

**FINAL**

**REGULATORY AMENDMENT TO ADDRESS**

**VERMILION SNAPPER REGULATIONS**

**UNDER THE FISHERY MANAGEMENT PLAN**

**FOR THE REEF FISH FISHERY OF THE GULF OF MEXICO**

**INCLUDING ENVIRONMENTAL ASSESSMENT,**

**REGULATORY IMPACT REVIEW,**

**AND REGULATORY FLEXIBILITY ACT ANALYSIS**

**FEBRUARY 2007**



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## Executive Summary

The Gulf of Mexico vermilion snapper stock was assessed in 2001 using data through 1999. The findings from that assessment indicated the Gulf of Mexico vermilion snapper stock was overfished and undergoing overfishing (Porch and Cass-Calay, 2001). Based on the assessment, the Council prepared a plan to end overfishing and rebuild the stock, which was implemented on July 8, 2005 (GMFMC, 2004a). In 2006, a new stock assessment was conducted through the Southeast Data, Assessment, and Review (SEDAR) process (SEDAR 9, 2006). That assessment determined vermilion snapper was neither overfished nor undergoing overfishing. Under projected constant fishing mortality levels that existed prior to the implementation of Amendment 23, spawning stock biomass (SSB) is expected to be stable or increase slightly. After receiving the Assessment Report and recommendations from its Scientific and Statistical Committee (SSC) and Reef Fish Advisory Panel, the Council decided at their November 2006 meeting to move forward as quickly as possible with a regulatory amendment to eliminate some or all of the harvest reduction management regulations in Amendment 23.

This amendment considers two alternatives. **Alternative 1** is the no action alternative and would maintain regulations implemented in Amendment 23. **Preferred Alternative 2** contains three subalternatives that can be selected either individually or in combination with one another. **Preferred Alternatives 2a** pertains to both sectors, **2b** pertains only to the recreational fishery, and **2c** pertains only to the commercial fishery. **Preferred Alternative 2** subalternatives were discussed and motioned separately by the Council.

**Alternative 1:** Status quo, maintain the management measures implemented by Amendment 23.

**Preferred Alternative 2:** Revise selected management measures for vermilion snapper to those prior to implementation of Reef Fish Amendment 23 by:

**Preferred a.** Reducing the minimum size limit for vermilion snapper from 11 inches to 10 inches TL.

**Preferred b.** Eliminating the 10 fish bag limit for vermilion snapper and retaining the current 20 fish aggregate bag limit for those reef fish species without a species-specific bag limit.

**Preferred c.** Eliminating the April 22 through May 31 commercial closed season for vermilion snapper.

**Alternative 1** would allow the stock to increase above 2004 biomass levels. As of 2004, SSB exceeded SSB at optimum yield ( $SSB_{OY}$ ) and is expected to remain stable or increase slightly based on projections using constant fishing mortality (F) through 2017. The fishing mortality rate in 2004 was estimated to be 17 percent below the F at optimum yield ( $F_{OY}$ ) as defined in Amendment 23. Any reduction in harvest since 2004 should increase SSB further above  $SSB_{OY}$  and decrease F further below  $F_{OY}$  at least for the short term. Therefore, the stock is healthy and the regulations implemented by Amendment 23 are overly restrictive and are resulting in foregone biologically-sound economic benefits from the resource.

Collectively, **Preferred Alternatives 2a-c** would eliminate the management regulations imposed by Amendment 23. Harvest is expected to increase by approximately 25 percent and improve the

economic conditions of the fishery. Lowering the minimum size limit and eliminating the seasonal closure are both expected to reduce dead discards. The stock would not continue to increase but should remain above or near the  $SSB_{OY}$  level through 2012. In the long-term, there is the possibility that effort could continue to increase and overfishing could eventually occur; however, periodic stock assessments will be conducted to evaluate whether the status of vermilion snapper has changed. The next stock assessment scheduled for 2012 will be used to determine whether or not additional management measures are necessary to ensure vermilion snapper are maintained at sustainable levels. Effects to the physical environment are expected to be insignificant relative to status quo. The ecosystem would be indirectly affected by allowing increased harvest of vermilion snapper. Increases in harvest could allow forage species and competitor species to increase in abundance and species relying on vermilion snapper as prey may be negatively affected. However, overall changes in vermilion snapper abundance and harvest are relatively small when considering the entire reef fish complex, and therefore are not expected to substantially affect ecosystem function. Vermilion snapper are less desirable to fishermen than red snapper or grouper species so stabilizing stock abundance of vermilion snapper should not greatly affect the conduct of the red snapper or grouper fisheries. Increased targeting of vermilion snapper may occur if allowable catches and quotas are reduced for more desirable species, such as red snapper or groupers. The extent to which vermilion snapper are targeted is unknown, and will likely depend on how much allowable catches are reduced/increased in other fisheries.

