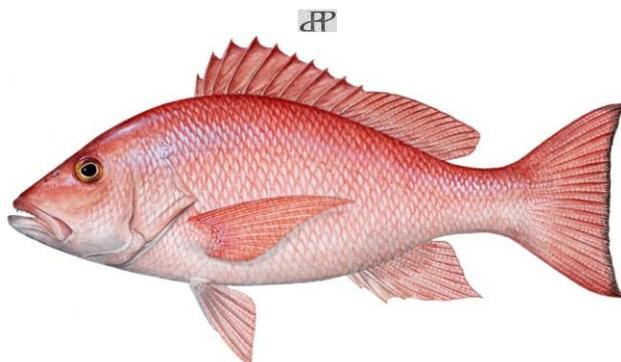


Revision of the Red Snapper Recreational Sector Separation Sunset Provision



Amendment 45 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

Including Environmental Assessment,
Fishery Impact Statement, Regulatory Impact Review,
and Regulatory Flexibility Act Analysis

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ENVIRONMENTAL ASSESSMENT COVER SHEET

Revision of the Red Snapper Recreational Sector Separation Sunset Provision

Reef Fish Amendment 45 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including an Environmental Assessment, Fishery Impact Statement, Regulatory Impact Review, and Regulatory Flexibility Act Analysis.

Abstract:

This Environmental Assessment (EA) is prepared pursuant to the National Environmental Policy Act to assess the environmental impacts associated with a regulatory action. The EA analyzes the impacts of a reasonable range of alternatives intended to modify the provision sunsetting the regulations implemented through Amendment 40, which separated the recreational sector fishing for Gulf of Mexico red snapper into federal for-hire and private angling components. The purpose of this action is to extend or remove the sunset provision, which as currently written would end the distinct private angling and federal for-hire components of the red snapper recreational fishery at the end of 2017 fishing year. Extending or removing the sunset provision allows more time to for the Gulf of Mexico Fishery Management Council to develop and implement for-hire and private angling component management measures.

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Type of Action

Administrative
 Draft

Legislative
 Final

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
ACT	annual catch target
AM	accountability measure
APAIS	Access Point Angler Intercept Survey
BPA	bycatch practicability analysis
Council	Gulf of Mexico Fishery Management Council
CS	consumer surplus
EA	Environmental Assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
EJ	environmental justice
E.O.	Executive Order
ESA	Endangered Species Act
F	fishing mortality rate
FIS	Fishery Impact Statement
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
IFQ	individual fishing quota
IPCC	Intergovernmental Panel on Climate Change
IRFA	Initial Regulatory Flexibility Analysis
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
mp	million pounds
MRIP	Marine Recreational Information Program
MRFSS	Marine Recreational Fisheries Statistics Survey
MSY	maximum sustainable yield
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOR	net operating revenue
OFL	overfishing limit
Opinion	biological opinion
PAH	polycyclic aromatic hydrocarbons
PS	producer surplus
RF	reef fish
RFA	Regulatory Flexibility Act
RFAA	Regulatory Flexibility Act Analysis
RFFA	Reasonable and foreseeable future action
RIR	Regulatory Impact Review
SEAMAP	Southeast Area Monitoring and Assessment Program
Secretary	Secretary of Commerce
SEDAR	Southeast Data Assessment and Review

SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office of NMFS
SPR	spawning potential ratio
SRHS	Southeast Region Headboat Survey
SSC	Scientific and Statistical Committee
TAC	total allowable catch
TL	total length
TPWD	Texas Parks and Wildlife Department
VOC	volatile organic compounds
ww	whole weight

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FISHERY IMPACT STATEMENT

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires that a fishery impact statement (FIS) be prepared for all amendments to fishery management plans (Magnuson-Stevens Act Section 303(a)(9)). The FIS contains an assessment of the likely biological/conservation, economic, and social effects of the conservation and management measures on fishery participants and their communities, participants in the fisheries conducted in adjacent areas under the authority of another Fishery Management Council, and the safety of human life at sea. Detailed discussion of the expected effects for all alternatives considered is provided in Chapter 4. The FIS provides a summary of these effects.

Red snapper is a federally managed species and is under a rebuilding plan. Under the Magnuson-Stevens Act (Section 407(d)(1)), the recreational harvest of red snapper is limited to an annual quota and the recreational harvest of red snapper must be closed once the recreational sector's quota is determined to have been met. In recent years, some Gulf of Mexico States have provided additional fishing opportunities to anglers in state waters when federal waters were closed. Red snapper landed outside of the federal season must be deducted from the annual quota. These additional fishing opportunities increase the difficulties for projecting the season length and constraining landings to within the quota. In recent years, the recreational quota has been exceeded routinely. In response, new accountability measures have been developed, including the use of a buffer on the quota, to reduce the likelihood of exceeding the quota.

In an effort to increase flexibility in managing the harvest of red snapper by the recreational sector and to minimize the chance for recreational annual catch limit (ACL) overruns, the Gulf of Mexico Fishery Management Council (Council) approved sector separation through Amendment 40 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (FMP). In this amendment, sector separation was defined as the partition of a sector into distinct components. Thus, the amendment (1) established a private angling component (private anglers fishing from privately owned vessels and operators of state-permitted for-hire vessels that do not have a federal permit) and a federal for-hire component (operators of federally-permitted for-hire vessels); (2) allocated the red snapper ACL and annual catch target (ACT)¹ between the private angling (57.7%) and federal for-hire (42.3%) components; and (3) established season closure provisions for the components where the component ACT is used to project the respective red snapper component federal season lengths. In establishing the components, the Council put in place a sunset provision where the federal for-hire and private angling components and associated management measures end after three years (2017) unless the Council takes additional action. The Council determined that limiting the duration of the sector separation action would provide an incentive for the Council to continue to evaluate alternative management measures or programs for the recreational sector as a whole.

The Council is considering two actions to improve management of the federal for-hire industry. Amendment 41 to the FMP is evaluating allocation-based management programs for red snapper that would apply to operators of federally-permitted charter vessels. The other action,

¹ The recreational red snapper annual catch target is calculated as 80% of the annual catch limit.

Amendment 42 to the FMP, is evaluating allocation-based management programs for five species of reef fish, including red snapper, and would apply to operators of federally-permitted headboats. However, it is becoming apparent that the implementation of any management programs from Amendments 41 and 42 is not expected to be completed until after the sector separation expires after the end of the 2017 fishing year.

In addition to the above, for-hire operators have expressed concern in public testimony that the sunset provision reduces the economic certainty for their businesses and makes it difficult for them to plan and book trips. They have benefited from sector separation through longer seasons. Based on the component ACTs, the 2015 and 2016 federal season length for the federal for-hire component were 44 and 46 days, respectively, and is longer than the 2014 recreational season of nine days. For the private angling component, the federal 2015 and 2016 seasons remained similar to the 2014 season (10 and 9 days, respectively). Then again, private anglers had additional fishing opportunities in state waters where the state season lengths were extended for longer periods of time. Due to federal permit limitations, operators of federally permitted for-hire reef fish vessels cannot harvest red snapper from state waters if federal waters are closed.

Given that the development of for-hire management measures through Amendments 41 and 42 are not expected to be completed until after the 2017 fishing year ends, the Council needs to take action in a plan amendment to extend or eliminate Amendment 40's sunset provision. Thus, the purpose of Amendment 45 to the FMP is to extend or remove the sunset provision that would end the distinct private angling and federal for-hire components of the red snapper recreational sector. The need for the proposed action is to allow more time for the Council to develop and implement federal for-hire and private angling component management measures to better prevent overfishing while achieving the optimum yield on a continuing basis, particularly with respect to recreational opportunities, and while rebuilding the red snapper stock.

Amendment 45 is a single action amendment and proposes to extend the sunset provision for an additional 5 years. Thus, rather than expiring at the end of the 2017 fishing year, the provisions put in place through Amendment 40 would expire after the 2022 fishing year. This would provide additional time for Amendments 41 and 42 to be fully developed and evaluated.

The Gulf of Mexico red snapper stock is managed under the Council's Reef Fish FMP. Therefore, the actions of this amendment would not be expected to impact fishery participants in areas adjacent to the Gulf of Mexico, such as fisheries managed under the Caribbean and South Atlantic Fishery Management Councils' jurisdictions.

Biological Effects (Conservation Effects)

The extension of the sunset provision put in place through Amendment 40 is not expected to have any direct effects for the biological environment as detailed in Section 4.1.2. This is because this action would not change the overall red snapper recreational quota. Thus, little change is expected in overall recreational red snapper fishing effort and removals of fish from the stock. However, establishing sector separation is expected to have indirect effects on the red snapper stock.

The most likely indirect effect on the red snapper stock from this action would be on discard mortality as discussed in the bycatch practicability analysis in Amendment 40. Regulatory discards are fish that are caught, but not kept because they are too small, would put a fisherman over the bag limit, or are caught out of season. A certain percentage of these fish die and are called dead discards. The most recent red snapper stock assessment estimated dead discard rates for the recreational sector at 10%. However, the number of discards relative to the landed fish may differ between components. As described in Section 4.1.2, the relative number of discarded fish compared to landed fish is less for charter boat fishing than for private angling (Note that similar information is not available for fishing from headboats). Therefore, by extending the sunset provision, and thus the separate component allocations, by five years, any increase in dead discards from the private angling component relative to the federal for-hire component is delayed. The delay would have a beneficial effect on the stock, although this effect might be mitigated if most private angler effort shifted to shallower state waters where fish would be less susceptible to the effects of decompression that can lead to mortality.

Another likely indirect effect from extending the sunset provision would be a reduction in the likelihood of red snapper overfishing by the recreational sector. If better landings information becomes available for one component, then either in-season monitoring of the harvest or better projections could be used to reduce the likelihood that a component exceeds its quota/annual catch limit. This would particularly be true for the federally permitted for-hire component. Because of the limited number of federally-permitted vessels and the fact that headboats regularly report landings, it is currently easier to both monitor and project landings of this component. Thus, extending the sunset provision should indirectly benefit the stock by reducing the probability of overfishing through better monitoring.

Economic Effects

The extension of the sunset provision is expected to result in increased economic benefits because it would allow for a longer period of time during which each sector can experience more predictable red snapper seasons; better planning for businesses, notably for-hire businesses; better planning for anglers; and improvements to the economic performance of the associated businesses that cater to both the for-hire sectors and private anglers. Additionally, a longer sunset should better enable the development of management measures tailored to the needs of each sector which, in turn, would be expected to result in improved use of the red snapper resource and better timing of effort and other resources associated with the harvest activities by the respective groups, leading to improved management of the red snapper resource and increased economic benefits.

Social Effects

The social effects of extending the sunset provision put in place through Amendment 40 are expected to be positive, overall. Extending the sunset provision will enable the Council to continue developing and evaluating management approaches that are tailored to the needs of each component. However, the potential benefits that may result from continuing separate management measures for each component of the recreational sector would be diminished through extending the sunset provision (as opposed to eliminating it) as uncertainty about future management will remain. Further, the Council will need to revisit its decision, again, and determine whether the management approach for separate federal for-hire and private angling

components should be continued. This could affect the range of management measures under consideration to those the Council could develop and implement before the next sunset occurs. Any distinct management approaches applied to a component would cease at the time of the sunset.

Continuing to manage the recreational components separately for five additional years should result in positive effects for both components, as neither would lose fishing opportunities as a result of a quota overage by the other component. However, even with separate season closures, when the Gulf-wide recreational quota is met, the recreational harvest of red snapper must end (Section 407(d) of the Magnuson-Stevens Act). Thus, the potential benefits of establishing separate quotas and season closures may not be realized without attendant measures to ensure each component does not exceed its quota.

As a result of the action proposed in this amendment, recreational anglers would not be expected to have additional incentives to participate in red snapper fishing under adverse weather or ocean conditions. Therefore, safety-at-sea issues would not be expected to arise from this action.

CHAPTER 1. INTRODUCTION

1.1 Background

The Gulf of Mexico (Gulf) red snapper stock is overfished and is currently under a rebuilding plan. Consistent with the rebuilding plan, both commercial and recreational annual catch limits (ACLs), also called quotas, have been increased as the stock has recovered. The commercial sector has been managed under an individual fishing quota (IFQ) program since 2007 and landings have stayed below the commercial ACL as each IFQ allocation holder is strictly monitored to ensure that they do not land more fish than pounds of allocation held in their IFQ account at the time of landing. The recreational sector, which has experienced quota overages and recent reductions in season length, is managed under an ACL, component ACLs and annual catch targets (ACTs), bag and size limits, and closed seasons.²

Gulf of Mexico Fishery Management Council (Council)

- Responsible for conservation and management of fish stocks
- Consists of 17 voting members: 11 appointed by the Secretary of Commerce; 1 representative from each of the 5 Gulf States, the Southeast Regional Administrator of National Marine Fisheries Service (NMFS); and 4 non-voting members
- Responsible for developing fishery management plans and amendments, and recommends actions to NMFS for implementation

National Marine Fisheries Service (NMFS)

- Responsible for preventing overfishing while achieving optimum yield on a continuing basis
- Approves, disapproves, or partially approves Council recommendations
- Implements regulations

The recreational sector in the Gulf includes a private angling component and a federal for-hire component. The federal for-hire component includes charter vessels and headboats (for-hire) with a federal charter/headboat permit for reef fish. This allows operators of such vessels to fish for reef fish including red snapper in federal waters. Operators of for-hire vessels without federal permits are restricted to fishing for red snapper in state waters. Until the implementation of Amendment 40 to the Fishery Management Plan (FMP) for the Reef Fish Resources of the Gulf of Mexico (GMFMC 2014a), recreational management measures were applied to the recreational sector as a whole, without distinguishing between the private angling and federal for-hire components. Recreational red snapper season lengths in federal waters have been

² See Appendix D for other regulations pertaining to the harvest of red snapper in the Gulf.

decreasing, in part due to an increase in the average fish size the recreational sector has been harvesting (fewer fish needed to fill the recreational ACL) and in part due to non-compatible state fishing seasons (fish harvested in state waters count against the recreational ACL). Thus, red snapper fishing opportunities have declined for both the federal for-hire and private angling components in federal waters through the 2014 fishing year (Table 1.1.1). In 2015, sector separation was established. The federal for-hire component's season length was similar to the 2012 and 2013 seasons, while the private angling component's season length was similar to the 2014 season.

Table 1.1.1. Number of red snapper fishing days in federal waters and number of additional fishing days in state waters.

Year	Federal Season	Number of days state waters were open in addition to the federal season				
		Florida	Alabama	Mississippi	Louisiana	Texas
2012	46	0	0	0	0	320
2013	42	23	0	0	72	323
2014	9	43	12	27	277	356
2015 PA*	10	60	31	108	205	355
2015 FFH*	44	na	na	na	na	na

*Note PA refers to the private angling component and FFH refers to the federal for-hire component, both of which were established in 2015.

In an effort to increase flexibility in managing the harvest of red snapper by the recreational sector and to minimize the chance for recreational ACL overruns, the Gulf of Mexico Fishery Management Council (Council) approved sector separation through Amendment 40 (GMFMC 2014a). The amendment was implemented in 2015. In this amendment, sector separation was defined as the partition of a sector into distinct components. Specifically, the two distinct components of the recreational sector are 1) a private angling component that includes private anglers fishing from privately owned vessels, as well as operators of state-permitted for-hire vessels that do not have a federal permit, and 2) a federal for-hire component that includes operators of federally-permitted for-hire vessels. The amendment defined the two components and allocated the red snapper ACL and ACT between the private angling (57.7%) and federal for-hire (42.3%) components. The ACT is 20% less than the ACL. In addition, Amendment 40 established season closure provisions for the federal for-hire and private angling components where the component ACT is used to project the respective federal red snapper component season lengths.

The component season lengths are determined through projections that rely on previous years' landings information³. Rulemaking from Amendment 40 set the recreational quota, component sub-quotas, and ACTs, as presented in the Table 1.1.2. Based on the component ACTs, the 2015 federal season length for the private angling component was 10 days and for the federal for-hire

³ See http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/index.html for more information.

component was 44 days (SERO-LAPP-2015-04). Private anglers had additional fishing opportunities in state waters where the state season lengths were extended for longer periods of time (Table 1.1.1).

Table 1.1.2. The 2015-2017 red snapper recreational quotas, component annual catch limits (ACL), and component annual catch targets (ACT) in millions of pounds gutted weight.

Year	Recreational Quota	Recreational ACT	Federal For-hire Quota	Private Angling Quota	Federal For-hire ACT	Private Angling ACT
2015	7.007	5.606	2.964	4.043	2.371	3.234
2016	6.840	5.473	2.893	3.947	2.315	3.158
2017+	6.733	5.386	2.848	3.885	2.278	3.108

In establishing the components in Amendment 40, the Council put in a sunset provision where the federal for-hire and private angling components and associated management measures end after three years unless the Council takes additional action. The Council determined that limiting the duration of the sector separation action would provide an incentive for the Council to continue to evaluate alternative management structures for the recreational sector as a whole and take action by the sunset date to either enact the alternative management measures or continue with the sector separation as set forth under Amendment 40.

The Council is considering two actions to improve management of the federal for-hire component. Amendment 41 is evaluating allocation-based management programs for red snapper that would apply to operators of federally-permitted charter vessels. The purpose of Amendment 41 is to develop a management approach for federally-permitted charter vessels that provides flexibility, reduces management uncertainty, improves economic conditions, and increases fishing opportunities for federal charter vessels and their angler passengers. The other action, Amendment 42, is evaluating allocation-based management programs for five species of reef fish, including red snapper, that would apply to operators of federally-permitted headboats. The purpose of Amendment 42 is to reduce management uncertainty and improve economic conditions for Gulf reef fish headboat operators/owners and provide flexibility by increasing fishing opportunities for their angler passengers through a management program for Gulf headboats participating in the Southeast Region Headboat Survey (SRHS).

It is becoming apparent that the implementation of any management programs from Amendments 41 and 42 is not expected to be completed until after the sector separation expires under Amendment 40's sunset provision (i.e., after the end of the 2017 fishing year). In addition, for-hire operators in public testimony have expressed concern that the sunset provision reduces the economic certainty for their businesses and makes it difficult for them to plan and book trips. Therefore, Council action through a plan amendment to extend or remove the sunset provision for sector separation would be beneficial to the federal for-hire component.

1.2 Purpose and Need

The purpose of this action is to extend or remove the sunset provision that would end the distinct private angling and federal for-hire components of the red snapper recreational sector. The need for the proposed action is allow more time to for the Council to develop and implement federal for-hire and private angling component management measures to better prevent overfishing while achieving the optimum yield on a continuing basis, particularly with respect to recreational opportunities, and while rebuilding the red snapper stock.

1.3 History of Management

This history of management covers events pertinent to red snapper allocation and setting quotas. A complete history of management for the FMP is available on the Council's website at http://www.gulfcouncil.org/fishery_management_plans/reef_fish_management.php and a history of red snapper management through 2006 is presented in Hood et al. (2007). The final rule for the Reef Fish FMP (with its associated environmental impact statement [EIS]) (GMFMC 1981) was effective November 8, 1984, and defined the reef fish fishery management unit, which included red snapper.

Currently, the commercial sector fishing for red snapper is regulated by a 13-inch total length (TL) minimum size limit and managed under an individual quota program. Recreational fishing for red snapper is managed with a 16-inch TL minimum size limit, 2-fish bag limit, and a season beginning on June 1 and ending when the recreational quota is projected to be caught. Other reef fish fishery management measures that affect red snapper fishing include permit requirements for the commercial and federal for-hire fleets as well as season-area closures (e.g., Madison-Swanson and the Edges).

Red snapper allocation and quotas: The final rule for **Amendment 1** (GMFMC 1989) to the Reef Fish FMP (with its associated Environmental Assessment (EA), Regulatory Impact Review (RIR), and Initial Regulatory Flexibility Analysis [IRFA]) was effective in February 1990. The amendment specified a framework procedure for specifying the total allowable catch (TAC) to allow for annual management changes. A part of that specification was to establish a species allocation. This was based on the percentage of total landings during the base period of 1979-1987. For red snapper, the commercial sector landed 51% and the recreational sector landed 49% of red snapper over the base period. **Amendment 1** also established a commercial quota of 3.1 million pounds. The recreational quota was established through a 1997 regulatory amendment (with its associated EA and RIR) (GMFMC 1995) with a final rule effective in October 1997. Prior to 1997, the recreational sector had exceeded its allocation of the red snapper TAC, though the overages were declining through more restrictive recreational management measures (see Section 3, Table 3.1.2). With the establishment of a recreational quota, the Regional Administrator was authorized to close the recreational season when the quota is reached as required by the Magnuson-Stevens Act. Commercial and recreational quotas, recreational allocations, and commercial and recreational landings are provided in Table 3.1.2. NMFS has recently changed the commercial and recreational allocation through **Amendment 28**

(GMFMC 2015a). Amendment 28 reallocates the Gulf red snapper stock ACL between the commercial and recreational sectors from a 51 to 49% split to a 48.5 to 51.5% split, respectively.

At its April 2014 meeting, the Council requested an emergency rule to revise the recreational accountability measures for red snapper by applying a 20% buffer to the recreational quota, which resulted in a recreational ACT of 4.312 million pounds whole weight (NMFS 2014). The Council's decision to request an emergency rule was made following the decision of the U.S. District Court for the District of Columbia in *Guindon v. Pritzker* (March 26, 2014). A 2014 framework action created an ACT and a quota overage adjustment to apply to the 2015 fishing year and beyond (GMFMC 2014b). The action adopted an ACT based on a 20% buffer to the recreational quota. The Council also selected as preferred an overage adjustment such that the amount by which the recreational quota is exceeded in a fishing season is deducted from the following year's quota.

The Council established a federal for-hire and a private angling component within the Gulf recreational sector fishing for red snapper through **Amendment 40** (with its associated EIS, RIR, and Regulatory Flexibility Act analysis) which was implemented by NMFS on May 22, 2015 (GMFMC 2014a). The federal for-hire component is comprised of all for-hire operators with a valid or renewable federal charter vessel/headboat permit for reef fish and the private angling component is comprised of other for-hire operators and private recreational anglers. Amendment 40 allocated the red snapper recreational quota and ACT among the federal for-hire (42.3%) and private angling (57.7%) components.

For-hire permit requirements: The requirement to have a permit to operate for-hire vessels in the Gulf exclusive economic zone for reef fish fishing was implemented through **Amendment 11** (with its associated EA, RIR, and IRFA) on April 1, 1996 (GMFMC 1995). The initial purpose of the permits was to address potential abuses in the two-day bag limit allowance. It was thought that by having a permit to which sanctions could be applied would improve compliance with the two-day bag limit. In addition, the permit requirement was seen as a way to enhance monitoring of for-hire vessels in the recreational sector. **Amendment 20** (with its associated EA and RIR; GMFMC 2003), implemented on June 16, 2003, established a three-year moratorium on the issuance of new charter and headboat Gulf reef fish permits to limit further expansion in the for-hire fisheries, an industry concern, while the Council considered the need for more comprehensive effort management systems. The moratorium was extended indefinitely in **Amendment 25** (with its Supplemental EIS, RIR, and IRFA, implemented June 15, 2006 [GMFMC 2006]).

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action – Revise the Provision that Sunsets Sector Separation

Alternative 1: No Action. The separate management of the federal for-hire and private angling components (sector separation) will be effective through the end of the 2017 fishing year under the existing sunset provision.

Preferred Alternative 2: Extend the separate management of the federal for-hire and private angling components (sector separation) for an additional:

Option 2a: 3 calendar years (to be effective through the end of the 2020 fishing year).

Preferred Option 2b: 5 calendar years (to be effective through the end of the 2022 fishing year).

Option 2c: 10 calendar years (to be effective through the end of the 2027 fishing year).

Alternative 3: Remove the sunset provision for sector separation and continue the separate management of the federal for-hire and private angling components.

Discussion

Under **Alternative 1** (No Action), the sunset provision implemented through Amendment 40 would allow sector separation to expire after the 2017 fishing year (GMFMC 2014a). If this were to occur, the recreational sector fishing for red snapper would no longer be managed under two component annual catch limit (ACLs), but instead be managed under a single recreational ACL. Thus, rather than projecting component-specific federal fishing seasons for 2018 and beyond, only one federal recreational season applying to both components would be projected for the recreational sector. Amendments 41 and 42 could continue to be developed; however, at least for Amendment 41, a new action would need to be added to establish a red snapper allocation for the charter industry. Amendment 42 would be able to apply a portion of the recreational catch based on historical landings from the Southeast Region Headboat Survey (SRHS).

Preferred Alternative 2 would extend the sunset provision for a set number of years and **Options 2a-2c** would allow sector separation to expire after 3 to 10 years. Under **Option 2a**, sector separation would be extended an additional 3 years and would expire after the 2020 fishing year. Under **Preferred Option 2b**, sector separation would be extended an additional 5 years and would expire after the 2022 fishing year. Finally, under **Option 2c**, sector separation would be extended an additional 10 years and would expire after the 2027 fishing year. Selecting any of the options as preferred under this alternative would provide additional time for Amendments 41 and 42 to be fully evaluated.

Alternative 3 would remove the sunset provision and allow sector separation to continue until such time as the Gulf of Mexico Fishery Management Council (Council) takes action eliminating sector separation. This alternative would relieve any time constraints for completing

Amendments 41 and 42, or any other action the Council decides to take concerning management measures for the separate components of the recreational sector.

CHAPTER 3. AFFECTED ENVIRONMENT

The actions considered in this amendment/environmental assessment would affect primarily recreational fishing for red snapper in federal and state waters of the Gulf of Mexico (Gulf). Descriptions of the physical, biological, economic, social, and administrative environments were completed in the environmental impact statements (EISs) for Reef Fish Amendments 27/Shrimp Amendment 14 (GMFMC 2007), 30A (GMFMC 2008a), 30B (GMFMC 2008b), 32 (GMFMC 2011a), 40 (GMFMC 2014a), 28 (GMFMC 2015a), the Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004a), and the Generic Annual Catch Limits/Accountability Measures (ACL/AM) Amendment (GMFMC 2011b). Below, information on each of these environments is summarized or updated, as appropriate.

3.1 Description of the Red Snapper Component of the Reef Fish Fishery

A description of the fishery and affected environment relative to red snapper was last fully discussed in joint Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007). The description has been updated in Amendments 28 (GMFMC 2015a), 31 (GMFMC 2009), and 40 (GMFMC 2014a). This section updates the previous description to include additional information since publication the previous amendments and their associated EISs.

General Features

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). Currently, the commercial sector operates under an individual fishing quota (IFQ) program. In 2014, 401 vessels participated in the IFQ program (NMFS 2015a). The recreational sector operates in the following three modes: charter vessels, headboats, and private vessels. In 2014 private vessels accounted for 80.9% of recreational red snapper landings and the for-hire mode (charter vessels and headboats) accounted for 19.1% of the landings (Table 3.1.1). On a state-by-state basis, Florida accounted for the most landings (42.9%), followed by Alabama (30.2%), Louisiana (15.4%), Texas (10.3%), and Mississippi (1.2%).

Table 3.1.1. Recreational red snapper landings and percent in 2014 by state and mode.

State	Private angling		For-hire		Total	
	Pounds	Percent	Pounds	Percent	Pounds	Percent
Florida (west)	1,402,619	36.6%	242,223	6.3%	1,644,842	42.9%
Alabama	951,421	24.8%	207,359	5.4%	1,158,780	30.2%
Mississippi	43,425	1.1%	1,693	0.0%	45,118	1.2%
Louisiana	530,089	13.8%	61,012	1.6%	591,100	15.4%
Texas	173,605	4.5%	221,993	5.8%	395,597	10.3%
Total	3,101,157	80.9%	734,280	19.1%	3,835,437	100.0%

Source: SEFSC Recreational ACL Database (Mar 2016).

The red snapper stock has been found to be in decline or in an overfished condition since the first red snapper stock assessment in 1986 (Parrack and McClellan 1986). The first red snapper rebuilding plan was implemented in 1990 through Amendment 1 (GMFMC 1989). From 1990 through 2009, red snapper harvest was managed through the setting of an annual total allowable catch (TAC). The TAC was allocated with 51% going to the commercial sector and 49% to the recreational sector. Beginning in 2010, the TAC was phased out in favor of an ACL as a result of revisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Amendment 1 also established a 1990 commercial red snapper quota of 3.1 million pounds (mp) whole weight (ww) (Table 3.1.2). There was no explicit recreational quota or allocation specified in Amendment 1, only a bag limit of 7 fish and a minimum size limit of 13 inches total length (TL). Beginning in 1991, an explicit recreational allocation in pounds, based on 49% of the TAC, was specified, and that allocation was specified through Gulf of Mexico Fishery Management Council (Council) action until 1997 when the recreational allocation was changed to a quota (Table 3.1.2). Based on the 51% to 49% commercial to recreational sector allocation, the commercial quota implied a TAC of about 5.2 mp in 1990, followed by an explicit TAC of 4.0 mp in 1991 and 1992, 6.0 mp in 1993 through 1995, and 9.12 mp from 1996 through 2006 (Table 3.1.2). The TAC was reduced to 6.5 mp in 2007 and 5.0 mp in 2008 and 2009 as the Council shifted from a constant catch rebuilding plan to a constant fishing mortality rebuilding plan (GMFMC 2007). Under a constant fishing mortality rate rebuilding plan, the acceptable biological catch (ABC) is allowed to increase as the stock rebuilds, thus the ABCs for 2010, 2011, and 2012 were increased to 6.945, 7.530, and 8.080 mp, respectively⁴.

In July 2013, the Council reviewed a new benchmark assessment (SEDAR 31 2013) which showed that the red snapper stock was rebuilding faster than projected, partly due to strong recruitment in some recent years. Initially in 2013, a scheduled increase in the ABC to 8.690 mp was cancelled due to an overharvest in 2012 by the recreational sector. After an analysis of the impacts of the overharvest on the red snapper rebuilding plan, the 2013 ABC was increased to 8.460 mp. However, once the new benchmark assessment was completed, the Scientific and Statistical Committee (SSC) increased the ABC for 2013 to 13.5 mp with the caveat that catch levels would have to be reduced in future years unless recruitment returned to average levels. After incorporating a buffer to reduce the possibility of having to later reduce the quota, the Council further increased the 2013 commercial and recreational quotas to a combined 11.0 mp (5.61 mp and 5.39 mp, respectively) (GMFMC 2013a). The Council plans to maintain the 11.0 mp combined quota for 2014, and 2015 based on SSC recommendations, increase the combined quota for 2015 to 14.3 mp. For 2016 and 2017, the SSC recommended declining ABCs of 13.96 mp and 13.74 mp, respectively.

⁴ Note the allocation for the commercial and recreational quotas shifted from the TAC to the ABC in 2010.

Table 3.1.2. Red snapper quota and landings by sector, 1986-2014. Landings are in mp ww. Commercial quotas began in 1990. Recreational allocations began in 1991 and recreational quotas began in 1997. Summing the recreational allocation/quota and the commercial quota yields the TAC for the years 1991-2009 and the ABC for 2010-2014.

Year	Recreational		Commercial		Total	
	Allocation Quota	Actual landings	Quota	Actual landings	TAC/ABC	Actual landings
1986	na	3.491	na	3.700	na	6.470
1987	na	2.090	na	3.069	na	4.883
1988	na	3.139	na	3.960	na	6.528
1989	na	2.940	na	3.098	na	5.754
1990	na	1.625	3.1	2.650	na	4.264
1991	1.96	2.917	2.04	2.213	4.0	5.130
1992	1.96	4.618	2.04	3.106	4.0	7.724
1993	2.94	7.161	3.06	3.374	6.0	10.535
1994	2.94	6.076	3.06	3.222	6.0	9.298
1995	2.94	5.464	3.06	2.934	6.0	8.398
1996	4.47	5.339	4.65	4.313	9.12	9.652
1997	4.47	6.804	4.65	4.810	9.12	11.614
1998	4.47	4.854	4.65	4.680	9.12	9.534
1999	4.47	4.972	4.65	4.876	9.12	9.848
2000	4.47	4.750	4.65	4.837	9.12	9.587
2001	4.47	5.252	4.65	4.625	9.12	9.877
2002	4.47	6.535	4.65	4.779	9.12	11.314
2003	4.47	6.105	4.65	4.409	9.12	10.514
2004	4.47	6.460	4.65	4.651	9.12	11.111
2005	4.47	4.676	4.65	4.096	9.12	8.772
2006	4.47	4.131	4.65	4.649	9.12	8.780
2007	3.185	5.809	3.315	3.153	6.5	8.962
2008	2.45	4.056	2.55	2.461	5.0	6.517
2009	2.45	5.597	2.55	2.461	5.0	8.058
2010	3.403	2.651	3.542	3.362	6.945	6.013
2011	3.866	6.734	3.664	3.562	7.53	10.296
2012	3.959	7.524	4.121	4.000	8.08	11.524
2013	5.390	9.639	5.610	5.399	11.00	15.038
2014	5.390	3.826	5.610	5.568	11.00	9.394

Sources: Recreational landings from the Southeast Fisheries Science Center including landings from the Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey. Commercial landings from the Southeast Data Assessment and Review 31 Data Workshop Report (1990-2006), commercial quotas/catch allowances report from the National Marine Fisheries Service /Southeast Regional Office IFQ landings website (2007-2014): <http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>. Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww.

Both the commercial and recreational sectors have had numerous allocation or quota overruns. Table 3.1.2 shows a comparison of quotas and actual harvests from 1990 through 2014. Note the

commercial sector has not had overruns since 2005, including the years 2007 onward when the commercial harvest of red snapper has operated under an IFQ program.

Recreational Sector

Red snapper are an important component of the recreational sector's harvest of reef fish in the Gulf. Red snapper are caught from charter vessels, headboats (or party boats), and private or rental boats. Red snapper are primarily caught with hook-and-line gear in association with bottom structures. Recreational red snapper harvest allocations since 1991 have been set at 49% of the TAC. In 1997, a recreational quota was created (also set at 49% of the TAC) and quotas have been used since to manage the fishery. Recreational allocations and quotas are provided in Table 3.1.2).

Before 1984, there were no restrictions on the recreational harvest of red snapper. In November 1984, a 12-inch TL minimum size limit was implemented, but with an allowance for five undersized fish per person. In 1990, the undersized allowance was eliminated, and the recreational sector was managed through bag and size limits with a year-round open season. In 1997, the recreational red snapper allocation was converted into a quota with accompanying quota closure should the sector exceed its quota. Recreational quota closures occurred in 1997, 1998, and 1999, becoming progressively shorter each year even though the quota remained a constant 4.47 mp.

A fixed recreational season of April 21 through October 31 (194 days) was established for 2000 through 2007. However, National Marine Fisheries Service (NMFS) returned to variable length seasons beginning in 2008. Under that management approach, due to a lag in the reporting of recreational catches, catch rates over the course of the season were projected in advance based on past trends and changes in the average size of a recreationally harvested red snapper. The recreational season opened each year on June 1 and closed on the date when the quota was projected to be reached. In 2008, the season length was reduced from 194 days to 65 days in conjunction with a reduction in quota to 2.45 mp. The season length then increased to 75 days in 2009. In 2010, the recreational red snapper season was originally projected to be 53 days. However, due to reduced effort and large emergency area closures resulting from the Deepwater Horizon MC252 oil spill, catches were below projections, and a one-time supplemental season of weekend only openings (Friday, Saturday, and Sunday) was established from October 1 through November 22. The one-time supplemental weekend season added 24 fishing days to the 2010 season for a total of 77 days. In 2011, the season was reduced to 48 days despite an increase in the quota, due to an increase in the average size of recreationally harvested fish. In 2012 the season was initially scheduled to be 40 days, but was extended to 46 days to compensate for the loss of fishing days due to storms (Table 3.1.3). For 2013, an increase in the ABC occurred too late to extend the June recreational season, so the Council requested that NMFS reopen the recreational season on October 1 for whatever number of days would be needed to harvest the additional quota. NMFS estimated that the additional recreational quota would take 14 days to be caught, and therefore announced a supplemental season of October 1 through 14. Due in part to an adjustment in the Access Point Angler Intercept Survey (APAIS) methodology (MRIP Calibration Workshop 2 Final Report 2014) utilized by the newly implemented Marine Recreational Information Program (Carmichael and Van Vorhees 2015), the quota in 2013 was

exceeded by 80% (SERO 2014). In 2014, the season was 9 days starting on June 1. The season length was determined using new MRIP information to estimate catch rates and was based on an annual catch target (ACT) set 20% below the quota. The 2014 catches were under the ACT by 9% (SERO-LAPP-2015-04). The ACT was put in place through an emergency rule which was subsequently made permanent through a framework action implemented in March 2015. The private angling and federal for-hire components were established in 2015 through Amendment 40. Season lengths for each component were based on component-specific ACTs and resulted in a 10-day season for the private angling component and a 44-day season for the federal for-hire component. Preliminary information suggests catches in 2015 were 16% over the private angling ACT and 12% below the federal for-hire ACT (N. Farmer, NMFS SERO, pers. comm.) and neither component exceeded its respective ACL.

With the exception of Texas, state water fishing seasons were generally consistent with the federal season until 2013. Texas has never closed its state waters to recreational fishing and maintained a year-round season. Starting in 2013, both Florida and Louisiana established fishing seasons in state waters outside of the federal season. By 2014, all the Gulf states had non-compatible fishing seasons (Table 1.1.1 and 3.1.4). Table 1.1.1 shows how many days in addition to the federal season state waters of the different Gulf states were open from 2012 until 2015. The 2016 federal season will be nine days for the private angling component and 46 days for the federal for-hire component.

Table 3.1.3. Red snapper recreational landings vs. allocation/quota and days open, bag limit, and minimum size limits 1986-2014. Landings are in mp ww. Minimum size limits are in inches total length. Recreational allocations began in 1991, and became quotas in 1997.

