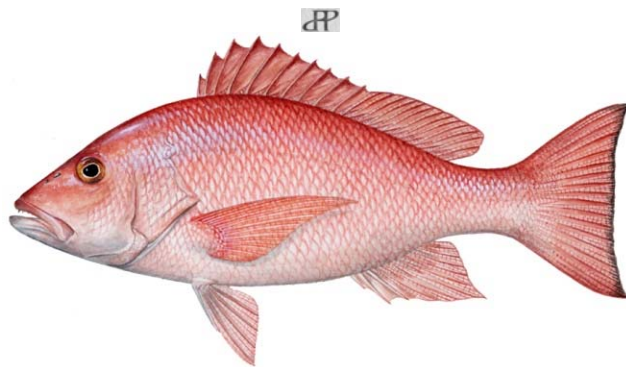


# **Revision of the Red Snapper Recreational Sector Separation Sunset Provision**



## **Draft 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**

**April 2016**



*This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.*

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# GULF OF MEXICO REEF FISH AMENDMENT 45

## Environmental Assessment (EA) Cover Sheet

Red Snapper 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 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 sunseting the regulations implementing Amendment 40, which separated the recreational sector of the Gulf of Mexico red snapper fishery 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
CEA	Cumulative Effects Analysis
Council	Gulf of Mexico Fishery Management Council
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
FEIS	Final Environmental Impact Statement
EJ	environmental justice
ESA	Endangered Species Act
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
HAPC	habitat areas of particular concern
IFQ	individual fishing quota
IRFA	Initial Regulatory Flexibility Analysis
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
mp	million pounds
MRIP	Marine Recreational Information Program
MRFSS	Marine Recreational Fisheries Statistics Survey
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OY	optimum yield
RFFA	Reasonable and foreseeable future action
RIR	Regulatory Impact Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office of NMFS
SFA	Sustainable Fisheries Act
SRHS	Southeast Region Headboat Survey
SSC	Scientific and Statistical Committee
TAC	total allowable catch
TL	total length
VEC	valued environmental components
ww	whole weight

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# 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 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 quota 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 a quota, component sub-quotas, bag and size limits, and closed seasons.<sup>1</sup>

### *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 vessel component and a federal for-hire component. The federal for-hire component includes charter vessels and headboats. Those for-hire vessels with a federal reef fish charter/headboat permit for reef fish are allowed to fish for red snapper in federal waters, and those without federal permits are restricted to fishing for red snapper in state waters. Recreational management measures have been applied to the recreational sector as a whole, without distinguishing between the private angling and federalfor-hire components. Recreational red snapper season lengths in federal waters have been 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 quota) and in part due to non-compatible state fishing seasons. Thus, red snapper fishing opportunities for both the federal for-hire and private angling components in federal waters through the 2014 fishing year (Table 1.1.1). In

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<sup>1</sup> See Appendix E for other regulations pertaining to the harvest of red snapper in the Gulf.

2015, sector separation was established. The federal for-hire components season length was similar to 2012 and 2013, while the private angler components season length was similar to 2014.

**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 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 harvest of red snapper by the recreational sector and to minimize the chance for recreational quota overruns, the Council approved sector separation through Amendment 40 to the Fishery Management Plan (FMP) for the Reef Fish Resources of the Gulf of Mexico (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 quota between the private angling (57.7%) and federal for-hire (42.3%) components. In addition, Amendment 40 established separate red snapper annual catch targets (ACTs) and season closure provisions for the federal for-hire and private angling components. Each component’s ACT is 20% less than the component sub-quota and 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 information<sup>2</sup>. 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 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).

<sup>2</sup> See [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/gulf\\_fisheries/red\\_snapper/index.html](http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/index.html) for more information.

**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 industry. 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. In addition, 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.

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 established under Amendment 40 expires under the 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 for-hire sector.

## 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](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 Fishery Management Plan [FMP] (with its associated environmental impact statement [EIS]) (GMFMC 1981) was effective November 8, 1984, and defined the reef fish fishery management unit to include red snapper and other important reef fish.

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 is evaluating whether the allocation should be changed through **Amendment 28** (GMFMC 2015a). If approved, Amendment 28 would reallocate the Gulf red snapper stock annual catch limit (ACL) between the commercial and recreational sectors from a 51 to 49 percent split to a 48.5 to 51.5 percent 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 annual catch target (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 reef fish charter vessel/headboat permit 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

### 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.

**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).

**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 sub-quotas, but managed a single recreational quota. 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.

**Alternative 2** would extend the sunset provision for a set number of years and **Options 2a-2b** 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 **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 Council takes action eliminating sector separation. This alternative would relieve any time constraints for completing Amendments 41 and 42, or any other action concerning management measures for the separate components of the recreational sector that the Council decides to take.



## CHAPTER 3. AFFECTED ENVIRONMENT

The actions considered in this 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 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 environmental impact statements.

#### 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 boats, headboats, and private vessels. In 2012 private vessels accounted for 70.0% of recreational red snapper landings, followed by charter boats (20.3%) and headboats (9.6%). On a state-by-state basis, Alabama accounted for the most landings (36.1%), followed by Florida (32.3%), Louisiana (19.2%), Texas (8.2%), and Mississippi (4.2%) (Table 3.1.1).



**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
<b>Florida (west)</b>	951,421	24.6%	207,359	5.4%	1,158,780	30.0%
<b>Alabama</b>	1,402,619	36.3%	242,223	6.3%	1,644,842	42.5%
<b>Mississippi</b>	528,229	13.7%	103,866	2.7%	632,095	16.3%
<b>Louisiana</b>	43,425	1.1%	1,693	0.0%	45,118	1.2%
<b>Texas</b>	163,704	4.2%	221,992	5.7%	385,696	10.0%
<b>Total</b>	3,089,398	79.9%	777,133	20.1%	3,866,531	100.0%

Sources: MRIP APAIS Adjusted SEFSC Recreational ACL Data (1986-2012), SEFSC Recreational ACL Data (2013-2014; accessed May 2015), LA Creel Survey data (2013-2014), SRHS CRNF file (Feb 2015).

