estimated gallons of fuel used on trip	<i>Useful to assess economics of the for-hire sector</i>	Recommended, included in current SRHS. May be possible to compute from VMS track rather than require operator to report.	Recommended, included in current SRHS. May be possible to compute from VMS track rather than require operator to report.
Fuel Price	Price per gallon paid for fuel used on trip	<i>Useful to assess economics of the for-hire sector</i>	Recommended, included in current SRHS. Secondary data sources exist for this information.	Recommended, included in current SRHS. Secondary data sources exist for this information.

Table 2 cont. Data elements recommended by the Technical Data Committee at their September 2016 meeting.

Variable	Description	Comments	Committee Recommended?	Submission Type
Passengers	Number of passengers (not including crew)	<i>Used to compute total trip fee (website posted headboat cost/person X passengers), essential for bag limit analysis</i>	Recommended; note some passengers may not have paid, which introduces some bias in the economic analysis	Recommended; note some passengers may not have paid, which introduces some bias in the economic analysis
Secondary Method of Fishing [optional]	Secondary Method {troll, drift, bottom, spear} used on the trip; field not required, optional if applicable to the trip	<i>Critical for accurate CPUE computations; gear impacts selectivity, discard rates</i>	Suggested as “Optional” field	Select from list

Table 3. Data elements not recommended by the Technical Data Committee at their September 2016 meeting.

Variable	Description	Comments	Committee Recommended?
Number of Hooks	Mean number of hooks in the water	<i>Useful for CPUE, difficult for large boats with many anglers</i>	Not recommended
Pay Type	Per person, per group, or no charge (mixed pay types defaults to per person)	<i>Useful to assess economics of the for-hire sector; and delineation of for-hire sub-sectors</i>	Not recommended
Hook Manufacturer	Manufacturer of hooks used to catch each species (if hook gear reported)	<i>Useful for CPUE computations; hook size impacts selectivity - hook sizes vary by manufacturer</i>	Not recommended
Hook Number	Number of hooks used	<i>Useful to convert angler-hours to hook-hours for CPUE computations</i>	Not recommended
Hook Size	Size of hook used	<i>Useful for CPUE computations; hook size impacts selectivity - hook sizes vary by manufacturer</i>	Not recommended
# of Crew Fishing	Number of crew that were fishing on the boat	<i>Critical metric for CPUE computations ([anglers+fishing crew] X fishing hours = angler-hours)</i>	Not Recommended - Difficult to define – what if a crew member deploys the line and the angler lands the fish?

Table 3 cont. Data elements not recommended by the Technical Data Committee at their September 2016 meeting.

Variable	Description	Comments	Committee Recommended?
Number of Lines	Mean number of lines being fished	Useful for CPUE, difficult for large boats with many anglers	Not recommended for Headboat; Potentially useful for Charter – if vessel is trolling this is probably a more accurate measure of effort than number of anglers
Charter Fee	Total for-hire fees collected from all passengers for this trip	Critical for ANY economic analysis/assessment	Not recommended in eLogbook, but highly recommended for Separate survey. Can also be obtained online. Vessel operator may not have this information available prior to hitting dock.
Crew Pay	Total compensation received by hired crew for this trip	Useful to assess economics of the for-hire sector	Not recommended in eLogbook, but highly recommended for Separate survey. Requesting tip information may reduce compliance. Vessel operator may not have this information available prior to hitting dock.