Year	Allocation/ Quota	Actual landings	Days open	Bag limit	Minimum size limit
1986	na	3.491	365	none	13
1987	na	2.090	365	none	13
1988	na	3.139	365	none	13
1989	na	2.940	365	none	13
1990	na	1.625	365	7	13
1991	1.96	2.917	365	7	13
1992	1.96	4.618	365	7	13
1993	2.94	7.161	365	7	13
1994	2.94	6.076	365	7	14
1995	2.94	5.464	365	5	15
1996	4.47	5.339	365	5	15
1997	4.47	6.804	330	5	15
1998	4.47	4.854	272	4	15
1999	4.47	4.972	240	4	15
2000	4.47	4.750	194	4	16
2001	4.47	5.252	194	4	16
2002	4.47	6.535	194	4	16
2003	4.47	6.105	194	4	16
2004	4.47	6.460	194	4	16
2005	4.47	4.676	194	4	16
2006	4.47	4.131	194	2	16
2007	3.185	5.809	194	2	16
2008	2.45	4.056	65	2	16
2009	2.45	5.597	75	2	16
2010	3.403	2.651	53 + 24 = 77	2	16
2011	3.866	6.734	48	2	16
2012	3.959	7.524	46	2	16
2013	5.390	9.639	42	2	16
2014	5.390	3.826	9	2	16

Sources: Southeast Fisheries Science Center including landings from the MRIP, Texas Parks and Wildlife Department, and the Southeast Headboat Survey (May 2014).

Table 3.1.4. Federal and state red snapper recreational regulations for 2012-2015.

Region and year	Season	Days open
Florida (all years there is a 2-fish bag limit and 16" TL minimum size limit)		
2012	Compatible with federal regulations	46
2013	June 1-July 14 season & October 1-21	65
2014	May 24-July14	52
2015	May 23-July 12 with Labor Day weekend (Sept 5-7) & 2-day weekends in Sept-Oct	70
Alabama (all years there is a 2-fish bag limit and 16" TL minimum size limit)		
2012	Compatible with federal regulations	46
2013	Compatible with federal regulations	42
2014	July weekends (12 days plus federal season June 1-9)	21
2015	July 1-31 (31 days plus federal season June 1-10)	41
Mississippi (all years there is a 2-fish bag limit and 16" TL minimum size limit)		
2012	Compatible with federal regulations	46
2013	Compatible with federal regulations	42
2014	Federal season plus July & October-November 2 weekends	36
2015	Federal season plus July 16-October 31	118
Louisiana (except 2013 2-fish bag limit & 16" TL minimum size limit; 2013 3-fish bag limit)		
2012	Compatible with federal regulations	46
2013	March 23-September 30 & October 1-14	113
2014	February 21-April 13 weekends & April 14-December 31	286
2015	March 20-September 8 & November 20-December 31	215
Texas (4-fish bag limit and 15" TL minimum size limit)		
2012	January 1-December 31	366
2013	January 1-December 31	365
2014	January 1-December 31	365
2015	January 1-December 31	365
Federal (2-fish bag limit and 16" TL minimum size limit)		
2012	June 1-July 16	46
2013	June 1-June 28 & October 1-14	42
2014	June1-June 9	9
2015	Private angling - June 1-June10	10
	Federal for-hire – June 1-July 14	44

During the six years when the recreational harvest was an allocation, not a quota (1991 – 1996), actual recreational harvests in pounds of red snapper exceeded the allowable every year. During the period when the recreational harvest was managed as a quota (1997 – 2014), actual recreational harvest in pounds of red snapper often exceeded the quota (Table 3.1.3). Historical recreational landings estimates have recently been revised to reflect changes in methodology under MRIP.

For-hire vessels have operated under a limited access system with respect to the issuance of new federal for-hire permits for fishing reef fish or coastal migratory pelagics since 2003. A total of 3,340 reef fish and coastal migratory pelagic charter permits were issued under the moratorium, and they were associated with 1,779 vessels. Of these vessels, 1,561 have both reef fish and coastal migratory pelagics permits, 64 have only reef fish permits, and 154 have only coastal migratory pelagics permits.

Savolainen et al. (2012) surveyed the charter and headboat fleets in the Gulf. They found that most charter vessel trips occurred in the exclusive economic zone (68%) and targeted rig-reef species (64%; snappers and groupers). Pelagic (mackerel and cobia) trips accounted for 19% of trips. If examined by state, more trips targeted rig-reef species with the exception of Louisiana where rig-reef species and pelagic species had almost the same proportion of trips. In a similar survey conducted in 1998, Holland et al. (1999) found species targeted by Florida charter boat operators were king mackerel (41%), grouper (~37%), snapper (~34%), cobia (25%), and Spanish mackerel (20%). For the rest of the Gulf, Sutton et al. (1999) using the same survey reported that the majority of charter boats targeted snapper (91%), king mackerel (89%), cobia (76%), and tuna (55%).

For headboats, Savolainen et al. (2012) reported that most headboats target offshore species and fish in federal waters (81% of trips), largely due to vessel size and consumer demand. On average, 84% of trips targeted rig-reef species, while only 10 % targeted inshore species and 6% pelagic species. Holland et al. (1999) reported approximately 40% of headboats did not target any particular species. The species groups targeted by the largest proportion of Gulf coast Florida headboats were snapper (60%), grouper (60%) and sharks (20%) with species receiving the largest percentage of effort being red grouper (46%), gag 33%), black grouper (20%), and red snapper (7%). For the other Gulf States, Sutton et al. (1999) reported that the majority of headboats targeted snapper (100%), king mackerel (85%), shark (65%), tuna (55%), and amberjack (50%). The species receiving the largest percentage of total effort by headboats in the four-state area were snapper (70%), king mackerel (12%), amberjack (5%), and shark (5%).

Commercial Sector

In the Gulf, red snapper are primarily harvested commercially with hook-and-line and bandit gear, with bandit gear being more prevalent. Longline gear captures a small percentage of total landings (generally < 5%; SEDAR 31 2013). Current regulations prohibit longline gear for the harvest of reef fish inside of 50 fathoms west of Cape San Blas. East of Cape San Blas, longline gear is prohibited for harvest of reef fish inside of 20 fathoms from September through May. From June through August, the longline boundary is shifted out to 35 fathoms to protect foraging sea turtles.

Between 1990 and 2006, the principal method of managing the commercial sector for red snapper was with quotas set at 51% of TAC and seasonal closures after each year's quota was filled. The result was a race for fish in which fishermen were compelled to fish as quickly as possible to maximize their catch of the overall quota before the season was closed. The fishing year was characterized by short periods of intense fishing activity with large quantities of red snapper landed during the open seasons. The result was short seasons and frequent quota overruns (Table 3.1.5). From 1993 through 2006, trip limits, limited access endorsements, split seasons and partial monthly season openings were implemented in an effort to slow the race for fish. At the beginning of the 1993 season, 131 boats qualified for red snapper endorsements on their reef fish permits that entitled them to land 2,000 lbs of red snapper per trip.

In 2007, a commercial red snapper IFQ program was implemented to reduce overcapacity and mitigate the race to fish conditions. Each vessel that qualified for the program was issued shares as a percentage of the commercial quota. The number of shares was based on historical participation. At the beginning of each year, each shareholder is issued allocation in pounds based on the number of shares they have. Each shareholder is then allowed to harvest, sell or lease their allocation to other fishermen, or purchase allocation from other fishermen. In addition, shares can be bought and sold. As a result of this program, the commercial red snapper season has no longer been subject to closure since 2007, but a commercial vessel cannot land red snapper unless it has sufficient allocation in its vessel account to cover the landing poundage. Thus, the IFQ program has ended quota overruns (Table 3.1.5). Recently, a 5-year review of the IFQ program was completed by the Council (GMFMC 2013b) and the Council is working to determine if changes are needed to the program based on that review. The five-year review found that the IFQ program had mixed success in reducing overcapacity, but was successful in mitigating derby fishing behavior and preventing quota overages (GMFMC 2013b; Agar et al, 2014).

Table 3.1.5. Commercial red snapper harvest (mp ww) vs. days open, 1986-2014.

Year	Quota	Actual landings	Days Open (days that open or close at noon are counted as half-days) (“+” = split season)
1986	na	3.700	365
1987	na	3.069	365
1988	na	3.960	365
1989	na	3.098	365
1990	3.1	2.650	365
1991	2.04	2.213	235
1992	2.04	3.106	52½ + 42 = 94½
1993	3.06	3.374	94
1994	3.06	3.222	77
1995	3.06	2.934	50 + 1½ = 51½
1996	4.65	4.313	64 + 22 = 86
1997	4.65	4.810	53 + 18 = 71
1998	4.65	4.680	39 + 28 = 67
1999	4.65	4.876	42 + 22 = 64
2000	4.65	4.837	34 + 25 = 59
2001	4.65	4.625	50 + 20 = 70
2002	4.65	4.779	57 + 24 = 81
2003	4.65	4.409	60 + 24 = 84
2004	4.65	4.651	63 + 32 = 95
2005	4.65	4.096	72 + 48 = 120
2006	4.65	4.649	72 + 43 = 115
2007	3.315	3.183	IFQ
2008	2.55	2.484	IFQ
2009	2.55	2.484	IFQ
2010	3.542	3.392	IFQ
2011	3.664	3.594	IFQ
2012	4.121	4.036	IFQ
2013	5.559	5.449	IFQ
2014	5.610	5.568	IFQ

Sources: Southeast Data Assessment and Review 31 Data Workshop Report (1990-2011 landings), commercial quotas/catch allowances report from National Marine Fisheries Service/Southeast Regional Office IFQ landings website (2012-2014 landings):

http://sero.nmfs.noaa.gov/sustainable_fisheries/ifq/documents/pdfs/commercialquotascatchallowancetable.pdf

Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

3.2 Description of the Physical Environment

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 3.2.1). 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 3.2.1) between 1982 and 2009, according to satellite-derived measurements (NODC 2011: <http://accession.nodc.noaa.gov/0072888>). In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

The physical environment for Gulf reef fish, including red snapper, is also detailed in the EIS for the Generic EFH Amendment, the Generic ACL/AM Amendment, and Reef Fish Amendment 40 (refer to GMFMC 2004a; GMFMC 2011a; GMFMC 2014a) and are incorporated by reference and further summarized below. In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. A planktonic larval stage lives in the water column and feeds on zooplankton and phytoplankton (GMFMC 2004a). Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf (<100m) 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, juvenile red snapper are common on mud bottoms in the northern Gulf, particularly off Texas through Alabama. Also, some juvenile snapper (e.g., mutton, gray, red, dog, lane, and yellowtail snappers) and grouper (e.g., Goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems.

In the Gulf, fish habitat for adult red snapper consists of submarine gullies and depressions; coral reefs, rock outcroppings, and gravel bottoms; oilrigs; and other artificial structures (GMFMC 2004a). Detailed information pertaining to the closures and marine reserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010).

With respect to the National Register of Historic Places, there is one site listed in the Gulf. This is the wreck of the *U.S.S. Hatteras*, located in federal waters off Texas. Historical research indicates that over 2,000 ships have sunk on the Federal Outer Continental Shelf between 1625 and 1951; thousands more have sunk closer to shore in state waters during the same period. Only a handful of these have been scientifically excavated by archaeologists for the benefit of generations to come. Further information can be found at:

<http://www.boem.gov/Environmental-Stewardship/Archaeology/Shipwrecks.aspx>.

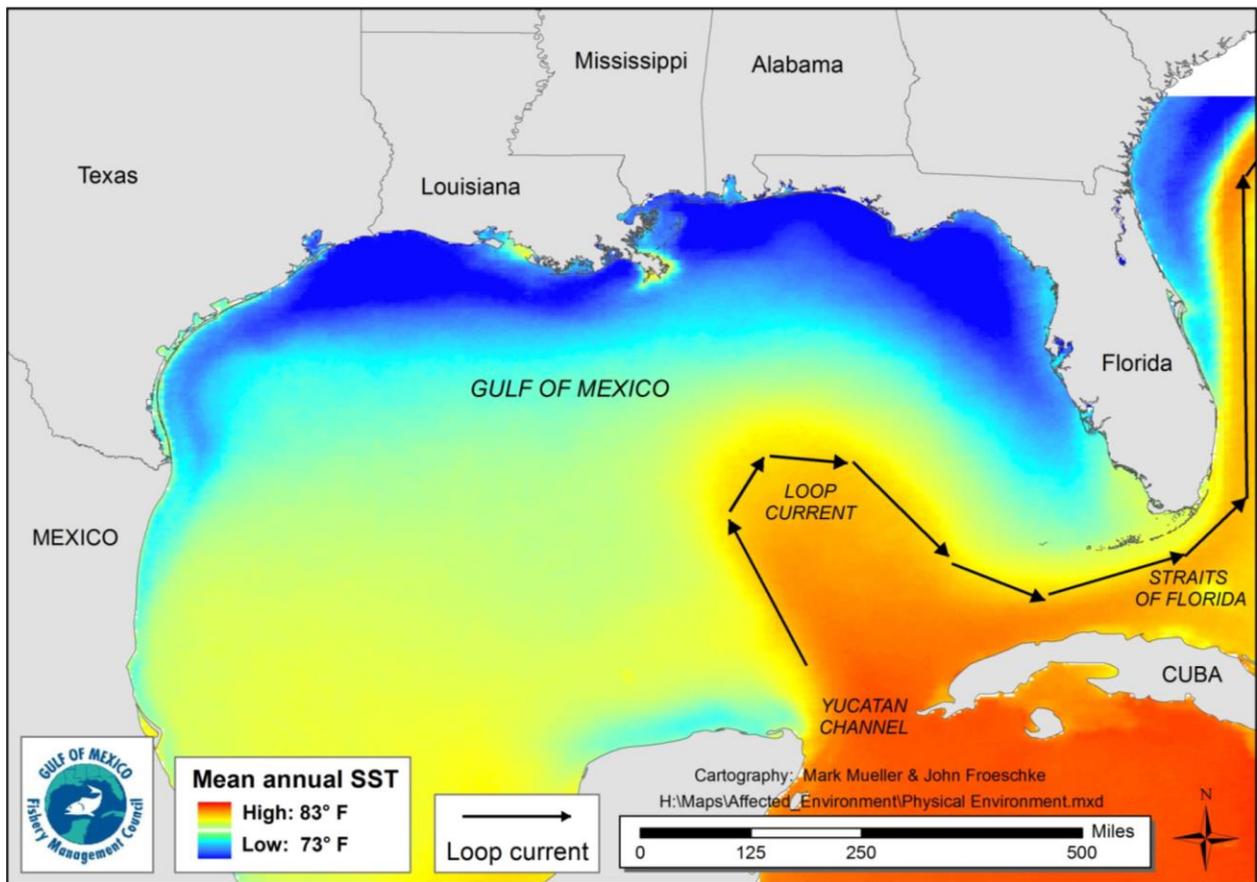


Figure 3.2.1. Physical environment of the Gulf, including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (<http://accession.nodc.noaa.gov/0072888>)

3.3 Description of the Biological Environment

The biological environment of the Gulf, including the species addressed in this amendment, is described in detail in the final EISs for Generic EFH Amendment, the Generic ACL/AM Amendment, and Reef Fish Amendments 28 and 40 (refer to GMFMC 2004a; GMFMC 2011a; GMFMC 2014a; GMFMC 2015a) and is incorporated here by reference and further summarized below.

Red Snapper Life History and Biology

Red snapper demonstrate the typical reef fish life history pattern (Appendix B). Eggs and larvae are pelagic while juveniles are found associated with bottom features or over barren bottom. Spawning occurs over firm sand bottom with little relief away from reefs during the summer and fall. Most females are mature by age two and almost all are mature by age 5 (Woods 2003). Red snapper have been aged up to 57 years (Wilson and Nieland 2001). In the late 1990s, most red snapper caught by the directed fishery were 2- to 4-years old (Wilson and Nieland 2001), but a recently completed stock assessment suggests that the age and size of red snapper in the directed fishery has increased in recent years (SEDAR 31 2013). A more complete description of red snapper life history can be found in the EIS for the Generic EFH Amendment (GMFMC 2004a) and SEDAR 31 (2013).

Status of the Red Snapper Stock

Southeast Data Assessment and Review (SEDAR) 31 Benchmark Stock Assessment and 2014 update

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). The first stock assessment conducted by NMFS in 1986 suggested that the stock was in decline (Parrack and McLellan 1986) and since 1988 (Goodyear 1988) the stock biomass has been in an overfished condition.

A red snapper update assessment was conducted by the Southeast Fishery Science Center (SEFSC) in 2014 (SEDAR 31 Update 2015) and presented to the SSC in January 2015 SSC.⁵ The update assessment was based on the SEDAR 31 benchmark in 2012 and 2013 (SEDAR 31 2013). The primary assessment model selected for the SEDAR 31 was Stock Synthesis (Methot 2010). Stock Synthesis is an integrated statistical catch-at-age model that is widely used for stock assessments in the United States and throughout the world. Commercial landings data included commercial handline and longline landings from the accumulated landings system from 1964 through 2011. For landings between 1880 and 1963, previously constructed historical

⁵ The written report for the 2014 red snapper update assessment was not available to the SSC or Council in January. A PowerPoint presentation describing the assessment was presented to the Council at its January 2015 meeting, and is available at the January 2015 briefing materials on the Council website (<http://www.gulfcouncil.org>) or by going directly to: http://www.gulfcouncil.org/council_meetings/Briefing%20Materials/BB-01-2015/B%20-%202014%20Red%20Snapper%202014%20Update%20Presentation.pdf.

landings were used. Total annual landings from the IFQ program for years 2007-2011 were used to reapportion 2007-2011 accumulated landings system data across strata. Recreational landings data included the MRIP/Marine Recreational Fishery Statistics Survey (MRFSS) from 1981-2011, Southeast Headboat Survey for 1981-2011, and Texas Parks and Wildlife Department survey for 1983-2011. For the years 2004-2011, MRIP landings are available. For earlier years, MRFSS data were calibrated to MRIP estimates using a standardized approach for calculating average weight that accounts for species, region, year, state, mode, wave, and area.

Standardized indices of relative abundance from both fishery dependent and independent data sources were included in the Stock Synthesis model. The fishery dependent indices came from the commercial handline fleet, recreational headboats, and recreational private/for-hire sectors. Fishery independent indices came from the Southeast Area Monitoring and Assessment Program (SEAMAP) bottom trawl survey, SEAMAP reef fish video survey, NMFS bottom longline survey, and the SEAMAP plankton survey.

The benchmark stock assessment (SEDAR 31 2013) estimated dead discard rates separately for each sector. Note these same values were used in the recent 2014 update assessment and at this time are considered the best scientific information available. Red snapper discards in the Gulf were calculated from data collected by the self-reported commercial logbook data and the NMFS Gulf reef fish observer program. In addition to these directed fisheries discards, estimates of red snapper bycatch from the commercial shrimp fleet were also generated. Based on the commercial observer program, dead discard rate estimates were based on average depths, gear type (handline or longline), region (eastern or western Gulf), and season (open or closed). The assessment defined open season discard rates as those occurring on commercial fishing trips with IFQ allocation, while discards from trips without IFQ allocation were considered closed season dead discard rates. For the recreational sector, average depths at which discards occurred for each region (eastern or western Gulf) and season (open or closed) were calculated using self-reported discard data from the iSnapper program and reflected fishing depths, in general, reported by recreational anglers (SEDAR 31 2013). The stock assessment also estimated discard mortality rates before and after the implementation of the circle hook and venting tool requirement in 2008 for both sectors (GMFMC 2007). In August 2013, the Council decided to remove the venting tool requirement due to questions of its efficacy and also to allow fishermen to use other methods to minimize barotrauma (e.g., fish descending devices; GMFMC 2013c). Fishermen may continue to use venting tools.

For the commercial sector, estimates of discard mortality rates are higher compared to the recreational sector (Table 3.3.1) due to gear types and depth fished (GMFMC 2007; SEDAR 7 2005; SEDAR 31 2013). Since the implementation of the red snapper IFQ program, the overall rate of dead discards by the commercial sector has been reduced (GMFMC 2013b). Regardless of whether the recreational red snapper season is open or closed, the recreational discard mortality rates are lower than the commercial rates because recreational fishermen vessels typically fish in shallower depths and typically used hook and line gear (Table 3.3.1).

Table 3.3.1. Average depth fished and estimated discard mortality rates of red snapper by sector during the closed and open seasons in the eastern and western Gulf. The associated discard mortality estimates for the recreational and commercial sector listed are based on use of circle hooks and the venting tool requirement.

Sector	Recreational sector		Commercial handline		Commercial bottom longline	
Season	Open		Open		Open	
Region	East	West	East	West	East	West
Depth	102 ft	105 ft	135 ft	159 ft	186 ft	312 ft
Mortality rate	10%	10%	56%	60%	64%	81%
Season	Closed		Closed		Closed	
Region	East	West	East	West	East	West
Depth	99 ft	108 ft	126 ft	252 ft	198 ft	396 ft
Mortality rate	10%	10%	55%	74%	66%	88%

Source: Tables 5.1 and 5.2 in SEDAR 31 2013.

For the update assessment (SEDAR 31 Update 2015), the model and methods used were the same as SEDAR 31 except as follows.

1. Because recreational fishermen appear to be selecting for larger and older fish in recent years, a new selectivity timeblock (2011-2013) was added in the model for all recreational fleets to accommodate recent changes in fishing patterns. For the purposes of the red snapper assessment, selectivity is defined as the probability of fish being caught (landed or discarded) by a fishing gear as a function of the age of the fish. This definition incorporates both gear attributes and availability of the stock to the fishery (e.g. if no fish are present < 20cm, the selectivity will be zero < 20cm even if the gear could theoretically catch a fish this small). A retention function is then applied to estimate the proportion of fish that were caught that are subsequently discarded (dead or alive), and dead discards are calculated using a discard mortality rate that, in this case of recreational red snapper, is constant with length and age.
2. The MRIP implemented new data collection methods beginning in March 2013. Due in part to the addition of dockside interviews in late afternoon and evening, which was beyond the time frame previously used, landings data collected under the new methodology appear to be higher than comparable landings in earlier years. An MRIP calibration workshop convened by NMFS in the summer of 2014 developed methods to rescale MRIP estimates from 2004-2012 to account for possible undersampling outside “peak hours.” The “rescaled” MRIP (2004-2013) landings were then used in turn to rescale years prior to 2004 as in SEDAR 31. The east and west portions of the stock were modeled separately. The revised recreational landings are generally 10% to 20% higher than in SEDAR 31, and the revised discards show proportionately higher rates than in SEDAR 31.

The results of the 2014 update assessment indicated that overfishing was not occurring and the stock is continuing to rebuild, but it remains overfished. Based on the assessment, the SSC

recommended overfishing limits (OFL) and acceptable biological catch (ABC) for the years 2015-2017. The OFL is the resulting yield when the fishing mortality (F) level is set to the rate that maximizes long-term yield (i.e., fishing at F_{MSY} , which results in attainment of the maximum sustainable yield (MSY)). The ABC was derived by determining a harvest rate ($F_{REBUILD-26\% SPR}$) that would rebuild the stock to a spawning potential ratio (SPR) of 26% of the unfished spawning potential ($B_{26\% SPR}$; a proxy for B_{MSY}) by 2032. To account for uncertainty in the true value of $F_{REBUILD-26\% SPR}$, a probability density function that reflects scientific uncertainty was developed. Based on Tier 1 of the Council’s ABC control rule (GMFMC 2011a), a P^* (acceptable probability of overfishing) of 0.427 was established to determine ABC for each year.

The original SSC recommendations for red snapper OFL and ABC were based on projections that assumed harvest in 2014 would be the same as in 2013. Provisional landings estimates for 2014 indicated that the recreational 2014 landings were less than in 2013. When the projections were re-run using the provisional 2014 landings, revised OFL and ABC yields were produced. The SSC reviewed the updated analysis at a webinar meeting in February 2015, and approved the revised 2015-2017 OFL and ABC yields⁶. In doing so, they noted three uncertainties in the projections including that (1) the final 2014 landings estimates would not be available until later in the year; (2) there were questions about the accuracy of the average weight of recreationally caught fish from Texas (2014 average weights were lower than 2013 average weights); and (3) 2014 discards were assumed to continue at 2013 rates. The original and revised OFLs and ABCs are listed in Table 3.3.2.

Table 3.3.2. SSC projections for red snapper OFL and ABC 2015-2017.

Year	Original Projections		Projections with Provisional 2014 Landings	
	OFL	ABC	OFL	ABC
2015	14.73 mp	13.00 mp	16.13 mp	14.30 mp
2016	14.56 mp	13.21 mp	15.32 mp	13.96 mp
2017	14.40 mp	13.32 mp	14.80 mp	13.74 mp

Other analyses tiered off the 2014 update assessment

The SEFSC did additional analyses based on the 2014 update assessment that were requested by the Council and evaluated by the SSC in May 2015⁷. One analysis reviewed alternative F_{MSY} proxies for the Gulf red snapper stock including fishing mortality rates (Fs) based on several SPRs ($F_{40\% SPR}$ to $F_{20\% SPR}$). The SSC noted that “Over the long-term, fishing at target SPR levels less than 30% will result in declines in the eastern Gulf stock of red snapper, while in the west the SPR will increase at all SPR levels between 20% and 40%.” They also noted that for at SPRs less than 26%, there were short-term increases in ABC; however target SPRs of 20% to 30% tended to converge to similar ABC levels over the long term. In the end, the SSC concluded that

⁶ Gulf of Mexico Fishery Management Council Standing and Special Scientific and Statistical Webinar Summary. February 19, 2015.

⁷ Gulf of Mexico Fishery Management Council Standing and Special Scientific and Statistical Meeting Summary. May 20, 2015.

there was insufficient biological evidence for a better MSY proxy than what is currently used by the Council (i.e., the yield at 26% SPR).

Another SEFSC analysis reviewed by the SSC at the same meeting was a series of sensitivity runs to evaluate the effect of recalibrated recreational removals and recreational selectivity on OFL and ABC projections. The sensitivity runs consisted of using the update assessment base model with the following projections:

- Project the annual OFLs at $F_{26\%SPR}$ and the ABCs at $F_{REBUILD}$ from 2015-2032 using pre-MRIP recalibrated estimates.
- Project the annual OFLs at $F_{26\%SPR}$ and the ABCs at $F_{REBUILD}$ from 2015-2032 using pre-MRIP recalibrated estimates and no new recreational selectivity block for 2011-2013.

There is some evidence that recreational fishing selectivity in recent years has been shifting toward larger and older red snapper. Therefore, in these runs the model was allowed to re-estimate recreational selectivities in the most recent years (2011-2014). The runs suggested that there are two reasons why higher OFLs and ABCs were projected in the update assessment. The first was the use of the larger MRIP recalibrated estimates of recreational catch and the second was because of the recalibration of recreational selectivity in recent years.

The last analysis conducted by the SEFSC evaluated the effects of changing the commercial:recreational allocation on OFL and ABC yield streams. This analysis was also reviewed by the SSC at their May 20, 2015 meeting. The recreational allocation was adjusted from the current 49% of the stock ACL up to 70% and included the recreational allocation of 51.5%, which was the preferred alternative (Alternative 8) at the time the analysis was conducted. The OFL and ABC yields for the directed fisheries presented to the SSC increased with increasing recreational allocation and achieve a Gulf-wide stock rebuilding to 26% SPR by 2032 (Tables 3.3.3 and 3.3.4). However, when looking at the projected regional stock SPRs, the western portion of the Gulf stock continued to increase while the SPR in the eastern Gulf declined (Figure 3.3.1). This decline for the eastern stock was exacerbated by increasing the recreational allocation. At a 70% recreational allocation, the eastern SPR is projected to decrease to 4% of the unfished condition by 2032.

Table 3.3.3. Red snapper OFL yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% SPR by 2032.

OFL (Retained Yield in mp ww)						
Year	Rec 49%	Rec 51.5%	Rec 55%	Rec 60%	Rec 65%	Rec 70%
2015	16.10 mp	16.35	16.70	17.19	17.69	18.17
2016	15.31	15.50	15.72	16.06	16.39	16.71
2017	14.79	14.96	15.12	15.38	15.64	15.89
2018	14.25	14.40	14.54	14.77	15.00	15.23
2019	13.60	13.73	13.87	14.09	14.31	14.52
2020	13.17	13.29	13.43	13.65	13.86	14.07
Equil	12.91	13.00	13.11	13.27	13.42	13.57

Table 3.3.4. Red snapper ABC yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% SPR by 2032.

ABC (Retained Yield in mp ww)						
Year	Rec 49%	Rec 51.5%	Rec 55%	Rec 60%	Rec 65%	Rec 70%
2015	14.29	14.49	14.76	15.18	15.61	16.05
2016	13.96	14.13	14.31	14.62	14.93	15.24
2017	13.75	13.89	14.04	14.29	14.53	14.78
2018	13.39	13.52	13.65	13.87	14.09	14.32
2019	12.85	12.97	13.10	13.31	13.52	13.73
2020	12.49	12.60	12.73	12.94	13.15	13.35
Equil	12.40	12.48	12.59	12.73	12.87	12.98

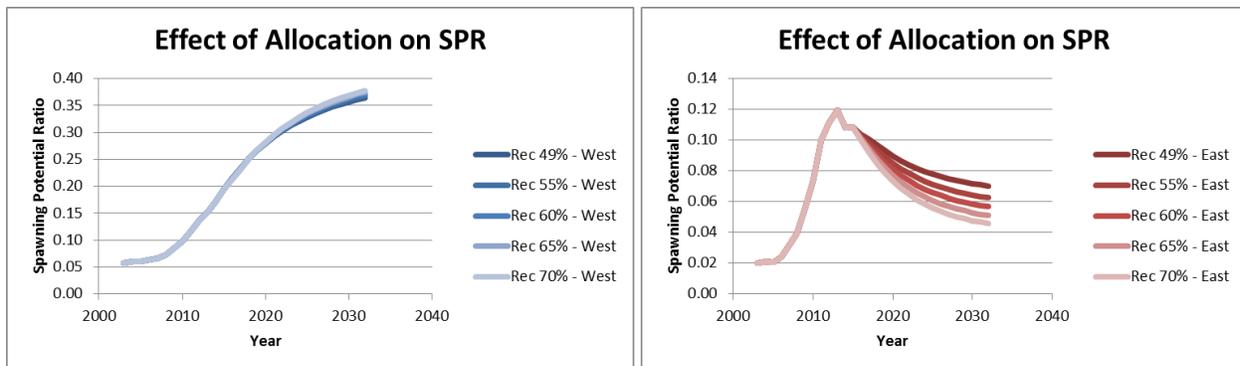


Figure 3.3.1. Regional trends in west and east red snapper SPR under various recreational allocations. Note that the graphs are drawn to different Y-axis scales.

The SEFSC attributed the differences in SPR changes between the eastern and western stocks to the distribution of the red snapper population and regional fishing effort. Increasing the recreational allocation disproportionately increases the fishing effort in the east (where most recreational fishing occurs), leading to an increased fraction of the population removed in the east as the recreational allocation increases thus leading to a depressed stock size. In addition, the selectivity patterns differ, with the recreational sector in the east selecting larger fish than the commercial sector.

General Information on Reef Fish Species

The National Ocean Service collaborated with NMFS and the Council to develop distributions of reef fish (and other species) in the Gulf (SEA 1998). The National Ocean Service obtained fishery-independent data sets for the Gulf, including SEAMAP, and state trawl surveys. Data from the Estuarine Living Marine Resources Program contain information on the relative abundance of specific species (highly abundant, abundant, common, rare, not found, and no data) for a series of estuaries, by five life stages (adult, spawning, egg, larvae, and juvenile) and month for five seasonal salinity zones (0-0.5, 0.5-5, 5-15, 15-25, and >25 parts per thousand). National

Ocean Service staff analyzed these data to determine relative abundance of the mapped species by estuary, salinity zone, and month. For some species not in the Estuarine Living Marine Resources Program database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

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 are summarized in Appendix B and can be found in more detail in GMFMC (2004a). 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 (<328 feet; <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).

Many of these species co-occur with red snapper and can be incidentally caught during red snapper fishing. In some cases, these fish may be discarded for regulatory reasons and thus are considered bycatch. Appendix B in Amendment 40 (GMFMC 2014a) examined the effects of fishing on these species. In general, this analysis coupled with previous analyses has found that reducing bycatch provides biological benefits to managed species as well as benefits to the fishery through less waste, higher yields, and less forgone yield. However, in some cases, actions are approved that can increase bycatch through regulatory discards such as increased minimum sizes and closed seasons. In these cases, there is some biological benefit to the managed species that outweighs any increases in discards.

Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 31 species (Table 3.3.5). Eleven other species were removed from the FMP in 2012 through the Generic ACL/AM Amendment (GMFMC 2011a). Stock assessments and stock assessment reviews have been conducted for 13 species and can be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) websites. The 13 assessed species are:

- Red Snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013; SEDAR 31 Update 2015)
- Vermilion Snapper (Porch and Cass-Calay 2001; SEDAR 9 2006c; SEDAR 9 Update 2011a)
- Yellowtail Snapper (Muller et al. 2003; SEDAR 3 2003; O’Hop et al. 2012)
- Mutton Snapper (SEDAR 15A 2008)

- Gray Triggerfish (Valle et al. 2001; SEDAR 9 2006a; SEDAR 9 Update 2011b; SEDAR 43 2015)
- Greater Amberjack (Turner et al. 2000; SEDAR 9 2006b; SEDAR 9 Update 2010; SEDAR 33 2014a)
- Hogfish (Ault et al. 2003; SEDAR 6 2004b; Cooper et al. 2013; SEDAR 37 2014)
- 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 2014b)
- 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).

The 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 information. The most recent update can be found at: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/. The status of both assessed and unassessed stocks as of the writing of this report is shown in Table 3.3.5.

Table 3.3.5. Species of the Reef Fish FMP grouped by family.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
Gray Triggerfish	<i>Balistes capriscus</i>	Overfished, 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	<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>	Overfished, no overfishing
Cubera Snapper	<i>Lutjanus cyanopterus</i>	Unknown, no overfishing
Gray Snapper	<i>Lutjanus griseus</i>	Unknown, no overfishing
Lane Snapper	<i>Lutjanus synagris</i>	Unknown, no overfishing
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

Notes: *In 2013, the genus for yellowedge grouper, snowy grouper, and warsaw grouper was changed by the American Fisheries Society from *Epinephelus* to *Hyporthodus* (American Fisheries Society 2013).

**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).

Protected Species

The Marine Mammal Protection Act (MMPA) and Endangered Species Act (ESA) provide special protections to some species that occur in the Gulf. Appendix A includes a very brief summary of how these two laws, and more information is available on NMFS Office of Protected Resources website (<http://www.nmfs.noaa.gov/pr/laws/>). All 22 marine mammals in the Gulf are protected under the MMPA. Two marine mammals (sperm whales and manatees) are also protected under the ESA. Other species protected under the ESA include five sea turtle species (Kemp's ridley, loggerhead, green, leatherback, and hawksbill), two fish species (Gulf sturgeon and smalltooth sawfish), and five coral species (elkhorn, staghorn, lobed star, mountainous star, and boulder star). Critical habitat designated under the ESA for smalltooth sawfish, Gulf sturgeon, and the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles also occur in the Gulf, though only loggerhead critical habitat occurs in federal waters.

The following sections provide a brief overview of the marine mammals, sea turtles, and fish that may be present in or near areas where Gulf reef fish fishing occurs and their general life history characteristics. Since none of the listed corals or designated critical habitats in the Gulf are likely to be adversely affected by the Gulf reef fish fishery, they are not discussed further.

Marine Mammals

The 22 species of marine mammals in the Gulf include one sirenian species (a manatee), which is under U.S. Fish and Wildlife Service's jurisdiction, and 21 cetacean species (dolphins and whales), all under NMFS' jurisdiction. Manatees primarily inhabit rivers, bays, canals, estuaries, and coastal waters rich in seagrass and other vegetation off Florida, but can occasionally be found in seagrass habitats as far west as Texas. Although most of the cetacean species reside in the oceanic habitat (≥ 200 m), the Atlantic spotted dolphin is found in waters over the continental shelf (20-200 m), and the common bottlenose dolphin (hereafter referred to as bottlenose dolphins) is found throughout the Gulf, including within bays, sounds, and estuaries; coastal waters over the continental shelf; and in deeper oceanic waters.

Sperm whales are one of the cetacean species found in offshore waters of the Gulf (>200 m) and are listed endangered under the ESA. Sperm whales, are the largest toothed whales and are found year-round in the northern Gulf along the continental slope and in oceanic waters (Waring et al. 2013). There are several areas between Mississippi Canyon and De Soto Canyon where sperm whales congregate at high densities, likely because of localized, highly productive habitats (Biggs et al. 2005; Jochens et al. 2008). There is a resident population of female sperm whales, and whales with calves frequently sighted there.

Bryde's whales are the only resident baleen whales in the Gulf and are currently being evaluated to determine if listing under the ESA is warranted. Bryde's whales (pronounced "BREW-days") in the Gulf are currently restricted to a small area in the northeastern Gulf near De Soto Canyon in waters between 100 – 400 m depth along the continental shelf break, though information in the southern Gulf is sparse (Waring et al. 2013). On September 18, 2014, NMFS received a revised petition from the Natural Resource Defense Council to list the Gulf Bryde's whale as an

endangered Distinct Population Segment. On April 6, 2015, NMFS found the petitioned action may be warranted and convened a Status Review Team to prepare a status review report. NMFS will rely on the information status review report to make a 12-month determination as to whether or not listing as endangered or threatened the species is warranted, and if so, a proposed rule will be published in the *Federal Register*.

Although they are all the same species, **bottlenose dolphins** in the Gulf can be separated into demographically independent populations called stocks. Bottlenose dolphins are currently managed by NMFS as 36 distinct stocks within the Gulf. These include 31 bay, sound and estuary stocks, three coastal stocks, one continental shelf stock, and one oceanic stock (Waring et al. 2013). Additional climatic and oceanographic boundaries delineate the three coastal stocks such that the Gulf Eastern Coastal Stock ranges from 84°W to Key West, FL, the Gulf Northern Coastal Stock ranges from 84°W to the Mississippi River Delta, and the Gulf Western Coastal stock ranges from the Mississippi River Delta to the Texas/Mexico border. Marine Mammal Stock Assessment Reports and additional information on these species in the Gulf are available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/sspecies/>.