The recreational fishery would be expected to increase consumer surplus by \$1.016 million and net revenues by \$3.158 million over the period 2004-2008. The commercial fishery would be expected to increase net revenues by \$1.443 million over the same period. The socioeconomic environments may also indirectly benefit the social structure of the commercial and recreational for-hire fishery in the Gulf of Mexico. Enforcement needs are reduced because of the elimination of the closed season and increase to the bag limit.

The potential environmental consequences of each alternative within each action are illustrated in the following table. For a full discussion of the environmental consequences see Section 5. A plus (+) indicates an overall positive benefit, a minus (-) an overall negative impact and “na” represents no identified impact, not measurable, or not applicable.

Summary of Environmental Consequences

		Preferred	Physical	Biological	Economic	Social	Administrative	Mitigation	Cumulative	Unavoidable Irreversible Irretrievable
Alt. 1	Status Quo	na	na	-	-	-	na	-	na	na
Pref. Alt. 2a	10 inch size limit	na	-	+	+	na	na	+	+	na
Pref. Alt. 2b	Rescind bag limit	na	na	na	na	na	na	+	+	na
Pref. Alt. 2c	Rescind closed season	na	-	+	+	+	na	+	+	na

## **Fishery Impact Statement / Social Impact Analysis (FIS/SIA)**

Current assessment projections indicate that stock biomass will remain stable or increase slightly without the measures implemented by Amendment 23 and with no appreciable change in pre-Amendment 23 fishing mortality rates. This amendment offers alternatives to selectively eliminate each of the management measures implemented by Amendment 23. The analytical approach adopted to estimate the expected economic effects of the alternatives considered in this regulatory action is to take the reverse of the expected short-term impacts of actions in Amendment 23. Since stock biomass and fishing mortality rates are expected to remain stable, the long-term economic effects should match those in the short-term, as reduced by the discount rate (7 percent) used for calculating present value. A more complete description of the approach and results of the economic analysis can be found in Section 6.5.

**Alternative 1** is the no action alternative and would not affect any harvest increase. **Preferred Alternative 2a** would reduce the minimum size limit from 11 inches TL to 10 inches TL for both the commercial and recreational fisheries. **Preferred Alternative 2b** would eliminate the 10 fish bag limit within the 20 fish aggregate bag limit for those reef fish with no specific bag limit. **Preferred Alternative 2c** eliminates the 40-day commercial closed season from April 22 through May 31.

The combined short-term effects on the recreational fishery of implementing the 11-inch minimum size limit and 10-fish bag limit for vermilion snapper within the 20-fish aggregate bag limit under Amendment 23 were an expected reduction in consumer surplus of 15 percent (\$1.016 million, this and all subsequent value impacts are in terms of 2005 dollars) and a reduction in net revenue in the recreational sector of 9.6 percent (\$3.158 million) over the period 2004-2008. Therefore, **Alternative 1** (status quo) would be expected to result in these losses to the recreational sector in the short-term (next four years). **Preferred Alternatives 2a and 2b** would re-establish the original 10-inch minimum size limit and eliminate the vermilion snapper specific bag limit, respectively. Collectively, the effect of these two alternatives would be an expected increase to consumer surplus and net revenues by \$1.016 million and \$3.158 million, respectively, relative to the status quo. The results for each measure are expected to be proportional to the contribution to harvest, such that **Preferred Alternative 2a** is assumed to result in an increase to consumer surplus of approximately \$0.955 million and an increase in net revenue by about \$2.969 million, or a total of approximately \$3.924 million. The comparable values for **Preferred Alternative 2b** are \$0.061 million and \$0.189 million, respectively, or a total of approximately \$0.250 million.