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. Beginning in 1991, an explicit recreational allocation in pounds, based on 49% of the TAC, was specified, and that allocation was specified through 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 TACs 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 Gulf of Mexico Fishery Management Council (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 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, respectively<sup>3</sup>.

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

<sup>3</sup> Note the allocation for the commercial and recreational quotas shifted from the TAC to the ABC in 2010.

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, increased the combined quota for 2015 to 14.3 mp, though a 2014 stock assessment may lead to a revised combined quota for 2015, with decreasing quotas provided for subsequent years.

**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 total allowable catch (TAC) for the years 1991-2009 and the acceptable biological catch (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. Values highlighted in red are those where landings exceeded quotas.

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 total length 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 (MRIP), 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 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 ACT and 12% below the federal for-hire ACT (N. Farmer, NMFS SERO, pers. comm.).

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.

**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 Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey (May 2014). Values highlighted in red are those where landings exceeded quotas.

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

<b>Region and year</b>	<b>Season</b>	<b>Days open</b>
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-July 14	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	June 1-June 9	9
2015	Private angling - June 1-June 10	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 exceeded the quota in 15 out of 17 years, including 5 of the last 6 years (Table 3.1.3). Historical recreational landings estimates have recently been revised to reflect changes in methodology under the Marine Recreational Information Program (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 head boats 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 (ww) vs. days open, 1986-2013.

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 Individual Fishing Quota landings website (2012-2014 landings): [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/ifq/documents/pdfs/commercialquotascatchallowancetable.pdf](http://sero.nmfs.noaa.gov/sustainable_fisheries/ifq/documents/pdfs/commercialquotascatchallowancetable.pdf)

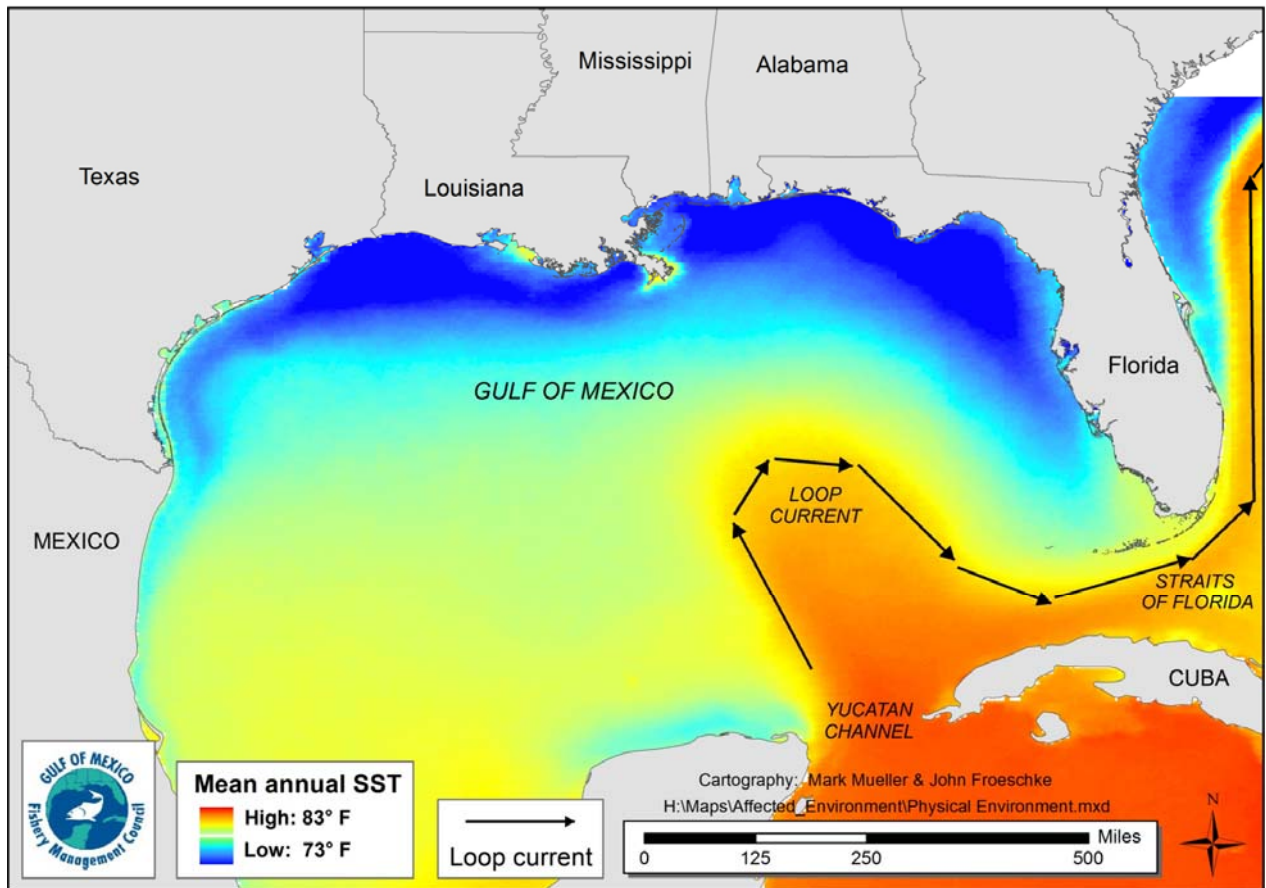
Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

## 3.2 Description of the Physical Environment

The Gulf has a total area of approximately 600,000 square miles (1.5 million km<sup>2</sup>), 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 Essential Fish Habitat (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).



**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 et al. 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).

#### 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 Scientific and Statistical Committee (SSC) in January 2015 SSC.<sup>4</sup> 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 Gulf red snapper stock evaluation assessment 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

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<sup>4</sup> 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](http://www.gulfcouncil.org/council_meetings/Briefing%20Materials/BB-01-2015/B%20-%202014%20Red%20Snapper%202014%20Update%20Presentation.pdf).

through 2011. For landings between 1880 and 1963, previously constructed historical 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 Marine Recreational Information Program (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, 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 yields<sup>5</sup>. 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 2015<sup>6</sup>. 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%

<sup>5</sup> Gulf of Mexico Fishery Management Council Standing and Special Scientific and Statistical Webinar Summary. February 19, 2015.