Bottlenose dolphin adults range from 6 to 9 feet (1.8 to 2.8 m) long and weigh typically between 300 to 600 pounds (136 to 272 kg). Females and males reach sexual maturity between ages 5 to 13 and 9 to 14, respectively. Once mature, females give birth once every 3 to 6 years. Maximum known lifespan can be 50 years for males and greater than 60 years for females (Reynolds et al. 2000).

The MMPA requires that each commercial fishery be classified by the number of marine mammals they seriously injure or kill. NMFS's List of Fisheries classifies U.S. commercial fisheries into three categories based on the number of incidental mortality or serious injury they cause to marine mammals. More information about the List of Fisheries and the classification process can be found at: <http://www.nmfs.noaa.gov/pr/interactions/fisheries/lof.html>.

NMFS classifies reef fish bottom longline/hook-and-line gear in the MMPA 2015 List of Fisheries as a Category III fishery (79 FR 77919). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any 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. Dolphins are the only species documented as interacting with these fisheries. Bottlenose dolphins are a common predator around reef fish vessels. They prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery.

Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the Gulf. Several volumes exist that cover the biology and ecology of these species (i.e., Lutz and Musick (eds.) 1997; Lutz et al. (eds.) 2003, Wynekan et al. (eds.) 2013).

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

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988; Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

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

Leatherbacks are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean. Although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks'

diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routine dives of 4 to 14.5 minutes (Standora et al. 1984; Eckert et al. 1986; Eckert et al. 1989; Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

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

All five species of sea turtles are adversely affected by the Gulf reef fish fishery. Incidental captures are infrequent, but occur in all commercial and recreational hook-and-line and longline components of the reef fish fishery. Observer data indicate that the bottom longline component of the fishery interacts solely with loggerhead sea turtles. Captured loggerhead sea turtles can be released alive or can be found dead upon retrieval of bottom longline gear as a result of forced submergence. Sea turtles caught during other reef fish fishing with other gears are believed to all be released alive due to shorter gear soak. All sea turtles released alive may later succumb to injuries sustained at the time of capture or from exacerbated trauma from fishing hooks or lines that were ingested, entangled, or otherwise still attached when they were released. Sea turtle release gear and handling protocols are required in the commercial and for-hire reef fish fisheries to minimize post-release mortality.

NMFS has conducted specific analyses ("Section 7 consultations") evaluating potential effects from the Gulf reef fish fishery on sea turtles (as well as on other ESA-listed species and critical habitat) as required by the ESA. On September 30, 2011, the Southeast Regional Office (SERO) completed a biological opinion (Opinion), which concluded that the continued authorization of the Gulf reef fish fishery is not likely to jeopardize the continued existence of any sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback [NMFS 2011]). An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes.

Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. Smalltooth sawfish primarily occur in the Gulf off peninsular Florida and are most common off Southwest Florida and the Florida Keys. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 meters (Bigelow and Schroeder 1953; Adams and Wilson 1995), while mature animals occur in waters in excess of 100 meters (Simpfendorfer and Wiley 2004). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food resources (Simpfendorfer 2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938; Bigelow and Schroeder 1953).

Smalltooth sawfish are also adversely affected by the Gulf reef fish fishery, but are interacted with to a much lesser extent than sea turtles. Although the long, toothed rostrum of the smalltooth sawfish causes this species to be particularly vulnerable to entanglement in fishing gear, incidental captures in the commercial and recreational hook-and-line components of the reef fish fishery are rare events. Only eight smalltooth sawfish are anticipated to be incidentally caught every three year in the entire reef fish fishery, and none are expected to result in mortality (NMFS 2011). In the September 30, 2011, Opinion, NMFS concluded that the continued authorization of the Gulf reef fish fishery is not likely to jeopardize the continued existence of smalltooth sawfish (NMFS 2011). An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. Fishermen in this fishery are required to follow smalltooth sawfish safe handling guidelines.

Northern Gulf of Mexico Hypoxic Zone

Every summer in the northern Gulf, a large hypoxic zone forms. It is the result of allochthonous materials and runoff from agricultural lands by rivers to the Gulf, increasing nutrient inputs from the Mississippi River, and a seasonal layering of waters in the Gulf (see <http://www.gulfhypoxia.net/>). The layering of the water is temperature and salinity dependent and prevents the mixing of higher oxygen content surface water with oxygen-poor bottom water. For 2014, the extent of the hypoxic area was estimated to be 5,052 square miles and is similar the running average for over the past five years of 5,543 square miles Gulf (see <http://www.gulfhypoxia.net/>).

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). However, more mobile macroinvertebrates and demersal fishes (e.g., red snapper) are able to detect lower dissolved oxygen levels and move away from hypoxic conditions. Therefore, although not directly affected, these organisms are indirectly affected by limited prey availability and constrained available habitat (Baustian and Rabalais 2009; Craig 2012). For red snapper, Courtney et al. (2013) have conjectured that the

hypoxic zone could have an indirect positive effect on red snapper populations in the western Gulf. They theorize that increased nutrient loading may be working in ‘synergy’ with abundant red snapper artificial habitats (oil platforms). Nutrient loading likely increases forage species biomass and productivity providing ample prey for red snapper residing on the oil rigs, thus increasing red snapper productivity.

Climate change

Climate change projections show 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 (IPCC) <http://www.ipcc.ch/>]. 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 change could bring about temperature changes in coastal and marine ecosystems that, in turn, can influence organism metabolism; alter ecological processes, such as productivity and species interactions; change precipitation patterns and cause a rise in sea level that could change the water balance of coastal ecosystems; alter 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 Administration’s (NOAA) Climate Change Web Portal (<http://www.esrl.noaa.gov/psd/ipcc/ocn/>) indicates that the average sea surface temperature in the Gulf will increase by 1.2-1.4°C for 2006-2055 compared to the average over the years 1956-2005. For reef fishes, Burton (2008) speculated that climate change could cause shifts in spawning seasons, changes in migration patterns, and changes to basic life history parameters such as growth rates. The OceanAdapt model (http://oceanadapt.rutgers.edu/regional_data/) shows distributional trends both in latitude and depth over the time period 1985-1013. For some reef fish species such as the smooth puffer, there has been a distributional trend to the north in the Gulf. For other species such as red snapper and the dwarf sand perch, there has been a distributional trend towards deeper waters. Finally, for other reef fish species such as the dwarf goatfish, there has been a distributional trend both to the north and to deeper waters. These changes in distributions have been hypothesized as a response to environmental factors such as increases in temperature.

The distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Hollowed et al. (2013) provided a review of projected effects of climate change on the marine fisheries and dependent communities. Integrating the potential effects of climate change into the fisheries assessment is currently difficult due to the time scale differences (Hollowed et al. 2013). The fisheries stock assessments rarely project through a time span that would include detectable climate change effects.

Greenhouse gases

The IPCC (<http://www.ipcc.ch/>) has indicated that greenhouse gas emissions are one of the most important drivers of recent changes in climate. Wilson et al. (2014) inventoried the sources of greenhouse gases in the Gulf from sources associated with oil platforms and those associated with other activities such as fishing. A summary of the results of the inventory are shown in Table 3.3.6 with respect to total emissions and from fishing. Commercial fishing and

recreational vessels make up a small percentage of the total estimated greenhouse gas emissions from the Gulf (1.43% and 0.59%, respectively).

Table 3.3.6. Total Gulf greenhouse gas emissions estimates (tons per year) from oil platform and non-oil platform sources, commercial fishing and recreational vessels, and percent greenhouse gas emissions from commercial fishing and recreational vessels of the total emissions.*

Emission source	Greenhouse		Gas	Total CO _{2e} **
	CO ₂	CH ₄	N ₂ O	
Oil platform	11,882,029	271,355	167	17,632,106
Non-platform	22,703,695	2,029	2,698	23,582,684
Total	34,585,724	273,384	2,865	41,214,790
Commercial fishing	585,204	2	17	590,516
Recreational vessels	244,483	N/A	N/A	244,483
Percent commercial fishing	1.69	>0.01	0.59	1.43
Percent recreational vessels	0.71	NA	NA	0.59

*Compiled from Tables 7.9 and 7.10 in Wilson et al. (2014).

**The CO₂ equivalent (CO_{2e}) emission estimates represent the number of tons of CO₂ emissions with the same global warming potential as one ton of another greenhouse gas (e.g., CH₄ and N₂O). Conversion factors to CO_{2e} are 21 for CH₄ and 310 for N₂O.

Deepwater Horizon MC252 Oil Spill

On April 20, 2010, an explosion occurred on the Deepwater Horizon MC252 oil rig, approximately 36 nautical miles (41 statute miles) off the Louisiana coast. Two days later, the rig sank. An uncontrolled oil leak from the damaged well continued for 87 days until British Petroleum BP successfully capped the well on July 15, 2010. The Deepwater Horizon MC252 oil spill affected at least one-third of the Gulf area from western Louisiana east to the Florida Panhandle and south to the Campeche Bank in Mexico (Figure 3.3.2).

As reported by the NOAA Office of Response and Restoration (NOAA 2010), the oil from the Deepwater Horizon MC252 spill is relatively high in alkanes, which can readily be used by microorganisms as a food source. As a result, the oil from this spill is likely to biodegrade more readily than most crude oil. The Deepwater Horizon MC252 oil is also relatively much lower in polyaromatic hydrocarbons than other oil. Polyaromatic hydrocarbons are highly toxic chemicals that tend to persist in the environment for long periods of time, especially if the spilled oil penetrates into the substrate on beaches or shorelines. Like all crude oils, MC252 oil contains volatile organic compounds (VOCs) such as benzene, toluene, and xylene. Some VOCs are

acutely toxic but because they evaporate readily, they are generally a concern only when oil is fresh.⁸

In addition to the crude oil, over a million gallons of oil dispersant, Corexit 9500A[®], was applied to the ocean surface and an additional hundreds of thousands of gallons of dispersant was pumped to the mile-deep well head (National Commission 2010). No large-scale applications of dispersants in deep water had been conducted until the Deepwater Horizon MC252 oil spill. Thus, no data exist on the environmental fate of dispersants in deep water. However, a study found that although Corexit 9500A[®] and oil are similar in their toxicity, when Corexit 9500A[®] and oil were mixed in lab tests, toxicity to microscopic rotifers increased up to 52-fold (Rico-Martínez et al. 2013). This suggests that the toxicity of the oil and dispersant combined may be greater than anticipated.

Oil could exacerbate development of the hypoxic “dead” zone in the Gulf. For example, oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion.

General Impacts on Fishery Resources

The presence of polycyclic aromatic hydrocarbons (PAHs) in marine environments can have detrimental impacts on marine finfish, especially during the more vulnerable larval stage of development (Whitehead et al. 2012). When exposed to realistic yet toxic levels of PAHs (1–15 µg/L), greater amberjack (*Seriola dumerili*) larvae develop cardiac abnormalities and physiological defects (Incardona et al. 2014). The future reproductive success of long-lived species, including red drum (*Sciaenops ocellatus*) and many reef fish species, may be negatively affected by episodic events resulting in high-mortality years or low recruitment. These episodic events could leave gaps in the age structure of the population, thereby affecting future reproductive output (Mendelsohn et al. 2012). Other studies have described the vulnerabilities of various marine finfish species, with morphological and/or life history characteristics similar to species found in the Gulf, to oil spills and dispersants (Hose et al. 1996; Carls et al. 1999; Heintz et al. 1999; Short 2003).

An increase in histopathological lesions were found in red snapper (*Lutjanus campechanus*) in the area affected by the oil, but Murawski et al. (2014) found that the incidence of lesions had declined between 2011 and 2012. The occurrence of such lesions in marine fish is not uncommon (Sindermann 1979; Haensly et al. 1982; Solangi and Overstreet 1982; Khan and Kiceniuk 1984, 1988; Kiceniuk and Khan 1987; Khan 1990). Red snapper diet was also affected after the spill. A decrease in zooplankton consumed, especially by adults (>400 mm TL) over natural and artificial substrates may have contributed to an increase in the consumption of fish and invertebrate prey—more so at artificial reefs than natural reefs (Tarnecki and Patterson 2015).

The effect of oil, dispersants, and the combination of oil and dispersants on fishes of the Gulf remains an area of concern. Marine fish species typically concentrate PAHs in the digestive

⁸ Source: http://sero.nmfs.noaa.gov/sf/deepwater_horizon/OilCharacteristics.pdf

tract, making stomach bile an appropriate testing medium. A study by Snyder et al. (2015) assessed bile samples from golden tilefish (*Lopholatilus chamaeleonticeps*), king snake eel (*Ophichthus rex*), and red snapper for PAH accumulation over time, and reported concentrations were highest in golden tilefish during the same time period when compared to king snake eel and red snapper. These results suggest that the more highly associated an organism is with the sediment in an oil spill area, the higher the likelihood of toxic PAH accumulation. Twenty-first century dispersant applications are thought to be less harmful than their predecessors. However, the combination of oil and dispersants have proven to be more toxic to marine fishes than either dispersants or crude oil alone. Marine fish that are more active (e.g., a pelagic species versus a demersal species) appear to be more susceptible to negative effects from interactions with weathered oil/dispersant emulsions. These effects can include mobility impairment and inhibited respiration (Swedmark et al. 1973).

Deepwater Coral Communities

Deepwater corals are particularly vulnerable to episodic mortality events such as oil spills since corals are immobile. Severe health declines have been observed in three deepwater corals in response to dispersant alone (2.3–3.4 fold) and the oil–dispersant mixtures (1.1–4.4 fold) compared to oil-only treatments (DeLeo et al. 2015). Increased dispersant concentrations appeared to exacerbate these results. As hundreds of thousands of gallons of dispersant were applied underwater, near the wellhead during the Deepwater Horizon MC252 oil spill, the possibility exists that deepwater corals may have been negatively impacted by the oil spill and subsequent spill remediation activities.

Several studies have documented coral death or declines in coral health in the presence of oil from the Deepwater Horizon MC252 oil spill (White et al. 2012; Hsing et al. 2013; Fisher et al. 2014). Sites as far as 11 km southwest of the spill were documented to have >45% of the coral colonies affected by oil (White et al. 2012; Hsing et al. 2013), and, though less affected, a site 22 km in 1900 m of water had coral damage caused by oil (Fisher et al. 2014). Coral colonies from several areas around the wellhead had damage to colonies that seemed to be representative of microdroplets as all colonies were not affected, and colonies that were affected had patchy distributions of damaged areas (Fisher et al. 2014). Because locations of deep-sea corals are still being discovered, it is likely that the extent of damage to deep-sea communities will remain undefined.

Outstanding Effects

As a result of the Deepwater Horizon MC252 oil spill, NMFS reinstated consultation pursuant to ESA Section 7(a)(2) on the Gulf reef fish fishery. As discussed above, on September 30, 2011, the Protected Resources Division released an Opinion, which, after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC252 oil spill in the northern Gulf), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp’s ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011). For additional information on the Deepwater Horizon MC252 oil spill and associated closures, see: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm.

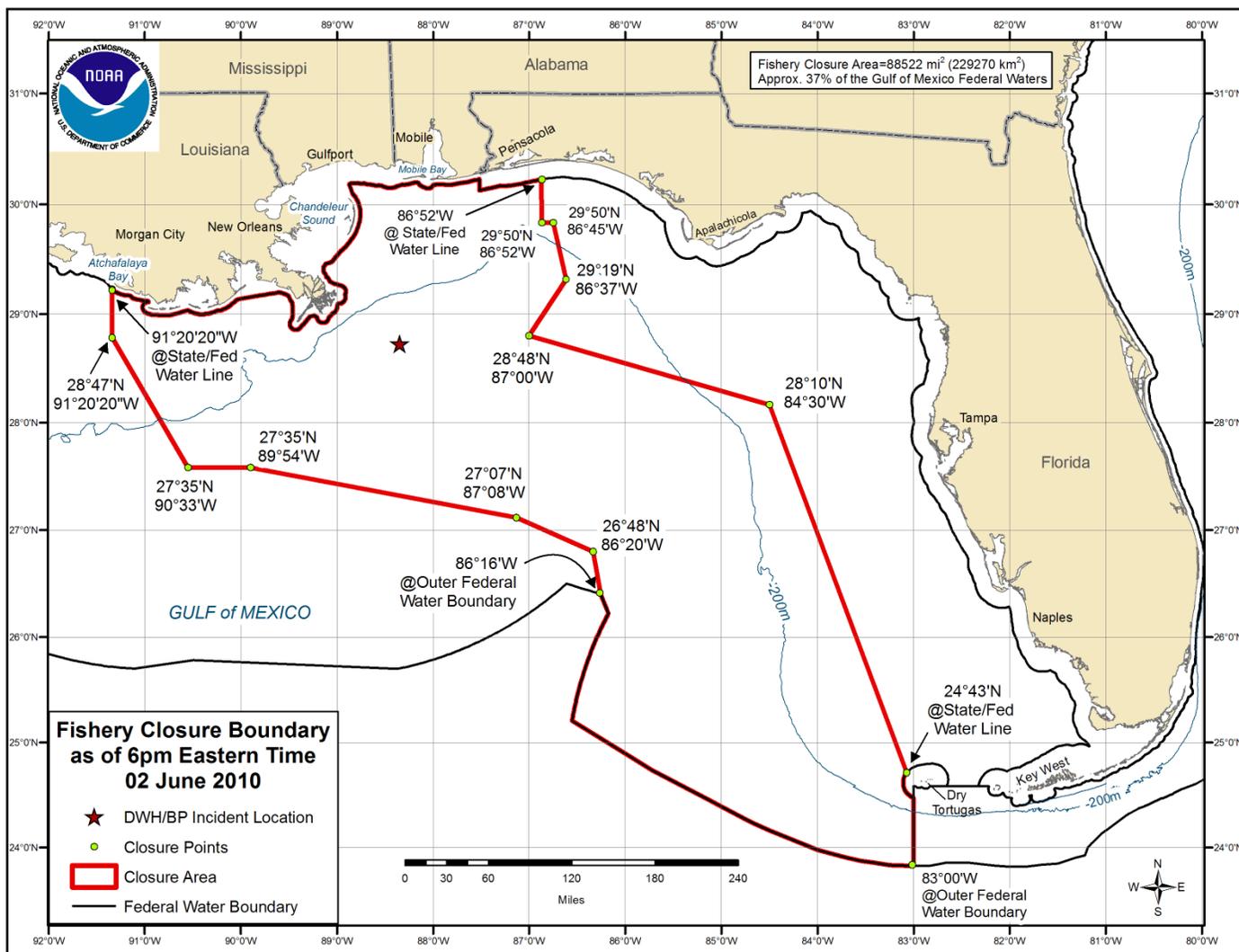


Figure 3.3.2. Fishery closure at the height of the Deepwater Horizon MC252 oil spill.

3.4 Description of the Economic Environment

3.4.1 Commercial Sector

A description of the red snapper IFQ program is contained in NMFS (2015c) and is available at: http://sero.nmfs.noaa.gov/sustainable_fisheries/lapp_dm/index.html. This description is incorporated herein by reference. Additional economic information on the commercial harvest of red snapper in the Gulf is contained in GMFMC (2015b). The current proposed amendment only addresses the recreational harvest of red snapper in the Gulf. As a result, no additional information on the commercial sector engaged in the harvest of Gulf red snapper is provided in this document.

3.4.2 Recreational Sector

Angler Effort

Recreational effort derived from the 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 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 trips (the number of individual angler trips that either targeted or caught a particular species), among other measures. Estimates of the number of red snapper target trips and catch trips for the shore, charter, and private/rental boat modes in the Gulf for 2011-2015 are provided in Table 3.4.2.1 and Table 3.4.2.2. Estimates of red snapper target effort for additional years, and other measures of directed effort, are available at <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Table 3.4.2.1. Number of red snapper recreational target trips, by mode, 2011-2015*.

	Alabama	West Florida	Louisiana	Mississippi	Total
Charter Mode					
2011	19,010	29,642	1,424	nr	50,076
2012	16,609	24,653	7,204	74	48,540
2013	23,638	32,689	7,191	38	63,556
2014	9,050	7,358	na	nr	16,408
2015	26,250	45,034	na	303	71,587
Average	18,911	27,875	5,273	138	52,198
Private/Rental Mode					
2011	116,886	113,021	19,900	16,790	266,597
2012	72,030	136,594	43,547	13,515	265,686
2013	222,245	461,349	24,691	21,586	729,871
2014	56,918	165,498	na	7,555	229,971
2015	116,421	132,564	na	4,167	253,152
Average	116,900	201,805	29,379	12,723	360,807
All Modes					
2011	135,896	142,663	21,324	16,790	316,673
2012	88,640	161,247	50,751	13,589	314,227
2013	245,883	494,038	31,882	21,624	793,427
2014	65,968	172,856	na	7,555	246,379
2015	142,671	177,598	na	4,470	324,739
Average	135,812	229,680	34,652	12,806	412,950

* “na” = not available; “nr” = none recorded. Averages based on positive entries; “nr” entries are not assumed equivalent to “0” trips. Texas information unavailable. 2015 estimates are preliminary. Source: MRIP database, NMFS, SERO.

Note: These effort estimates have not been re-calibrated. Re-calibrated effort data are currently unavailable.

Table 3.4.2.2. Number of red snapper recreational catch trips, by mode, 2011-2015*.

	Alabama	West Florida	Louisiana	Mississippi	Total
Charter Mode					
2011	43,550	101,500	3,066	221	148,337
2012	25,252	105,385	10,501	74	141,212
2013	52,331	107,466	12,321	38	172,156
2014	36,340	66,559	na	nr	102,899
2015	49,282	92,971	na	303	142,556
Average	41,351	94,776	8,629	159	141,432
Private/Rental Mode					
2011	130,500	203,567	31,957	6,169	372,193
2012	83,783	282,332	51,377	13,515	431,007
2013	227,889	537,469	55,679	29,250	850,287
2014	110,593	233,265	na	10,254	354,112
2015	147,617	197,872	na	17,931	363,420
Average	140,076	290,901	46,338	15,424	474,204
All Modes					
2011	174,050	305,067	35,023	6,390	520,530
2012	109,035	387,717	61,878	13,589	572,219
2013	280,221	644,935	68,000	29,288	1,022,444
2014	146,933	299,824	na	10,254	457,011
2015	196,899	290,843	na	18,234	505,976
Average	181,428	385,677	54,967	15,551	615,636

* “na” = not available; “nr” = none recorded. Averages based on positive entries; “nr” entries are not assumed equivalent to “0” trips. Texas information unavailable. 2015 estimates are preliminary. Source: MRIP database, NMFS, SERO.

Note: These effort estimates have not been re-calibrated. Re-calibrated effort data are currently unavailable.

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 number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. The stationary “fishing for demersal (bottom-dwelling) species” nature of headboat fishing, as opposed to trolling, suggests that most, if not all, headboat trips and, hence, angler days, are demersal or reef fish trips by intent.

The distribution of headboat effort (angler days) by geographic area is presented in Table 3.4.2.3. For purposes of data collection, the headboat data collection program divides the Gulf into several areas. On average (2011 through 2015), the area from the Dry Tortugas through the

Florida Middle Grounds accounted for 40.5% of total headboat angler days in the Gulf, followed by northwest Florida through Alabama (35.4%), Texas (22.5%), and Mississippi through Louisiana (1.5%). Western Florida experienced a steady increase over that time period to a five-year high in 2015.

Table 3.4.2.3. Headboat angler days and percent distribution, by state, 2011-2015.

	Angler Days				Percent Distribution			
	FLW	NWFL-AL*	MS-LA**	TX	FLW	FL-AL	MS-LA	TX
2011	79,722	77,303	3,657	47,284	38.3%	37.2%	1.8%	22.7%
2012	84,205	77,770	3,680	51,776	38.7%	35.8%	1.7%	23.8%
2013	94,752	80,048	3,406	55,749	40.5%	34.2%	1.5%	23.8%
2014	102,841	88,524	3,257	51,231	41.8%	36.0%	1.3%	20.8%
2015	107,910	86,473	3,587	55,135	42.6%	34.2%	1.4%	21.8%
Average	93,886	82,024	3,517	52,235	40.5%	35.4%	1.5%	22.5%

Source: NMFS Southeast Region Headboat Survey (SRHS).

*Beginning in 2013, HBS data was reported separately for NW Florida and Alabama, but has been combined here for consistency with previous years.

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

Permits

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

A federal charter/headboat (for-hire) vessel permit is required for fishing in federal waters for Gulf reef fish (RF). On February 17, 2016, there were 1,312 vessels with a valid (non-expired) or renewable Gulf for-hire RF permit (including historical captain permits). A renewable permit is an expired limited access permit that may not be actively fished, but is renewable for up to one year after expiration. The Gulf RF for-hire permits are limited access permits. Most for-hire vessels possess more than one for-hire permit.

Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, if a vessel meets the selection criteria 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. As of February 2016, 69 Gulf headboats were registered in the SRHS (K. Fitzpatrick, NMFS SEFSC, pers. comm.).

Information on Gulf charter vessel and headboat operating characteristics is included in Savolainen et al. (2012) and is incorporated herein by reference. The average charter vessel operation took 46 full-day (9 hours) and 55 half-day (5 hours) trips per year, carried 4.8 and 4.6 passengers per trip type, respectively, targeted reef fish and pelagic species on 64% and 19% of all trips, respectively, and took 68% of all trips in the Exclusive Economic Zone (EEZ). The average headboat operation took 83 full-day (10 hours) and 37 half-day (6 hours) trips per year, carried 13.1 and 14.6 passengers per trip type, respectively, targeted reef fish and pelagic species on 84% and 6% of all trips, respectively, and took 81% of all trips in the EEZ.

There are no specific federal permitting requirements for recreational anglers to fish for or harvest reef fish. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. For the for-hire sector, customers are authorized to fish under the charter or headboat vessel license and are not required to hold their own fishing licenses. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed action.

Economic Value

Economic value can be measured in the form of consumer surplus (CS) per additional red snapper kept on a trip for anglers (the amount of money that an angler would be willing to pay for a fish in excess of the cost to harvest the fish). The estimated value of the CS per fish for a second red snapper kept on a trip is approximately \$82 (Carter and Liese 2012; values updated to 2015 dollars).

Economic value for for-hire vessels can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. For vessels in the Gulf, the estimated net operating revenue (NOR) value is approximately \$155 (2015 dollars) per charter angler trip (Liese and Carter 2011). The estimated NOR value per headboat angler trip is approximately \$54 (2015 dollars) (C. Liese, NMFS SEFSC, pers. comm.).

Business Activity

Recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity, though not necessarily in the region where the original fishing expenditure occurs. As such, the analysis below represents a distributional analysis only. In this analysis, although the fishing trips are associated with the state where they occur, the region from the perspective of the estimates of business activity is the U.S. as a whole.

Estimates of the business activity (economic impacts) associated with recreational angling for red snapper were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2015b). Estimates of the average expenditures by recreational anglers are also provided in NMFS (2015b) and are incorporated herein by reference.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, output (sales) impacts (gross business sales), income impacts, and value-added impacts (difference between the value of goods and the cost of materials or supplies). Estimates of the average red snapper target effort (2011-2015) and associated business activity (2015 dollars) are provided in Table 3.4.2.4.

Table 3.4.2.4. Summary of red snapper target trips (2011-2015 average) and associated business activity (thousand 2015 dollars). Output, value added, and income impacts are not additive.

	Alabama	West Florida	Louisiana	Mississippi	Texas
Private/Rental Mode					
Target Trips	140,076	290,901	46,338	15,424	*
Output Impact	\$7,303	\$14,669	\$3,383	\$518	*
Value Added Impact	\$4,212	\$9,284	\$1,948	\$290	*
Income Impacts	\$2,545	\$5,618	\$1,053	\$170	*
Jobs	81	136	27	5	*
Charter Mode					
Target Trips	41,351	94,776	8,629	159	*
Output Impact	\$24,529	\$64,220	\$4,772	\$74	*
Value Added Impact	\$13,270	\$39,054	\$2,908	\$36	*
Income Impacts	\$9,604	\$27,175	\$2,213	\$25	*
Jobs	273	585	42	1	*
All Modes					
Target Trips	181,428	385,677	54,967	15,551	*
Output Impact	\$31,831	\$78,888	\$8,155	\$592	*
Value Added Impact	\$17,482	\$48,338	\$4,856	\$325	*
Income Impacts	\$12,150	\$32,793	\$3,267	\$195	*
Jobs	355	721	69	6	*

*Because target information is unavailable, associated business activity cannot be calculated.

Note: There were no target trips recorded from the shore mode.

Source: effort data from the MRIP, economic impact results calculated by NMFS SERO using the model developed for NMFS (2015b).

Estimates of the business activity in the U.S. associated with the recreational targeting of red snapper provided in Table 3.4.2.4. West Florida experienced the highest level of business activity associated with recreational red snapper fishing for the states evaluated, followed by Alabama, Louisiana, and Mississippi.

The estimates provided in Table 3.4.2.4 only apply at the state-level. These numbers are not additive across the region. Addition of the state-level estimates to produce a regional (or national) total could either under- or over-estimate the actual amount of total business activity because of the complex relationship between different jurisdictions and the expenditure/impact multipliers. Neither regional nor national estimates are available at this time.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRFSS/MRIP 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.

3.5 Description of the Social Environment

This section provides a historical background and a current description of recreational red snapper fishing for which the proposed action will be evaluated in Chapter 4, Section 4.1.4. The following description focuses on the management of the recreational sector, as the proposed action in this framework applies to the recreational sector, only.

Context of recreational red snapper management in the Gulf

Although the recreational sector is often described as “open access,” open entry is more accurate as a true open access resource lacks rules of usage (Feeny et al. 1990). However, the federal for-hire component of the recreational sector is not open entry, as there is a moratorium on the issuance of new federal for-hire permits. Thus, part of the recreational sector is open entry, while the other is not. For the recreational sector, harvest constraints are implemented primarily by reductions to the bag limit and shortening of the fishing season. The bag limit has been reduced from seven red snapper per angler per day in 1990 (when the sector allocation was established), to five fish in 1995, four fish in 1998, and two fish in 2007 (Figure 3.5.1). In 1997, the recreational season was shortened for the first time from year round and has been getting shorter ever since. From 2008 through 2012, the recreational season in federal waters averaged 62 days in length. In 2014, the recreational season in federal waters was nine days long, although all five Gulf States provided additional fishing days in their state waters, resulting in additional fishing opportunities for anglers fishing from privately owned vessels (Table 1.1.1).

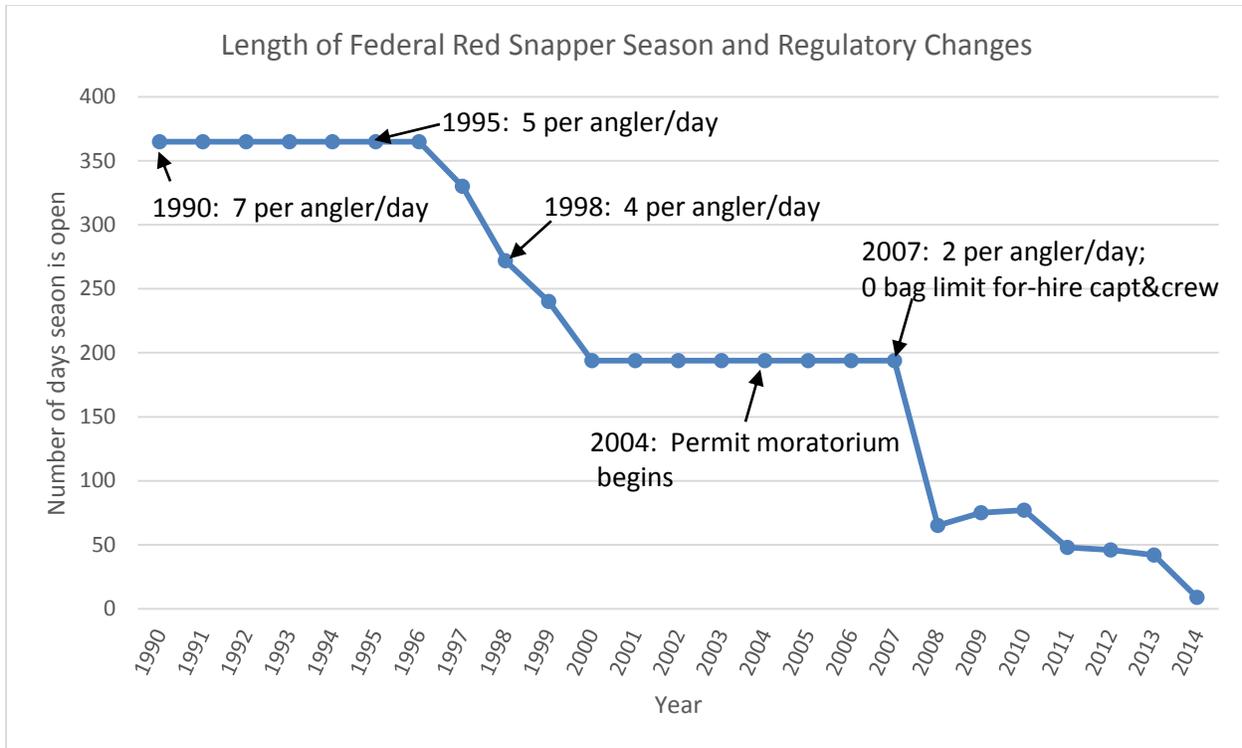


Figure 3.5.1. Length of federal recreational red snapper fishing season, with date of changes in bag limits, trip limits, and implementation of the for-hire permit moratorium. State-water red snapper seasons are not included, but have represented an increasing proportion of landings in recent years. 2015 is not included as separate season lengths were established for the two components of the recreational sector.

The practice in recent years of projecting season length for a given quota based on past effort has not prevented the quota from being exceeded (Table 3.1.3). Without attending measures to actually stop harvest when the quota is met, a quota does not on its own constitute an output control. There is a disjunction between management measures used to constrain the rate of recreational harvest, and attempts to estimate the rate of harvest under such measures, as anglers modify their fishing activity in response to new access restrictions. Even with additional quota, continuing to rely on existing management measures to slow harvest may allow two problems to continue. First, the harvest coming from the recreational sector will continue to face the problems of “subtractability” and “excludability,” where the resource is open to anyone able to access it during a particular time. Without rules governing who has access to the resource (excludability), the effects of smaller returns are shared among all participants (subtractability; Feeny et al. 1990; McCay and Acheson 1987).

The second problem concerns the quota overages. Alongside the short seasons, increases in average weight of fish, and lag time to calculate landings from MRIP, quota overages are likely to continue under the system of predicting season length based on past fishing effort. Faced with a shorter season for a desired target species, individual anglers rationally adjust their effort and fishing activity. With no restrictions on entry by private vessels to the fishery (excludability),

new participants join as well. This has resulted in an inverse relationship between season length and effort, where the shorter the length of the recreational fishing season, the more red snapper have been landed per day (Figure 3.5.2). It cannot be assumed that the pattern of increasing effort during a shortening season would reverse, where an increase in the length of the season would correspond with a proportional reduction in effort. Furthermore, not all recreational red snapper landings occur during the federal season. In recent years, an increasing amount of red snapper is harvested from state waters when federal waters are closed, thus the number landed per day does not reflect actual in-season effort, especially during the most recent years (Table 1.1.1).

Another factor compounding the problem of quota overages is the increase in the average weight of a recreationally landed red snapper under the rebuilding plan, which has resulted in each angler’s bag limit weighing more. Thus, the rate at which the quota is caught accelerates. That recreational anglers as a sector are said to “exceed the quota” is not a reflection of individual angler compliance, but rather, reflects rational changes to fishing activity under situations of decreased access, and the inability of the existing management system to close harvest before the quota is met. Examples of management changes that may reduce quota overages include the adoption of accountability measures, such as the 20% buffer and overage adjustment put in place through a 2014 framework action (GMFMC 2014b), or implementation of real time quota monitoring.

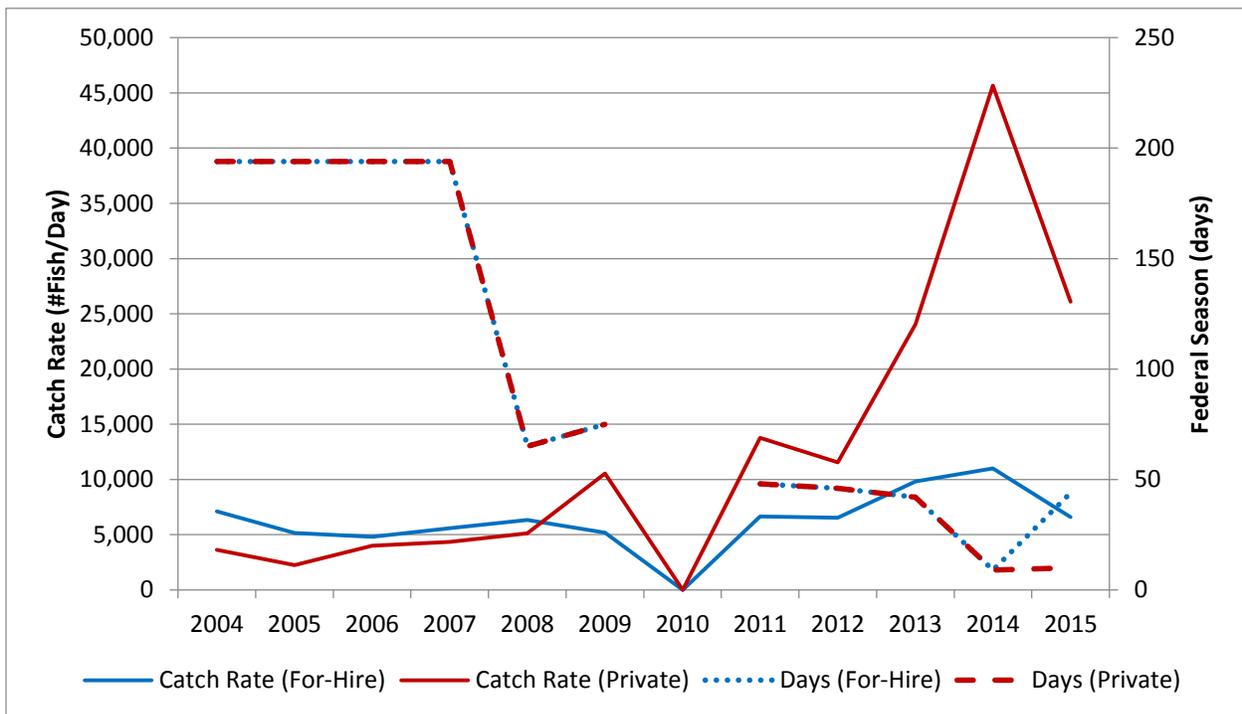


Figure 3.5.2. Length of federal recreational red snapper season in days and catch rate (number of fish landed per open day), by mode of fishing. In recent years, a greater proportion of landings occur outside of the federal season when state waters are open. Source: Southeast Fisheries Science Center, recreational ACL dataset (Jan 2016).