The combined short-term effect on the commercial fishery of implementing the 11-inch minimum size limit and 40 day closed period under Amendment 23 was an expected reduction in net revenue of 3.4 percent (\$1.443 million) over the period 2004-2008. Therefore, **Alternative 1** (status quo) would be expected to result in these losses to the commercial sector in the short-term (next four years).

**Preferred Alternatives 2a and 2c** would re-establish the original 10-inch minimum size limit and no closed season respectively. Collectively, the effect of these two alternatives would be expected to increase net revenues to the commercial sector by \$1.443 million (3.5 percent). **Preferred**

**Alternative 2a** would be expected to contribute \$0.640 million of this total; whereas, **Preferred Alternative 2c** would be expected to contribute \$0.803 million.

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### Abbreviations used in this Document

B <sub>MSY</sub>	Biomass at MSY
BRD	Bycatch Reduction Device
CEQ	Council on Environmental Quality
CZMA	Coastal Zone Management Act
DQA	Data Quality Act
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
F	Instantaneous Fishing Mortality Rate
F <sub>MSY</sub>	Fishing Mortality Rate at MSY
F <sub>OY</sub>	Fishing Mortality Rate at OY
FEIS	Final Environmental Impact Statement
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
FR	Federal Register
GMFMC	Gulf of Mexico Fishery Management Council
GOM	Gulf of Mexico
GSMFC	Gulf States Marine Fisheries Commission
HAPC	Habitat Area of Particular Concern
IFQ	Individual Fishing Quota
IRFA	Initial Regulatory Flexibility Analysis
MFMT	Maximum Fishing Mortality Threshold
MMPA	Marine Mammal Protection Act

mp	Million Pounds
MRFSS	Marine Recreational Fishing Statistical Survey
M-SFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	Minimum Stock Size Threshold
MSY	Maximum Sustainable Yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OMB	Office of Management and Budget
OY	Optimum Yield
PRA	Paperwork Reduction Act
RA	Regional Administrator
RFA	Regulatory Flexibility Act of 1980
RIR	Regulatory Impact Review
SAV	Submerged Aquatic Vegetation
SBA	Small Business Administration
SEDAR	Southeast Data Assessment Review
SFA	Sustainable Fisheries Act
SEIS	Supplemental Environmental Impact Statement
SMZ	Special Management Zone
SPR	Spawning Potential Ratio
SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
TL	Total Length
USCG	U. S. Coast Guard



## Environmental Assessment (EA) Cover Sheet

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### Name of Action

Regulatory Amendment to Address Vermilion Snapper Regulations in the Gulf of Mexico.

### Type of Action

Administrative  
 Draft

Legislative  
 Final

### Summary

This amendment proposes to eliminate management measures implemented through Reef Fish Amendment 23 that are causing the vermilion snapper fishery to be fished at a rate below optimum yield, which is resulting in the unnecessary loss of social and economic benefits. The most recent stock assessment for vermilion snapper determined the stock was never overfished or undergoing overfishing as of 2004 and was not projected to exceed those thresholds in the near future. As of 2004 the fishing mortality rate was about 17 percent below the fishing mortality rate at optimum yield. Therefore, the stock is healthy and the regulations implemented by Amendment 23 were overly restrictive and are resulting in foregone biologically-sound economic benefits from the resource.

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# 1 INTRODUCTION

## 1.1 General Information:

The Gulf of Mexico vermilion snapper stock was assessed in 2001 using data through 1999 (Porch and Cass-Calay, 2001). The Reef Fish Stock Assessment Panel (RFSAP) reviewed the assessment in October 2001 (RFSAP, 2001), and subsequently so did the Gulf of Mexico Fishery Management Council (Council) and its advisory panels. The Council's Reef Fish Advisory Panel (RFAP) raised concerns that the decrease in landings might be explained by changes in fishing pressure rather than fish abundance and the Council requested follow-up analysis when suitable data became available. NOAA Fisheries reexamined the assessment as well as more recent data and, on October 30, 2003, supported the findings of the assessment and declared the Gulf of Mexico vermilion snapper stock overfished. The RFSAP examined results of the assessment and noted the surplus-production model was limited by data restrictions (i.e., short time-series and insufficient age composition to conduct an age-structured assessment), which resulted in uncertain status and population estimates (RFSAP, 2001). Despite these concerns, the RFSAP felt declines in landings and catch-per-unit-effort (CPUE) indices suggested stock status of Gulf vermilion snapper had declined (RFSAP, 2001). In order to improve future vermilion snapper stock assessments, the RFSAP made several recommendations. A primary research recommendation included direct ageing of the catch so that an age-structured assessment could be conducted in the future. Based on these findings, the Council prepared Amendment 23 to the Reef Fish Fishery Management Plan to end overfishing and rebuild the stock; Amendment 23 was implemented on July 8, 2005 (GMFMC, 2004a). That plan set a 10-year rebuilding plan based on a stepped total allowable catch (TAC) of 1.475 million pounds (mp) for the first four years (2004-2007), 2.058 mp for the next three years (2008-2010), and 2.641 mp for the final three years (2011-2013). Overfishing was expected to end by 2007, three years after the rebuilding plan was implemented. This rebuilding plan was considered the best balance between short- and long-term economic impacts, biological recovery, and the administrative burden to manage the stock.