<sup>6</sup> Gulf of Mexico Fishery Management Council Standing and Special Scientific and Statistical Meeting Summary. May 20, 2015.



tended to converge to similar ABC levels over the long term. In the end, the SSC concluded that 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.

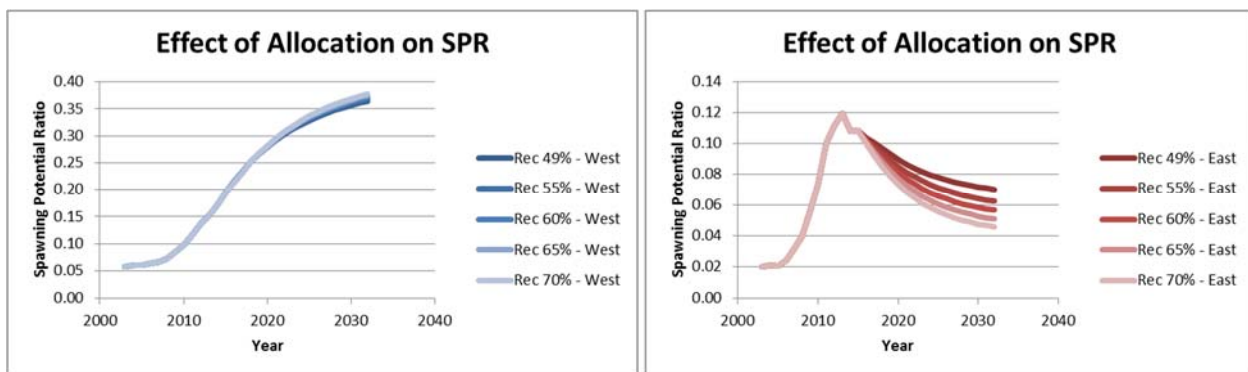
The last analysis conducted by the SEFSC evaluated the effects of changing the commercial:recreational allocation on OFL and ABC yield streams. This analysis was also reviewed by the SSC at their May 20, 2015 meeting. The recreational allocation was adjusted from the current 49% of the stock ACL up to 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 overfishing level (OFL) yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% spawning potential ratio (SPR) by 2032.

<b>OFL (Retained Yield Millions of Pounds Whole Weight)</b>						
<b>YEAR</b>	<b>Rec 49%</b>	<b>Rec 51.5%</b>	<b>Rec 55%</b>	<b>Rec 60%</b>	<b>Rec 65%</b>	<b>Rec 70%</b>
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 acceptable biological catch (ABC) yield streams and equilibrium yield for several allocations of recreational harvest and a target of 26% spawning potential ratio (SPR) by 2032.

ABC (Retained Yield Millions of Pounds Whole Weight)						
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 spawning potential ratio (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 Fishery Management Plan (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](http://www.gulfcouncil.org)) and SEDAR ([www.sefsc.noaa.gov/sedar](http://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/](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
<b>Family Balistidae – Triggerfishes</b>		
Gray Triggerfish	<i>Balistes capriscus</i>	Overfished, overfishing
<b>Family Carangidae – Jacks</b>		
Greater Amberjack	<i>Seriola dumerili</i>	Overfished, overfishing
Lesser Amberjack	<i>Seriola fasciata</i>	Unknown
Almaco Jack	<i>Seriola rivoliana</i>	Unknown
Banded Rudderfish	<i>Seriola zonata</i>	Unknown
<b>Family Labridae - Wrasses</b>		
Hogfish	<i>Lachnolaimus maximus</i>	Not overfished, no overfishing
<b>Family Malacanthidae - Tilefishes</b>		
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	Not overfished no overfishing
Blueline Tilefish	<i>Caulolatilus microps</i>	Unknown
Goldface Tilefish	<i>Caulolatilus chrysops</i>	Unknown
<b>Family Serranidae - Groupers</b>		
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
<b>Family Lutjanidae - Snappers</b>		
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

Federal law protects 40 species that may occur in the Gulf. Thirty-nine of these are under the jurisdiction of NMFS, while the West Indian manatee (*Trichechus manatus*) is managed by the U.S. Fish and Wildlife Service. Of the species under NMFS's jurisdiction, 27 are marine mammals that are protected under the Marine Mammal Protection Act (MMPA). 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 (LOF) 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 LOF and the classification process can be found at <http://www.nmfs.noaa.gov/pr/interactions/lof/>. Five of the 27 marine mammal species are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, and humpback). In addition to those five marine mammals, 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) are also protected under the ESA. Designated critical habitat for smalltooth sawfish, Gulf sturgeon, and the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles also occur within nearshore waters of the Gulf, though only loggerhead critical habitat occurs in federal waters.

NMFS has conducted specific analyses ("Section 7 consultations") to evaluate potential effects from the Gulf reef fish fishery on species and critical habitats protected under the ESA. On September 30, 2011, the Protected Resources Division released a biological opinion (Opinion) that concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (NMFS 2011). The Opinion also concluded that other ESA-listed species are not likely to be adversely affected by the FMP. 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. The Council addressed further measures to reduce take in the reef fish fishery's longline component in Amendment 31 (GMFMC 2009).

Subsequent to the completion of the Opinion, NMFS published final rules listing 20 new coral species (September 10, 2014), and designating critical habitat for the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles (July 10, 2014). NMFS addressed these changes in a series of consultation memoranda. In consultation memoranda dated September 16, 2014, and October 7, 2014, NMFS assessed the potential impact of the continued operation of the Gulf reef fish fishery on the newly-listed coral species occurring in the Gulf (3 species of *Orbicella* and *Mycetophyllia ferox*) and concluded that continued operation of the fishery is not likely to adversely affect any of the protected coral species. Similarly, in consultation memoranda dated September 16, 2014, NMFS assessed the potential impacts of continued authorization of South Atlantic and Gulf of Mexico fisheries on loggerhead critical habitat and concluded that continued operation of the Gulf reef fish fishery is not likely to adversely affect the newly designated critical habitat. The effects of reef fish fishing on these species is further



considered in a bycatch practicability analysis in Appendix B of Amendment 40 (GMFMC 2014a).