Recreational anglers can access red snapper fishing by private vessels and for-hire vessels. Both modes share the same bag limit and fishing season; however, additional restrictions are placed on the for-hire fleet (which includes charter vessels and headboats), to which private vessels are not subject. Since 2007, captain and crew of for-hire vessels have been prohibited from retaining a bag limit, and there are mandatory reporting requirements for headboats to report all landings and discards. In 2004, a moratorium was put in place on the issuance of federal for-hire permits. As with commercial permits, no new federal for-hire permits may be issued, but existing permits may be transferred. There is no mechanism to limit entry by private recreational vessels. Through an action in Amendment 30B (GMFMC 2008b), federally permitted for-hire vessels must abide by the more restrictive of federal or state fishing regulations, and may not participate in the extended fishing opportunities when provided in state waters if federal waters are closed.

Thus, the issue of excludability described above reflects private recreational vessels only. During the fishing season in federal waters, participation is limited to a finite number of federally permitted for-hire vessels, but there is no restriction to the number of private vessels that may harvest red snapper. Since the permit moratorium became effective, the number of federally permitted for-hire vessels has decreased, while the number of private fishing licenses has increased. Coupled with the extended fishing opportunities in some state waters in which federally permitted for-hire vessels may not participate, the proportion of red snapper landed by each component of the recreational sector has shifted toward private vessel landings representing a greater proportion of the recreational quota (Figure 1.1.2 in GMFMC 2014a). For the years 1991-2013 (excluding 2010), private-angler landings of red snapper represent 53.1% of recreational landings, but represent 76.6% for 2011-2013. For-hire vessel landings of red snapper have decreased proportionally for these same years, from 46.9% to 23.4% of the recreational landings. In part as a result of this decreasing proportion of landings and fishing opportunities for the for-hire fleet, Amendment 40 (GMFMC 2014a) was implemented, establishing private vessels and federal for-hire vessels as separate components of the recreational sector, including separate quotas, for a period of three years.

3.5.1 Fishing Communities

This section provides a description of where recreational fishing for red snapper occurs. The description is based on the geographical distribution of landings of red snapper and federal for-hire permits, and the relative importance of red snapper for recreational communities. This spatial approach enables discussion of fishing communities and the importance of fishery resources to those communities, as required by National Standard 8.

Recreational Fishing Communities

Red snapper is harvested recreationally in all states in the Gulf. However, as the red snapper stock has continued to rebuild, the proportion of landings made up by the eastern Gulf States (Alabama and western Florida) has increased compared to the western Gulf States (Texas and Louisiana). The majority of the recreational catch is landed in Florida and Alabama (Table 3.5.1.1). Fishermen in other Gulf States are also involved in recreational red snapper fishing, but these states represent a smaller percentage of the total recreational landings.

Red snapper landings for the recreational sector are not available at the community level, making it difficult to identify communities as dependent on recreational fishing for red snapper. Although commercial landings are available at the community level, it cannot be assumed that the proportion of commercial red snapper landings among other species in a community would be similar to its proportion among recreational landings within the same community because of sector differences in fishing practices and preferences.

While there are no landings data at the community level for the recreational sector (except for headboats, see below), Table 3.5.1.2 offers a ranking of communities based upon the number of charter permits and charter permits divided by population. The count includes both reef fish and coastal migratory pelagic for-hire permits. This is a crude measure of the reliance upon recreational fishing and is general in nature and not specific to red snapper. Ideally, additional variables quantifying the importance of recreational fishing to a community would be included (such as the amount of recreational landings in a community, availability of recreational fishing related businesses and infrastructure, etc.); however, these data are not available at this time. 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 list suggesting a greater importance for recreational fishing in that region. At this time, it is not possible to examine the intensity of recreational fishing activity at the community level for a specific species. However, it is likely that those communities that have a higher rank in terms of charter activity and have a dynamic commercial fishery for red snapper will likely have a vigorous recreational red snapper fishery. The communities that meet those criteria are: Destin, Panama City, and Panacea, Florida; Freeport, Texas; and Venice and Grand Isle, Louisiana.

Table 3.5.1.1. Percentage of annual recreational red snapper landings by state (1986-2014), based on whole weight (ww) of fish.

Year	Alabama	Florida	Louisiana	Mississippi	Texas
1986	11.5%	55.3%	18.1%	0.1%	15.0%
1987	18.5%	43.7%	13.5%	2.6%	21.7%
1988	16.4%	30.0%	33.1%	0.7%	19.8%
1989	18.5%	12.3%	24.1%	11.7%	33.3%
1990	39.7%	17.8%	16.9%	3.4%	22.2%
1991	30.1%	15.1%	33.2%	6.2%	15.5%
1992	32.7%	8.1%	24.5%	16.6%	18.2%
1993	29.3%	17.5%	22.7%	12.7%	17.9%
1994	32.1%	13.9%	21.1%	8.1%	24.7%
1995	31.9%	10.3%	28.3%	2.9%	26.6%
1996	32.8%	18.7%	16.6%	4.0%	27.9%
1997	39.1%	14.8%	16.8%	9.8%	19.5%
1998	29.8%	28.7%	14.9%	3.9%	22.8%
1999	39.7%	28.6%	15.8%	4.1%	11.8%
2000	29.6%	35.8%	18.6%	1.1%	14.9%
2001	42.3%	39.9%	6.0%	2.1%	9.7%
2002	40.1%	38.7%	6.2%	3.6%	11.4%
2003	37.9%	36.3%	8.9%	6.0%	10.9%
2004	30.0%	53.9%	5.8%	0.4%	9.9%
2005	29.1%	48.0%	10.4%	0.1%	12.5%
2006	20.0%	51.0%	12.2%	0.8%	16.0%
2007	19.5%	56.7%	15.6%	0.1%	8.0%
2008	17.1%	57.5%	15.7%	1.0%	8.6%
2009	21.6%	47.0%	18.8%	0.8%	11.8%
2010	21.3%	55.9%	5.0%	0.4%	17.3%
2011	53.6%	29.3%	8.9%	1.0%	7.2%
2012	35.9%	32.5%	19.2%	4.2%	8.2%
2013	45.8%	39.1%	5.6%	4.4%	5.1%
2014	30.2%	42.9%	15.4%	1.2%	10.3%

Source: SEFSC ACL dataset, including Calibrated MRIP, TPWD, LA Creel, and SRHS landings. Alabama and the Florida Panhandle SRHS landings are initially reported to the same headboat fishing area. Landings have been assigned to each state based on the SRHS vessel landing records (May 2015).

Table 3.5.1.2. Average recreational community rank by total number of charter permits by community* and population.

Community	State	Charter Permits	Rank Charter Permits	Charter Permit/Pop	Rank Charter Permits/Pop	Average Rank
Orange Beach	AL	223	3	0.0358	6	5
Destin	FL	234	2	0.0186	16	9
Port Aransas	TX	96	8	0.0250	11	10
Steinhatchee	FL	44	23	0.0307	7	15
Dauphin Island	AL	44	23	0.0277	9	16
Apalachicola	FL	45	21	0.0204	15	18
Port O'Connor	TX	33	35	0.0306	8	22
Freeport	TX	78	10	0.0062	46	28
Carrabelle	FL	30	43	0.0244	13	28
Venice	LA	20	60	0.0862	2	31
Grand Isle	LA	27	44	0.0167	21	33
Panama City	FL	159	4	0.0043	62	33
Panama City Beach	FL	77	11	0.0053	55	33
Port Saint Joe	FL	27	44	0.0076	39	42
Cedar Key	FL	18	68	0.0184	17	43
Saint Marks	FL	13	81	0.0408	4	43
Panacea	FL	20	60	0.0116	32	46
Matagorda	TX	14	78	0.0184	18	48
Madeira Beach	FL	25	49	0.0058	51	50

* Total number of charter permits does not correspond to number of vessels; a vessel may have several different types of charter permits. Source: Southeast Regional Office 2008.

Destin and Panama City are likely more reliant with regard to recreational fishing as they have numerous charter operations. When visiting charter service websites from these two communities, photos of red snapper are very prominent and advertised as a key target species.⁹ Panacea is less reliant upon red snapper and located in a more rural area than the other communities. In terms of occupation, it has the lowest percentage working in farming, forestry, and fishing, yet it does have the largest percentage class of worker in that category. All of these communities are considered to be primarily involved in fishing based upon their community profiles (Impact Assessment, Inc. 2005).

The Orange Beach Red Snapper World Championship Tournament, billed as “Alabama’s state celebration of recreational saltwater fishing,”¹⁰ was an annual event in March. Dauphin Island, Alabama also has a number of charter services that specialize in bottom fishing, especially for red snapper.¹¹ Both Alabama communities are considered primarily involved in fishing as noted

⁹ <http://www.fishdestin.com/fishinggallery.html>; and <http://www.jubileefishing.com/>

¹⁰ http://www.cityoforangebeach.com/pages_2007/pdfs/events/2009/2009_Snapper_Tournament.pdf

¹¹ <http://gulfinfo.com/fishing.htm>

in the profiles of fishing communities (Impact Assessment, Inc. 2006). Red snapper fishing is featured at Pascagoula charter websites¹² and the community ranks third with regard to value of red snapper landings out of total commercial landings. Pascagoula is regarded as primarily involved in fishing according to its community profile (Impact Assessment, Inc. 2006).

Venice and Grand Isle, Louisiana, are also ranked among the top recreational fishing communities. A sampling of charter service websites from these communities indicates they do feature red snapper as a target species but not as prominently as charter services from other states.

Red snapper are also an important species for charter fishing in Galveston and Freeport, Texas. Many of the charter services include photos of red snapper catches on their website and note that this species is one of their prime target species.¹³ However, many inshore species like trout and redfish are more prominently displayed. Matagorda and Freeport are noted as being primarily involved in fishing while Galveston is secondarily involved (Impact Assessment, Inc. 2005).

Charter Boats and Headboats by Community

Charter boats and headboats target red snapper throughout the Gulf. At this time it is not possible to determine which species are targeted by specific charter vessels and associate those vessels with their homeport communities (other than to glean information from various charter websites as was done for the descriptions above for specific communities). However, harvest data are available for headboats by species and can be linked to specific communities through the homeport identified for each vessel. These data are available for headboats registered in the SRHS.

In 2013, 68 federal for-hire vessels in the Gulf were registered in the SRHS (K. Brennen, NMFS SEFSC, pers. comm.). Fifty-five of these vessels landed red snapper in 2013 (SRHS, SERO LAPPs/DM database). The majority of these headboats with red snapper landings are registered in Florida, with smaller numbers of vessels registered in the other Gulf States (Table 3.5.1.3).

Table 3.5.1.3. Number of federal for-hire vessels in the Gulf registered in the SRHS with landings of red snapper in 2013, by state.

State	Number of Vessels
AL	8
FL	25
LA	2
MS	4
TX	16

Source: SEFSC SRHS data (2014).

¹² <http://www.jkocharters.com/1938863.html>

¹³ <http://www.texassaltwaterfishingguide.com/> or <http://www.matagordabay.com/>

Headboats with red snapper landings are based in 14 homeports (10 homeports were located in Florida, 2 in Texas, and 2 in Louisiana). The top four homeports represent about 79% of the red snapper landings by vessels participating in the SRHS (SERO LAPPs/DM database, 2013). Homeports with the greatest landings of red snapper include South Padre Island, Texas (27% of red snapper landed by SRHS vessels in 2013); Port Aransas, Texas (20%); Panama City Beach, Florida (16%); and Destin, Florida (16%) (SEFSC SRHS 2014 data). Other homeports represent a small portion of landings and include fewer than three vessels; therefore, landings are not reported to maintain confidentiality.

To present additional information about the charter boats and headboats that are engaged in recreational fishing, all vessels with a federal for-hire permit for reef fish, including historical captain permits, are included in the following analysis as a proxy. However, it cannot be assumed that every included permitted vessel is engaged in red snapper fishing.

The majority of federal for-hire permits for reef fish are held by operators in Florida (58.8% in 2013), followed by Texas (16.2%), Alabama (11.6%), Louisiana (8.9%), Mississippi (3.4%), and other states (1%; Table 3.5.1.4). The distribution of permits by state has followed a similar pattern throughout the last five years. These data may deviate from the numbers included elsewhere in the document because of the date on which data were gathered. Data included in Table 3.5.1.4 are based on the number of permits throughout the year, rather than from a specific date, and include permits that were valid or renewable sometime during the year. However, if the permit was sold, then only the most current permit has been counted.

Table 3.5.1.4. Number of valid and renewable federal for-hire permits for Gulf reef fish including historical captain permits, by state and year.

State	2009	2010	2011	2012	2013
AL	150	147	148	155	159
FL	900	865	832	814	804
LA	111	110	123	123	122
MS	52	52	50	48	47
TX	241	237	226	221	221
Other	19	21	17	17	14
Total	1,473	1,432	1,396	1,378	1,367

Source: NMFS SERO permit office.

Federal for-hire permits are held by those with mailing addresses in a total of 323 communities, located in 22 states (SERO permit office, February 13, 2014). The communities with the most federal for-hire permits are provided in Table 3.5.1.5. Figure 3.5.1.1 shows the spatial distribution of federal for-hire permits around the Gulf. A pattern of abundance for for-hire permits is evident, with large clusters of permitted vessels in Florida communities along the Panhandle, in the greater Tampa Bay area, in the Naples-Fort Meyers-Marco Island area, and in the Florida Keys; in Alabama (Orange Beach, Mobile, and Gulf Shores); in Texas (Port Aransas,

Galveston, Freeport, Corpus Christi, and Houston); and in Mississippi (Biloxi, Ocean Springs, and Gulfport).

Table 3.5.1.5. Top ranking communities based on the number of federal for-hire permits, including historical captain permits, in descending order.

Community	State	Permits
Destin	FL	67
Orange Beach	AL	47
Key West	FL	45
Panama City	FL	43
Naples	FL	36
Pensacola	FL	30
Panama City Beach	FL	29
Sarasota	FL	19
Port Aransas	TX	19
Galveston	TX	18
Clearwater	FL	17
Marco Island	FL	17
Fort Walton Beach	FL	15
Gulf Breeze	FL	15
Biloxi	MS	15
St. Petersburg	FL	14
Chauvin	LA	14
Gulf Shores	AL	12
Marathon	FL	12
Port St. Joe	FL	12
Freeport	TX	12

Source: NMFS SERO permit office, February 13, 2014.

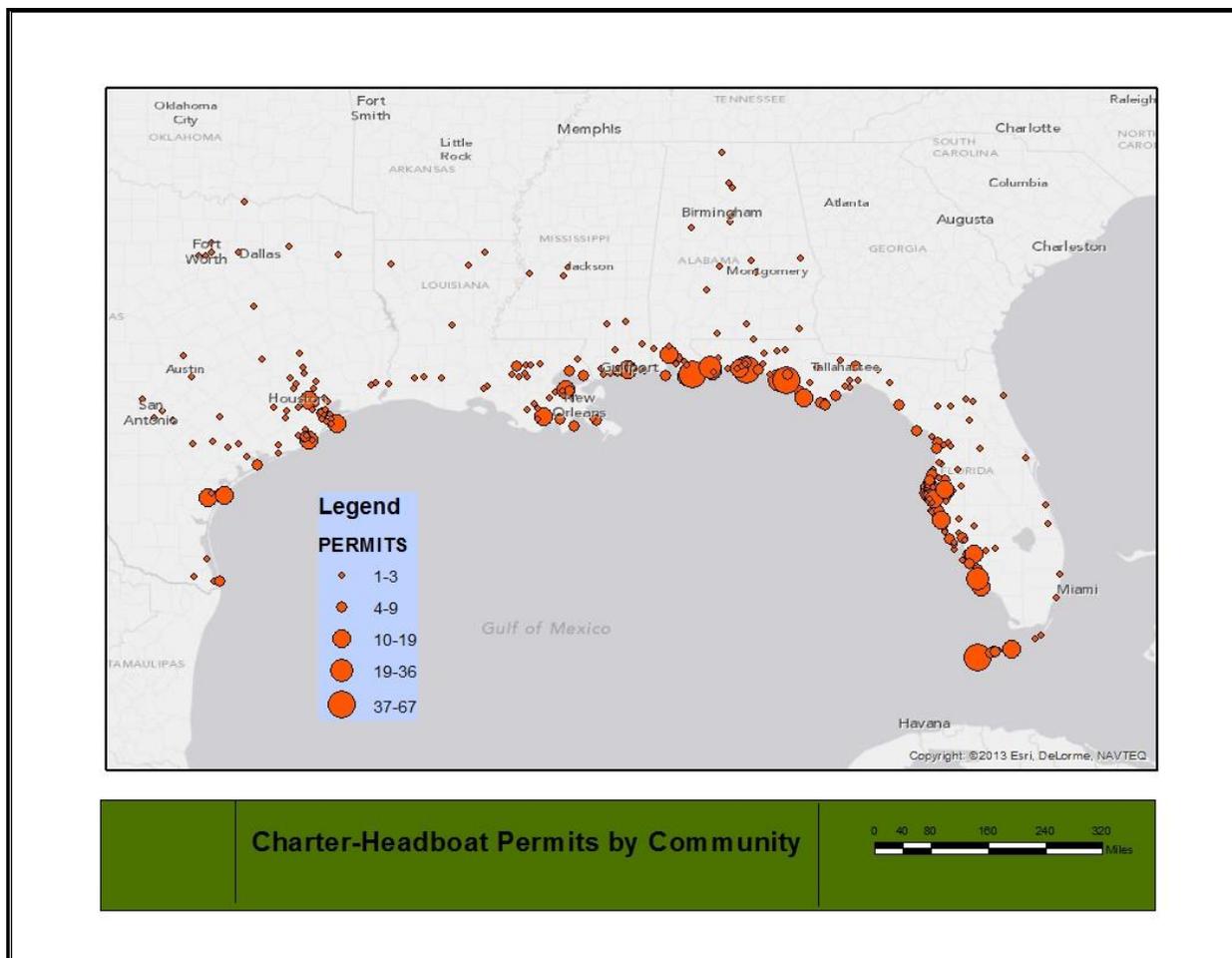


Figure 3.5.1.1. Distribution of federal for-hire permits, including historical captain permits in Gulf States, by community. Source: NMFS SERO permit office, February 13, 2014.

3.5.2 Environmental Justice Considerations

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

Recreational red snapper fishermen and associated businesses and communities along the coast may be affected by this proposed action. However, information on race, ethnicity, and income

status for groups at the different participation levels (private anglers, for-hire captains, crew, and customers, and employees of recreational fishing businesses, etc.) is not available, because these types of data are not collected by NMFS or other agencies. To identify potential areas of EJ concern, this analysis uses a suite of indices created to examine the social vulnerability of coastal communities (Jepson and Colburn 2013). The three indices are poverty, population composition, and personal disruptions. 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. Indicators such as increased poverty rates for different groups, more single female-headed households, households with children under the age of five, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of populations experiencing vulnerabilities. Communities that exceed the threshold for one or more of the indices would be expected to exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change, and greater vulnerability is suggested by exceeding the thresholds for multiple indices.

These indicators of vulnerability have been developed using secondary data at the community level because it does not exist for fishermen individually and is not collected through permit application or other programs that might be vehicles for this type of data. Because these types of data are not collected at the individual level by NMFS or other agencies, it is difficult to understand the social vulnerabilities that might exist on either a household or individual basis. Therefore, it is hard to recognize or attribute impacts that will directly affect individuals who are fishermen or work in a related business because what those specific vulnerabilities may be remains unknown. Therefore, this measure of vulnerability is a broader measure at the community level and not specific to fishermen or the related businesses and their employees.

Figure 3.5.2.1 provides community scores for the three social vulnerability indices for 15 of the recreational communities identified as the most engaged and reliant on fishing in general (Table 3.5.1.2). The communities of Apalachicola, Carrabelle, Port St. Joe, Cedar Key, and Panama City, Florida; Grand Isle, and Venice, Louisiana; Dauphin Island, Alabama; and Freeport, Texas exceed the threshold of $\frac{1}{2}$ standard deviation above the mean for at least one of the social vulnerability indices. It would be expected that these communities may exhibit vulnerabilities to social or economic disruption because of regulatory change, and would be the communities most likely subject to EJ concerns. Those communities that exhibit several index scores exceeding the threshold would be the most vulnerable. These include Apalachicola and Carrabelle, Florida; and Freeport, Texas, each of which exceeds the threshold of one standard deviation above the mean for two of the social vulnerability indices. Social effects resulting from action taken in this plan amendment are likely to be greatest in these communities.

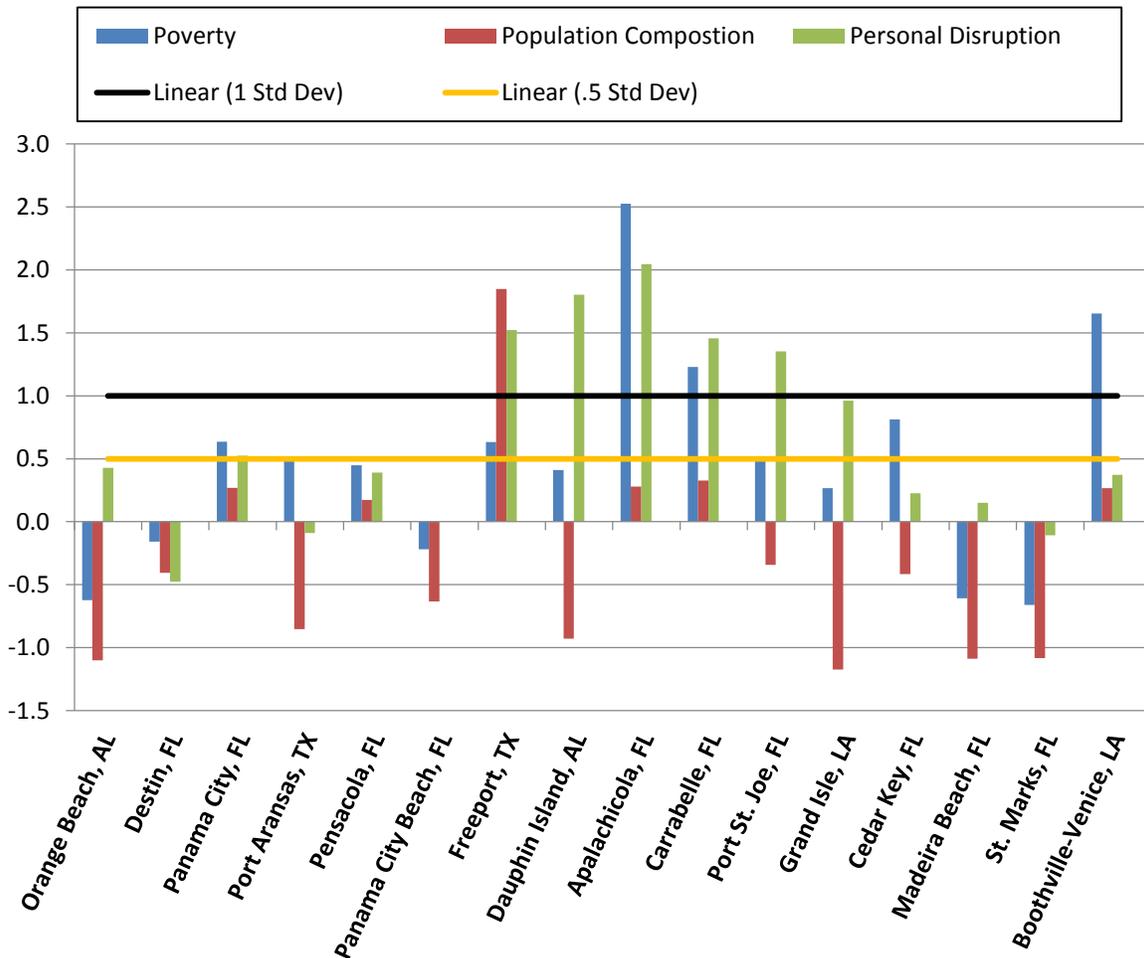


Figure 3.5.2.1. Social vulnerability indices for recreational fishing communities. Source: SERO social indicators database (2012).

While some communities expected to be affected by this proposed action may have minority or economic profiles that exceed the EJ thresholds and, therefore, may constitute areas of concern, significant EJ issues are not expected to arise as a result of this proposed action. No adverse human health or environmental effects are expected to accrue, nor is the action expected to result in increased risk of exposure of affected individuals to adverse health hazards. The proposed action would apply to all participants in the affected area, regardless of minority status or income level, and information is not available to suggest that minorities or lower income persons are, on average, more dependent on the affected species than non-minority or higher income persons. There are no known claims for customary usage or subsistence consumption of Gulf red snapper by any population including tribes or indigenous groups. The harvest of red snapper is conducted offshore requiring boat access. Thus, it is unlikely that there would be any EJ concerns resulting from the actions in this amendment, which would disproportionately affect minorities or those in poverty. Nevertheless, although disproportionate impacts to EJ populations are not expected to result from the action in this framework, the lack of impacts on EJ populations cannot be assumed.

3.6 Description of the Administrative Environment

3.6.1 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 exclusive economic zone, 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 exclusive economic zone.

Responsibility for federal fishery management is shared by the Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Appendix A. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the seaward boundaries of the Gulf states of Alabama, Florida, Louisiana, Mississippi, and Texas, as those boundaries have been defined by law, including the Congressional Omnibus Appropriations Bill signed into law on December 18, 2015, which will remain in place for one year unless Congress takes additional action. The length of the Gulf coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through Council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative Procedure Act, in the form of “notice and comment” rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of NOAA’s Office of Law Enforcement, the United States Coast Guard, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council’s Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission’s

Law Enforcement Committee, which have developed joint enforcement agreements and cooperative enforcement programs (www.gsmfc.org).

The red snapper stock in the Gulf is classified as overfished, but no longer undergoing overfishing. A rebuilding plan for red snapper was first implemented under Amendment 1 (GMFMC 1989), and has undergone several revisions. The current rebuilding plan was established in Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), and calls for rebuilding the stock to a level capable of supporting maximum sustainable yield on a continuing basis by 2032. Periodic adjustments to the ACL and other management measures needed to affect rebuilding are implemented through regulatory amendments.

3.6.2 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 in Amendment 22 (GMFMC 2004b) and their respective web sites. The agencies (web sites) are as follows:

- Alabama Department of Conservation and Natural Resources (<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>)

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action – Revise the Provision that Sunsets Sector Separation

This action considers extending the provision that sunsets the separation of the recreational sector into federal for-hire and private angling components. Alternatives include No Action (**Alternative 1**), which would allow sector separation to expire after the 2017 fishing year under the current sunset provision; extending the sunset provision (**Preferred Alternative 2**) for sector separation for either 3 calendar years (**Option 2a**), 5 calendar years (**Preferred Option 2b**), or 10 calendar years (**Option 2c**); and removing the sunset provision altogether (**Alternative 3**).

4.1.1 Direct and Indirect Effects on the Physical Environment

Sections 3.2, 3.3, and GMFMC (2004a, 2004b, and 2007) describe the physical environment and habitat used by red snapper. In summary, adult red snapper targeted by the reef fish fishery are found around hard bottom habitat. In terms of red snapper fishing, most commercial red snapper fishermen use handlines (mostly bandit rigs and electric reels, occasionally rod-and-reel) with a small percentage (generally <5% annually) caught with bottom longlines (see Section 3.1). Recreational red snapper fishing almost exclusively uses vertical-line gear, most frequently rod-and-reel (See Section 3.1). The following describes the effects of handline fishing gear on the physical environment. Because this amendment applies only to the recreational sector, and longlines are used exclusively by the commercial sector, the effects of longline gear will not be discussed here. A summary of effects from longline gear on the physical environment can be found in GMFMC (2011b).

Handline gear (rod-and-reel) used in recreational fishing for reef fish is generally suspended above hard bottom where many managed reef fish species occur. Reef fish species are generally not found over sand or mud bottoms (GMFMC 2004a). Recreational fishing with rod-and-reel lays gear on the bottom. The terminal part of the gear is either lifted off the bottom or left contacting the bottom. Sometimes the fishing line can become entangled on coral and hard bottom outcroppings (Barnette 2001). The subsequent algal growth on the gear can foul and eventually kill the underlying coral. Researchers conducting studies in the restricted fishing area at Madison-Swanson reported seeing lost fishing line on the bottom, much of which appeared to be older and covered with invertebrate growth (A. David, Southeast Fisheries Science Center, pers. comm.), a clear indication that bottom fishing has had an impact on the physical environment prior to fishing being prohibited in the area (GMFMC 2003).

Anchor damage is also associated with handline fishing vessels, particularly by the recreational sector where fishermen may repeatedly visit well marked fishing locations. Bohnsack (2000) points out that “favorite” fishing areas such as reefs are targeted and revisited multiple times, particularly with the advent of global positioning technology. The cumulative effects of repeated anchoring could damage the hard bottom areas where fishing for red snapper occurs.

Effects from fishing on the physical environment are generally tied to fishing effort. The greater the fishing effort, the more gear interacts with the bottom. This action, extending or eliminating

the sunset provision for the two recreational components (federal for-hire and private angling), would have no direct effect on the physical environment. This action could indirectly affect the physical environment if extending or eliminating the sunset provision results in an increase or decrease in the amount of fishing gear used to harvest red snapper. **Alternative 1**, no action, would allow the provision separating the sectors to expire after the 2017 fishing year, under the terms of the current sunset. Thus fishing effort is likely to revert back to pre-sector separation conditions. As described in Amendment 40 (GMFMC 2014a), which separated the recreational sector, the trend in the recreational sector before the sectors were separated was an increasing private angling share of the harvest. This trend would likely start back up if sector separation expired. The private angling component seems to be less efficient in harvesting red snapper based on bag limit analyses reported in SERO (2012). The analysis in SERO (2012) indicated that charter vessels tend to catch slightly more red snapper on average than private vessels or headboats. Therefore, if sector separation expires and harvest patterns return to pre-sector separation levels, a proportional increase in the private angler's contribution to the recreational harvest, and commensurate increase in fishing effort would be expected. In addition, this increase in private angler effort is likely to occur in state waters unless state and federal regulations become more compatible. If sector separation were to be continued for 3-10 years (**Preferred Alternative 2, Options a-c**) or indefinitely (**Alternative 3**), private angler effort would be expected to be less than under the no action alternative after 2017 until either the sector separation expires (after which point effort would be expected to increase) or new management measures are put in place. Thus **Alternative 1**, particularly for state waters, would likely have the greatest adverse effects, followed by **Alternative 2a, Preferred Alternative 2b, Alternative 2c**, and **Alternative 3**. The management of the charter vessel and headboat fleets fishing for red snapper could change with the development of Amendments 41 and 42. Those proposed management programs are expected to affect the physical environment, and any changes in effects will be analyzed in the appropriate documents before approval and implementation.

4.1.2 Direct and Indirect Effects on the Biological/Ecological Environment

Direct and indirect effects from fishery management actions have been discussed in detail in Reef Fish Amendments 22, 27/14, 28, and 40 (GMFMC 2004b, 2007, 2014a, and 2015) and in several red snapper framework actions (GMFMC 2010, 2012, 2013a) and are incorporated here by reference. Potential impacts of the 2010 Deepwater Horizon MC252 oil spill on the biological/ecological environment are discussed in Section 3.3 and the January 2011 Framework Action (GMFMC 2011c) and are also incorporated here by reference. These impacts may include recruitment failure and reduced fish health. Management actions that affect this environment mostly relate to the impacts of fishing on a species' population size, life history, and the role of the species within its habitat. Removal of fish from the population through fishing reduces the overall population size. Fishing gears have different selectivity patterns which refer to a fishing method's ability to target and capture organisms by size and species. This would include the number of discards, mostly sublegal fish or fish caught during seasonal closures, and the mortality associated with releasing these fish.

Fishing can affect life history characteristics of reef fish such as growth and maturation rates. For example, Fischer et al. (2004) and Nieland et al. (2007) found that the average size-at-age of

red snapper had declined and associated this trend with fishing pressure. Woods (2003) found that the size at maturity for Gulf of Mexico (Gulf) red snapper had also declined and speculated this change may also have been due to increases in fishing effort. The reef fish fishery can also affect species outside the reef fish complex. Specifically, sea turtles have been observed to be directly affected by the longline component of the Gulf reef fish fishery. These effects occur when sea turtles interact with fishing gear and result in an incidental capture injury or mortality and are summarized in GMFMC (2009). However, for sea turtles and other listed species, the most recent biological/ecological opinion for the Reef Fish Fishery Management Plan concluded authorization of the Gulf reef fish fishery managed in the reef fish plan is not likely to jeopardize the continued existence of sea turtles, smalltooth sawfish, or Acropora species (NMFS 2011). In addition, the primary gear used by the recreational sector (hook-and-line) was classified in the 2014 List of Fisheries (79 FR 14418, April 14, 2014) as a Category III fishery with regard to marine mammal species, indicating this gear has little effect on these populations (see Section 3.3 for more information).

Extending (**Preferred Alternative 2**) or eliminating (**Alternative 3**) the sunset provision for the two recreational components (federal for-hire and private angling) would have no direct effect on the biological/ecological environment. This action could indirectly change the number of discards from the recreational sector. The most likely indirect effect on the red snapper stock from this action would be on discard mortality as discussed in the bycatch practicability analysis (BPA) in Amendment 40. Regulatory discards are fish that are caught, but not kept because they are too small, would put a fisherman over the bag limit, or are caught out of season. A certain percentage of these fish die and are called dead discards. The most recent red snapper stock assessment (SEDAR 31 2013) estimated dead discard rates for the recreational sector at 10%. However, the number of discards relative to the landed fish may differ between components. For example, the relative number of landed fish between the charter boat and private angling components over the time period 1981-2011 was 45% to 55%, respectively (Data Workshop Report Figure 4.11.1 in SEDAR 31 2013). But the relative number of discards over the same time period was much lower for the charter boat component than the private angling component at 31% to 69%, respectively (Data Workshop Report Figure 4.11.4 in SEDAR 31 2013). Thus, the relative number of discarded fish compared to landed fish is less for charter boat fishing than for private angling.¹⁴ Therefore, the sooner the sunset expires, the number of fish landed by the private angling component is expected to increase relative to the federal for-hire component and likely result in an increase in dead discards. These fish would be added to the number of fish killed by the recreational sector (landings and dead discards) and have an adverse effect on the stock, although this effect might be mitigated if most private angler effort occurs in state waters that are shallower and fish would be less susceptible to the effects of decompression.

Another likely indirect effect from extending (**Preferred Alternative 2**) or eliminating (**Alternative 3**) the sunset provision would be a reduction in the probability of red snapper overfishing by the recreational sector. If better landings information became available for one component, then either in-season monitoring of the harvest or better projections could be used to reduce the likelihood that a component does not exceed its quota/annual catch limit. This would

¹⁴ Note that similar data in terms of discards were not available for headboat trips and so a similar comparison could not be made for this portion of the sector.

particularly be true for the federally permitted for-hire component. Because of the limited number of federally-permitted vessels and the fact that headboats regularly report landings, it is currently easier to both monitor and project landings of this component. In addition, federally-permitted headboat operators are required to submit electronic logbooks and efforts are underway to extend this type of reporting to federally-permitted charter vessels—actions that should improve harvest information for the federal for-hire component. Thus, extending (**Preferred Alternative 2**) or eliminating (**Alternative 3**) the sunset provision for sector separation should indirectly benefit the stock by reducing the probability of overfishing through better monitoring of the stock compared to **Alternative 1**, no action.

Alternative 1, no action, would allow sector separation to sunset the soonest (at the end of the 2017 fishing year). Given the discussion above, this alternative would have the greatest adverse effect on red snapper stock. Assuming that no charter vessel- or headboat-specific management program is developed through Amendments 41 and 42, **Preferred Alternative 2**, **Preferred Option 2b**, and **options 2a,c**, would be more beneficial to the stock because they delay the expiration of sector separation more than **Alternative 1**. **Option 2c**, would be most beneficial because it would delay the sunset of sector separation the longest (10 years), followed by **Preferred Option 2b** (5 years), and then **Option 2a** (3 years). **Alternative 3** would allow the benefits to the red snapper stock from sector separation to continue indefinitely and so would have the least adverse effect on the stock relative to **Alternative 1** and **Preferred Alternative 2**. As mentioned in Section 4.1.1, the management of the charter vessel and headboat fleets fishing for red snapper could change with the development of Amendments 41 and 42. These management programs are expected to affect the biological/ecological environment, and any changes in effects will be analyzed in the appropriate documents before approval and implementation.

The relationships among species in marine ecosystems are complex and poorly understood, making the nature and magnitude of ecological effects difficult to predict with any accuracy. The most recent red snapper stock assessment (SEDAR 31 Update 2015) indicated the stock is rebuilding. Consequently, it is possible that forage species and competitor species could decrease in abundance in response to an increase in red snapper abundance. This action, regardless of the alternative, should not affect the red snapper recovery, thus any effects on forage species and competitor species would not likely be different from no action. Changes in the bycatch of red snapper are not expected to directly affect other species in the ecosystem. Although birds, dolphins, and other predators may feed on red snapper discards, there is no evidence that any of these species rely on red snapper discards for food. Changes in the prosecution of the reef fish fishery are not expected from this action, so no additional effects to protected resources (see Section 3.3.1) are anticipated.

4.1.3 Direct and Indirect Effects on the Economic Environment

Alternative 1 would not impose new regulations on the harvest of red snapper by the recreational sector and, as a result, would not change how the harvest of red snapper by the recreational sector is managed. Thus, because no change in current management would occur, no associated direct or indirect economic effects would be expected.