## 1.2 Status of the Vermilion Snapper Stock in the Gulf of Mexico

In 2006, a new stock assessment, incorporating new data, was conducted through the Southeast Data, Assessment, and Review (SEDAR) process (SEDAR 9, 2006). That assessment determined vermilion snapper was neither overfished (Figure 1) nor undergoing overfishing (Figure 2) but stock biomass was generally declining and fishing mortality (F) was increasing. In the long-term, there is the possibility that effort could continue to increase and overfishing could eventually occur. Based on the trajectory of fishing mortality since 1986, F may exceed  $F_{OY}$  by 2012 but is unlikely to exceed  $F_{MSY}$  through 2017. The base-case assessment was conducted using a surplus production model that included the ability to use age data where available. Table 1 summarizes benchmarks and threshold values from the base assessment. Based on the recommendations of the RFSAP (RFSAP, 2001), the number of directly aged vermilion snapper increased from a yearly average of about 250 to over 1,700 starting in 2001; these aged fish are the primary reason why the new model was chosen and why the stock was determined to have never been overfished. Additionally, under projected constant fishing mortality levels that existed prior to the implementation of Amendment 23, SSB is expected to be stable or increase slightly in the future (Figure 1). After receiving the SEDAR 9 Assessment Report and recommendations from its SSC and RFAP, the Council decided at their November 2006 meeting to move forward as quickly as possible with a regulatory

amendment to eliminate some or all the harvest reduction management regulations in Amendment 23. The rebuilding plan established by Amendment 23 is no longer necessary because the vermilion snapper stock is not overfished.