### **Marine Mammals**

The gear used by the Gulf reef fish fishery is classified in the Marine Mammal Protection Act 2015 List of Fisheries as a Category III fishery (79 FR 77919). Category III fisheries are those from which the annual mortality and serious injury of a marine mammal stock 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 prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery. They are also a common predator around reef fish vessels, feeding on the discards. Marine Mammal Stock Assessment Reports and additional information are available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/sspecies/>.

### **Turtles**

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

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

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988; Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell

production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

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

**Leatherbacks** are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean, although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life 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 routines dives of 4 to 14.5 minutes (Standora et al. 1984; Eckert et al. 1986; Eckert et al. 1989; Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

**Loggerhead** hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974; Carr 1987; Walker 1994; Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764ft.) (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 relatively infrequent, but occur in all commercial and recreational hook-and-line and longline components of the reef fish fishery. Captured sea turtles can be released alive or can be found dead upon retrieval of the gear as a result of forced submergence. 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.

## **Fish**

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

Smalltooth sawfish are also adversely affected by the Gulf reef fish fishery, but to a much lesser extent. Smalltooth sawfish primarily occur in the Gulf off peninsular Florida. Incidental captures in the commercial and recreational hook-and-line components of the reef fish fishery are rare events, with only eight smalltooth sawfish estimated to be incidentally caught annually, and none are expected to result in mortality (NMFS 2005). Fishermen in this fishery are required to follow smalltooth sawfish safe handling guidelines. The long, toothed rostrum of the smalltooth sawfish causes this species to be particularly vulnerable to entanglement in fishing gear.

## **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. NOAA’s 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. It is unclear if hogfish distribution in the Gulf has been affected. Hogfish have not been used in the OceanAdapt model ([http://oceanadapt.rutgers.edu/regional\\_data/](http://oceanadapt.rutgers.edu/regional_data/)) that 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 of Mexico 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 of Mexico (1.43% and 0.59%, respectively).

**Table 3.3.6.** Total Gulf of Mexico 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 <sub>2e</sub> **
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	
<b>Oil platform</b>	11,882,029	271,355	167	17,632,106
<b>Non-platform</b>	22,703,695	2,029	2,698	23,582,684
<b>Total</b>	34,585,724	273,384	2,865	41,214,790
<b>Commercial fishing</b>	585,204	2	17	590,516
<b>Recreational vessels</b>	244,483	N/A	N/A	244,483
<b>Percent commercial fishing</b>	1.69	>0.01	0.59	1.43
<b>Percent recreational vessels</b>	0.71	NA	NA	0.59

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

\*\*The CO<sub>2</sub> equivalent (CO<sub>2e</sub>) emission estimates represent the number of tons of CO<sub>2</sub> emissions with the same global warming potential as one ton of another greenhouse gas (e.g., CH<sub>4</sub> and N<sub>2</sub>O). Conversion factors to CO<sub>2e</sub> are 21 for CH<sub>4</sub> and 310 for N<sub>2</sub>O.

***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 3.3.1).

As reported by the National Oceanic and Atmospheric Administration 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.<sup>7</sup>

In addition to the crude oil, over a million gallons of oil dispersant, Corexit 9500A<sup>®</sup>, 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<sup>®</sup> and oil are similar in their toxicity, when Corexit 9500A<sup>®</sup> 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. 2011). 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

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<sup>7</sup> Source: [http://sero.nmfs.noaa.gov/sf/deepwater\\_horizon/OilCharacteristics.pdf](http://sero.nmfs.noaa.gov/sf/deepwater_horizon/OilCharacteristics.pdf)

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 tract, making stomach bile an appropriate testing medium. A study by Synder 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.

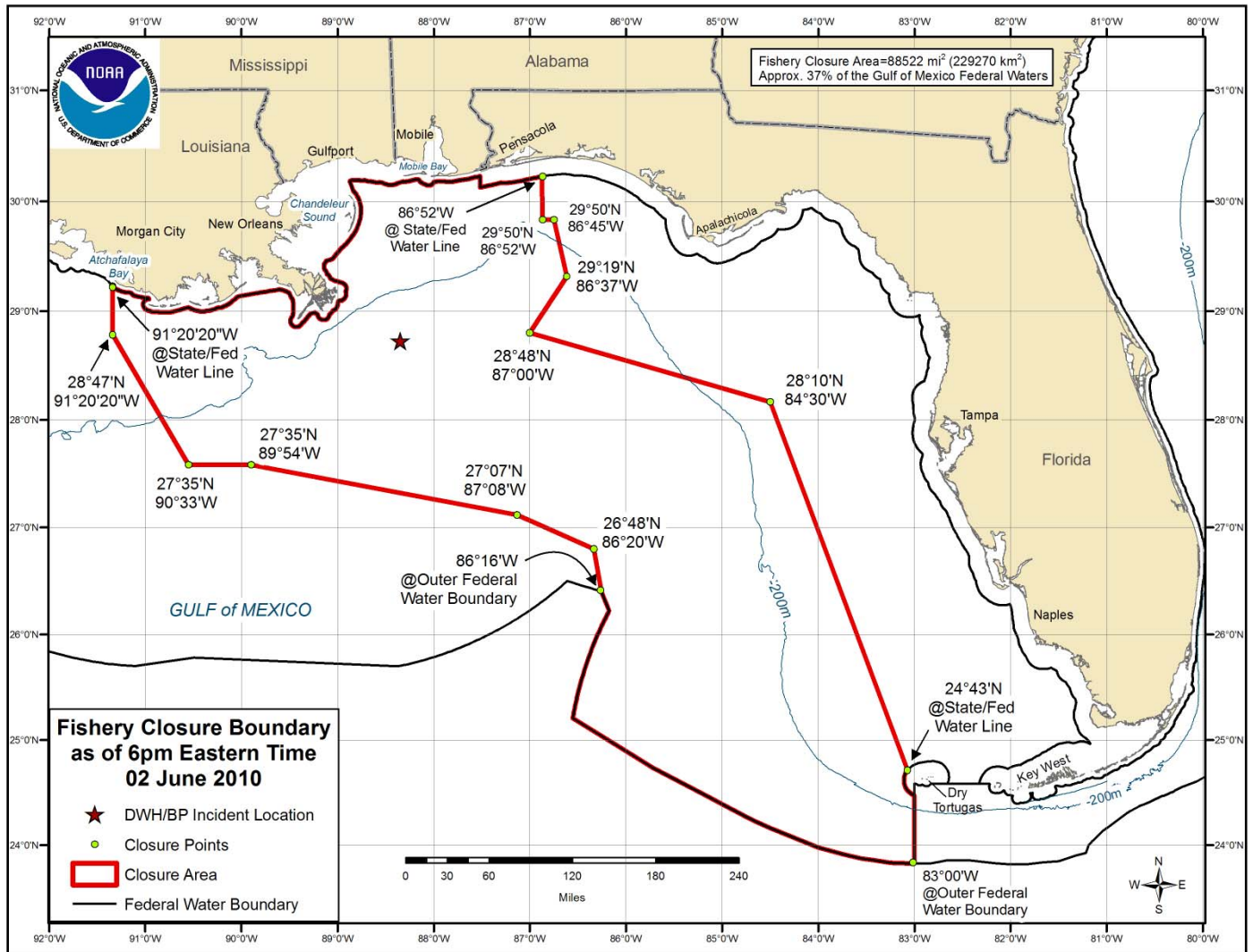
Several studies have documented coral death or declines in coral health in the presence of oil from the *Deepwater Horizon* MC252 oil spill (White et al. 2011; Hsing et al. 2013; Fisher et al. 2014). Sites as far as 11 km southwest of the spill were documented to have >45% of the coral colonies affected by oil (White et al. 2011; 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 reinitiated 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](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 individual fishing quota (IFQ) program is contained in NMFS (2015c) and is available at: [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/lapp\\_dm/index.html](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 Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