However, current management of the recreational sector specifies that the separate management of the federal for-hire and private angling components (sector separation) for the harvest of red snapper, currently in place as established under Amendment 40, will expire at the end of the 2017 fishing year. Sector separation was implemented to end the erosion of the share of the red snapper resource harvested by the for-hire component, stabilize the proportion of red snapper available to each component, and enable the development and establishment of management measures tailored to the specific needs of each component. The percentage of the red snapper recreational quota harvested by the federal for-hire component had steadily decreased, from 66.2% in 1986 to 16.1% in 2013 (GMFMC 2014a). Sector separation stopped this decline; allocated, based on historical and more recent harvests, the for-hire component a portion of the red snapper quota, 42.3%, that the component had not harvested since 2008; and, through the specified allocation to each component, allowed each component to harvest a predetermined and non-decreasing portion of the recreational red snapper quota (GMFMC 2014a). Associated with each component's allocation, each component would have separate and independent fishing seasons designed to keep each component within its allocation. As a result, it was expected that, although the seasons from year to year may for each component may continue to vary (as affected by changing rates of effort and harvest success within each component), the seasons would not be affected by the harvest activity of the other component. This was expected to result in a more predictable season length; better planning for businesses, notably for-hire businesses; better planning for anglers; and improvements to the economic performance of the associated businesses that cater to both the for-hire sectors and private anglers.

In addition to the benefits expected to accrue to the fixed allocations, management measures tailored to each component were expected to result in improved use of the red snapper resource and better timing of effort and other resources associated with the harvest activities by the respective groups, leading to improved management of the red snapper resource and increased economic benefits. In the development and adoption of Amendment 40, quantitative evaluation of the potential economic benefits that could result from sector separation was, and continues to be, not possible because of the absence of identification of the specific management measures that may be implemented for the separate sectors.

Sector separation has only been in effect for one season and, to date, sector-specific management measures have not been developed. (Note: although the adoption of sector separation resulted in different season lengths, as will be subsequently discussed, these differences are the result of the application of the management measure that specifies that the season will start June 1 and continue until the allowable harvest for the component is expected to be taken. Thus, the season lengths are not management measures per se but, rather the result of the application of a management measure. Examples of changing the management measures are, but are not limited to, changing the start date for the season, the bag or minimum size limit, or limiting recreational effort.) Nevertheless, the 2015 red snapper fishing season demonstrated that benefits can be achieved even in the absence of tailored management measures. During the 2015 season, as a result of the sector allocations to both components of the recreational sector, the red snapper season for the federally permitted for-hire component was 44 days, a substantial increase from the 9-day season in 2014 (see Section 1.1). Some of the potential benefits of this longer season may be suggested by the information in Tables 3.3.2.1 and 3.3.2.2, which contain estimates of red snapper recreational target and catch effort. Although the data are not disaggregated by

federal and state waters and do not cover all modes and states (headboat data are not available; Texas data is not available for all years and Louisiana is not available for 2014 and 2015), red snapper target effort in the charter mode increased from 16,408 trips in 2014 to 71,587 trips in 2015 (Table 3.3.2.1). The increase in catch effort was not as dramatic; however, red snapper catch effort also increased from 102,899 trips in 2014 to 142,556 trips in 2015 (Table 3.3.2.2). Although these are single year comparisons and potentially subject to survey fluctuations, their veracity may be supported by the observation that the higher totals in 2015 are consistent with the results seen in 2012 and 2013 when the red snapper seasons were 46 and 42 days, respectively, roughly equivalent to the 2015 season. Thus, the effort data strongly suggests the for-hire component benefited from sector separation and the associated longer red snapper season in 2015, and may be expected to similarly benefit in subsequent years.

For the private angling component, the situation is more complicated. The allocation of 42.3% of the red snapper recreational quota to the for-hire component resulted in a reduction in the amount of red snapper available to the anglers constituting the private component relative to what they had harvested in recent years. However, the private component has the ability to fish in federal waters when open and in state waters, when open, even when the federal season is closed, which increases their opportunity to harvest red snapper. Further, in a given year, the amount of red snapper that may be harvested by the private component may not be as limited as the federal allocation and federal season length suggest. Although a federal season is specified, it is based on expectations of subsequent seasons in state waters, which may not be set prior to the determination of the federal season, as well as on projections of the associated red snapper harvest from state, as well as federal, waters. If these projections are wrong, as a result of either longer open seasons, more effort, or better catch rates in state waters, adjustments to the federal season for the private component may only be made in the following year. When red snapper is under a rebuilding plan, if the recreational red snapper quota is exceeded, the full amount of the overage would be deducted from the quota the next year unless the best scientific information determines that a greater, lesser, or no overage adjustment is necessary. Also, the recreational annual catch target (ACT) would also be adjusted and the projected federal season set accordingly. In 2015, sector separation resulted in a federal season for the private component of 10 days, one day more than in 2014 prior to sector separation, and seasons in state waters that were 41 days (Alabama), 70 days (Florida), 118 days (Mississippi), 215 days (Louisiana), and 365 days (Texas). The associated red snapper target and catch effort in 2015 (noting, again, the absence of Louisiana and Texas) was 253,152 trips and 363,420 trips, respectively, both small increases over 2014 (229,152 trips and 354,112 trips, respectively). Thus, the private component took more red snapper target trips and caught red snapper on more trips in 2015 under sector separation compared to 2014. With the exception of 2013, during which unusual spikes in red snapper target and catch trips were observed, particularly in Alabama and Florida, the private component effort in 2015 was more similar to that which occurred in 2011 and 2012 when a longer federal season occurred. However, in 2011 and 2012, the seasons in state waters were more compatible with the federal season so, the red snapper effort in 2015 is suggestive of the longer effective season, combining both the federal and state seasons, during which anglers in the private component could fish for red snapper.

The total season for the private component, composed of the open season in federal and state waters, is noteworthy because similar “dual” harvest opportunities do not exist for vessels in the

federal for-hire component; anglers fishing from these vessels may only harvest red snapper during the open season in federal waters. Thus, the private component can harvest red snapper more total days than the for-hire component. However, when considering the economic effects of sector separation on the private component, it is also necessary to consider the effects of fishing quality as well as season length. Although this may not hold true for all areas of the Gulf or on all fishing trips taken, red snapper abundance and quality are generally expected to be better in federal waters than in state waters, resulting in a higher catch rate and larger fish harvested in federal waters than in state waters. Because the quality of the fishing trip affects the value received from the trip, substituting red snapper fishing in federal waters for red snapper fishing in state waters would not generally be economically equitable on a one-for-one trip basis because the difference is red snapper fishing quality in the different waters. Thus, although the private component received more total fishing days in 2015 than in 2014, on that basis alone it would be incorrect to conclude the private component experienced a gain in economic benefits. However, the increase in both red snapper target and catch effort, coupled with the high popularity of red snapper, may suggest, overall, the private component experienced an increase in economic benefits in 2015 when managed under sector separation. Within the increase in target effort by the private component in 2015 compared to 2014, approximately 23,000 trips, approximately 18,000 of these trips occurred in federal waters and approximately 5,000 of these trips occurred in state waters. This may suggest that, because the majority of new target trips occurred where red snapper fishing quality is expected to be highest, the economic benefits to the private component may have increased. Thus, overall, although anglers in the private component may not have benefited as much as those in the for-hire component, the private component may have also likely experienced an increase in economic benefits in 2015. The absence of the necessary economic data, however, prevents definitive determination of any increase, or decrease, in economic benefits to private anglers as a result of sector separation.

Finally, because sector separation resulted in a decrease in the allowable harvest by the private component compared to previous years, from over 80% of the allowable red snapper harvest to less than 45%, the increase in the federal season for the private component was due to the increase in the total recreational red snapper ACT, from 4.312 mp in 2014 to 5.605 mp in 2015. Under the 2014 ACT, both components were projected to have a 9-day season in federal waters in 2015. Thus, the increase in the ACT in 2015 would have allowed the private component an even longer season in the 2015 in the absence of sector separation than the 10 days they received. Although this longer season was never calculated, a longer season than the 10 days received for the private component in the federal waters would logically be expected to have resulted in an increase in economic benefits to this component. Thus, although the private component is expected to have experienced an increase in economic benefits in 2015 under sector separation, these benefits are likely less than the private component would have received had sector separation not been implemented. Collectively, however, despite the private component likely experiencing less economic benefits in 2015 than they would have in the absence of sector separation, the combined economic effects to both the for-hire and private components of sector separation was expected to be positive.

Thus, these results suggest that, even in the absence of developing component-specific management measures, sector separation is capable of resulting in increased economic benefits. Because the duration of the sector separation is limited to three years under **Alternative 1**,

however, the potential economic benefits expected to accrue to sector separation are limited. The Gulf of Mexico Fishery Management Council (Council) may have insufficient opportunity to implement potentially beneficial management measures, any measures adopted would have limited effective time, individual businesses may be reluctant to make certain potentially beneficial business decisions in an uncertain regulatory environment, and, in the absence of component-specific management measures, any benefits accruing to just the separate component seasons, as in 2015, would cease upon expiration of sector separation. However, it is noted that the sunset provision may contribute to a timelier cancellation of the federal for-hire and private angling components if unintended adverse economic effects arise later in the duration of the program. Overall, though, sector separation is expected to result in a net gain in economic benefits.

Alternatives 2 and 3 would either extend (**Preferred Alternative 2** and associated options) or eliminate (**Alternative 3**) the sector separation sunset. Because sector separation is expected to result in improved management of the red snapper resource and associated increases in economic benefits, these benefits will increase, incrementally and cumulatively, the longer sector separation remains in effect. Thus, it may be logical to conclude that the alternative proposed durations of the sector separation management can be ranked (best to worst) according to the proposed duration or as follows: **Alternative 3** (no sunset), followed by **Alternative 2 Option 2c** (additional 10 years before sunset), **Preferred Alternative 2 Preferred Option 2b** (additional 5 years before sunset), and **Alternative 2 Option 2a** (additional 3 years before sunset). However, regardless of the period selected, the effective difference between the alternatives is the potential implications on administrative costs if Council action to extend or end sector separation and any effect the stated duration of the program may have on business decisions by industry participants. Regardless of the alternative selected, the Council has the discretion to extend or end sector separation. Thus, even if a short extension is selected, the Council, as it is considering in the current action, could extend the program, incurring the additional costs of amendment development and rule-making; these expenditures could be avoided if a longer extension is selected. Alternatively, with respect to administrative costs, the only economic effect of selecting a longer extension would be, if the program is not meeting the expected goals, the costs of ending sector separation. From the industry perspective, it is logical to expect that a business may be more hesitant to make a business decision in an uncertain management environment, or an environment in which a specific beneficial management arrangement is temporary (such as sector separation from the perspective of federally permitted for-hire vessels). Thus, the longer the extension, potentially the greater the likelihood that businesses associated with the industry will make business decisions that increase their economic viability and performance.

4.1.4 Direct and Indirect Effects on the Social Environment

Amendment 40 (GMFMC 2014a) provided the foundation for red snapper management to be tailored to each component of the recreational sector, but it did not establish different management measures for each component. Potential component-specific management measures could be implemented subsequent to Amendment 40. For example, the Council is currently considering allocation-based management programs for the federal for-hire component

including a red snapper charter vessel program (Amendment 41) and a reef fish headboat program (Amendment 42).

Alternative 1 would allow the separate management of the private angling and federal for-hire components to end following the 2017 red snapper fishing season, coinciding with the 3-year sunset provision selected in Amendment 40. After three years of management under separate quotas, a single recreational quota would again be used from 2018 to estimate the length of the recreational fishing season in federal waters. Under **Alternative 1**, negative effects would be expected beginning in 2018 for federally permitted for-hire vessels and their angling passengers, as the recreational season in federal waters will be shorter than the season would be for the federal for-hire component if separate management of the components were to continue. For the private angling component, the federal season would be expected to be somewhat longer beginning in 2018, resulting in some positive effects by increasing fishing opportunities. However, compared to the season lengths for each component for the years 2015-2017, greater negative effects would be expected for the federal for-hire component, which will only be able to land red snapper during the respectively shorter federal season, compared to the positive effects that may result for the private angling component, as private vessels are able to continue fishing during extended state water fishing opportunities. Further, compared with the federal season lengths for managing the components separately (2015-2017), the recreational federal season to be established in 2018 is expected to be a greater reduction of fishing days for the federal for-hire component than the increase in fishing days that will be realized for the private angling component.

Under **Alternative 3**, the two components of the recreational sector would continue to be managed separately, including the establishment of separate component annual catch limits (ACLs) and respective ACTs. Among the alternatives, **Alternative 3** would be expected to result in the greatest benefits for the federal for-hire component, as the separate management of the components would continue and the federal for-hire fleet would continue to fish under a separate quota. Further, **Alternative 3** would allow for the development of a management plan for the federal for-hire component. On the other hand, **Alternative 3** would allow the shorter federal fishing seasons to continue for the private angling component. As discussed in Amendment 40 (GMFMC 2014a), private anglers are provided additional fishing opportunities in their states' waters in which anglers fishing from federally permitted for-hire vessels may not participate.

For **Preferred Alternative 2**, the effects of extending the sunset provision are mixed. On the one hand, extending the sunset provision would require the Council to revisit its decision, again, and determine whether the management approach for separate federal for-hire and private angling components should be continued. On the other hand, the potential benefits that may result from continuing separate management measures for each component of the recreational sector would be diminished through extending the sunset provision. The range of management measures available would be restricted to those the Council could develop and implement before the next sunset occurs. Furthermore, any distinct management approaches applied to a component would cease at the time of the sunset. Thus, a plan amendment that takes as much time to develop as the term of the sunset would become irrelevant and not be implemented. For example, while changes to the season structure or bag limit may be possible to enact for the short-term (these may be modified through a framework action), management approaches such

as those under consideration in Amendments 41 and 42, which would require a longer time frame to develop, may not be feasible under the constraints of a sunset provision.

Among the options, the shortest time period before sector separation sunsets (**Option 2a**) would provide the recreational components with the least amount of flexibility to develop and implement management approaches tailored to their needs, followed by **Preferred Option 2b** and **Option 2c**.

As noted in Section 3.5.1, the only recreational landings of red snapper reported at the community level are from those headboats participating in the Southeast Region Headboat Survey (SRHS). Although it is possible to identify communities with the most landings of red snapper by headboats, it is not possible to determine whether these same communities are where the most landings of red snapper by private anglers are made. It may be assumed that a greater proportion of anglers fishing from for-hire vessels compared to private vessels do not reside in the community where landings are made, as for-hire vessels would be expected to provide access to more coastal visitors than privately owned vessels. Nevertheless, both coastal residents and visiting anglers access red snapper from private vessels and for-hire vessels. Given that fishing infrastructure such as marinas and tackle shops are used by anglers fishing from charter boats, headboats, and private vessels, it is assumed that communities from which for-hire vessels and private angling vessels depart overlap, rather than being distinct communities. Thus, there are not federal for-hire communities and private angling communities for which different effects may result from this action.

4.1.5 Direct and Indirect Effects on the Administrative Environment

Extending (**Alternative 2**) or eliminating (**Alternative 3**) the sunset provision for the recreational sector fishing for red snapper would likely have minimal direct or indirect effects on the administrative environment. Because **Alternative 1**, the no-action alternative, would not require rulemaking, it would have no effect on the administrative environment. The extension or elimination of the sunset provision is a one-time event under this action. Thus, **Preferred Alternative 2 (Options 2a-2c)** and **Alternative 3** would have an equivalent burden to this environment though the minor direct administrative impacts associated with the rulemaking to implement the new sunset when compared to **Alternative 1**. However, **Preferred Alternative 2** could still allow for further action should the Council wish to maintain sector separation or still be working on component-specific actions after the sunset is reached. Thus, this could have future adverse (although minor) effects on the administrative environment. The likelihood of the sunset needing to be extended would be greatest under **Option 2a** (the shortest time period) and least under **Option 2c** (the longest time period).

The indirect effects of maintaining sector separation, either for a set period of time under **Preferred Alternative 2 (Options 2a-2c)** or indefinitely under **Alternative 3**, would include the administrative costs of continuing to monitor each component's harvest, enforcing the harvesting rules, and setting management measures to minimize the risk that the components' respective harvests exceed the recreational quota. However, these activities would need to continue even if sector separation were discontinued. Therefore, the indirect effects from each alternative, including **Alternative 1**, would likely be similar.

4.2 Cumulative Effects

The cumulative effects of setting the sunset provision for the sector separation provision were analyzed in the environmental impact statement for Amendment 40 (GMFMC 2014a). Cumulative effects relative to red snapper management also have been analyzed in the environmental impact statements for Amendments 22 (GMFMC 2004b), 27/14 (GMFMC 2007), and 28 (GMFMC 2015a). In addition, cumulative effects to the reef fish fishery have been analyzed in the environmental impact statements for Amendments 30A (GMFMC 2008a), 30B (GMFMC 2008b), 31 (GMFMC 2009), and 32 (GMFMC 2011b). These cumulative effects analyses are incorporated here by reference. Additional pertinent actions are summarized in the history of management (Section 1.3). Currently, the Council is considering five red snapper reasonably foreseeable future actions (RFFAs). These include: Amendments 36A and 36B, which would revise the red snapper commercial individual fishing quota programs; Amendment 41, which evaluates allocation-based red snapper management programs for operators of federally-permitted charter vessels; Amendment 42, which evaluates allocation-based management programs for five species of reef fish, including red snapper, that would apply to operators of federally-permitted headboats; and Amendment 44, which would define (or re-define) the minimum stock size threshold for species in the reef fish fishery management unit, including red snapper.

The affected area of this proposed action encompasses the state and federal water of the Gulf as well as Gulf communities dependent on reef fish fishing. The proposed action would extend or remove a sunset provision for sector separation of the Gulf recreational sector fishing for red snapper. This action is not expected to have significant beneficial or adverse cumulative effects on the physical and biological/ecological environments as it would minimally affect fishing practices (see Sections 4.1.1 and 4.1.2). If the recreational harvest continues to be constrained to the separate sub-quotas for the private angling and for-hire components, then the effects to these environments would likely be beneficial compared to the no action alternative because the components would be better constrained than if managed under a single recreational quota. Management measures tailored to each component are expected to result in improved use of the red snapper resource and better timing of effort and other resources associated with the harvest activities by the respective components. This would lead to improved management of the red snapper resource and increased socioeconomic benefits (Sections 4.1.3 and 4.1.4) that would extend as long as sector separation is extended. This action is not expected to change the long-term management goals to rebuild the red snapper stock as well as RFFAs (see preceding paragraph) designed to allow the recreational sector more fishing opportunities. This action, combined with past and RFFAs, is not expected to have substantial adverse effects on public health or safety. Because the reef fish fishery is a multispecies fishery, there are always alternative reef fish species to target throughout the year for the recreational sector. Thus, the proposed action, along with past and RFFAs, are not expected to substantially alter the manner in which the fishery is prosecuted.

Non-Fishery Management Plan (FMP) actions affecting the reef fish fishery have been described in previous cumulative effect analyses (e.g., Amendment 32). Two important events include impacts of the Deepwater Horizon MC252 oil spill and climate change (see Section 3.3).

Impacts from the Deepwater Horizon MC252 oil spill are still being examined and peer-reviewed studies are only now being published. For red snapper, there may have been a reduction in spawning success in 2010. However, the effects may not begin to manifest themselves measurably until recruits from the 2010 year-class begin to enter the adult spawning population and be caught by anglers. The most recent red snapper stock assessment (SEDAR 31 2013) was completed in May 2013 and did detect a slight reduction of recruitment for 2010. Because recruitment occurs at approximately 3 years of age, any 2010 year class failure is likely to be detected in the next stock assessment, which will occur later this year and will include 2013 landings data. Should the 2010 year class be adversely affected, it would result in reduced fishing success and reduced spawning potential, and would need to be taken into consideration in future assessments and actions. The oil itself could also adversely affect adult red snapper and other reef fish species. In a recent study, Weisberg et al. (2014) suggested the hydrocarbons associated with Deepwater Horizon MC252 oil spill did transit onto the Florida shelf and may be associated with the occurrences of reef fish with lesions and other deformities. However, Murawski et al. (2014) reported that the incidence of lesions on bottom dwelling fish had declined between 2011 and 2012 in the northern Gulf.

There is a large and growing body of literature on past, present, and future impacts of global climate change induced by human activities. Some of the likely effects commonly mentioned are sea level rise, increased frequency of severe weather events, and change in air and water temperatures. The Environmental Protection Agency's climate change web page provides basic background information on these and other measured or anticipated effects. In addition, the Intergovernmental Panel on Climate Change has numerous reports addressing their assessments of climate change (<http://www.ipcc.ch/>). Global climate changes could affect the Gulf fisheries as discussed in Section 3.3. However, the extent of these effects cannot be quantified at this time. The proposed action is not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing as these actions should not change how the fishery is prosecuted. As described in Section 3.3, the contribution to greenhouse gas emissions from fishing is minor compared to the total from other emission sources.

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by the National Marine Fisheries Service, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. Landings data for the recreational sector in the Gulf are collected through the Marine Recreational Information Program (MRIP), the Southeast Region Headboat Survey (SRHS), and by the Texas Parks and Wildlife Department (TPWD). In addition, the Gulf States have instituted programs to collect or supplement recreational landings information in their respective states, including the Louisiana Department of Wildlife and Fisheries' LA Creel Survey and the Alabama Department of Conservation and Natural Resources' Snapper Check. Commercial data are collected through trip ticket programs, port samplers, and logbook programs, as well as dealer reporting through the individual fishing quota programs.

CHAPTER 5. REGULATORY IMPACT REVIEW

5.1 Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: 1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; 2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and, 3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. The RIR also serves as the basis for determining whether the regulations are a “significant regulatory action” under the criteria provided in Executive Order (E.O.) 12866. This RIR analyzes the impacts this action would be expected to have on the red snapper component of the Gulf of Mexico reef fish fishery.

5.2 Problems and Objectives

The problems and objectives addressed by this action are discussed in Section 1.2.

5.3 Description of Fisheries

A description of the red snapper component of the Gulf reef fish fishery is provided in Section 3.4.

5.4 Impacts of Management Measures

A detailed analysis of the economic effects expected to result from this action is provided in Section 4.1.3. The following discussion summarizes the expected economic effects of the preferred alternative.

Sector separation, established through Amendment 40 (GMFMC 2014a), was implemented to end the erosion of the share of the red snapper resource harvested by the for-hire component, stabilize the proportion of red snapper available to each component, and enable the development and implementation of management measures tailored to the specific needs of each component. Sector separation allocated, based on historical and more recent harvests, 42.3% of the recreational red snapper quota to the for-hire component and 57.7% to the private component, allowing each component to harvest a predetermined and non-decreasing portion of the recreational red snapper quota. Associated with each component’s allocation, each component has separate and independent fishing seasons designed to keep each component within its allocation. As a result, although the year-to-year open seasons for each component may continue to vary (as affected by changing rates of effort and harvest success within each component), the seasons would not be affected by the harvest activity of the other component. This is expected to result in a more predictable season length; better planning for businesses, notably for-hire

businesses; better planning for anglers; and improvements to the economic performance of the associated businesses that cater to both the for-hire sectors and private anglers.

In addition to the benefits expected to accrue to the fixed allocations, sector separation is expected to enable the development of management measures tailored to each component which, in turn, are expected to result in improved use of the red snapper resource and better timing of effort and other resources associated with the harvest activities by the respective groups, leading to improved management of the red snapper resource and increased economic benefits.

However, sector separation has a sunset and the program is limited to three years, lasting only through 2017 under current regulation. The short duration is expected to limit the potential economic benefits expected to accrue to sector separation. Under a limited duration, the Council may have insufficient opportunity to implement potentially beneficial management measures, any measures adopted would have limited effective time, individual businesses may be reluctant to make certain potentially beneficial business decisions in an uncertain regulatory environment, and, in the absence of component-specific management measures, any benefits accruing to just the separate component seasons would cease upon expiration of sector separation. However, it is noted that the sunset provision may contribute to a timelier cancellation of sector separation than could otherwise occur if unintended adverse economic effects arise. Overall, though, sector separation is expected to result in a net gain in economic benefits.

Preferred Alternative 2 Preferred Option 2b would extend the sector separation sunset an additional five years, allowing the program to continue, absent additional management action, through 2022. Because sector separation is expected to result in improved management of the red snapper resource and generate associated increases in economic benefits, these benefits will increase, incrementally and cumulatively, under the preferred alternative. However, because of an inability to forecast the behavioral changes by for-hire businesses, anglers, or associated shore-side businesses, and the absence of knowledge, or schedule of implementation, of the specific management measures that may be implemented for the separate sectors, it is not feasible to generate quantitative estimates of the expected economic benefits expected to accrue to this action.

5.5 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any federal action involves the expenditure of public and private resources which can be expressed as costs associated with the regulations. Estimated costs associated with this action include:

Council costs of document preparation, meetings, public hearings, and information dissemination.....	\$100,000
NMFS administrative costs of document preparation, meetings and review	\$50,000
TOTAL	\$150,000

The estimate provided above does not include any law enforcement costs. Any enforcement duties associated with this action would be expected to be covered under routine enforcement costs rather than an expenditure of new funds. It is noted that it will be more difficult and, therefore, more costly, to monitor closure periods that vary by fishing mode.

5.6 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a “significant regulatory action” if it is likely to result in: 1) an annual effect of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; 2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; 3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or 4) raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this executive order. Based on the information provided above, this action has been determined to not be economically significant for the purposes of E.O. 12866.

CHAPTER 6. REGULATORY FLEXIBILITY ACT ANALYSIS

6.1 Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure such proposals are given serious consideration. The RFA does not contain any decision criteria; instead the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the fishery management plan (FMP) or amendment (including framework management measures and other regulatory actions) and to ensure the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

The RFA requires agencies to conduct a Regulatory Flexibility Act Analysis (RFAA) for each proposed rule. The RFAA is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. An RFAA is conducted to primarily determine whether the proposed action would have a “significant economic impact on a substantial number of small entities.” The RFAA provides: 1) A description of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for, the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; 5) an identification, to the extent practicable, of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed rule; 6) a description and estimate of the expected economic impacts on small entities; and 7) an explanation of the criteria used to evaluate whether the rule would impose “significant economic impacts”.

6.2 Statement of the need for, objective of, and legal basis for the proposed action

The need for and objective of this proposed action are provided in Chapter 1. In summary, more flexible management approaches are needed to prevent of red snapper overfishing and rebuild the red snapper stock, while achieving the optimum yield, particularly with respect to recreational opportunities. The purpose of this proposed action is to extend the sunset provision that would end the distinct private angling and federal for-hire components (sector separation) of the red snapper recreational sector in order to allow more time to for the Gulf of Mexico Fishery

Management Council (Council) to develop and implement federal for-hire and private angling component management measures to better prevent overfishing while achieving the optimum yield on a continuing basis, particularly with respect to recreational opportunities, and while rebuilding the red snapper stock. The Magnuson-Stevens Fishery Conservation and Management Act provides the statutory basis for this proposed action.

6.3 Description and estimate of the number of small entities to which the proposed action would apply

This proposed action would directly affect all vessels with a Gulf of Mexico (Gulf) federal charter vessel/headboat permit (hereafter referred to as a for-hire permit). Headboats, which charge a fee per passenger, and charter vessels, which charge a fee on a whole vessel basis, are types of vessel operations that participate in the for-hire fishing sector. A federal for-hire permit is required for for-hire vessels to harvest reef fish species, including red snapper, in the Gulf Exclusive Economic Zone (EEZ). On February 17, 2016, there were 1,312 valid (non-expired) or renewable Gulf Charter/Headboat Reef Fish permits. A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration. Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS). Participation in the SRHS is based on determination by the Southeast Fishery Science Center (SEFSC) that the vessel primarily operates as a headboat. Sixty-nine vessels were registered in the SHRS as of February 2016 (K. Fitzpatrick, NMFS SEFSC, pers. comm.). As a result, the estimated 1,312 vessels expected to be directly affected by this proposed action are expected to consist of 1,243 charter vessels and 69 headboats. The average charter vessel is estimated to receive approximately \$83,000 (2015 dollars) in annual revenue. The average headboat is estimated to receive approximately \$252,000 (2015 dollars) in annual revenue.

National Marine Fisheries Service (NMFS) has not identified any other small entities that might be directly affected by this proposed action.

The Small Business Administration has established size criteria for all major industry sectors in the U.S., including fish harvesters. A business involved in the for-hire fishing industry is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of \$7.5 million (NAICS code 487210, for-hire businesses) for all its affiliated operations worldwide. All for-hire businesses expected to be directly affected by this proposed rule are believed to be small business entities.

6.4 Description of the projected reporting, record-keeping and other compliance requirements of the proposed action, including an estimate of the classes of small entities which will be subject to the

requirement and the type of professional skills necessary for the preparation of the report or records

This proposed action would not establish any new reporting, record-keeping, or other compliance requirements.

6.5 Identification of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed action

No duplicative, overlapping, or conflicting federal rules have been identified.

6.6 Significance of economic impacts on a substantial number of small entities

Substantial number criterion

This proposed action would be expected to directly affect an estimated 1,243 charter vessels and 69 headboats, or all of the for-hire vessels permitted to harvest red snapper in the Gulf EEZ. All of the businesses these vessels are believed to be small business entities. As a result, this proposed action, if implemented, would be expected to affect a substantial number of small entities.

Significant economic impacts

The outcome of “significant economic impact” can be ascertained by examining two factors: disproportionality and profitability.

Disproportionality: Do the regulations place a substantial number of small entities at a significant competitive disadvantage to large entities?

All entities expected to be directly affected by the measures in this proposed action are believed to be small business entities, so the issue of disproportionality does not arise in the present case.

Profitability: Do the regulations significantly reduce profits for a substantial number of small entities?

This proposed amendment contains a single action that would extend the sunset on the establishment of separate for-hire and private angler components (sector separation) for the recreational harvest of red snapper in the Gulf. The current sector separation program would sunset at the end of 2017. The proposed change would extend the sunset five years through 2022. Embedded within sector separation are sector allocations, which allow each sector to have distinct seasons unaffected (in the short term) by the harvest activity by the other sector, and accountability measures that help restrain each sector to its allocation and help ensure that the potential benefits expected to accrue to separate allocations are realized. Sector separation also

establishes a platform which enables management changes that may result in increased economic benefits to the small entities. These effects would be a direct effect of these future changes and not of this proposed action.

The current sunset provision limits the duration of these positive economic effects, but not their amount or direction (increase). Three years is insufficient time to conduct substantive evaluation of the needs for each sector, develop and implement appropriate sector-specific management measures, and allow sufficient time for the measures to be in effect. Additionally, the three-year sunset is a disincentive for business owners to make financial or other operational decisions that may improve the economic viability of their business. Although subsequent regulatory action could end sector separation sooner, extending the sunset five years would be expected to result in increased economic benefits to for-hire small business entities because it would increase the management flexibility to implement sector-specific measures designed to increase the economic benefits accruing to each component and would lengthen the planning horizon for these entities.

It is not feasible to generate quantitative estimates of the expected economic benefits expected to accrue to these small for-hire business entities because of an inability to forecast the behavioral changes by the for-hire businesses themselves or the anglers which hire their services, and the absence of knowledge, or schedule of implementation, of the specific management measures that may be implemented for the separate sectors. Nevertheless, the net effect of the proposed change in the sunset of sector separation is expected to be an increase in profit per affected small entity.

6.7 Description of the significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities

This proposed action, if implemented, would not be expected to have a significant adverse economic impact on a substantial number of small entities. As a result, the issue of significant alternatives is not relevant.

CHAPTER 7. LIST OF AGENCIES AND PERSONS CONSULTED

PREPARERS

Name	Expertise	Responsibility	Agency
Assane Diagne	Economist	Co-Team Lead – Amendment development, economic analyses	GMFMC
Peter Hood	Fishery biologist	Co-Team Lead – Amendment development, biological analyses, cumulative effects analysis	SERO
Ava Lasseter	Anthropologist	Social analyses	GMFMC
Stephen Holiman	Economist	Economic analyses	SERO

REVIEWERS (Preparers also serve as reviewers)

Name	Expertise	Responsibility	Agency
Noah Silverman	Natural resource management specialist	National Environmental Policy Act review	SERO
Jocelyn D'Ambrosio	Attorney	Legal review	NOAA GC
Steve Branstetter	Biologist	Review	SERO
Scott Sandorf	Technical writer and editor	Regulatory writer	SERO
Carrie Simmons	Biologist	Review	GMFMC
Juan Agar	Economist	Review	SEFSC
David Carter	Economist	Review	SEFSC

GMFMC = Gulf of Mexico Fishery Management 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.

AGENCIES and ORGANIZATIONS CONSULTED

National Marine Fisheries Service
 - Southeast Fisheries Science Center
 - Southeast Regional Office
 - Office for Law Enforcement
 NOAA General Counsel

United States Coast Guard
 Texas Parks and Wildlife Department
 Alabama Department of Conservation and Natural Resources/Marine Resources Division
 Louisiana Department of Wildlife and Fisheries
 Mississippi Department of Marine Resources
 Florida Fish and Wildlife Conservation Commission

CHAPTER 8. REFERENCES

- Adams, W.F., and C. Wilson. 1995. The status of the smalltooth sawfish, *Pristis pectinata* Latham 1794 (Pristiformes: Pristidae) in the United States. *Chondros* 6(4):1-5.
- Agar, J. S., A. Strelcheck, and A. Diagne. 2014. The Gulf of Mexico Red Snapper IFQ Program: The First Five Years. *Marine Resource Economics*. 29(2): 177-198.
- American Fisheries Society. 2013. Common and Scientific Names of Fishes from the United States, Canada, and Mexico. Seventh Edition. Special Publication 34. Bethesda, MD.
- Anderes Alvarez, B. L., and I. Uchida. 1994. Study of hawksbill turtle (*Eretmochelys imbricata*) stomach content in Cuban waters. Pages 27-40 in *Study of the Hawksbill Turtle in Cuba (I)*. Ministry of Fishing Industry, CUBA. Ministry of Fishing Industry, Cuba.
- 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.
- Barnette, M. C. 2001. A review of the fishing gear utilized within the Southeast Region and their potential impacts on essential fish habitat. NOAA Technical Memorandum. NMFS-SEFSC-449. National Marine Fisheries Service. 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.
- Bigelow, H.B., and W.C. Schroeder. 1953. Sawfishes, guitarfishes, skates and rays. Pages 1-514 in Tee-Van, J., C.M Breder, A.E. Parr, W.C. Schroeder and L.P. Schultz, editors. *Fishes of the Western North Atlantic, Part Two*. Mem. Sears Found. Mar. Res. I.
- Biggs, D.C., Jochens, A.E., Howard, M.K., DiMarco, S.F., Mullin, K.D., Leben, R.R., Muller-Karger, F.E., & Hu, C. 2005. Eddy forced variations in on- and off-margin summertime circulation along the 1000-m isobath of the northern Gulf of Mexico, 2000–2003, and links with sperm whale distributions along the middle slope. In: W. Sturges & A. Lugo-Fernandez, editors, *Circulation in the Gulf of Mexico: Observations and models*. (Vol. 161). Washington, D.C.: American Geophysical Union.
- Bjorndal, K. A. 1980. Nutrition and grazing behavior of the green turtle, *Chelonia mydas*. *Marine Biology* 56:147-154.
- Bjorndal, K. A. 1997. Foraging ecology and nutrition of sea turtles. P. L. Lutz, and J. A. Musick, editors. *The biology of sea turtles*. CRC Press, Boca Raton, Florida.

Bohnsack, J. 2000. Report on impacts of recreational fishing on essential fish habitat. *In*: Hamilton, A. N., Jr., editor. Gear impacts on essential fish habitat in the southeastern region. National Marine Fisheries Service, Southeast Fisheries Science Center. Pascagoula, Mississippi.

Bolten, A. B., and G. H. Balazs. 1995. Biology of the early pelagic stage - the 'lost year'. Pages 579-581 *in* K. A. Bjorndal, editor. Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington, DC.

Brongersma, L. D. 1972. European Atlantic turtles. *Zoologische Verhandelingen* (121):1-318.

Burke, V. J., S. J. Morreale, and A. G. J. Rhodin. 1993. *Lepidochelys kempii* (Kemp's ridley sea turtle) and *Caretta caretta* (loggerhead sea turtle): diet. *Herpetological Review* 24(1):31-32.

Burton, M. 2008. Southeast U.S. continental shelf, Gulf of Mexico, and U.S. Caribbean. Page 118 *in* Osgood, K. E., editor. Climate impacts on U.S. living marine resources: National Marine Fisheries Service concerns, activities and needs. U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/SPO-89.

Burton, M. 2008. Southeast U.S. continental shelf, Gulf of Mexico, and U.S. Caribbean. Pages 31-43 *in* Osgood, K. E., editor. Climate impacts on U.S. living marine resources: National Marine Fisheries Service concerns, activities and needs. U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/ SPO-89.

Byles, R. 1988. Satellite telemetry of Kemp's ridley sea turtle, *Lepidochelys kempi*, in the Gulf of Mexico. Report to the National Fish and Wildlife Foundation:40 pp.

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.

Carmichael J. and D. Van Vorhees, editors. 2015. Marine Recreational Information Program (MRIP) Calibration Workshop II – Final Report, SEDAR41-RD55.

Carr, A. F. 1986. RIPS, FADS, and little loggerheads. *BioScience* 36(2):92-100.

Carr, A. 1987. New perspectives on the pelagic stage of sea turtle development. *Conservation Biology* 1(2):103-121.

Carter, D.W. and C. Liese. 2012. The economic value of catching and keeping or releasing saltwater sportfish in the southeast USA. *North American Journal of Fishery Management* 23:613-625.

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.

Chester, W. 2001. Full box! One hundred years of fishing and boat building in Bay County. Fire in the Water Publishing Company, Southport, Florida.

Cooper, W., A. Collins, J. O'Hop, and D. Addis. 2013. The 2013 Stock Assessment Report for Hogfish in the south Atlantic and Gulf of Mexico. Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida. 295 p. with App.

Courtney, J. M., A. C. Courtney, and M. W. Courtney. 2013. Nutrient loading increases red snapper production in the Gulf of Mexico. *Hypotheses in the Life Sciences*, 3:7-14.