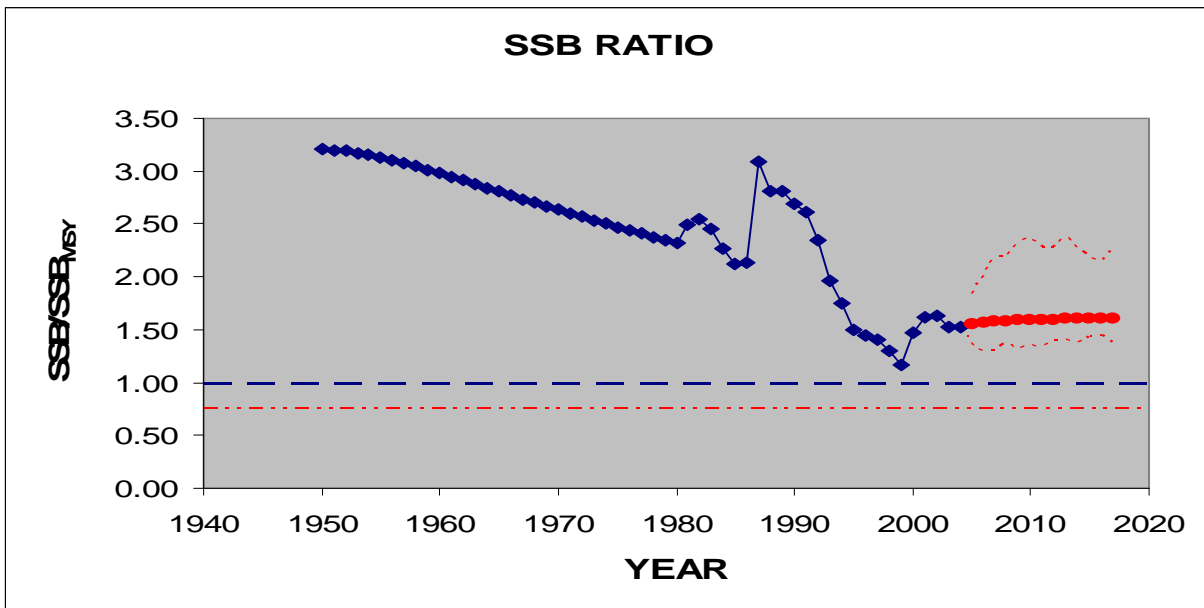


Figure 1. Historical and projected ratio of  $SSB_{2004} / SSB_{MSY}$  from 1950 through 2017. Dashed line is the reference for biomass at  $SSB_{MSY}$ . Alternate dashed dotted line is the reference for MSST.

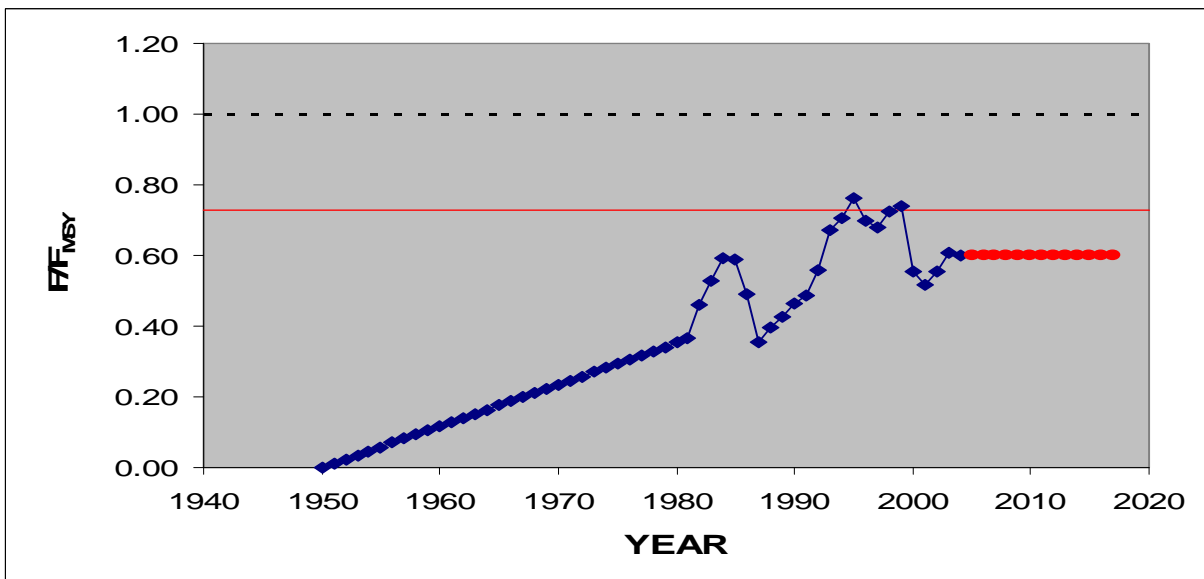


Figure 2. Historical and projected ratio of  $F_{2004} / F_{MSY}$  from 1950 through 2017. Dashed line is the maximum level that the stock can be fished and not be considered undergoing overfishing. Solid line is the reference  $F_{OY} / F_{MSY}$ .

Table 1. Management Status Benchmarks and Thresholds for the SEDAR 9 vermilion snapper stock assessment.	
Benchmark/Threshold	Value
$F_{2004}$	0.49
$F_{MSY}$	0.81
$F_{30\%SPR}$	0.79
$F_{OY}$ (75% of $F_{30\%SPR}$ )	0.59
$SSB_{2004}$ (eggs)	1.05E+14
$SSB_{MSY}$ (eggs)	6.88E+13
$SSB_{30\%SPR}$	7.14E+13
MSY	7.44E+06
$F_{2004} / F_{MSY}$	0.60
$F_{2004} / F_{30\%SPR}$	0.62
$SSB_{2004} / SSB_{MSY}$	1.52
$SSB_{2004} / SSB_{30\%SPR}$	1.47