- Target effort – The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or 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
<b>Charter Mode</b>					
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
<b>Private/Rental Mode</b>					
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
<b>All Modes</b>					
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
<b>Charter Mode</b>					
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
<b>Private/Rental Mode</b>					
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
<b>All Modes</b>					
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
<b>2011</b>	79,722	77,303	3,657	47,284	38.3%	37.2%	1.8%	22.7%
<b>2012</b>	84,205	77,770	3,680	51,776	38.7%	35.8%	1.7%	23.8%
<b>2013</b>	94,752	80,048	3,406	55,749	40.5%	34.2%	1.5%	23.8%
<b>2014</b>	102,841	88,524	3,257	51,231	41.8%	36.0%	1.3%	20.8%
<b>2015</b>	107,910	86,473	3,587	55,135	42.6%	34.2%	1.4%	21.8%
<b>Average</b>	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 sector is comprised of charter vessels and headboats (party boats). Although charter vessels tend to be smaller, on average, than headboats, the key distinction between the two types of operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

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 SRHS and is selected to report by the Science Research Director of the Southeast Fishery Science Center, 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 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 Marine Recreational Fisheries Statistics Survey

(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.

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.

**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
<b>Private/Rental Mode</b>					
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	*
<b>Charter Mode</b>					
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	*
<b>All Modes</b>					
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).

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.

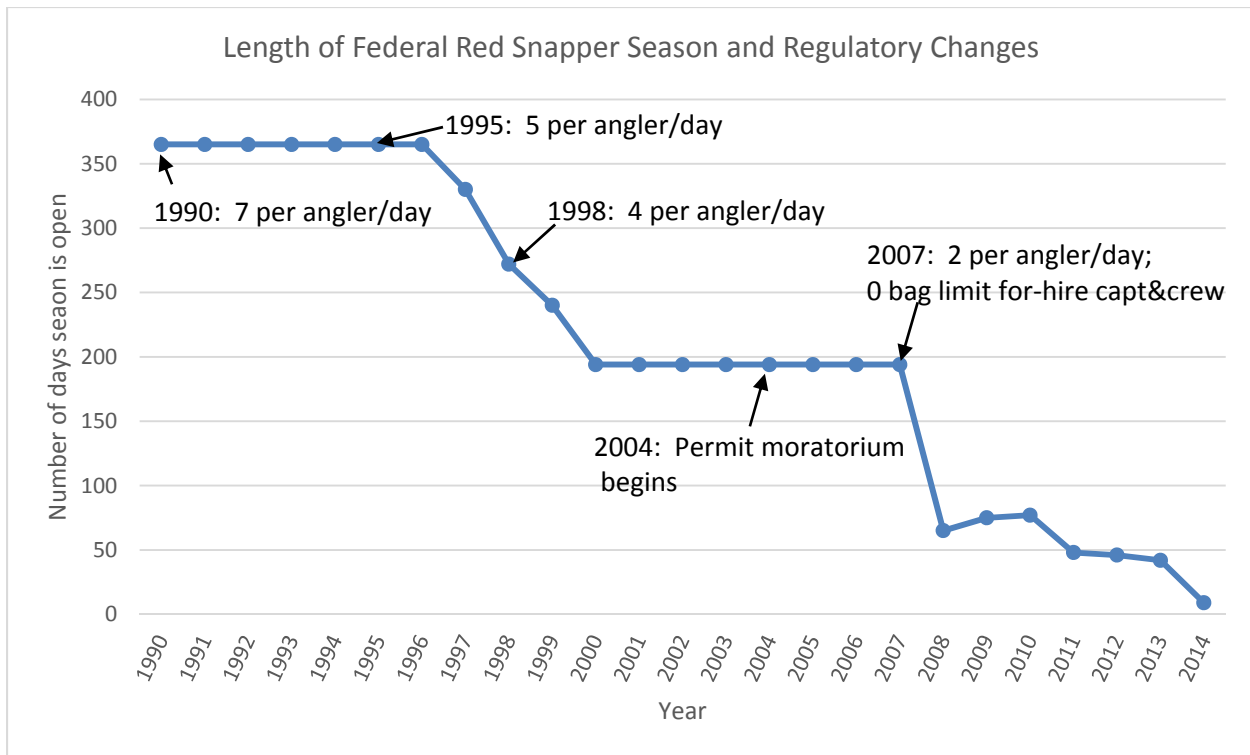
### 3.5 Description of the Social Environment

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).