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. *Mar. Ecol. Prog. Ser.*, 445:75–95.

DeLeo, D.M., D.V. Ruiz-Ramos, I.B. Baums, and E.E. Cordes. 2015. Response of deep-water corals to oil and chemical dispersant exposure. *Deep-Sea Research II*. In press.

Eckert, S. A., K. L. Eckert, P. Ponganis, and G. L. Kooyman. 1989. Diving and foraging behavior of leatherback sea turtles (*Dermochelys coriacea*). *Canadian Journal of Zoology* 67(11):2834-2840.

Eckert, S. A., D. W. Nellis, K. L. Eckert, and G. L. Kooyman. 1986. Diving patterns of two leatherback sea turtles (*Dermochelys coriacea*) during interesting intervals at Sandy Point, St. Croix, U.S. Virgin Islands. *Herpetologica* 42(3):381-388.

Feeny, David, Fikret Berkes, Bonnie J. McCay, and James M. Acheson. 1990. The tragedy of the commons: Twenty-two years later. *Human Ecology* 18:1-19.

Fischer, A. J., M. S. Baker, Jr., and C. A. Wilson. 2004. Red snapper (*Lutjanus campechanus*) demographic structure in the northern Gulf of Mexico based on spatial patterns in growth rates and morphometrics. *Fishery Bulletin* 102:593–603.

Fisher, C.R., P. Hsing, C.L. Kaiser, D.R., Yoerger, H.H. Roberts, W.W. Shedd, E.E. Cordes, T.M. Shank, S.P. Berlet, M.G. Saunders, E.A. Larcom, J.M. Brooks. 2014. Footprint of *Deepwater Horizon* blowout impact to deep-water coral communities. *Proceedings of the National Academy of Sciences* 111: 11744-11749. doi: 10.1073/pnas.1403492111

Frick, J. 1976. Orientation and behavior of hatchling green turtles (*Chelonia mydas*) in the sea. *Animal Behavior* 24(4):849-857.

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.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20FMP%20and%20EIS%201981-08.pdf>

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

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20Amend-01%20Final%201989-08-rescan.pdf>

GMFMC. 1995. Regulatory amendment to the reef fish fishery management plan to set 1996 red snapper total allowable catch. Gulf of Mexico Fishery Management Council, Tampa, Florida. 49 p.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20RegAmend%20-%201995-12.pdf>

GMFMC. 1996. Amendment 11 to the reef fish fishery management plan including environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

GMFMC. 2003. Corrected amendment for a charter/vessel headboat permit moratorium amending the fishery management plans for: reef fish (Amendment 20) and coastal migratory pelagics (Amendment 14) including environmental assessment, regulatory impact review, and initial regulatory flexibility act. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/CBAmdmentFINAL-corrected.pdf>

GMFMC. 2004a. 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 and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

GMFMC. 2004b. Amendment 22 to the fishery management plan for the reef fish fishery of the Gulf of Mexico, U.S. waters, with supplemental environmental impact statement, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend%2022%20Final%2070204.pdf>

GMFMC. 2006. Amendment 25 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico and Amendment 17 to the Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic (including an environmental assessment, regulatory impact review, and regulatory flexibility act analysis). Gulf of Mexico Fishery Management Council. Tampa, Florida.

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008a. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%202008.pdf>

GMFMC. 2008b. Final Amendment 30B: gag – end overfishing and set management thresholds and targets. Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance including environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 261 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2010. Final regulatory amendment the reef fish fishery management plan to set total allowable catch for red snapper including revised environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Regulatory%20Amendment%203_26_10.pdf

GMFMC. 2011a. 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. Gulf of Mexico Fishery Management Council. Tampa, Florida.

[http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

GMFMC. 2011b. 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.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2011c. Regulatory amendment to the reef fish fishery management plan to set 2011 total allowable catch for red snapper. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%202011%20Regulatory%20Amendment%20-%2011.pdf>

GMFMC. 2012. Final regulatory amendment to the fishery management plan for the reef fish resources of the Gulf of Mexico, revise fall recreational fixed closed season and set 2012 and 2013 quotas for red snapper. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Red%20Snapper%20Fall%20Season%20and%20Quota%20RegAmend%20-%202003-20-2012.pdf>

GMFMC. 2013a. Red snapper 2013 quota increase and supplemental recreational season, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Framework%20Action%20Set%202013%20Quotas%2008-01-13.pdf>

GMFMC. 2013b. Red snapper individual fishing quota program 5-year review. Jointly prepared by Gulf of Mexico Fishery Management Council and NMFS Southeast Regional Office. Tampa and St. Petersburg, FL. <http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%205-year%20Review%20FINAL.pdf>

GMFMC. 2013c. Framework action to set the 2013 red snapper commercial and recreational quotas and modify the recreational bag limit, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://gulfcouncil.org/docs/amendments/Red%20Snapper%20Framework%20Action%20to%20Set%202013%20Quotas.pdf>

GMFMC. 2014a. Amendment 40 to the Reef Fish Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico - Recreational Red Snapper Sector Separation. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/fishery_management_plans/reef_fish_management.php

GMFMC. 2014b. Recreational Accountability Measures for Red snapper, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Final%20Recreational%20AMs%20for%20Red%20Snapper%2010-6-2014.pdf>

GMFMC. 2015a. Red Snapper Allocation Amendment 28 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/fishery_management_plans/reef_fish_management.php

GMFMC. 2015b. Red snapper commercial quota retention for 2016. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://gulfcouncil.org/docs/amendments/Retain%202016%20Red%20Snapper%20Commercial%20Quota-September%202015.pdf>

GMFMC and SAFMC. 1982. Fishery management plan final environmental impact statement for coral and coral reefs. Gulf of Mexico Fishery Management Council. Tampa, Florida; and South Atlantic Fishery Management Council. Charleston, South Carolina.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Coral%20FMP.pdf>

Goodyear, C. P. 1988. The Gulf of Mexico fishery for reef fish species, a descriptive profile. Unpublished report. National Marine Fisheries Service, Southeast Fisheries Center, Miami Laboratory, CRD 87/88-19.

https://grunt.sefsc.noaa.gov/P_QryLDS/DisplayDocuments.jsp?min_series_code=CR&min_record_id=935&direction=next&total_rows=2955&description=SEFSC%20Technical%20Memorandum#

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.

- 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.
- Holiman, Stephen. 2000. Summary report of methods and descriptive statistics for the 1997-1998 southeast region marine recreational economics survey. NMFS Southeast Regional Office. SERI-ECON-00-11.
- Holland, S. M., A. J. Fedler, and J. W. Milon. 1999. The operations and economics of the charter and head boat fleets of the eastern Gulf of Mexico and south Atlantic Coasts. University of Florida. Gainesville, Florida. 178 pp.
- Hollowed, A. B., Barange, M., Beamish, R., Brander, K., Cochrane, K., Drinkwater, K., Foreman, M., Hare, J., Holt, J., Ito, S-I., Kim, S., King, J., Loeng, H., MacKenzie, B., Mueter, F., Okey, T., Peck, M. A., Radchenko, V., Rice, J., Schirripa, M., Yatsu, A., and Yamanaka, Y. 2013. Projected impacts of climate change on marine fish and fisheries. *ICES Journal of Marine Science* 70:1023–1037.
- Hood, P. B., A. J. Strelcheck, and P. Steele. 2007. A history of red snapper management in the Gulf of Mexico. Pages 267-284 in W. F. Patterson, III, J. H. Cowan, G. R. Fitzhugh, and D. L. Nieland, editors. *Red snapper ecology and fisheries in the U.S. Gulf of Mexico*. American Fisheries Society Symposium 60. Bethesda, Maryland
<http://web.fisheries.org/proofs/red/hood.pdf>
- 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.
- Hsing, P., B. Fu, E.A. Larcom, S.P. Berlet, T.M. Shank, A.F. Govindarajan, A.J. Lukasiewicz, P.M. Dixon, C.R. Fisher. 2013. Evidence of lasting impact of the *Deepwater Horizon* oil spill on a deep Gulf of Mexico coral community *Elementa: Science of the Anthropocene* 1:1-15.
- Hughes, G. R. 1974. Is a sea turtle no more than an armored stomach? *Bulletin of the South African Association for Marine Biological Research* 11:12-14.
- Impact Assessment, Inc. 2005. Identifying communities associated with the fishing industry along the Florida Gulf Coast. Impact Assessment, Inc. La Jolla, California. Volumes 1-3. 646 p.
- Impact Assessment, Inc. 2006. Identifying communities associated with the fishing industry in Alabama and Mississippi -Final Report. Prepared under Contract WC133F-03-SE-0603.
http://sero.nmfs.noaa.gov/sf/socialsci/pdfs/AlaMiss_PublicReleaseVersion_pdf_Feb06.pdf

Incardona, J.P., L.D. Gardner, T.L. Linbo, T.L. Brown, A.J. Esbaugh, E.M. Mager, J.D. Stieglitz, B.L. French, J.S. Labenia, C.A. Laetz, M. Tagal, C.A. Sloan, A. Elizur, D.D. Benetti, M. Grosell, B.A. Block, and N.L. Scholz. 2014. *Deepwater Horizon* crude oil impacts the developing hearts of large predatory pelagic fish. *Proceedings of the National Academy of Sciences* 111(15): E1510–E1518.

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. U.S. Dept. of Commerce., NOAA Technical Memorandum NMFS-F/SPO-129. 64 p.

Jochens, A., Biggs, D., Benoit-Bird, K., Engelhaupt, D., Gordon, J., Hu, C., Jaquet, N., Johnson, M., Leben, R., Mate, B., Miller, P., Ortega-Ortiz, J., Thode, A., Tyack, P., & Würsig, B. (2008). Sperm whale seismic study in the Gulf of Mexico: Synthesis report. (OCS Study MMS 2008-006). New Orleans, LA: U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region.

Keinath, J. A., and J. A. Musick. 1993. Movements and diving behavior of leatherback turtle. *Copeia* 1993(4):1010-1017.

Kennedy, V. S., R.R. Twilley, J. A. Kleypas, J. H. Cowan, Jr., S. R. Hare. 2002. Coastal and marine ecosystems and & global climate change. Pew Center on Global Climate Change, Arlington, Virginia. 52 p.

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.

Landsberg, J.H., L.J. Flewelling, and J. Naar. 2009. *Karenia brevis* red tides, brevetoxins in the food web, and impacts on natural resources: Decadal advancements. *Harmful Algae* 8:598–607.

Lanyon, J.M., C.J. Limpus, and H., Marsh. 1989. Dugongs and turtles: grazers in the seagrass system. Page 610 in Larkum, A.W.D, A.J., McComb and S.A., Shepard, editors. *Biology of Seagrasses*. Elsevier, Amsterdam.

- Liese, C. and D.W. Carter. 2011. Collecting economic data from the for-hire fishing sector: Lessons from a cost and earnings survey of the southeast U.S. charter boat industry. Page 14 in Beard, T. D., Jr., A. J. Loftus, and R. Arlinghaus (editors). *The Angler and the Environment*. American Fisheries Society, Bethesda, Maryland.
- Limpus, C.J., and N., Nichols. 1988. The southern oscillation regulates the annual numbers of green turtles (*Chelonia mydas*) breeding around northern Australia. *Australian Journal of Wildlife Research* 15:157.
- Limpus, C.J., and N., Nichols. 1994. Progress report on the study of the interaction of El Niño Southern Oscillation on annual *Chelonia mydas* numbers at the southern Great Barrier Reef rookeries. In: *Proceedings of the Australian Marine Turtle Conservation Workshop, Queensland Australia*.
- Lutz, P. L., and J. A. Musick, editors. 1997. *The biology of sea turtles*. CRC Press, Boca Raton, Florida.
- Lutz, P. L., J. A. Musick, and J. Wyneken. 2003. *The biology of sea turtles. Volume II*. CRC Press, Inc., Washington, D.C.
- Márquez, M. R. 1994. Synopsis of biological data on the Kemp's ridley turtle, *Lepidochelys kempii* (Garman 1880). U. S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, Florida.
- McCay, B. J., and J. M. Acheson. 1987. Human ecology of the commons. Pages 1-34 in B.J. McCay and J.M. Acheson, editors. *The question of the commons: The culture and ecology of communal resources (Arizona Studies in Human Ecology)*. The University of Arizona Press. Tucson, Arizona.
- McEachran, J.D. and J.D. Fechhelm. 2005. *Fishes of the Gulf of Mexico, Vol. 2*. University of Texas Press. Austin, Texas.
- 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.
- Mendonca, M. T., and P. C. H. Pritchard. 1986. Offshore movements of post-nesting Kemp's ridley sea turtles (*Lepidochelys kempii*). *Herpetologica* 42:373-380.
- Meylan, A. 1984. Feeding ecology of the hawksbill turtle (*Eretmochelys imbricata*) spongivory as a feeding niche in the coral reef community. University of Florida.
- Meylan, A. 1988. Spongivory in hawksbill turtles: a diet of glass. *Science* 239:393-395.

Meylan, A. B., and M. Donnelly. 1999. Status justification for listing the hawksbill turtle (*Eretmochelys imbricata*) as critically endangered on the 1996 IUCN Red List of Threatened Animals. *Chelonian Conservation and Biology* 3(2):200-204.

Methot, R. D. 2010. User manual for stock synthesis, model version 3.10b. Seattle, Washington
The most recent version of this manual and software is available at
<http://nft.nefsc.noaa.gov/Download.html>

Mortimer, J. A. 1981. The feeding ecology of the west Caribbean green turtle (*Chelonia mydas*) in Nicaragua. *Biotropica* 13(1):49-58.

Mortimer, J. A. 1982. Feeding ecology of sea turtles. Pages 103-109 in K. A. Bjorndal, editor. *Biology and Conservation of Sea Turtles*. Smithsonian Institution Press, Washington D.C.

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. Barbeiri. 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.

National Commission. 2010. The use of surface and subsea dispersants during the BP *Deepwater Horizon* oil spill. National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling (National Commission). Staff Working Paper No. 4.
<http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Dispersants%20Working%20Paper.pdf>

Nieland, D. L., C. A. Wilson III, and A. J. Fischer. 2007. Declining size-at-age among red snapper in the northern Gulf of Mexico off Louisiana, USA: recovery or collapse? Pages 329-336 in W. F. Patterson, III, J. H. Cowan, Jr., G. R. Fitzhugh and D. L. Nieland, editors. *Red snapper ecology and fisheries in the U.S. Gulf of Mexico*. American Fisheries Society, Symposium 60, Bethesda, Maryland.

NMFS. 2002. Status of red grouper in United States waters of the Gulf of Mexico during 1986-2001, revised. Contribution No. SFD-01/02-175rev. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

NMFS. 2005. Endangered Species Act – Section 7 consultation on the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan and proposed amendment 23. February 15, 2005. National Marine Fisheries Service. St. Petersburg, Florida.

NMFS. 2011. Biological opinion on the continued authorization of reef fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at: <http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

NMFS. 2014. Emergency action to set red snapper accountability measures for the recreational sector of the Gulf of Mexico reef fish fishery. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701.

NMFS. 2015a. 2014. Gulf of Mexico red snapper individual fishing quota annual report. SERO-LAPP-2012-04. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701. 43 pp. <https://portal.southeast.fisheries.noaa.gov/cs/main.html#>

NMFS. 2015b. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118. http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2013

NMFS. 2015c. Gulf of Mexico 2014 Red Snapper Individual Fishing Quota Annual Report http://sero.nmfs.noaa.gov/sustainable_fisheries/lapp_dm/index.html

NOAA. 2010. Deepwater Horizon Oil: Characteristics and Concerns. NOAA Office of Response and Restoration, Emergency Response Division. 2 pp. http://www.noaa.gov/deepwaterhorizon/publications_factsheets/documents/OilCharacteristics.pdf

Norman, J. R., and F. C. Fraser. 1938. Giant fishes, whales and dolphins. W. W. Norton and Company, Inc., New York, New York. 361 pp.

Ogren, L. H. 1989. Distribution of juvenile and subadult Kemp's ridley sea turtles: preliminary results from 1984-1987 surveys. Pages 116-123 in C. W. Caillouet Jr., and J. A.M. Landry, editors. Proceedings of the First International Symposium on Kemp's Ridley Sea Turtle Biology, Conservation, and Management. Texas A&M University Sea Grant College, Galveston, Texas.

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. Florida 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 Tech. Memo. NMFSF/SPO-89. 118 pp.

Paredes, R.P. 1969. Introduccion al Estudio Biologico de *Chelonia mydas agassizi* en el Perfil de Pisco, Master's thesis, Universidad Nacional Federico Villareal, Lima, Peru.

- Parrack, N.C. and D.B. McClellan. 1986. Trends in Gulf of Mexico red snapper population dynamics, 1979-85. National Marine Fisheries Service, Southeast Fisheries Center, Miami, Florida. Coastal Resources Division Contribution No. CRD-86/87-4. 116 pp.
- Porch, C. E., and S. L. Cass-Calay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico – assessment 5.0. Sustainable Fisheries Division Contribution No. SFD-01/01-129. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- 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.
- Reynolds, J.E. III, R.S. Wells, and S.D. Eide. 2000. The bottlenose dolphin: Biology and conservation. University Press of Florida. 289 pp.
- 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 p. Available at: <http://www.laseagrant.org/pdfs/Gulf-RFH-Survey-Final-Report-2012.pdf>
- SEA (Strategic Environmental Assessment Division, NOS). 1998. Product overview: Products and services for the identification of essential fish habitat in the Gulf of Mexico. NOS, Page 7-62 DEIS for EFH for the Gulf of Mexico FMPs July 2003 Silver Spring MD; National Marine Fisheries Service, Galveston, Texas; and Gulf of Mexico Fishery Management Council. Tampa, Florida.
- 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. <http://www.sefsc.noaa.gov/sedar/>.
- 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. <http://www.sefsc.noaa.gov/sedar/>.
- SEDAR 6. 2004b. SEDAR report 2 the hogfish in Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006a. Stock assessment report 1 of SEDAR 9: Gulf of Mexico gray triggerfish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006b. Stock assessment report 2 of SEDAR 9: Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006c. Stock assessment report 3 of SEDAR 9: Gulf of Mexico vermilion snapper assessment report 3. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10. 2006. Gulf of Mexico Gag Grouper Stock Assessment Report 2. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

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. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 33. 2014a. Gulf of Mexico greater amberjack stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

SEDAR 33. 2014b. Gulf of Mexico gag stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

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. Available from <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 42. 2015. Gulf of Mexico red grouper stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

SEDAR 43. 2015. Gulf of Mexico gray triggerfish stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

- SERO. 2012. Estimated Reduction in Gulf of Mexico Recreational Red Snapper Harvest Associated with Various Bag Limits. NOAA Fisheries, Southeast Regional Office, St. Petersburg, FL. SERO-LAPP-2012-11 6 pp.
- SERO. 2015. 2015 Gulf of Mexico Red Snapper Recreational Season Length Estimates. NOAA Fisheries Service, Southeast Regional Office, St. Petersburg, FL. SERO-LAPP-2015-04 15 pp.
- Shaver, D. J. 1991. Feeding ecology of wild and head-started Kemp's ridley sea turtles in south Texas waters. *Journal of Herpetology* 25(3):327-334.
- Shipp, R.L. 2001. The snapper fishery in the Gulf of Mexico, an historical perspective, and management implications. PowerPoint presentation to the Gulf of Mexico Fishery Management Council, January 2001.
- Shipp, R. L. and S. A. Bortone. 2009. A prospective of the importance of artificial habitat on the management of red snapper in the Gulf of Mexico. *Reviews in Fisheries Science* 17:41-47.
- Short, J. 2003. Long-term effects of crude oil on developing fish: Lessons from the Exxon Valdez oil spill. *Energy Sources* 25(6):509-517.
- Simpfendorfer, CA. 2001. Essential habitat of the smalltooth sawfish, *Pristis pectinata*. Report to the National Fisheries Service's Protected Resources Division. Mote Marine Laboratory, Technical Report (786). 21pp.
- Simpfendorfer, C.A., and T.R., Wiley. 2004. Determination of the distribution of Florida's remnant sawfish population, and identification of areas critical to their conservation. Mote Marine Laboratory, Technical Report July 2, 2004. 37 pp.
- Sindermann, C.J. 1979. Pollution-associated diseases and abnormalities of fish and shellfish: a review. *Fisheries Bulletin* 76:717-749.
- Snyder, S.M., E.L. Pulster, D.L. Wetzel, and S. Murawski, 2015. PAH Exposure in Gulf of Mexico Demersal Fishes, Post-Deepwater Horizon. *Environmental Science and Technology*. 49 (14):8786-8795.
- 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.
- Soma, M. 1985. Radio biotelemetry system applied to migratory study of turtle. *Journal of the Faculty of Marine Science and Technology, Tokai University, Japan*. 21:47.

Standora, E. A., J. R. Spotila, J. A. Keinath, and C. R. Shoop. 1984. Body temperatures, diving cycles, and movement of a subadult leatherback turtle, *Dermochelys coriacea*. *Herpetologica* 40:169-176.

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Report by the Human Dimensions of Recreational Fisheries Research Laboratory, Texas A&M University, MARFIN program grant number NA77FF0551.

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

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.

Thayer, G.W., K.A., Bjorndal, J.C., Ogden, S.L., Williams, and J.C., Zieman. 1984. Role of large herbivores in seagrass communities. *Estuaries* 7:351.

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 capricus*, 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.

van Dam, R. P., and C. E. Díez. 1998. Home range of immature hawksbill turtles (*Eretmochelys imbricata* (Linnaeus)) at two Caribbean islands. *Journal of Experimental Marine Biology and Ecology* 220(1):15-24.

Walker, T. 1994. Post-hatchling dispersal of sea turtles. *Proceedings of the Australian Marine Turtle Conservation Workshop* 1994:79-94.

Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel. 2013. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2012, Volume 1. 425 pp.

- Weisberg, R.H., Zheng, L., Liu, Y., Murawski, S., Hu, C., and Paul, J. 2014. Did *Deepwater Horizon* hydrocarbons transit to the west Florida continental shelf?, *Deep Sea Research Part II: Topical Studies in Oceanography*, Available online 17 February 2014, ISSN 0967-0645, <http://dx.doi.org/10.1016/j.dsr2.2014.02.002>.
- White, H.K., P. Hsing, W. Cho, T.M. Shank, E.E. Cordes, A.M. Quattrini, R.K. Nelson, R. Camili, A.W.J. Demopoulos, C.R. German, J.M. Brooks, H.H. Roberst, W. Shedd, C.M. Reddy, C.R. Fisher. 2012. Impact of the *Deepwater Horizon* oil spill on a deep-water coral community in the Gulf of Mexico. *Proceedings of the National Academy of Sciences* 109:20303-20308.
- Whitehead, A., B. Dubansky, C. Bodinier, T.I. 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 Science* 109(50): 20298-20302.
- Wilson, C.A. and D.L. Nieland. 2001. Age and growth of red snapper, *Lutjanus campechanus*, from the northern Gulf of Mexico off Louisiana. *Fishery Bulletin* 99:653-664. <http://fishbull.noaa.gov/994/wil.pdf>
- Wilson, D., R. Billings, R. Chang, H. Perez, and J. Sellers. 2014. Year 2011 Gulfwide emissions inventory study. US Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2014-666.
- Witzell, W. N. 2002. Immature Atlantic loggerhead turtles (*Caretta caretta*): suggested changes to the life history model. *Herpetological Review* 33(4):266-269.
- Woods, M. K. 2003. Demographic differences in reproductive biology of female red snapper (*Lutjanus campechanus*) in the northern Gulf of Mexico. Master's thesis. University of South Alabama, Mobile, Alabama.
- Wyneken, J., K. J. Lohmann, J. A. Musick, editors. 2013. *The biology of sea turtles, Volume III*. CRC Press, Boca Raton, London, New York. 457 pp.

APPENDIX A. OTHER APPLICABLE LAW

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

Administrative Procedure Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. 551 et seq.), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, the National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

Coastal Zone Management Act

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

Upon submission to the Secretary, NMFS will determine if this plan amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, Mississippi, and Texas to the maximum extent possible. NMFS’s determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Data Quality Act

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

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

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

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires federal agencies to use their authorities to conserve endangered and threatened species. The ESA requires NMFS, when proposing a fishery action that “may affect” critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the proposed action. Consultations are concluded informally when proposed actions may affect but are “not likely to adversely affect” endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are “likely to adversely affect” endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives.

On September 30, 2011, the Protected Resources Division released a biological opinion which, after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC 252 oil release event in the northern Gulf of Mexico), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf of Mexico reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp’s ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011a). On December 7, 2012, NMFS published a proposed rule to list 66 coral species under the ESA and reclassify *Acropora* from threatened to endangered (77 FR 73220). In a memorandum dated February 13, 2013, NMFS determined the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora*

where they are most likely to occur. In a consultation memorandum dated October 7, 2014, NMFS assessed the continued operation of the Gulf reef fish fishery's potential impact on the four newly-listed coral species occurring in the Gulf and concluded the fishery is not likely to adversely affect any of the protected coral species. Similarly, in a consultation memorandum dated September 16, 2014, NMFS assessed the continued authorization of South Atlantic and Gulf of Mexico fisheries' potential impacts on loggerhead critical habitat and concluded the Gulf reef fish fishery is not likely to adversely affect the newly designated critical habitat.

Marine Mammal Protection Act

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

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

In 1994, Congress amended the MMPA to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction, development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and studies of pinniped-fishery interactions.

Under Section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. The categorization of a fishery in the List of Fisheries determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The primary gears used in the Gulf of Mexico reef fish fishery are still classified in the proposed 2014 MMPA List of Fisheries as Category III fishery (December 6, 2013; 78 FR 73477). The conclusions of the most recent List of Fisheries for gear used by the reef fish fishery can be found in Section 3.3.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501 et seq.) regulates the collection of public information by federal agencies to ensure the public is not overburdened with information requests, the federal government's information collection procedures are efficient, and federal

agencies adhere to appropriate rules governing the confidentiality of such information. The PRA requires NMFS to obtain approval from the Office of Management and Budget before requesting most types of fishery information from the public. Setting red snapper allocation would likely not have PRA consequences.

Executive Orders

E.O. 12630: Takings

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

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan (See Chapter 5). RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Analysis. A regulation is significant if it a) has an annual effect on the economy of \$100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency; c) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or d) raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

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

This Executive Order mandates that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on

minority populations and low-income populations in the United States and its territories and possessions. The Executive Order is described in more detail relative to fisheries actions in Section 3.5.2.

E.O. 12962: Recreational Fisheries

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

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental Federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes, and local entities (international, too).

E.O. 13158: Marine Protected Areas

This Executive Order requires federal agencies to consider whether their proposed action(s) will affect any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural or cultural resource within the protected area. There are several marine protected areas, habitat

areas of particular concern, and gear-restricted areas in the eastern and northwestern Gulf of Mexico.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as essential fish habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the Council has, under separate action, approved an Environmental Impact Statement (GMFMC 2004) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

References

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 and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

NMFS. 2011. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at:

<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

APPENDIX B. SUMMARY OF HABITAT UTILIZATION BY LIFE HISTORY STAGE FOR SPECIES IN THE REEF FISH FMP.

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red Snapper	Pelagic	Pelagic	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms
Queen Snapper	Pelagic	Pelagic	Unknown	Unknown	Hard bottoms	
Mutton Snapper	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
Blackfin Snapper	Pelagic		Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Cubera Snapper	Pelagic		Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray Snapper	Pelagic, Reefs	Pelagic, Reefs	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Lane Snapper	Pelagic		Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk Snapper	Unknown	Unknown	Unknown	Unknown	Shelf edge	

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Yellowtail Snapper	Pelagic		Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	
Wenchman	Pelagic	Pelagic			Hard bottoms, Shelf edge/slope	Shelf edge/slope
Vermilion Snapper	Pelagic		Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
Gray Triggerfish	Reefs	Drift algae, <i>Sargassum</i>	Drift algae, <i>Sargassum</i>	Drift algae, Reefs, <i>Sargassum</i>	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater Amberjack	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser Amberjack			Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco Jack	Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Banded Rudderfish		Pelagic	Drift algae	Drift algae	Pelagic	Pelagic
Hogfish			SAV	SAV	Hard bottoms, Reefs	Reefs
Blueline Tilefish	Pelagic	Pelagic			Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
Tilefish (golden)	Pelagic, Shelf edge/ Slope	Pelagic	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Goldface Tilefish	Unknown					

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Speckled Hind	Pelagic	Pelagic			Hard bottoms, Reefs	Shelf edge/slope
Yellowedge Grouper	Pelagic	Pelagic		Hard bottoms	Hard bottoms	
Atlantic Goliath Grouper	Pelagic	Pelagic	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
Red Grouper	Pelagic	Pelagic	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	
Warsaw Grouper	Pelagic	Pelagic		Reefs	Hard bottoms, Shelf edge/slope	
Snowy Grouper	Pelagic	Pelagic	Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
Black Grouper	Pelagic	Pelagic	SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth Grouper	Pelagic	Pelagic	Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic	SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic	Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin Grouper			SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

Source: Adapted from Table 3.2.7 in the final draft of the EIS from the Generic EFH Amendment (GMFMC 2004a) and consolidated in this document.

APPENDIX C. SUMMARIES OF COMMENTS RECEIVED

Public Hearing Summary Reef Fish Amendment 45 Sector Separation Sunset Provision

Saint Petersburg, Florida
May 23, 2016

Council/Staff

Roy Williams
Emily Muehlstein
Bernadine Roy

23 members of public attended.

Steve Furman – Coastal Conservation Association

He supports Alternative 1, no action; let the sunset expire. It is disappointing that we're here discussing this again since the Council made a decision already. Let the states manage recreational fisherman. Allow the Council to manage the federal for-hire and commercial fishermen. Allocation must be wrong because private anglers don't get a chance to fish long enough. Shift allocation so that everyone gets the same number of days to fish. If you look at the states, there are more fishermen and more charter fishermen every day, but the fishery is great. The state is doing something right that the federal government can't figure out.

Bob Bryant - Private angler

We've continuously faced this issue since 2008 when it first came up. The overwhelming opinion about sector separation is still negative and people's negative options are hardening as time goes on. Tremendous pressure was put on the Council to pass Amendment 40 and the sunset was put in place for the sole purpose of making it pass. There was a conflict of interest by two Council members who would benefit directly from the vote. For Amendment 40, 2206 comments were received online; 92% were against and 8% were in support of sector separation. For Amendment 45, to date there are 173 online comments and 99% are against and 1% is in favor of sector separation. There is no justification for extending this failed experiment. No accountability measures have been vetted or put in place and there is no enhanced data collection. No information on if the charter for-hire has stayed within their allocation. Sector separation has no benefit to the fishery at all. Historically, the charter for-hire sector has hammered red snapper harder than other fishermen have and conservation measures should lessen their impact. If private anglers want to go red snapper fishing, they can hire a state vessels and fish within those seasons. Sector separation has caused chaos, hatred, and distrust, and the chasm between fishermen has expanded. Some charter anglers are offering dude trips. We have turned our fishery into a crony system and those who pay can play while all others must wait for the Council to do something. What we've done is unreasonable; 22% of anglers have 40% of the fish. The remaining 78% sit idly by begging for scraps from preferred groups. All the stock

assessments show this fishery was rebuilding under less restrictive seasons. The fishery isn't the problem, the Council and the management process are the real problems.

Eric Mahoney- Charter

He supports Alternative 3; Eliminate the sunset on Amendment 40. Sector separation was the right move and it is working well for the for-hire fleet. It was the first step for positive change in the for-hire sector. Florida didn't support sector separation, but since it's been in place, the Florida Fish and Wildlife Conservation Commission voted to extend the sunset and is finally recognizing the benefits. Amendment 40 is working, letting it sunset would not be in the best interest of the Council, the management process, or the industry. As a result of sector separation, pilot programs are being put in place that will benefit the future of the fishery. The Council needs to convene a private recreational advisory panel to pursue a management program for that sector that increases access. Move forward with Amendments 41 and 42.

Bill Tucker – Commercial fisherman

He supports Alternative 3; Eliminate the sunset provision. Sector separation was put in place because the charter for-hire component was not able to expand, and the proportion of recreational catch harvested by charter vessels was eroded over the years. Sector Separation protects charter boats and the people that access the fishery on those boats. Amendment 40 is a success story and the people that don't have their own boats have 46 days with sector separation while private anglers have extra days of access in state seasons. It has been essential for the charter sector to have their own allocation and they're working on ways to share the fish for people who don't have their own boats. Let's give the charter industry a future, it's unacceptable to just extend sector separation, it should be made permanent so the operators know they have a future in this fishery

Dennis O'Hern- Fishing Rights Alliance

Under sector separation, the boat owners get the charter for-hire quota, not the anglers on the charter boats. Statistically, 50% of all snapper/grouper trips in the entire Gulf used to leave from this three county area in central Florida. I don't know how good you have to be to catch red snapper in the state waters; from here we do not have access to the fishery. No one asked him if he wanted to give up his federal days to have a state season. No one asked the anglers who choose to fish on the charter for-hire boats. His boat is a lot less valuable now because of the regulations and he sees the writing on the wall. If fishermen are engaged in business they're not considered anglers, they're professional. The three-year sunset was used as an incentive to get Council members to buy-in to sector separation. The attorney warned that the decision could be reversed at any time and the sunset is the only reason the vote went forward. Why is the elimination of the sunset provision being turned into a separate amendment? These hijinks foster distrust. He never consented to giving his fishing rights to any business or person. He is tired of the Council stacking advisory panels with pro sector separation and individual fishing quota program advocates. Panel member selection occurs behind closed doors and there is no accountability for those decisions. Neither the Gulf Seafood Institute nor the Charter Fisherman's Association represent his interests and never have. 97% of anglers wouldn't find sector separation acceptable. It is a privatization of a public resource. The National Academy of Science recommends that NMFS register anglers and survey them. There was over a 20%

increase in charter for-hire trips for the years 2008 and 2009 however, over the same time period, there was a 20% decrease in private angler tips.

Sean Gucken – Coastal Conservation Association and Fishing Rights Alliance.

According to folks that have been around longer than him, in the 70's, all you needed was a stamp and permit to sell redfish, but now there is an endorsement for every fish in the ocean. With sector separation, red snapper is the flagship species. Next it will be gag and then amberjack and mangrove snapper. It seems like the Council and NMFS has (sic) not figured out how to reliably and accurately determine private boat anglers catch. It seems like they're trying to push private anglers out of business. Sector separation was sold with the sunset provision to get it through, and now were asking for more. When it was put though, didn't anyone look at how long it would take to put management measures in place? The sunset was put in place to appease a few voting members, and now we're stuck with death by a thousand paper cuts. Once you make money from fish, you should be considered a commercial fisherman. The charter for-hire fishermen should be shifted to the commercial sector. The fish don't belong to the anglers on the boats, they belong to the boat owners. The extension of sector separation is going to pass, he has no faith in the process.

Mike Colby – Charter and headboat

He is in favor of Alternative 3 to end the sunset. Sector separation is pragmatic. Think about all the arguments we've heard for six years prior to today, and the rationale for how allocations came into being. New management alternatives are now on the front burner in Amendments 41 and 42. The for-hire fishermen finally got what they were looking for. The real rationale behind sector separation for red snapper was to build a management platform; that is what the federally permitted fleet is doing and there is no reason to stop it. Fairness is a personal opinion, the Council did their due diligence and the charter for-hire industry wanted this. The problem with the recreational anglers is that they don't have a champion. There is no one who will come up to the Council post Amendment 40 and say "we have separate allocations and we need to develop a management plan for our anglers." He hasn't seen a different management plan pitched for private anglers. Simply saying; "lets wind the clock back five years," isn't productive. We need to move forward and develop management programs for everyone.

Jim Suomi – Coastal Conservation Association

The Gulf Council has successfully driven a wedge between recreational anglers and charter fishermen. They use to oppose commercial fishermen together, but now they're battling amongst themselves. Quite honestly, charter for-hire fishermen are commercial interest and harvest should come out of the commercial quota. If he told you that you could drive Friday and Saturday, but Sunday and Monday you have to hire a taxi, people would be up in arms. Sector separation does just that. No one should have guarantees for being in business. He supports Alternative 1.

Craig Berman – Fishing Rights Alliance

The people for whom the Council are passing are economic stakeholders. According to the law you cannot allocate between private anglers and for-hire reef permit holders, you have to treat all anglers the same. If the management measures you create involve fish tags, give them to the public and let them decide if they want to go on a party boat, charter boat, or private boat. It's

much cheaper to go on a friend's boat. The Council went off the rails and forgot about fair and equitable and skipped data from the headboat cooperative. The Council didn't go back and use data from 1986 for gag and red grouper, only for red snapper, because back then very few people owned their own boats, and today over 50% of the angling public owns their own boat. That is why there was a moratorium on reef permits. Private anglers don't owe charter fisherman anything for that., that was a conservation measure. There is still a lawsuit pending, and the briefing is almost complete. The sunset was put in place to allow for regional management. What happened to Amendment 39? Where are the flexible options for the private anglers? What plan do you have for 2032 when the stock is rebuilt? As permit numbers decline charter access will increase. The government isn't responsible for the stock rebound, it's the decline of the shrimping industry. The message you are sending is sorry, the fish are bigger and season is shorter. Somehow stock assessments can't capture that the stock is increasing in biomass. All the for-hire fishermen need is 18 days, but NMFS gave them 44 days; you can't explain that. If people want to catch red snapper they'll find state waters that are open. The charter customers can go to the panhandle to catch red snapper. The charter fishermen are giving you respect now because their pockets are lined. When will we see flexible management for private anglers? There is an appeal on sector separation in the 5th circuit court of appeals of Louisiana. What's your plan if Amendment 40 is reversed by the courts? You may get a notice that the Council violated the law, and a contingency plan should be in place for that event. Everything the council is doing is wrong. People cannot afford to go on a charter, it's not realistic. The Council is not considering the family anglers.