Twenty months have passed since Amendment 23 was implemented on July 8, 2005. Comparable recreational and commercial landings data are currently available through fall 2006. These landings were compared to 2002 to 2004 average landings to determine if the expected reductions in harvest (25.5 percent) could be substantiated. Commercial landings in 2005 decreased by approximately 32 percent, and preliminary commercial landings in 2006 decreased by 25 percent. Commercial length frequency data suggest the minimum size limit was effective starting in July 2005. Recreational landings decreased by approximately eight percent in 2005 and increased by approximately 16 percent in 2006. Recreational discards increased by approximately 160 percent in 2005 and decreased by one percent in 2006. The recreational size limit was expected to decrease landings by approximately 20 percent and the bag limit should have added another one percent. Length frequency sampling from MRFSS indicated the minimum size became effective by September 2005. While these results appear to partly follow the expected trends, the time frame is very short. Thus, analyses of the affects of Amendment 23 regulations remain incomplete until more data become available. So, for the purposes of this Amendment, the expected impacts of Amendment 23 regulations will be used as the basis for changes expected by eliminating those regulations. A copy of Amendment 23 can be obtained by contacting the GMFMC offices or going online at <http://www.gulfcouncil.org>

### 1.3 History of Management

*The following history of management only pertains to vermilion snapper management or regulations that could secondarily affect vermilion snapper, so some reef fish amendments may not be listed. Please contact the Council (see address on title page or go to <http://www.gulfcouncil.org>) for a complete history of reef fish management in the Gulf of Mexico.*

## **Fishery management plan and regulatory amendments**

The Reef Fish FMP (with its associated EIS) was implemented in November 1984. It established management objectives for the reef fish fishery and a list of species in the management unit, which included vermilion snapper, and an inshore stressed area within which certain gear was prohibited, including fish traps and roller trawls [49FR 39548].

**Amendment 1** (with its associated environmental assessment [EA], regulatory impact review [RIR], and initial regulatory flexibility analysis [IRFA]) to the Reef Fish Fishery Management Plan, was implemented in January 1990. It revised and added seven objectives to the FMP. Amendment 1 set a vermilion snapper minimum size limit of 8 inches TL; however, vermilion snapper were excluded from the 10-snapper recreational bag limit. A framework procedure for specification of TAC was created to allow for annual management changes. The procedure included subdividing TAC into commercial and recreational allocations of 67 percent and 33 percent respectively. This amendment required a commercial vessel reef fish permit for harvest in excess of the bag limit, and for the sale of reef fish. In addition, this amendment prohibited the use of longline and buoy gear for the directed harvest of reef fish inside of the 50-fathom isobath west of Cape San Blas, Florida and inside of the 20-fathom isobath east of Cape San Blas, Florida [55 FR 2078].

**Amendment 4** (with its associated EA and RIR), implemented in May 1992, established a moratorium on the issuance of new commercial reef fish vessel permits for a maximum period of three years [57 FR 11914].

**Amendment 5** (with its associated SEIS, RIR, and IRFA), implemented in February 1994, required that all finfish, except for oceanic migratory species, be landed with head and fins attached, and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations [59 FR 966].

**Amendment 11** (with its associated EA and RIR) was partially approved by NOAA Fisheries and implemented in January 1996. It implemented a new commercial reef fish permit moratorium for no more than five years or until December 31, 2000, during which time the Council was to consider limited access for the commercial reef fish fishery [60 FR 64356].

**Amendment 12** (with its associated EA and RIR) was implemented in January 1997. It created an aggregate bag limit of 20 reef fish for all reef fish species (including vermilion snapper) not having a bag limit [61 FR 65983].

**Amendment 15** (with its associated EA, RIR, and IRFA), implemented in January 1998, increased the vermilion snapper size limit from 8 to 10 inches TL; prohibited harvest of reef fish from traps other than permitted reef fish traps, stone crab traps, or spiny lobster traps; removed black sea bass, rock sea bass, bank sea bass, and all species of grunts and porgies from the Reef Fish FMP; and removed sand perch and dwarf sand perch from the recreational 20-reef fish aggregate bag limit [62 FR 67714].

An August 1999 regulatory amendment (with its associated EA, RIR, and IRFA) closed two areas (i.e., created two marine reserves), known as Steamboat Lumps and Madison-Swanson (104 and 115 square nautical miles respectively), year-round to all fishing under the jurisdiction of the

Council with a four-year sunset closure [65 FR 31827].