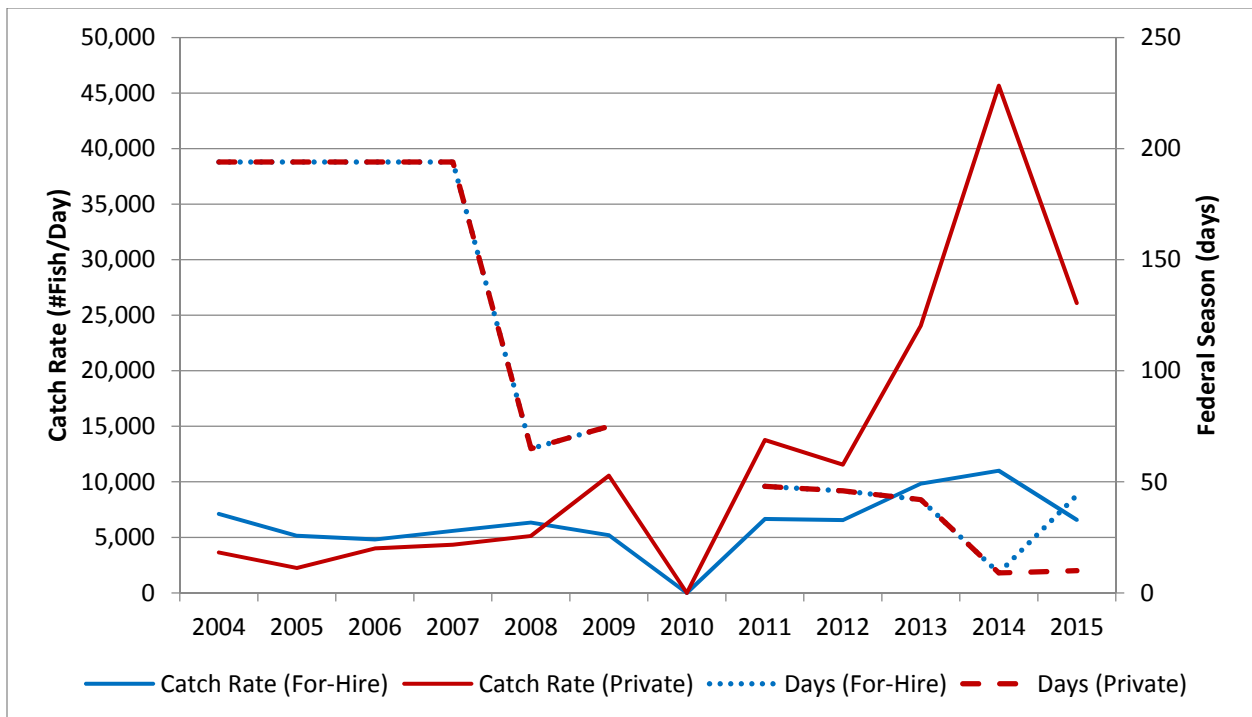
**Figure 3.5.1.** Length of federal recreational red snapper fishing season, with date of changes in bag limits, trip limits, and implementation of the for-hire permit moratorium. State-water red snapper seasons are not included, but have represented an increasing proportion of landings in recent years. 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.

<b>Year</b>	<b>Alabama</b>	<b>Florida</b>	<b>Louisiana</b>	<b>Mississippi</b>	<b>Texas</b>
<b>1986</b>	11.5%	55.3%	18.1%	0.1%	15.0%
<b>1987</b>	18.5%	43.7%	13.5%	2.6%	21.7%
<b>1988</b>	16.4%	30.0%	33.1%	0.7%	19.8%
<b>1989</b>	18.5%	12.3%	24.1%	11.7%	33.3%
<b>1990</b>	39.7%	17.8%	16.9%	3.4%	22.2%
<b>1991</b>	30.1%	15.1%	33.2%	6.2%	15.5%
<b>1992</b>	32.7%	8.1%	24.5%	16.6%	18.2%
<b>1993</b>	29.3%	17.5%	22.7%	12.7%	17.9%
<b>1994</b>	32.1%	13.9%	21.1%	8.1%	24.7%
<b>1995</b>	31.9%	10.3%	28.3%	2.9%	26.6%
<b>1996</b>	32.8%	18.7%	16.6%	4.0%	27.9%
<b>1997</b>	39.1%	14.8%	16.8%	9.8%	19.5%
<b>1998</b>	29.8%	28.7%	14.9%	3.9%	22.8%
<b>1999</b>	39.7%	28.6%	15.8%	4.1%	11.8%
<b>2000</b>	29.6%	35.8%	18.6%	1.1%	14.9%
<b>2001</b>	42.3%	39.9%	6.0%	2.1%	9.7%
<b>2002</b>	40.1%	38.7%	6.2%	3.6%	11.4%
<b>2003</b>	37.9%	36.3%	8.9%	6.0%	10.9%
<b>2004</b>	30.0%	53.9%	5.8%	0.4%	9.9%
<b>2005</b>	29.1%	48.0%	10.4%	0.1%	12.5%
<b>2006</b>	20.0%	51.0%	12.2%	0.8%	16.0%
<b>2007</b>	19.5%	56.7%	15.6%	0.1%	8.0%
<b>2008</b>	17.1%	57.5%	15.7%	1.0%	8.6%
<b>2009</b>	21.6%	47.0%	18.8%	0.8%	11.8%
<b>2010</b>	21.3%	55.9%	5.0%	0.4%	17.3%
<b>2011</b>	53.6%	29.3%	8.9%	1.0%	7.2%
<b>2012</b>	35.9%	32.5%	19.2%	4.2%	8.2%
<b>2013</b>	45.8%	39.1%	5.6%	4.4%	5.1%
<b>2014</b>	30.0%	42.5%	16.3%	1.2%	10.0%

Source: Southeast Fisheries Science Center (SEFSC) annual catch limit dataset, including Calibrated MRIP, TPWD, LA Creel, and Southeast Region Headboat Survey (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.<sup>8</sup> 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. 2005a).