Brad Gorst – Charter

He supports Alternative 3. We've given it three years and now, kick it in the teeth and say it isn't working? There hasn't been enough time to determine if it's working or not. The private component of the fishery keeps growing. In the past, the for-hire component harvested 60% at one point, but now have they only have 42%. The charter industry took it on the chin by giving away some of their historical catch to allow for separate management. The private sector keeps growing, but the maximum number for for-hire customers is stagnant. He is representing "Joe the plumber who lives in Kansas", and the sunset needs to go away. People in south Florida, who are complaining that they get 9 days, should be mad at the state of Florida for giving the snapper to the panhandle with a 70 day season, or Texas for their year-round access. There needs to be enough time for Amendments 41 and 42 to be developed.

Chad Haggert – Headboat operator

He supports Alternative 3 – Remove the sunset. We are moving forward with plans that will help the fleet of his vessels. The people in the headboat cooperative are harvesting fewer fish than they would have in a 44-day season, but members are able to choose when to harvest them. He is here speaking for his customers; if these meetings were held in the home states of his customers (Midwest), there would be a different opinion heard. The charter for-hire fleet is set where it is at and it can't grow. Private anglers don't want to change rules, because if they keep going, the charter fleet will be pushed out entirely. For-hire operators are painted as money hungry people, but he wonders what will happen to the people on his boats when the private fleet grows too big and there is no room for the charter for-hire industry. Someone in Minnesota might feel differently. The headboat pilot program was a success. He got to pick his days for fish and he caught fewer fish. He agrees that the private anglers need to find a better management program.

We have a template from the pilot program for headboats and he doesn't want the Council to yank the rug out when they're making progress.

Craig Cavanaugh – Private angler

He supports Alternative 1. When you look at using a sunset, it's usually because you can't get enough votes for something that is permanent. When the sunset occurs, sector separation ends and that is how it should be. Pass the buck, let it expire and it won't come again. All of this is crony capitalism and we see it in a lot of agencies. The general public is losing faith in federal agencies. If the Internal Revenue Service called you today, would you believe that you would be treated fairly and impartially? Same thing is happening here, the public is losing faith that they're not being listened to by representatives at any level. The agency is using its regulatory authority to divide profits in the industry to benefit a minority group. People weren't sure it was a good idea to begin with, and since it's not, sector separation should end.

Dave Mott – Coastal Conservation Association

He has a boat and also goes with charter vessels. There is value in headboats because you can go fishing with big groups of people and there is also value in going with a captain because they can teach you things. There is also value in going with family. A two fish bag limit doesn't make sense. In Florida, you can't catch red snapper in state waters. The Council should leave the sunset in place to allow for data collection and figure out what comes out of this sector separation trial. The voters and the public should be given more days to catch the fish. Let them have fun and come home with a few fish so they don't have to force fishing into such a short time period. Voters should have more time to fish so they can actually have the opportunity to fish. There is cronyism at the Council and it is crooked that dozens of people get the lion's share of the harvest.

Paul Kerr – Private angler

He is not knowledgeable in the numbers. He supports Bob Bryant's opinions. The charter captains have ignored the fact that they're just greedy crooks. The Council is corrupt, and this is not the way this county should be run. The capitalist free market shouldn't let us dictate who succeeds in business and who fails. Several inshore guides who are very serious fishermen, make a good living, and it's hard to get on their boats because they're booked. That is what free market is about. He supports Alternative 1.

Suzanne Foster – Charter

She has been fishing since the early 70's when you use to see snapper. If you went way off-shore after the 80's, there were hardly any fish, and her red snapper harvest was down to nothing. She resents being accused of hammering the fish and being called a crook. She represents 1000's of people that don't have boats. She doesn't even remember the last time she had red snapper. The private anglers have legitimate complaints, but the Gulf Council should be respected because they're educated. The fishermen have experiences that should be respected. She would like to support Alternative 3. We can all eventually work it so everyone gets what they want, which is fish. She has to work and make money.

Max Foster – Charter

He has been fishing since 1950. There used to be a lot of fish and fishermen didn't have all the fancy gear we have now like GPS and bottom machines. Red snapper used to sell for \$.025 a pound. That's something that no one is saying. The private anglers are allowed to catch two red snapper, grouper, amberjack and a lot more fish. You're not running six miles to catch two fish, you're going to harvest multiple species. It's mindboggling that we're having all these problems. There are millions more private fishermen than there were when he was young. Now everyone is a navigator. You can go to the same spot 100 miles out over and over; there is no guess work to fishing anymore.

Brent Kempton – Private angler

He supports Alternative 1. He has been diving for 9 years pretty consistently and gets to the deep water seldom. This year off the local coast, the water was cold and he saw more red snapper than he has ever seen in the past seven years. He has seen schools of 150 fish at a time, all around 8 pounds. In 100 feet of water he sees little fish and fish all the way up to 22 pounds. The data is wrong; the stock is healthy. Something isn't right, we see all the hogfish, grouper and amberjack and the numbers that National Marine Fisheries uses don't make sense. The fish are out there. You can't get a bait to the bottom.

Biloxi, Mississippi
May 23, 2016

Council/Staff

Dale Diaz
Kelly Lucas
Assane Diagne
Charlotte Schiaffo

47 members of the public attended

Clarence Seymour - Charter

He represents 15 other federal reef fish for-hire permit holders. He read a list of names and area codes of charter customers who are non-boat owning Americans that support sector separation and need access to the fishery. Amendment 40 - Sector Separation needs to be retained because there is too much non-compliance by recreational anglers. For Amendment 45, he supports Alternative 3.

F.J. Eicke - Private angler and Coastal Conservation Association member

He is opposed to Amendment 40 - Sector Separation and feels that it came about too fast. According to the Magnuson-Stevens Act there are only two sectors and sector separation is a misnomer. Amendment 45 should not change sunset provision. The program needs to be evaluated and taking away the sunset would disallow that evaluation period. The sunset is in place for a reason and needs to be enforced. Amendment 40 would not have passed without the sunset so, the sunset should remain. Sector separation does not help the recreational sector. He supports Alternative 1, no action.

Gary Bryant - Charter

He supports Alternative 3. Charter boats became a separate sector when the moratorium was established and really that is when sector separation should have occurred. 57% of the fish now belong to people who own their own boats. This is a public resource that belongs to all Americans and we must preserve historical access for those non-boat owning members of the public. There is no moratorium for private recreational anglers and the 9-day season is tragic but, the for hire industry just harvests their fish slower. Red Snapper is a public resource that should be accessed by all, including non-boat owners.

Tom Steber – Charter and charter for-hire Headboat Advisory Panel

The headboat cooperative won awards for developing a program that works so well and now the Council is dragging their feet to make the system permanent. He supports sector separation and is in favor of Alternative 3. Everyone needs to be accountable. Texas doesn't have to abide by the rules that the rest of the Gulf does and it's frustrating.

Mike Foto - Charter

He would like to do away with the sunset and he supports sector separation and is in favor of Alternative 3. He takes non-boating public from other parts of the country fishing. Red snapper is a public resource and he doesn't understand why private anglers are against seasons for those people without boats. Long state seasons are detrimental to charter boats. Charter vessels take non-boat owning public fishing

Jay Trochesset - Charter

He has been in the business for 46 years. He supports sector separation and is in favor of Alternative 3. He thinks of himself as a taxi service for people who like to fish but don't own boats. The state of Mississippi has a season that is twice as long as his federal season and private anglers are happy with that.

Dustin Trochesset - Charter

He supports sector separation and is in favor of Alternative 3. Long state seasons are detrimental to charter boats. He noted that many of his clients are people who can't afford a boat and who would not have an opportunity to fish without charter vessels. The Magnuson-Stevens Act calls for fair and equitable allocation of the resource. In the states there are 700+ days to fish in the Gulf, and this is especially advantageous with the new 9-mile limit.

Ron Harmon - Charter

Council should stay with sector separation. He supports Alternative 3. Before sector separation there was no mechanism for accountability and charter operators want to take care of the fish stocks. Private anglers have plenty of fishing days in state waters.

Frank Becker - Charter

He supports sector separation and is in favor of Alternative 3. He has customers that come from all over the United States and without charter access they wouldn't have access to the fishery.

Kenny Bellais - Charter

He supports sector separation and is in favor of Alternative 3.

**Panama City, Florida
May 24, 2016**

Council/Staff

Pam Dana
Assane Diagne
Charlotte Schiaffo

36 members of the public attended

Anita Ross - Charter

She supports sector separation and is in favor of a 3 or 5-year extension. Seems to be working for us.

Steve Ross - Charter

He supports a 3-year extension (Preferred Alternative 2a). For 3 or 5-year extension.

Billy Archer - Charter

He supports sector separation and is in favor of Alternative 3.

Bob Zales II - Charter

Does not care one way or the other when it comes to sector separation. Sector separation has divided the recreational community, not just in private rec and charters, but it has divided the charter community. He is opposed to IFQ programs for charter & headboats. Most Charter boats are happy with 46 days. IFQs will not give 46 days.

Charles Guilford - Charter

He is neutral on sector separation. Last year, he was able to make money for the first time in years. He is opposed to IFQs. IFQs profit only a few people but put others out of business.

Benjamin Kelly - Charter

He supports a 3-year extension (Preferred Alternative 2a). He is against IFQs and catch shares.

Mike Sullivan - Charter

He supports Alternative 2. He opposes catch shares and IFQ programs.

Stewart Miller - Charter

He supports a 3-year extension (Preferred Alternative 2a). Opposes catch shares and IFQs.

Buddy Cooper - Private Angler

With sector separation, the Council is trying to fix a problem that is not there. Anglers need more than 9 days to fish in federal waters, the Council needs to do whatever needs to be done to give anglers more days.

Mark Kelly - Charter

He supports sector separation but he is not happy with 46 days, just living with it. He supports a 3-year extension (Preferred Alternative 2a). Opposes inter-sector trading.

Pam Anderson

Amendment pits sectors against each other. Stop sector separation now and maintain the sunset provision (Alternative 1).

Dean Cox - Charter

He is for sector separation and supports either Alternative 3 or any of the options in Alternative 2.

Mike Eller - Charter

He is for sector separation and supports either Alternative 3 or Alternative 2c. He supports electronic logbooks. Against catch shares.

Henry Hunt - Charter

He is for sector separation; supports Alternative 2a. Believes we need at least three more years to see how this is going.

Kathy Eller - Charter

She supports sector separation and is in favor of Alternative 3.

John Anderson - Charter

He supports sector separation and is in favor of Alternative 3.

John Law - Charter

He supports sector separation and is in favor of Alternative 3. Opposes catch shares and IFQs.

Kyle Lowe - Charter

He supports sector separation and is in favor of Alternative 3.

B.J. Berkett - Charter

He supports a 3-year extension (Preferred Alternative 2a). Opposes catch shares and IFQs.

Scott Robson – Charter and Member of the Reef Fish Advisory Panel

He supports sector separation and is in favor of Alternative 3. Management plans take a long time to develop, 3 years (Alternative 2a) is not enough time. Not for IFQs.

Gary Jarvis - Charter

He supports the removal of the sunset provision; he is in favor of Alternative 3. State rules take fish away from the for-hire CB industry. The majority of the public does not own vessels. Alternative 3 allows to provide stable access to anglers who do not own boats.

Chris Schofield - Charter

He supports sector separation and is in favor of Alternative 3.

Harold Staples - Charter

He supports sector separation and is in favor of Alternative 3.

Scott Atkisson - Charter

He is against sector separation; supports Alternative 1. Most people did not want inter-sector trading, why did Council make no motions reflecting this wish?

**League City
May 25, 2016**

Council/Staff

Doug Boyd
Emily Muehlstein
Karen Hoak

68 members of the public attended.

William Barr – Charter

Working with flawed data landing information is a problem and it leads to more problems. He got into the permits for about \$7,000, and recently people have been calling to offer him nearly twice that; this indicates there is a problem. The general public is being left out of management. He is against the shorter season for the private recreational anglers and he is against sector separation. Dump the alternates and fix the flawed data.

Ted Venker- Coastal Conservation Association Conservation Director

CCA has 90,000 members across the Gulf Coast. He recommends the Council adopt the no action Alternative 1, and stick to the original deal with the sunset provision. Sector separation is controversial and it only makes sense for the sunset to remain as originally agreed upon so managers can analyze the effects of the unprecedented management regime. Phase out sector separation if it fails to meet objectives or if it produces unwanted consequences. As time goes on the charter for-hire industry will realize the implications of the sector separation and that it inevitably leads to a catch share system, more problems will come to light. The Council was concerned about social and economic impacts of this program and wanted to make sure there was an evaluation period. Elimination of the sunset before any evaluation has taken place would violate the spirit of the program. The economic study of the headboat pilot has not been concluded. This shows it takes a substantial amount of time to fully evaluate a program. Amendment 39 – Regional Management is not moving forward, but there is still time for the states to move forward with it or provide another amendment to transfer control to the states.

Joe Gilleland- Private angler

Grew up in Freeport fishing offshore for 25 years and guided for eight. Snapper management is the worst mess he has seen. People have no time to fish. It's windy in early June with winds regularly at 20 mph during the season. He would like sector separation to sunset next year, and he supports Alternative 1. Hopefully the states will take over the snapper fishery because they do a great job managing the fishery.

Warren Clark- Private angler

The Council should honor the commitment to sunset sector separation and provide time to evaluate and achieve the best management of the fishery. He supports Alternative 1. Any rush to

prematurely lock in sector separation can only be driven by a few, to lock in financial benefits for a few. Him and friends can go out 45 miles to catch red snapper on his boat, it costs less than \$200 for supplies, but he can only fish 9 days. If he charters a boat and pays \$2200, he can catch the same fish at the same spot for 46 days. No wonder charter operators want to skip the evaluation of the program; it's all about the money. The Magnuson–Stevens Act (MSA) isn't to provide means for anyone's personal financial gain. Section 98.623 of Magnuson-Stevens Act states: "Conservation and management measures shall not discriminate among residences. If it becomes necessary to allocate fishery resources among U.S. residents such allocation should be fair and equitable to all such fishermen and be carried out in such a manner that no one gets an excessive share." If sector separation were to continue, it violates MSA. The Council should honor their commitment to evaluate the provision with facts in hand rather than allow a privileged few to override the process to fill their pockets.

Tom Hilton- Private angler

The Council passed Amendment 40 despite the overwhelming opposition of most of the stakeholders in the Gulf. It passed because of the addition of the sunset provision and here we are, just 1 year later, looking to revoke that provision. It illustrates that the Council process is a dog and pony show and the Council is going to do what they want no matter what the public says. There is a lawsuit pending and it's premature to take any action on Amendment 40 and the sunset before the lawsuits are complete. The idea of separating sectors is segregation, so the Council is discriminating against a segment of the fishery based on the arbitrary parameter of the type of boat they fish on. The nine and 46 day seasons are the result of this segregation and discrimination. Our own government is condoning segregation and moving forward with privatization of the fishery. He supports Alternative 1.

Johnny Williams- Headboat operator

He supports Alternative 3. Let's do away with the sunset completely. He believes that CCA is disingenuous when they stand up and say things aren't equitable. There is a simple solution, if we close state waters, private anglers can have 46 days out in federal waters too. As is, private anglers get to fish state waters while charter fishermen don't. He feels that if CCA and their membership would contact state directors to close state waters, than everyone would have a long season. It's not fair that he can't fish state water seasons and that Captain and crew can't keep red snapper. There are many things that already separate the two types of fishermen.

Scott Hickman- Commercial fisherman

He supports Alternative 3. When Amendment 40 started the for-hire sector reached out to Coastal Conservation Association and asked them to sit and talk about solutions for the charter boats. No one from the recreational side would sit and talk with him. There is an awful situation with state waters and if he was a recreational fisherman he would be angry. South Texas has a great state water fishery, but the north coast of Texas does not, and it's forcing people to poach. Under sector separation the charter boats were 37% under their annual catch limit. They're more accountable, they've developed electronic logbooks and many have vessel monitoring systems on their boats to give the Council better data. The Council has tried to come up with a plan to help recreational anglers but nothing has happened. CCA isn't supporting them, and there are no proposals to solve the problems with the recreational fishery. All he he sees is attacks on the

industry that is trying to fix things. The charter boat industry will help if the recreational industry wants solutions.

Bubba Cochran- Commercial and charter
Alternative 3 is the best choice.

Dan Green- Charter
He supports Alternative 3 and would support Alternative 2. That's the only option. The charter industry needs more time to build results to show the Gulf Council.

Marc Wilkerson- Charter
Remove the sunset provision. The sunset decreases economic certainty for business. It allows each group to develop a management system that would work for them. The groups are different and need different management approaches. Each state has created their own seasons in state waters. Sector separation levels the playing field.

Hans Guindon- Commercial fisherman
Supports getting rid of the sunset. Move forward with sector separation by selecting Alternative 3.

Tony Bess- Private angler
Supports Alternative 1. He has been fishing since 1976 as a private recreational angler. As per the CCA newsletter, privatization has created a class of commercial sea lords and 55 commercial operators own more than 70% of the commercial harvest. This has also led to "catch share experience" trips where charter operators lease fish from commercial harvesters and sell them to recreational anglers. . This has created convoluted management measures that haven't been used in the management of any other wildlife; not ducks or bass. The ability for recreational anglers to participate has been eliminated. June is the windiest month. Across the country so few recreational anglers show up because they feel that their opinions are totally ignored and the sea lords and for-hire anglers get the advantage because they've bought and paid for it. When he asked the Council about the short recreational season the response he received was apathetic and he was told the information used to determine the season came from 2006. Why aren't Council members demanding better data? Snapper are everywhere and he understands the harvest is based on weight but it should be on numbers. The states have shown that they can regulate and manage the fishery.

Charles Everts- Private angler
He supports Alternative 1. Years ago, at a meeting at the University of Houston, Dr. Roy Crabtree came, and they had a discussion on recreational issues. Roy thought that private anglers voted for something and he discovered it was a charter guy voting on behalf of the private anglers. The charter for-hire members on the Council voted to line their own pockets, and they don't represent private anglers. Recreational anglers work for a living and know the meetings are a dog and pony show so they don't show up. The Council members are so skewed towards commercial interest to put money into their pockets.

Todd Coleman- Private angler

He supports Alternative 1. It is too windy in June and nine days is ridiculous. The charter guys would fish out all the snapper if they fished in state seasons.

Joey Lenderman- Private angler

He supports Alternative 1. The Council needs to get better numbers. We can go to the moon but can't figure out how many fish are in the Gulf. Commercial guys can catch thousands of fish in a few days but recreational anglers cannot have 2 fish for more than 9 days? The scientists need to figure it out.

Mark Scarborough- Private angler

The Council should allow sector separation to expire so the program can be evaluated before moving forward. He supports Alternative 1.

Shane Cantrell- Charter

The nine-day season is not the truth. In 365 days in Texas, he does some commercial fishing, and he sees recreational fisherman in federal waters poaching from the federal waters all the time. Nine days is a lie. The real problem is the representatives on the Council saying we only get 9 days; we need state season. The states are creating poachers. Under sector separation, we kept charter boats 37% under their catch target, while recreational anglers exceeded their annual catch target. Without sector separation, they probably would have exceeded the ACL. We need management in place for the private anglers. Get the Council representatives to stop voting against an advisory panel to help the anglers they represent. He supports Alternative 3.

David Patlovany- Private angler

He supports Alternative 1. The red snapper is owned by the entire population of the United States, so we should have the exact same season to fish. If you maintain sector separation, allow the recreational anglers to have a choice of which nine days to fish, such as use some ticket system, so they can choose their days to fish.

Debbie Patlovany- Private angler

The data is flawed. June is a horrible month to fish, it is windy and she wants to choose the days she fishes, if she is going to be so limited to the number of days she can go. She supports Alternative 1.

Jason Delgado- Private angler

He supports Alternative 1. The impact of sector separation has been interesting to watch. Specifically, what it has done to the value of permits. It has made him an interested buyer if anyone wants to sell. Also, he does not feel like it is fair that recreational anglers are held accountable and are being judged for exceeding their quotas since it's not under their control and the science the problem.

Johnny Walker – Charter and commercial

For the past couple years with sector separation the charter industry has had a little light on their piece of the pie. They've been able to achieve a sort of resemblance to making a living. He has begged for accountability; the charter industry wants to know what they're catching. On the

recreational side there, is no clue what's being harvested. At the Galveston yacht basin, recreational fishermen come home every day with their limit of sows. He doesn't think that is possible in state waters. Get accountable; get a license with a tag on it for recreational fishermen. It doesn't matter how many fish are in the Gulf if you don't know what you're catching. He supports Alternative 3.

Buddy Guindon- Commercial fisherman

Texas Parks and Wildlife (TPWD) has a program called iSnapper where you can report every fish you catch. TPWD has done a poor job of reporting recreational harvest. Under regional management, Texas recreational anglers get 6% of the fish in the Gulf, and that will be split between charter, headboat, and private anglers. Reconsider the quality of your state management. In Texas there is no commercial fishery for redfish and trout, and a reduced fishery for flounder. If you make a living on the water in Texas, you don't want to be a part of state management because they'll drive you out of the picture. The fish belong to all of us, including people who eat at restaurants, people who charter fish, and people who fish recreationally on their own boats. We should have a management system for each different group. Business should run businesses and recreational fishermen should have your round access. Coastal Conservation Association and a few members of the Council are blocking the development of a tag program. He supports Alternative 3. He wants to get together with recreational fishermen and help them get past the misinformation they're getting. Better management is available.

Chris Guindon-

Remove the sunset. He supports alternative 3. He wants to run a charter boat someday.

Andrew Reed- Charter

He supports Alternative 3.

Nicholas Gutierrez- Seafood dealer

Get rid of the sunset provision. It was only put in place to prolong the decision. The charter industry wants to create their own path and do their own thing. They want to be separate. Why do the private anglers want to stay tied together when the charter fishermen want a divorce? There is a better way for the private anglers to get better management. Blaming the commercial and charter industries isn't a solution.

John Tyrna- Private angler

There isn't accountability of harvest and he wants better ways to monitor catch. He doesn't have trouble catching his state limit of red snapper within 9 miles. He doesn't poach and shouldn't be punished for it.

Taylor Borel- Charter

He supports Alternative 3.

Greg Ball- Charter

He just put a vessel monitoring system on his boat so he can be accountable for what he catches. He has seen a lot of private anglers fishing illegally for big sows 40 and 50 miles off the coast when the federal season is closed. He supports Alternative 3.

Mike Osgood- Private angler

The data is clearly flawed. He keeps hearing about data being taken at the dock, but he has never been surveyed. His dad and granddad were shrimpers and owned a retail fish market. He was 10 years old when commercial fishing for redfish and speckled trout was outlawed. If the red snapper stock is in such bad shape why are we allowed to commercially fish for them? The public hearing meetings are just a forum to gripe. He doesn't think that the comments submitted are heard. The Council is going to do what they want to do anyway. He supports Alternative 1.

Otis Horton- Private angler

He is a business man and he sees the numbers and believes that they are all wrong. From what he remembers, he has never been surveyed, despite the fact that he has been fishing for over 50 years. He doesn't know what a commercial fish is worth. Charter fish value must be different too. Commercial fish couldn't possibly be worth \$40 pound. When he catches a fish recreationally, it's got to be worth \$250 pound if you consider the tackle and equipment he buys at the benefit of the local economy where we live. The sonar and new depth finder he bought is benefiting the local economy. Some benefit should be derived, without hurting the fishery, to maximize the financial benefit to Galveston county.

Shawn Owings- Private angler

The season is only nine days in the windiest month of the year. Let's extend the season. He supports Alternative 1.

Laramie Hargrove - Private angler

She supports Alternative 1.

Brandon Saenz – Private angler

He is an offshore captain but was laid-off two weeks ago. He recently tried to find a way to get a federal charter permit so he could fish for a living but he couldn't find one. You can't catch red snapper inshore of 9 miles off of Galveston, water is too hot unless you build illegal reefs. A lot of people don't want to go to other places to fish. It constantly blows 40 knots down in south Texas where there is a state water fishery so, it's hard. He supports Alternative 1.

Keith Leisos – Private angler

Fishes state waters out of Port Mansfield. It is hard for him to get past 9 miles. He would like to buy a bigger boat if the federal season was longer. We've separated a public resource into separate quotas to privatize it. We divided between commercial and recreational. Now we're dividing the recreational quota further. As a result, the headboat guys are being paid per snapper. We need to give the headboat and for-hire fishermen part of the commercial quota rather than the recreational quota. He supports Alternative 1.

Jonathon Kopp- Private angler

He supports Alternative 1. We've separated seasons for commercial and private fishermen. Now headboat fishermen get more of the recreational quota and can fish more days. He didn't fish nine days for snapper last year because he couldn't leave his business. This is the first time he has come to a meeting; he doesn't know if his voice is heard. He suggests we host a meeting in Houston because more recreational anglers would show up there.

Ken Guindon- Commercial fisherman

He supports Alternative 3. Smaller sectors are easier to manage. The commercial sector has had a really good management system for a long time. The charter separation allocation decision was based on catch history. He has empathy for the private anglers and believes they need better management. Get rid of state seasons and use a tag system to manage private anglers. He sees lots of poaching and while it's probably not the people that come to the meeting, it's still happening.

David Woodworth- Charter

He hears that people don't have time to come to meetings. He spends 16 hours a day fishing and working on his boat and he manages to show up; it's not an excuse. He supports Alternative 3.

Roy Dupree- Charter

The charter industry is getting 45 days and they can't get rich off of that. People say they're in the industry and management for the money, but they can't get rich from red snapper trips. There are other fish that help him survive as a business. He supports Alternative 3. The recreational fishermen are poaching. People come in from offshore with big sows hiding in totes. We need to hold those fishermen accountable for the illegal fish they harvest. Those fish aren't caught in state waters off of Galveston.

Mike Short- Charter

He supports Alternative 3. Charter boats need their own program. Recreational fishermen get 365 days in the state and an extra nine federal days. During the state season they go out to the federal waters and steal fish. There is no way that these guys are catching those big fish 20-pound red snapper in state waters off of Galveston.

Kenneth Smith – Private angler

He supports Alternative 1.

Katie Brown - Private angler

She owns a brand new boat. She understands that commercial fishermen are here to make a living. She respects that and uses charter boats to fish when she travels. She has heard that the data is flawed and she would like an opportunity to gain some type of license that would allow her to fish outside of the nine-day federal season. She supports Alternative 1 because it allows for more time to review the data so that it is clear and fair for both sides of the fishery. She wants to follow the rules and knows they impact everyone.

Blake Osgood- Private angler

Keep sector separation sunset in place. He supports Alternative 1. Who knows how many fish are out there? He has been going fishing since he was little and there are swarms of fish out there sometimes ten feet below the surface, 150 yards from a wreck. You aren't supposed to be able to catch red snapper on top water. There are too many fish out there and recreational anglers need more time to fish and get the population under control. No one has asked him how many fish he has caught. He went twice last year and caught his limit each day. We need people to support private anglers.

Zack Franey- Charter
He supports Alternative 3.

Billy Wright- Commercial and charter
Remove the sunset provision from sector separation and support Alternative 3.

Mobile, Alabama
May 25, 2016

Council/Staff
David Walker
Assane Diagne
Charlotte Schiaffo

46 members of the public attended

Ben Fairey - Charter
He supports sector separation and is in favor of Alternative 2b. Seen a lot of changes and a lot of things go against the charter boats for a long time. One of the things that was detrimental to us was first the moratorium on permits. We didn't realize it at the time when we agreed to it but we lost our historical catch. So as you look now we used to catch more red snappers percentage wise than the private angler and the way I look at it extending A45 gets things back level.

Bill Staff - Charter
For a long while the charter industry has been threatened. Sector separation helped fishery and saved business. He supports the Council's Preferred Alternative 2a.

Richard Alexander - Private angler
He is against sector separation (Amendment 40) and against Amend 45. Let sector separation sunset, resetting rules would be unfair to the fishing public. He supports Alternative 1. Lifetime fisherman. This is a matter of America. It is not about fishing. We are causing regression we are causing America to divide. It should never have been passed. It was passed because they put a sunset on it.

Brian Reeves - Charter
Made money for the first time in years. Sector separation allows anglers on charter vessels to catch the fish they deserve. Private anglers can go to state waters to fish, anglers on charter boats cannot. He supports Alternative 2.

Joseph Nelson - Private Angler
Recreational sector has been divided against itself. If it sunsets it will put pressure on the federal managers to figure this out or hand it over to the states. The states need to take over. The data that the federal management uses is not current. Resource distribution needs consideration. He supports Alternative 1.

Blakeley Ellis - Private angler

Anglers lost access to fishery because of rules. He supports Alternative 1.

Grey Cane - Private angler

He is against sector separation. He supports Alternative 1. Would like Council to stick with original agreement to let this sunset.

Wesley Blacksher - Private angler

The science is not being looked at, red snapper are everywhere. He supports Alternative 1. We were told that the sunset was put in there so that there would be time to look at the science. The Council needs to look at the science after it sunsets.

Brian Annan - Charter

Amend 40 saved the charter industry. Other fish besides red snapper can be caught by recreational anglers. He supports Alternative 3.

George Pfeiffer - Charter

There has been an exponential growth in the recreational fishery. He supports Alternative 2 (options b or c). Made more money last year, than in previous 10 years. Our fishery needs to be sustainable and we need to be accountable. All the charter for hire vessels are accountable. Way more recreational people that are not accountable.

Gordon Burdette - Charter

He supports sector separation and is in favor of Alternative 3.

Tom Ard - Charter

Although they are tough sometimes, management measures have helped the fishery. There is no need for a sunset clause. He supports Alternative 3. Need time to develop good fishery management plans. VMS or phone app system should be mandatory for charter for hire and recreational. Would like to see a recreational fishery management plan. Would like a Recreational AP to start working on solutions for their fishery.

Bobby Kelly - Charter

He supports sector separation and is in favor of Alternative 3 or Alternative 2c. Amendment 45 offsets the unfair state water seasons that the private recreational angler will not admit even exists.

Jerry Andrews - Charter

Private recreational anglers are catching most of the red snapper. He supports Alternative 3 and electronic logbooks.

Russell Smith - Charter

He supports sector separation and is in favor of Alternative 3.

Sean Kelley - Charter

State seasons hurt the fishery. He supports sector separation and is in favor of Alternative 3. Consistency has helped his business. Hopes for a Recreational fishery management plan.

Joe Nash - Charter

He supports sector separation and is in favor of Alternative 3.

John Hollingshead - Charter

He supports sector separation and is in favor of Alternative 3.

Tom Steber – AP Headboat Pilot & Charter for hire / President, Alabama CFA

Favors of Alternative 3.

Margaret Miller - Private angler

Opposed to extending sunset. It is a mismanagement of resource. All recreational anglers should be together, not fighting. Sector separation is a short term short-term fix for a long-term problem. Better science is needed. She supports Alternative 1.

Gary Bryant - Charter

The charter industry is not trying to take anything away from anybody. New ideas are needed from all participants in the fishery. He supports Alternative 3.

Jimmy Waller - Charter

He supports sector separation and is in favor of Alternative 3. Sector Separation saved his business. It is not perfect. It is a beginning.

Bill Jeffries – Private angler

Favors Alternative 1.

Sean Sullivan – Private angler

Favors Alternative 1. Sectors do not need to fight each other. State management is needed. He opposes sector separation and supports Alternative 1.

Casey Drioue - Charter

He supports sector separation and is in favor of Alternative 3.

Skipper Thierry - Charter

Sector separation saved charter boat industry. Supports Alternative 3. Provides stability for the charter for hire.

Ashley Walters – Private angler

Supports Alternative 1. Feds are mismanaging the resources, state supervision is needed. Recreational anglers should not have to depend on charter vessels for access to fishing. Recreational anglers should be able to fish as long as charter boats. He opposes sector separation and supports Alternative 1.

Marty Norder – Private angler

Sector separation pitted sectors against each other. Council needs to represent all the fishing public. Supports Alternative 1.

Vincent Duffy – Private angler

Federal government has messed up the fishery. Supports Alternative 1.

Timothy Smith – Private angler

Fed government is mismanaging data. A 9-day season is unfair. Sectors need to come together. Supports Alternative 1.

Randy Boggs - Headboat

Sector separation has worked for the for-hire industry. Supports Alternative 3. New ideas from private anglers are needed.

Susan Boggs - Charter

The for-hire industry is not taking fish away from anybody. The for-hire industry provides access to those who do not own boats. She supports Alternative 3 or at a minimum Alternative 2a.

Michael Wiederman- Private angler

He supports Alternative 2a. Sectors need to work together. States should take over management.

Shawn Miller – Private angler

We Need to be fair to all, 9 days are not enough. Fed government is splitting sectors on purpose. Against amendment 45 and all its alternatives.

Corpus Christi, Texas

May 26, 2016

Council/Staff

Greg Stunz

Emily Muehlstein

Karen Hoak

52 members of the public attended.

Michael Henry – Private angler

He opposes sector separation and supports Alternative 1.

Dave Sullivan – Private angler

He speaks on behalf of the Port Aransas Boatman Association, which was founded in 1932 by a group of charter fishermen. They work to preserve the heritage of their guides and the interests and needs of the recreational fishermen. The Association supports Alternative 1, and they are against extending sector separation for any period of time. The Association is also in favor of

regional management and will continue to be involved with the process. The whole management system is flawed, the data is flawed, and there are false assumptions being used. The Council needs additional time to figure things out.

Steve Johnson- Private angler

He supports Alternative 1, no action. Sector separation is forcing recreational fisherman and the charter fishermen to fight amongst themselves. They're fishing for the entertainment and for the opportunity to catch red snapper, not to sell them. The economic impacts that come from the recreational industry; hotels, restaurants, and gear purchases, are much larger than the economic impacts of the commercial fishery.

Claude Jennings- Private angler

He supports Alternative 1.

Jake Mynier – Charter

He urges the Council to pass Alternative 1. He is against commercial catch shares and individual fishing quotas.

Ron Moser – Private angler

He supports Alternative 1 and is against catch shares because it monetizes a private resource. He supports regional management because state waters don't have red snapper but the federal waters do. The size of red snapper in state waters is far smaller than the size of fish in federal waters. The science is horrible. Texas has an abundance of fish. He supports regional management and state control. The Council continues to restrict public access and make unruly decisions based on flawed data. He recently went amberjack fishing in 150ft water and struggled to catch anything but snapper.

Kesley Gibson – Private angler

She opposes the extension or elimination of sector separation and supports Alternative 1. The charter industry should not take away her access to the offshore fishery.

Virginia Moser- Private angler

She supports Alternative 1, no action. Sector separation is not fair to private anglers that own their own boats.

Chas Downy- Private angler

He is against sector separation and supports Alternative 1. The sunset should not be eliminated or extended.

Mike Nugent – Charter

The Port Aransas Boatman Association has been opposed to Amendment 40 from the get go because it is a preamble to catch shares and individual fishing quotas. Every time you hear supporters of sector separation stand up, they say they want accountability. If they wanted that, National Marine Fisheries Service would have put in a data collection system 10 years ago. But the agency isn't interested in a log book program for charter boats. It's a fish grab and therefore a cash grab. He is opposed to any extension or elimination of the sunset. He supports Alternative 1.

If things progress this way, the Texas charter boat industry will be gutted when it comes to the number of fish they get. It's finally starting to get across that catch shares aren't going to make everyone rich and profitable. There aren't enough fish for 1200 vessels so, you'll have to steal them from somebody. He is against catch shares and individual fishing quotas; they won't lead to anything good for anyone.

Tammy Graham – Private angler

She opposes the term “private recreational angler” because it plays into the terminology that none of them were in favor of to begin with. She was at the Amendment 40 public hearing in Port Aransas and not one person was in favor of sector separation, but the Council went and did it anyway. She is here again asking that the Council listen to their voices. She is not in favor of the Council doing anything because Council decisions don't benefit her. She supports Alternative 1, No action.

David McKey – Private angler

He Supports Alternative 1.

Jake Cross- Charter

He is in favor of Alternative 1.

Alex Tompkins- Private angler

Opposes sector separation. It's scary to privatize a public resource so, he supports Alternative 1.

Normand Oates- Private angler

This whole thing is a rouse. He wants to know where the alternatives come from and what they're based on. What are the season lengths based on? How long has it been since the Gulf Council has done real research on the biomass of red snapper in Texas? Both groups of recreational anglers should get at least 45 days. He has a small boat so, when the wind blows he can't go out in the nine-day season. The research is old, out of touch with what is going on in the water, it doesn't mean anything. You can't catch any other species out there because there are so many snapper. Sector separation is like building a 6-lane superhighway and putting a 45-mile speed limit on it. People are going to cheat because your law is wrong and there is no enforcement. Until the Council shows him that it knows what it's doing, and the research is based on fact, he believes that Council alternatives don't mean anything.

Paul Kratzig - Private angler

He supports Alternative 1. He has real concern that public resources being utilized by commercial interests that are getting large sums of money at the expense of private anglers. The economic impacts from recreational industry are one of the more beneficial things that occurs in the state. All other public resources like oil and land use profits are payed back for the taxpayers benefit. Council decisions are benefiting special groups and are too heavily weighted in favor of the commercial fishery.

Cliff Strain- Charter and private angler

He is against sector separation and individual fishing quotas because he doesn't want to sell off the industry to those who can afford a lobbyist. He supports Alternative 1, no action, and he

supports regional management. The science is bad, and he wonders if NOAA has data that supports the biomass that is in Texas. He disagrees with the estimates of the offshore takes from Texas anglers. What about migratory patterns? Have we done tagging of red snapper? The Council is worried about triggerfish, but he guarantees that the overpopulation of red snapper is harming them. He went to fish on a reef effected by red tide where the red snapper died and he caught tons of triggers. There needs to be better science. We need to separate the western zone from the eastern zone which is much different. The concentration of biomass off Texas is offshore, not in state waters.

Mark Mueller – Charter

He opposes individual fishing quotas and supports Alternative 1. He has been a charter fisherman for a long time and has seen the red snapper population explode. It's a joke to think that red snapper isn't healthy. Now the water turns red when you chum from the boat. People are catching snapper on beef jerky and places that have never held snapper have them now.

Troy Adler- Private angler

He sees unfairness towards the recreational fishermen. Nine days is ridiculous. He supports Alternative 1.

Lela Caldwell- Family fish-house owner

She would like the sunset provision removed and supports Alternative 3.

Mike Miglini- Charter

The sunset provision should be removed; he supports Alternative 3. It will decrease the economic uncertainty for the for-hire sector, and it allows each group to develop a management system that works best for them. Charter and private boaters are different and deserve to have different management. Each state has created their own seasons in state waters that the charter boats can't fish. Removing sector separation doesn't get people where they want to go. Going to a 16 day season is not a win. Developing a flexible management program, like harvest tags that allows for better data collection and utilization of the resource. We need a world-class management system for our world-class fishery. The Texas data comes from Texas Parks and Wildlife, not the federal government. Simply saying you want to end sector separation isn't going to get you where you need to go; a better management system is in order. Retribution, retaliation, and being kicked off a public dock for exercising their first Amendment right and disagreeing with an association is unfair. Lots of people who are afraid of retaliation and are not here to voice their opinions.

Ron Woltesdorf- Private angler

He supports Alternative 1 because the data is not true.

Jamie Yeaney- Headboat

He supports Alternative 1.

Ben Rutledge- Private angler and reef builder

He supports Alternative 1. The data collection methods were inaccurate and the population of red snapper is much larger than is being recognized. The separation of the sectors doesn't solve the problem.

Walter Brothers- Private angler

He is in favor of no action; Alternative 1. Snapper are voracious and pushing other fish off, vermillion used to be abundant but he doesn't find them anymore. He supports regional management.

Robert Jones- Environmental Defense Fund

He speaks in favor of Alternative 2, option b, for the five-year extension. He thinks recreational management is totally broken and we need to find solutions that are customized to federally permitted charter boats and private anglers. Nine-day seasons are punitive and that need to be fixed by developing management programs that are customized to both sectors.

Brenda Ballard- Private angler

She supports Alternative 1. Recreational and commercial fisherman are different but they are all after the same fish and the fact that charter fishermen get more than private anglers is not fair. The Council needs to spend as much time collecting data as they spend holding hearings. They need to talk to anglers and find a way to get the right and fair way to collect the data.

Jake Herring- Private angler

He supports Alternative 1. There has been a lot of good comments including the idea that sound data needs to be gathered.

Doug Webb- Private angler

He agrees with the rest of the commenters and supports Alternative 1. These hearings will be heard with the same results and the Council will do what they want to do.

John Jalufka- Private angler

He supports Alternative 1. Been fishing his whole life and the population of snapper was once down, but now he can't catch anything else on any type of bait. It doesn't matter how hard he tries; he can't get away from the snapper. It's a shame to let charter boats go and kill fish he has to throw back. Anywhere he goes he finds big snapper. The data is flawed. He can drift for miles and continue to catch snapper. There is no season for them to catch snapper, and as a licensed and tax paying citizen, he has as much right as anyone to catch those fish. We do need a better management program.

Jackson Lomax- Private and charter

He supports Alternative 1. He has cut open snapper and seen in their bellies that they're eating sharks, triggers, and everything else out there. The system is out of bounds, the red snapper are destroying the rest of the gamefish. There are people who have engineered projects to get fish closer in state waters but recently money has been reallocated to other projects instead. It's time that the research changes.

Steven Schmidt- Private angler
He supports Alternative 1.

Angelica Benchoff -
She supports Alternative 1.

David Norris - Private angler
He supports Alternative 1.

Troy Williamson- Private angler
He is in favor of Alternative 1, take no action. He was in Tampa at the Advisory Panel meeting when sector separation came up. This is like déjà vu, the preferred alternative was sector separation and the Advisory Panel voted to take no action; they voted against sector separation, but that advice was not taken by the Council, who elected to implement sector separation. It was a split vote on the Council, and one of the reasons it came to being was the compromise of adding the sunset. That is why we're here commenting on on this. The sunset was added so sector separation would pass. The same mechanism is here today to change rules in the middle of the game. The Council does not necessarily vote for the public good. The Council votes for its own private interests. The system is irretrievably broken. He supports regional management or management by the state, but not under the auspices of the federal government as it is designed today. Legislation to change the Magnuson-Stevens Act, or transfer red snapper to the states or multi-state body, is the only thing that will cure this problem.

Gretna, Louisiana
May 26, 2016

Council/Staff

Ed Swindell
Myron Fischer
Assane Diagne
Charlotte Schiaffo

17 members of the public attended

Charlie Caplinger – Private angler
He primarily fishes out of Venice, LA with his friends and family. He is against sector separation and supports Alternative 1, no action. He uses guides and thinks they are a great resource because they're on the water all the time. Guides see what's happening and keep him informed. Charter operators should be able to fish in state waters so, Reef Fish Amendment 30B should be repealed. In Louisiana there isn't a guide that targets red snapper, it's too expensive to go catch two fish per person. Guides go catch tuna, grouper, amberjack and then as a bonus they'll pick up a couple of snapper. The private sector does target red snapper. Anglers on charter boats are recreational anglers but they've been pulled out and given their own season. He supports Alternative 1 and believes that sector separation creates arbitrary animosity between the two groups. Recreational anglers deserve an opportunity to have sector separation analyzed before putting it into place for perpetuity.

Steve Tomeny - Charter

He has been charter fishing since the early 70's and currently owns two large multi-passenger boats. The sunset provision is not needed. He supports sector separation and is in favor of Alternative 3. Amendment 40 came about because the federal permits are no longer issued so, the number of permits can't grow. At the same time, the private angling sector has expanded with no limitations. That is why sector separation came about. He never fishes state waters; years ago there weren't fish in state waters. Amendment 30b forced them to fish offshore and years ago, it was determined that there would be no federal season with all the state water openings. The private anglers have not come up with a management plan. It's not his position to tell the private anglers what to do but, he knows that the charter industry they needed to do something to preserve access. Red snapper is a draw for his business and he likes the 46 day season. The charter fleet is on track for getting better accountability measures and last year, charter boats stayed below the annual catch limit.

Shane Cantrell – Charter Fisherman's Association

Sector separation is the foundation for solving many fishing problems. Many fish caught in federal waters are claimed to be caught in state waters. The for-hire component was 37% under their annual catch target for the first year of sector separation. They left a lot of fish in the water while, private anglers exceeded their annual catch target. Private anglers operate completely differently than the charter boats. As a result of sector separation, everyone in the Country continues to have access to the fishery. Rather than tearing down the systems that are working, the Council should start working on solutions and stop attacking commercial management and the developing charter management. Removing sector separation would only give private anglers a handful of extra days. He supports sector separation and is in favor of Alternative 3.

Scott Hickman – Charter, commercial, and recreational

He knows the fishery in south Louisiana. The rest of the Gulf would be lucky to enjoy the resources that exist in Louisiana. Federally permitted boats can't fish all year, they only get 46 days to fish and that is discriminatory. Let them develop a plan that allows them to access the fishery in the federal waters. Recreational anglers fishing from charter vessels need to be able to fish more. Venice captains do need red snapper because it's a big part of their business. 10 years ago the leadership of charter boats in Texas and Florida came together to start working on sector separation. Coastal Conservation Association wouldn't get on board so here is where we are. He believes the charter sector can develop a good management plan. He supports sector separation and is in favor of Alternative 3.

David Cresson - Private angler

He asks the Council to reconsider the dates of the meeting. The Thursday before Memorial Day weekend is a difficult day to host a meeting because everyone is fishing. He agrees that red snapper are not the target species of charter captains in Louisiana. He enjoys a good relationship with charter captains in Louisiana and many directors of the Coastal Conservation Association are charter boat operators. He hears a lot of talk about accountability and he believes that giving management control over the state of Louisiana would be in everyone's best interest. Amendment 40 was passed with the understanding that there was a sunset provision and now, after just one year, people are pushing for the removal of the sunset. The Council went against their own Advisory Panel and the state directors and scientists to approve Amendment 40. The

recreational sector is being divided and conquered and he thinks that everyone needs to work together. The charter fleet does give access to America, but- when he wanted to bring his baseball team on a headboat in Orange Beach his trip was cancelled because the boat didn't want to use their quota on a half-booked boat. He opposes sector separation and supports Alternative 1.

Maurice Darquin – Charter

He is an inshore guide and has heard that sector separation is hurting boat dealers and other businesses. He is against sector separation and supports Alternative 1.

Ben Tucker – Private angler

He supports Alternative 1.

Robert Boudet – Private angler

He supports Alternative 1, no action.

Julie Herbert – Private angler and serves on Wildlife and Fishery Commission

She fishes with her family. She runs an environmental permitting company and she ensures that development doesn't disrupt estuaries and rookeries. She is a member of Coastal Conservation Association. She has seen sector separation divide and conquer. LA Creel is the best fisheries information in the nation because they've raised the cost of the licenses and there are only 8 offshore landing places in Louisiana. The recreational sector needs to come together to ensure the federal government doesn't take away access the resource. She supports Alternative 1.

**Webinar
May 31, 2016**

Council/Staff

Emily Muehlstein

Bernadine Roy

14 members of the public attended.

James Zurbrick – Commercial

He supports Alternative 3: Remove the sunset provision for sector separation and continue the separate management of the federal for-hire and private angling components. He has seen it work in the commercial sector by them coming up with their own plan. Wants the recreational sector to come up with their own management plan. This is about conservation and safety.

Eric Brazer - Gulf of Mexico Shareholders Alliance

The Shareholders Alliance Supports Alternative 3. Sector separation is doing what it was intended to do. Clearly the old way of doing business wasn't working. The private anglers and the charter fisherman are all dealing with shorter seasons. The recreational sector as a whole went over its quota for the better part of a quarter century. So clearly things weren't working. Sector separation is giving fisherman who want to solve this problem, the charter and the

headboat sectors, a way to solve it. Sector separation gives them a chance to build a management plan that works for them. It worked really well on the commercial side of things and we want the charter guys and the headboat guys to have the same opportunity that the commercial sector has had. Private anglers deserve the opportunity as well. Eliminating the sector separation and enacting the sunset is going to lead to a mismanaged system. Ending sector separation isn't going to help private anglers and it's only going to hurt the charter boat. If we keep this sunset provision, nobody wins. We really shouldn't be putting together and supporting measures that hurt one group in order to protect and help another. He urges the private anglers to work towards a solution that works for them.

George McKinney – Private angler

Would like to see the sunset take effect. He has charterboat fished and private boat fished for over 60 years for snapper. He loves charterboat operators and knows they work very hard for a living. He believes that the historical data that was used to determine the current division did not take into account the large, technological advances that now enable the private fleet to catch more fish than they could in the 1970s and 80s, before they had pinpoint navigation systems, sonar and everything else. He would like to see sector separation sunset and the system should be re-evaluated from scratch.

Reef Fish Amendment 45 Summary of Written Comments

Comments received by June 17, 2016

Support for Alternative 1: No Action

- Sector separation is unfair and unpopular.
- The nine-day season is unacceptably short.
- Private anglers should have the same opportunity to fish as any other type of angler.
- Sector separation is stealing from the public to privatize the resource and give it to a for-profit industry.
- State guide boats should not have been excluded from sector separation.
- The program needs to be reviewed and evaluated prior to consideration of extension.
- The Council should abide by their three-year commitment.
- Sector separation is a disservice to private anglers who provide more economic benefit than charter and commercial anglers.
- It is too soon to seek the removal of the sunset provision.
- Recreational fishermen should have a longer season than charter fishermen.
- The allocation of red snapper among sectors is disproportionate.
- Private anglers should not be forced to pay for extra opportunities to fish on charter or commercial “dude trips.”
- Sector separation is discriminatory and does not allow fair access to the resources.
- Recreational fishermen have lower discards than commercial fishermen and should be the ones reaping those benefits.
- Recreational fishermen build reefs to restore the fishery and should be able to reap those benefits.
- The value of charter permits has raised dramatically due to the manipulation of regulations.
- Sector separation was illegal to begin with because it allocates between “components” of the fishery rather than fishermen. The Magnuson-Stevens Act does not define a charter operator as a recreational fishermen and federal for-hire reef fish permit holders are not “United States Fishermen.” The anglers fishing from for-hire boats are the fishermen.
- Recreational anglers outnumber all others but are under-represented by fisheries management policy.
- The quota should be distributed so that each sector gets an equal number of days to fish.
- The Council has created controversy between sectors who used to work together.
- Charter and private anglers should have the same regulations.
- It is unconstitutional to gift a public resource to a select few.

Support for Alternative 3: Remove the Sunset Provision

- Sector separation is needed and was long overdue.
- The charter boat sector should be protected so anglers without their own boats can fish.
- Charter vessels and headboats should be allowed to move forward with their own fishery management plans through Amendments 41 and 42.
- The industry wants to become accountable.

- Charter fishermen need more time to gather data so better management decisions can be made.
- Sector separation has allowed charter businesses grow.

Other Comments

- The federal fisheries management system is corrupt and anglers have lost faith in the system.
- Support for regional management.
- Support for state based management.
- Support for the Graves Bill H.R. 3094.
- The recreational red snapper season needs to be longer.
- It's hard to find an opportunity to fish in the short federal season.
- The nine-day season puts anglers at a significant safety risk when people are forced to fish in inclement weather.
- The short red snapper season has caused effort shifting and inshore fisheries are in decline.
- Incompatible state seasons shorten the federal season for private anglers.
- The short private season is disproportionate to commercial and charter seasons.
- The Council needs to get better fisheries data.
- Consider collecting input on stock health from local fishermen.
- Private and charter fishermen should report their catch.
- Red snapper should be a sport fish.
- Red snapper shouldn't be harvested commercially.
- The red snapper stock is healthy and the annual catch limit should be increased.
- The red snapper population has overtaken the Gulf and is damaging other reef fish populations.
- Discarding red snapper during the closed season is frustrating.
- Restrictive rules and seasons encourage illegal fishing.
- Bycatch from shrimping and commercial fishing has a greater impact on fish stock health than recreational fishing.
- Red snapper should be managed with a tag system. Give each private angler 25 tags and allow them to harvest 2-fish per day over 3-months.
- Consider opening the private recreational season on weekends only.
- Amberjack shouldn't be closed during snapper season.
- Recreational anglers should be allowed to fish all year long.
- Charter boats should fish under the commercial annual catch limit.
- Consider closing the fishery entirely until the red snapper stock is healthy.
- Charter boats are hurting the fisheries.
- Commercial fishermen don't report their catch honestly.
- The Council favors commercial interests.
- The Council should listen to the majority of fishermen rather than a few "big shots."
- Restaurants on the Gulf coast serve farm raised and imported fish while commercial red snapper are exported.

- The commercial industry overfishes red snapper and feeding the country with the resource should not be a priority.
- Catch share systems give a public resource to a select few.
- U.S. Citizens should not be denied their basic rights to access a natural resource.

Full text of comments received can be accessed at:

<https://docs.google.com/spreadsheets/d/1QjCT647GVX06qrvzOTQzrXEZIVgn4SB0pu8k0cb8hs/w/edit#gid=1043677366>

http://gulfcouncil.org/fishery_management_plans/Public%20Comment/Amendment%2045%20-%20Sector%20Separation/Amendment%2045%20Comments.pdf

APPENDIX D. CURRENT FEDERAL REGULATIONS FOR GULF OF MEXICO RECREATIONAL RED SNAPPER MANAGEMENT

1. § 622.9 Prohibited gear and methods--general.

(e) Use of Gulf reef fish as bait prohibited. Gulf reef fish may not be used as bait in any fishery, except that, when purchased from a fish processor, the filleted carcasses and offal of Gulf reef fish may be used as bait in trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster.

2. § 622.20 Permits and endorsements

(b) Charter vessel/headboat permits. For a person aboard a vessel that is operating as a charter vessel or headboat to fish for or possess Gulf reef fish, in or from the EEZ, a valid charter vessel/headboat permit for Gulf reef fish must have been issued to the vessel and must be on board.

(1) Limited access system for charter vessel/headboat permits for Gulf reef fish. No applications for additional charter vessel/headboat permits for Gulf reef fish will be accepted. Existing permits may be renewed, are subject to the restrictions on transfer in paragraph (b)(1)(i) of this section, and are subject to the renewal requirements in paragraph (b)(1)(ii) of this section.

(i) Transfer of permits--(A) Permits without a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that does not have a historical captain endorsement is fully transferable, with or without sale of the permitted vessel, except that no transfer is allowed to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred. An application to transfer a permit to an inspected vessel must include a copy of that vessel's current USCG Certificate of Inspection (COI). A vessel without a valid COI will be considered an uninspected vessel with an authorized passenger capacity restricted to six or fewer passengers.

(B) Permits with a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that has a historical captain endorsement may only be transferred to a vessel operated by the historical captain, cannot be transferred to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred, and is not otherwise transferable.

(C) Procedure for permit transfer. To request that the RA transfer a charter vessel/headboat permit for Gulf reef fish, the owner of the vessel who is transferring the permit and the owner of the vessel that is to receive the transferred permit must complete the transfer information on the reverse side of the permit and return the permit and a completed application for transfer to the RA. See § 622.4(f) for additional transfer-related requirements applicable to all permits issued under this part.

(ii) Renewal. (A) Renewal of a charter vessel/headboat permit for Gulf reef fish is contingent upon the permitted vessel and/or captain, as appropriate, being included in an active

survey frame for, and, if selected to report, providing the information required in one of the approved fishing data surveys. Surveys include, but are not limited to—

(1) NMFS' Marine Recreational Fishing Vessel Directory Telephone Survey (conducted by the Gulf States Marine Fisheries Commission);

(2) NMFS' Southeast Headboat Survey (as required by § 622.26(b)(1));

(3) Texas Parks and Wildlife Marine Recreational Fishing Survey; or

(4) A data collection system that replaces one or more of the surveys in paragraph (b)(1)(ii)(A),(1),(2), or (3) of this section.

(B) A charter vessel/headboat permit for Gulf reef fish that is not renewed or that is revoked will not be reissued. A permit is considered to be not renewed when an application for renewal, as required, is not received by the RA within 1 year of the expiration date of the permit.

(iii) Requirement to display a vessel decal. Upon renewal or transfer of a charter vessel/headboat permit for Gulf reef fish, the RA will issue the owner of the permitted vessel a vessel decal for Gulf reef fish. The vessel decal must be displayed on the port side of the deckhouse or hull and must be maintained so that it is clearly visible.

(2) A charter vessel or headboat may have both a charter vessel/headboat permit and a commercial vessel permit. However, when a vessel is operating as a charter vessel or headboat, a person aboard must adhere to the bag limits. See the definitions of "Charter vessel" and "Headboat" in § 622.2 for an explanation of when vessels are considered to be operating as a charter vessel or headboat, respectively.

(3) If Federal regulations for Gulf reef fish in subparts A or B of this part are more restrictive than state regulations, a person aboard a charter vessel or headboat for which a charter vessel/headboat permit for Gulf reef fish has been issued must comply with such Federal regulations regardless of where the fish are harvested.

3. § 622.26 Recordkeeping and reporting.

(b) Charter vessel/headboat owners and operators--(1) Reporting requirement. The owner or operator of a vessel for which a charter vessel/headboat permit for Gulf reef fish has been issued, as required under § 622.20(b), or whose vessel fishes for or lands such reef fish in or from state waters adjoining the Gulf EEZ, who is selected to report by the SRD must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD and must submit such record as specified in paragraph (b)(2) of this section.

(2) Reporting deadlines--(i) Charter vessels. Completed fishing records required by paragraph (b)(1) of this section for charter vessels must be submitted to the SRD weekly, postmarked not later than 7 days after the end of each week (Sunday). Information to be reported is indicated on the form and its accompanying instructions.

(ii) Headboats. Completed fishing records required by paragraph (b)(1) of this section for headboats must be submitted to the SRD monthly and must either be made available to an authorized statistical reporting agent or be postmarked not later than 7 days after the end of each month. Information to be reported is indicated on the form and its accompanying instructions.

4. § 622.27 At-sea observer coverage.

(a) Required coverage. A vessel for which a Federal commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued must carry a NMFS-approved observer, if the vessel's trip is selected by the SRD for observer coverage. Vessel permit renewal is contingent upon compliance with this paragraph (a).

(b) Notification to the SRD. When observer coverage is required, an owner or operator must advise the SRD in writing not less than 5 days in advance of each trip of the following:

(1) Departure information (port, dock, date, and time).

(2) Expected landing information (port, dock, and date).

(c) Observer accommodations and access. An owner or operator of a vessel on which a NMFS-approved observer is embarked must:

(1) Provide accommodations and food that are equivalent to those provided to the crew.

(2) Allow the observer access to and use of the vessel's communications equipment and personnel upon request for the transmission and receipt of messages related to the observer's duties.

(3) Allow the observer access to and use of the vessel's navigation equipment and personnel upon request to determine the vessel's position.

(4) Allow the observer free and unobstructed access to the vessel's bridge, working decks, holding bins, weight scales, holds, and any other space used to hold, process, weigh, or store fish.

(5) Allow the observer to inspect and copy the vessel's log, communications logs, and any records associated with the catch and distribution of fish for that trip.

5. § 622.29 Conservation measures for protected resources.

(a) Gulf reef fish commercial vessels and charter vessels/headboats--(1) Sea turtle conservation measures. (i) The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under

§§ 622.20(a)(1) and 622.20(b), respectively, must post inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS.

(ii) Such owner or operator must also comply with the sea turtle bycatch mitigation measures, including gear requirements and sea turtle handling requirements, specified in §§ 635.21(c)(5)(i) and (ii) of this chapter, respectively.

(iii) Those permitted vessels with a freeboard height of 4 ft (1.2 m) or less must have on board a dipnet, tire, short-handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in §§ 635.21(c)(5)(i)(E) through (L) of this chapter with the following modifications: the dipnet handle can be of variable length, only one NMFS-approved short-handled dehooker is required (i.e., § 635.21(c)(5)(i)(G) or (H) of this chapter); and life rings, seat cushions, life jackets, and life vests or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives to

tires for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter. Those permitted vessels with a freeboard height of greater than 4 ft (1.2 m) must have on board a dipnet, tire, long-handled line clipper, a short-handled and a long-handled dehooker, a long-handled device to pull an inverted "V", long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in § 635.21(c)(5)(i)(A) through (L) of this chapter with the following modifications: only one NMFS-approved long-handled dehooker (§ 635.21(c)(5)(i)(B) or (C)) of this chapter and one NMFS-approved short-handled dehooker (§ 635.21(c)(5)(i)(G) or (H) of this chapter) are required; and life rings, seat cushions, life jackets, and life vests, or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter.

(2) Smalltooth sawfish conservation measures. The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under §§ 622.20(a)(1) and 622.20(b), respectively, that incidentally catches a smalltooth sawfish must--

- (i) Keep the sawfish in the water at all times;
 - (ii) If it can be done safely, untangle the line if it is wrapped around the saw;
 - (iii) Cut the line as close to the hook as possible; and
 - (iv) Not handle the animal or attempt to remove any hooks on the saw, except for with a long-handled dehooker.
- (b) [Reserved]

6. § 622.30 Required fishing gear.

For a person on board a vessel to fish for Gulf reef fish in the Gulf EEZ, the vessel must possess on board and such person must use the gear as specified in paragraphs (a) through (c) of this section.

(a) Non-stainless steel circle hooks. Non-stainless steel circle hooks are required when fishing with natural baits.

(b) Dehooking device. At least one dehooking device is required and must be used to remove hooks embedded in Gulf reef fish with minimum damage. The hook removal device must be constructed to allow the hook to be secured and the barb shielded without re-engaging during the removal process. The dehooking end must be blunt, and all edges rounded. The device must be of a size appropriate to secure the range of hook sizes and styles used in the Gulf reef fish fishery.

(c) Venting tool. At least one venting tool is required and must be used to deflate the abdominal cavities of Gulf reef fish to release the fish with minimum damage. This tool must be a sharpened, hollow instrument, such as a hypodermic syringe with the plunger removed, or a 16-gauge needle fixed to a hollow wooden dowel. A tool such as a knife or an ice-pick may not be used. The venting tool must be inserted into the fish at a 45-degree angle approximately 1 to 2 inches (2.54 to 5.08 cm) from the base of the pectoral fin. The tool must be inserted just deep enough to release the gases, so that the fish may be released with minimum damage.

7. § 622.32 Prohibited gear and methods.

Also see § 622.9 for additional prohibited gear and methods that apply more broadly to multiple fisheries or in some cases all fisheries.

(a) Poisons. A poison may not be used to take Gulf reef fish in the Gulf EEZ.

(b) [Reserved]

8. § 622.33 Prohibited species.

(d) Gulf reef fish exhibiting trap rash. Possession of Gulf reef fish in or from the Gulf EEZ that exhibit trap rash is prima facie evidence of illegal trap use and is prohibited. For the purpose of this paragraph, trap rash is defined as physical damage to fish that characteristically results from contact with wire fish traps. Such damage includes, but is not limited to, broken fin spines, fin rays, or teeth; visually obvious loss of scales; and cuts or abrasions on the body of the fish, particularly on the head, snout, or mouth.

9. § 622.34 Seasonal and area closures designed to protect Gulf reef fish.

(a) Closure provisions applicable to the Madison and Swanson sites and Steamboat Lumps, and the Edges-- (1) Descriptions of Areas. (i) The Madison and Swanson sites are bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	29°17'	85°50'
B	29°17'	85°38'
C	29°06'	85°38'
D	29°06'	85°50'
A	29°17'	85°50'

(ii) Steamboat Lumps is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°14'	84°48'
B	28°14'	84°37'
C	28°03'	84°37'
D	28°03'	84°48'
A	28°14'	84°48'

(iii) The Edges is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°51'	85°16'
B	28°51'	85°04'
C	28°14'	84°42'
D	28°14'	84°54'
A	28°51'	85°16'

(2) Within the Madison and Swanson sites and Steamboat Lumps, possession of Gulf reef fish is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section.

(3) Within the Madison and Swanson sites and Steamboat Lumps during November through April, and within the Edges during January through April, all fishing is prohibited, and possession of any fish species is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section. The provisions of this paragraph, (a)(3), do not apply to highly migratory species.

(4) For the purpose of paragraph (a) of this section, transit means non-stop progression through the area; fishing gear appropriately stowed means--

(i) A longline may be left on the drum if all gangions and hooks are disconnected and stowed below deck. Hooks cannot be baited. All buoys must be disconnected from the gear; however, buoys may remain on deck.

(ii) A trawl net may remain on deck, but trawl doors must be disconnected from the trawl gear and must be secured.

(iii) A gillnet must be left on the drum. Any additional gillnets not attached to the drum must be stowed below deck.

(iv) A rod and reel must be removed from the rod holder and stowed securely on or below deck. Terminal gear (i.e., hook, leader, sinker, flasher, or bait) must be disconnected and stowed separately from the rod and reel. Sinkers must be disconnected from the down rigger and stowed separately.

(5) Within the Madison and Swanson sites and Steamboat Lumps, during May through October, surface trolling is the only allowable fishing activity. For the purpose of this paragraph (a)(5), surface trolling is defined as fishing with lines trailing behind a vessel which is in constant motion at speeds in excess of four knots with a visible wake. Such trolling may not involve the use of down riggers, wire lines, planers, or similar devices.

(6) For the purpose of this paragraph (a), fish means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. Highly migratory species means tuna species, marlin (*Tetrapturus spp.* and *Makaira spp.*), oceanic sharks, sailfishes (*Istiophorus spp.*), and swordfish (*Xiphias gladius*).

10. § 622.35 Gear restricted areas.

(a) Reef fish stressed area. The stressed area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 2 in Appendix B of this part.

(1) A powerhead may not be used in the stressed area to take Gulf reef fish. Possession of a powerhead and a mutilated Gulf reef fish in the stressed area or after having fished in the stressed area constitutes prima facie evidence that such reef fish was taken with a powerhead in the stressed area. The provisions of this paragraph do not apply to hogfish.

(2) A roller trawl may not be used in the stressed area. Roller trawl means a trawl net equipped with a series of large, solid rollers separated by several smaller spacer rollers on a separate cable or line (sweep) connected to the footrope, which makes it possible to fish the gear over rough bottom, that is, in areas unsuitable for fishing conventional shrimp trawls. Rigid framed trawls adapted for shrimping over uneven bottom, in wide use along the west coast of Florida, and shrimp trawls with hollow plastic rollers for fishing on soft bottoms, are not considered roller trawls.

(b) Seasonal prohibitions applicable to bottom longline fishing for Gulf reef fish. (1) From June through August each year, bottom longlining for Gulf reef fish is prohibited in the portion of the Gulf EEZ east of 85°30' W. long. that is shoreward of rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°58.70'	85°30.00'
B	28°59.25'	85°26.70'
C	28°57.00'	85°13.80'
D	28°47.40'	85°3.90'
E	28°19.50'	84°43.00'
F	28°0.80'	84°20.00'
G	26°48.80'	83°40.00'
H	25°17.00'	83°19.00'
I	24°54.00'	83°21.00'
J	24°29.50'	83°12.30'
K	24°26.50'	83°00.00'

(2) Within the prohibited area and time period specified in paragraph (b)(1) of this section, a vessel with bottom longline gear on board may not possess Gulf reef fish unless the bottom longline gear is appropriately stowed, and a vessel that is using bottom longline gear to fish for species other than Gulf reef fish may not possess Gulf reef fish. For the purposes of paragraph (b) of this section, appropriately stowed means that a longline may be left on the drum

if all gangions and hooks are disconnected and stowed below deck; hooks cannot be baited; and all buoys must be disconnected from the gear but may remain on deck.

(3) Within the Gulf EEZ east of 85°30' W. long., a vessel for which a valid eastern Gulf reef fish bottom longline endorsement has been issued that is fishing bottom longline gear or has bottom longline gear on board cannot possess more than a total of 1000 hooks including hooks on board the vessel and hooks being fished and cannot possess more than 750 hooks rigged for fishing at any given time. For the purpose of this paragraph, “hooks rigged for fishing” means hooks attached to a line or other device capable of attaching to the mainline of the longline.

(c) Reef fish longline and buoy gear restricted area. A person aboard a vessel that uses, on any trip, longline or buoy gear in the longline and buoy gear restricted area is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5%, by weight, of all fish on board or landed. The longline and buoy gear restricted area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 1 in Appendix B of this part.

(d) Alabama SMZ. The Alabama SMZ consists of artificial reefs and surrounding areas. In the Alabama SMZ, fishing by a vessel that is operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, as required under § 622.20(a)(1), or a vessel with such a permit fishing for Gulf reef fish is limited to hook-and-line gear with three or fewer hooks per line and spearfishing gear. A person aboard a vessel that uses on any trip gear other than hook-and-line gear with three or fewer hooks per line and spearfishing gear in the Alabama SMZ is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5%, by weight, of all fish on board or landed. The Alabama SMZ is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	30°02.5'	88°07.7'
B	30°02.6'	87°59.3'
C	29°55.0'	87°55.5'
D	29°54.5'	88°07.5'
A	30°02.5'	88°07.7'

11. § 622.37 Size limits.

All size limits in this section are minimum size limits unless specified otherwise. A fish not in compliance with its size limit, as specified in this section, in or from the Gulf EEZ, may not be possessed, sold, or purchased. A fish not in compliance with its size limit must be released immediately with a minimum of harm. The operator of a vessel that fishes in the EEZ is responsible for ensuring that fish on board are in compliance with the size limits specified in this section. See § 622.10 regarding requirements for landing fish intact.

(a) Snapper—(1) Red snapper—16 inches (40.6 cm), TL, for a fish taken by a person subject to the bag limit specified in § 622.38 (b)(3) and 13 inches (33.0 cm), TL, for a fish taken by a person not subject to the bag limit.

12. § 622.38 Bag and possession limits.

(a) Additional applicability provisions for Gulf reef fish. (1) Section 622.11(a) provides the general applicability for bag and possession limits. However, § 622.11(a) notwithstanding, bag and possession limits also apply for Gulf reef fish in or from the EEZ to a person aboard a vessel that has on board a commercial permit for Gulf reef fish--

(i) When trawl gear or entangling net gear is on board. A vessel is considered to have trawl gear on board when trawl doors and a net are on board. Removal from the vessel of all trawl doors or all nets constitutes removal of trawl gear.

(ii) When a longline or buoy gear is on board and the vessel is fishing or has fished on a trip in the reef fish longline and buoy gear restricted area specified in § 622.35(c). A vessel is considered to have a longline on board when a power-operated longline hauler, a cable of diameter and length suitable for use in the longline fishery, and gangions are on board. Removal of any one of these three elements, in its entirety, constitutes removal of a longline.

(iii) For a species/species group when its quota has been reached and closure has been effected, provided that no commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, are on board as specified in paragraph (a)(2) of this section.

(iv) When the vessel has on board or is tending any trap other than a stone crab trap or a spiny lobster trap.

(2) A person aboard a vessel that has a Federal commercial vessel permit for Gulf reef fish and commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, may not possess Gulf reef fish caught under a bag limit.

(b) Bag limits--

(3) Red snapper--2. However, no red snapper may be retained by the captain or crew of a vessel operating as a charter vessel or headboat. The bag limit for such captain and crew is zero.

13. § 622.39 Quotas.

See § 622.8 for general provisions regarding quota applicability and closure and reopening procedures. This section, provides quotas and specific quota closure restrictions for Gulf reef fish.

(a) Gulf reef fish

(2) *Recreational quotas*. The following quotas apply to persons who fish for Gulf reef fish other than under commercial vessel permits for Gulf reef fish and the applicable commercial quotas specified in paragraph (a)(1) of this section.

(i) *Recreational quota for red snapper—(A) Total recreational quota (Federal charter vessel/headboat and private angling component quotas combined)—*

(1) For fishing year 2015—7.007 million lb (3.178 million kg), round weight.

(2) For fishing year 2016—7.192 million lb (3.262 million kg), round weight.

(3) For fishing year 2017 and subsequent fishing years—7.076 million lb (3.210 million kg), round weight.

(B) *Federal charter vessel/headboat component quota.* The Federal charter vessel/headboat component quota applies to vessels that have been issued a valid Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year. This component quota is effective for only the 2015, 2016, and 2017 fishing years. For the 2018 and subsequent fishing years, the applicable total recreational quota specified in §622.39(a)(2)(i)(A) will apply to the recreational sector.

- (1) For fishing year 2015—2.964 million lb (1.344 million kg), round weight.
- (2) For fishing year 2016—3.042 million lb (1.380 million kg), round weight.
- (3) For fishing year 2017—2.993 million lb (1.358 million kg), round weight.

(C) *Private angling component quota.* The private angling component quota applies to vessels that fish under the bag limit and have not been issued a Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year. This component quota is effective for only the 2015, 2016, and 2017 fishing years. For the 2018 and subsequent fishing years, the applicable total recreational quota specified in §622.39(a)(2)(i)(A) will apply to the recreational sector.

- (1) For fishing year 2015—4.043 million lb (1.834 million kg), round weight.
- (2) For fishing year 2016—4.150 million lb (1.882 million kg), round weight.
- (3) For fishing year 2017—4.083 million lb (1.852 million kg), round weight.

14. §622.41 Annual catch limits (ACLs), annual catch targets (ACTs), and accountability measures (AMs).

(q) Red Snapper

(2) *Recreational sector.* (i) The recreational ACL is equal to the total recreational quota specified in §622.39(a)(2)(i)(A). The AA will determine the length of the red snapper recreational fishing season, or recreational fishing seasons for the Federal charter vessel/headboat and private angling components, based on when recreational landings are projected to reach the recreational ACT, or respective recreational component ACT specified in paragraph (q)(2)(iii) of this section, and announce the closure date(s) in the FEDERAL REGISTER. These seasons will serve as in-season accountability measures. On and after the effective date of the recreational closure or recreational component closure notifications, the bag and possession limit for red snapper or for the respective component is zero. When the recreational sector or Federal charter vessel/headboat component is closed, this bag and possession limit applies in the Gulf on board a vessel for which a valid Federal charter vessel/headboat permit for Gulf reef fish has been issued, without regard to where such species were harvested, *i.e.*, in state or Federal waters.

(ii) In addition to the measures specified in paragraph (q)(2)(i) of this section, if red snapper recreational landings, as estimated by the SRD, exceed the total recreational quota specified in §622.39(a)(2)(i)(A), and red snapper are overfished, based on the most recent Status of U.S. Fisheries Report to Congress, the AA will file a notification with the Office of the Federal Register to reduce the total recreational quota by the amount of the quota overage in the prior fishing year, and reduce the applicable recreational component quota(s) specified in §622.39(a)(2)(i)(B) and (C) and the applicable recreational component ACT(s) specified in paragraph (q)(2)(iii) of this section (based on the buffer between the total recreational ACT and the total recreational quota specified in the FMP), unless NMFS determines based upon the best scientific information available that a greater, lesser, or no overage adjustment is necessary.

(iii) *Recreational ACT for red snapper*—(A) *Total recreational ACT (Federal charter vessel/headboat and private angling component ACTs combined)*—

- (1) For fishing year 2015—5.606 million lb (2.543 million kg), round weight.
- (2) For fishing year 2016—5.754 million lb (2.610 million kg), round weight.
- (3) For fishing year 2017 and subsequent fishing years—5.661 million lb (2.568 million kg), round weight.

(B) *Federal charter vessel/headboat component ACT*. The Federal charter vessel/headboat component ACT applies to vessels that have been issued a valid Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year. This component ACT is effective for only the 2015, 2016, and 2017 fishing years. For the 2018 and subsequent fishing years, the applicable total recreational quota specified in §622.39(a)(2)(i)(A) will apply to the recreational sector.

- (1) For fishing year 2015—2.371 million lb (1.075 million kg), round weight.
- (2) For fishing year 2016—2.434 million lb (1.104 million kg), round weight.
- (3) For fishing year 2017—2.395 million lb (1.086 million kg), round weight.

(C) *Private angling component ACT*. The private angling component ACT applies to vessels that fish under the bag limit and have not been issued a Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year. This component ACT is effective for only the 2015, 2016, and 2017 fishing years. For the 2018 and subsequent fishing years, the applicable total recreational quota specified in §622.39(a)(2)(i)(A) will apply to the recreational sector.

- (1) For fishing year 2015—3.234 million lb (1.467 million kg), round weight.
- (2) For fishing year 2016—3.320 million lb (1.506 million kg), round weight.
- (3) For fishing year 2017—3.266 million lb (1.481 million kg), round weight.