The Orange Beach Red Snapper World Championship Tournament, billed as “Alabama’s state celebration of recreational saltwater fishing,”<sup>9</sup> 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.<sup>10</sup> Both Alabama communities are considered primarily involved in fishing as noted

<sup>8</sup> <http://www.fishdestin.com/fishinggallery.html>; and <http://www.jubileefishing.com/>

<sup>9</sup> [http://www.cityoforangebeach.com/pages\\_2007/pdfs/events/2009/2009\\_Snapper\\_Tournament.pdf](http://www.cityoforangebeach.com/pages_2007/pdfs/events/2009/2009_Snapper_Tournament.pdf)

<sup>10</sup> <http://gulfinfo.com/fishing.htm>

in the profiles of fishing communities (Impact Assessment, Inc. 2006). Red snapper fishing is featured at Pascagoula charter websites<sup>11</sup> 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.<sup>12</sup> 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. 2005b).

### **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 Southeast Region Headboat Survey (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.

<b>State</b>	<b>Number of Vessels</b>
AL	8
FL	25
LA	2
MS	4
TX	16

Source: SEFSC SRHS Data (2014).

<sup>11</sup> <http://www.jkocharters.com/1938863.html>

<sup>12</sup> <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). 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 Southeast Regional Office permit office.

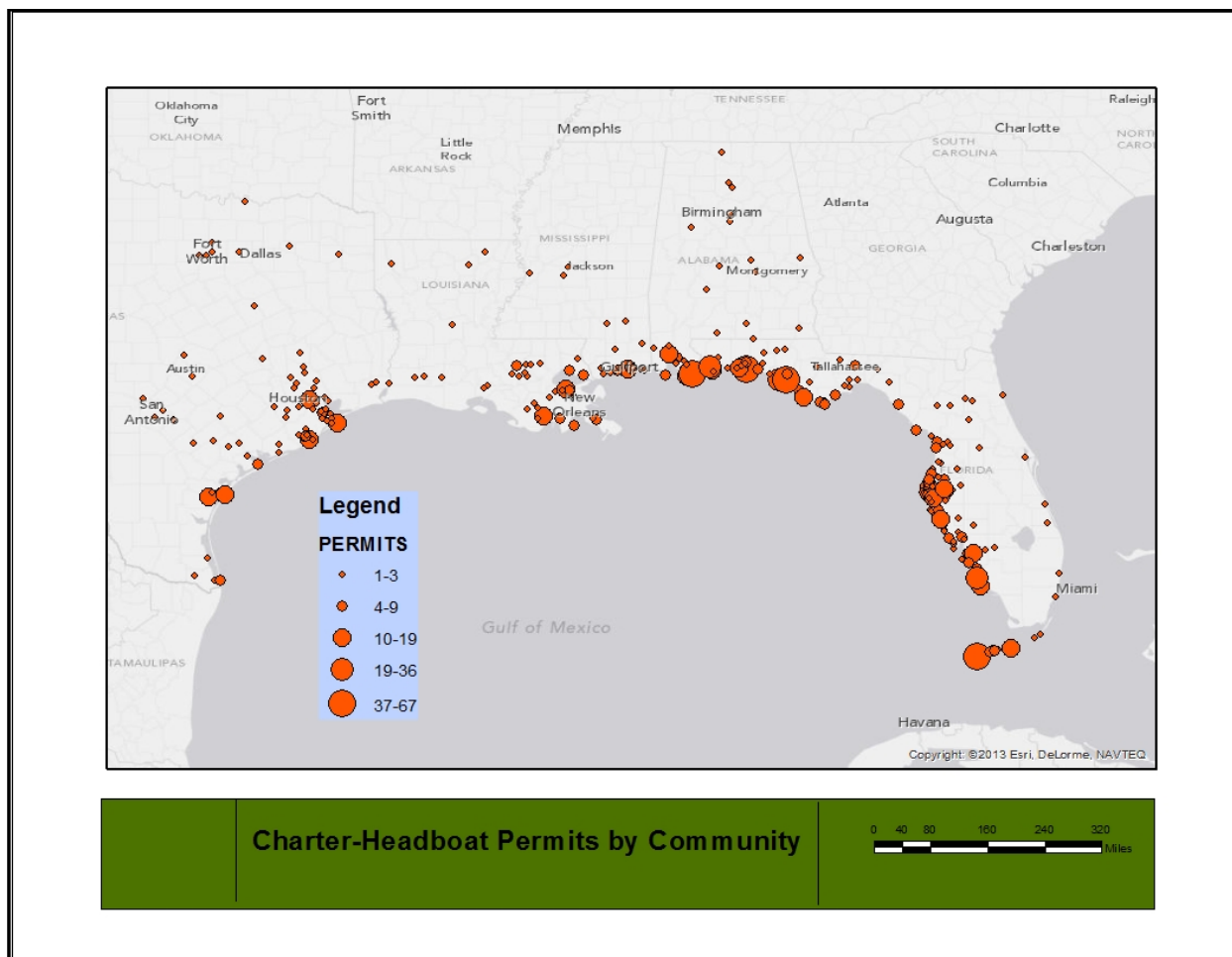
Federal for-hire permits are held by those with mailing addresses in a total of 323 communities, located in 22 states (Southeast Regional Office (SERO) permit office, February 13, 2014). The communities with the most federal for-hire permits are provided in Table 3.5.1.5. Figure 3.5.1.1 shows the spatial 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

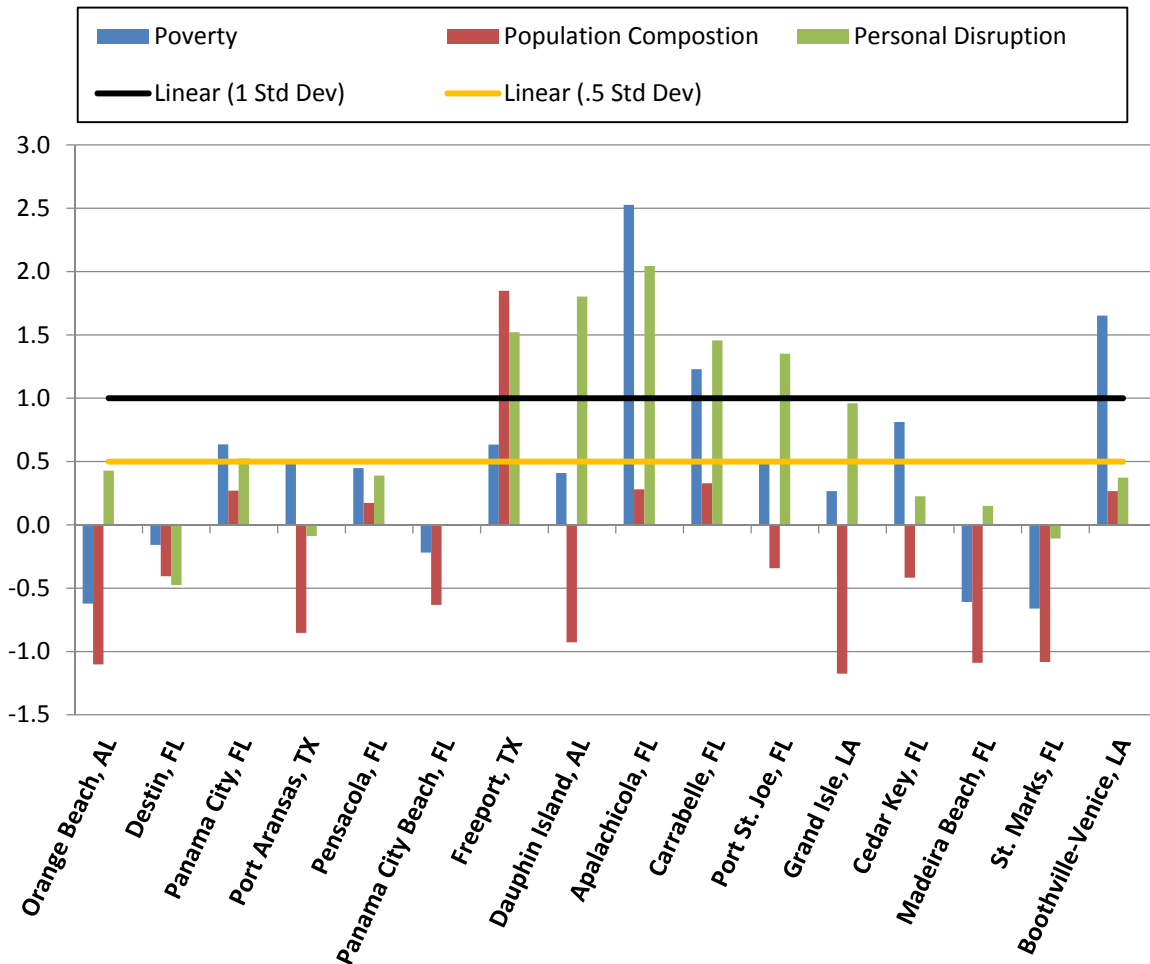
Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, 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: Southeast Regional Office, 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 the 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](http://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).



## 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 (**Alternative 2**) for sector separation for either 3 calendar years (**Option 2a**), 5 calendar years (**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 (**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, 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 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 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 (**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.<sup>13</sup> 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 which are shallower and fish would be less susceptible to the effects of decompression.

Another likely indirect effect from extending (**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 particularly be true for the federally permitted for-hire component. Because of the limited

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<sup>13</sup> 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.

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. This sector. Thus, extending (**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, **Alternative 2**, **Options 2a-2c**, 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 **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 **Alternatives 1** and **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 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 any 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 imposition 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 angler 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 recreation Allowable 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 federally permitted 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, suggests, 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 further suggests 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 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 likely also experienced an increase in economic benefits in 2015.

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 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 (**Alternative 2** and associated options) or eliminate (**Alternative 3**) the sector separation sunset. In theory, 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), **Alternative 2 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 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 **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 of the sunset provision is a one-time event. Thus, **Alternatives 2 (Options 2a-2c)** and **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**.

The indirect effects of maintaining sector separation, either for a set period of time under **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 three red snapper

reasonably foreseeable future actions (RFFAs) a. These include: Amendment 36 (A and B), which would revise the red snapper commercial individual fishing quota program; 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-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. 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/publications\\_and\\_data/publications\\_and\\_data.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data.shtml)). 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 NMFS, 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 MRIP, the Southeast Headboat Survey, and the Texas Marine Recreational Fishing Survey. In addition, the Louisiana Department of Wildlife and Fisheries and the Alabama Department of Conservation and Natural Resources have instituted programs to collect red snapper recreational landings information in their respective states. Commercial data are collected through trip ticket programs, port samplers, and logbook programs, as well as dealer reporting through the individual fishing quota program.

## **CHAPTER 5. REGULATORY IMPACT REVIEW**

# **CHAPTER 6. REGULATORY FLEXIBILITY ACT ANALYSIS**



## CHAPTER 7. LIST OF AGENCIES AND PERSONS CONSULTED

### PREPARERS

Name	Expertise	Responsibility	Agency
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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

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## 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					

<b>Common name</b>	<b>Eggs</b>	<b>Larvae</b>	<b>Early Juveniles</b>	<b>Late juveniles</b>	<b>Adults</b>	<b>Spawning adults</b>
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. ALTERNATIVES CONSIDERED BUT REJECTED**



# **APPENDIX D. SUMMARIES OF COMMENTS RECEIVED**

# **APPENDIX E. 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--4.145 million lb (1.880 million kg), round weight.

(c) Restrictions applicable after a recreational quota closure--

(1) After closure of the recreational quota for red snapper. The bag and possession limit for red snapper in or from the Gulf EEZ is zero.