**Generic Sustainable Fisheries Act Amendment** (with its associated EA, RIR, and IRFA), partially approved and implemented in November 1999, set the maximum fishing mortality threshold (MFMT) for vermilion snapper at  $F_{30\% SPR}$ . Estimates of maximum sustainable yield (MSY), minimum stock size threshold (MSST), and optimum yield (OY) were disapproved because they were based on SPR proxies rather than biomass estimates [67 FR 47967].

**Amendment 17** (with its associated EA), implemented in August 2000, extended the commercial reef fish permit moratorium for another five years, from December 31, 2000 to December 31, 2005 [65 FR 41016].

**Amendment 18A** (with its associated EA, RIR, and IRFA) implemented by NMFS in September, 2006 resolved minor conflicts and confusion in Reef Fish FMP regulations and required a vessel monitoring system (VMS) on all permitted reef fish vessels [71 FR 45428].

**Amendment 19**, also known as the **Generic Amendment Addressing the Establishment of the Tortugas Marine Reserves** (with its associated EIS, RIR, and IRFA), implemented on August 19, 2002, established two marine reserve areas off the Tortugas where fishing for any species and anchoring by fishing vessels was prohibited [67 FR 47467].

**Amendment 20**, also known as the **Charter/Headboat Moratorium Amendment** (with its associated EA and RIR), amended the Reef Fish and Coastal Migratory Pelagic FMPs (Amendment 14) and was implemented by NOAA Fisheries on July 29, 2002, except for some provisions that became effective on December 26, 2002. This amendment established a three-year moratorium on the issuance of new charter and headboat vessel permits in the recreational for-hire fisheries in the Gulf exclusive economic zone (EEZ). The purpose of this moratorium was to limit future expansion in the recreational for-hire fishery while the Council monitored the impact of the moratorium and considered the need for a more comprehensive effort management system [67 FR 43558].

**Amendment 21** (with its EA, RIR and IRFA) was implemented on June 3, 2004, and extended the Madison-Swanson and Steamboat Lumps closures for an additional six years. Additionally, surface trolling was to be allowed during the months of May through October; whereas, the original regulatory amendment did not allow any fishing [69 FR 24532].

**Amendment 22** (with its SEIS) was implemented in July 2005. Besides setting biological reference points and a rebuilding plan for red snapper, it implemented alternatives to improve bycatch monitoring in the reef fish fishery.

**Amendment 23** (with SEIS, RIR and IRFA), implemented in May 2005, established biological reference points and a rebuilding plan for vermilion snapper. MSY for vermilion snapper is the yield associated with  $F_{MSY}$  when the stock is at equilibrium. OY is the yield corresponding to a fishing mortality rate ( $F_{OY}$ ) defined as  $0.75 * F_{MSY}$  (or  $F_{MSY}$  proxy) when the stock is at equilibrium. MFMT is set equal to  $F_{MSY}$ . MSST is set equal to  $(1-M) * B_{MSY}$  (or  $B_{MSY}$  proxy). The ten-year rebuilding plan used a stepped approach, setting the TAC for 2004 -2007 at 1.475 mp, 2008-2010 at 2.058 mp and 2011-2013 at 2.641 mp. The minimum size for recreationally and commercially

caught vermilion snapper was increased from 10 to 11 inches TL and the recreational bag limit was set at 10 fish within the 20-reef fish aggregate bag limit. Additionally, a commercial closed season was established from April 22 through May 31.

**Amendment 24** (with SEIS, RIR, and IRFA), implemented in August 2005, established a limited access system for the Gulf of Mexico commercial reef fish fishery. All vessels with valid commercial reef fish permits on July 5, 2005, the date the amendment was approved, were issued a commercial reef fish permit under the limited access system, and permits will be renewable and transferable in the same manner as currently prescribed [70 FR 41161].

**Amendment 25** (with SEIS, RIR and IRFA) was implemented in June 2006 and established a limited access program for for-hire permits in the Reef Fish and Coastal Migratory Pelagic fisheries in the Gulf of Mexico. All vessels with valid for-hire reef fish permits on June 15, 2006, the date the amendment was approved, were issued a for-hire reef fish permit under the limited access system, and permits will be renewable and transferable in the same manner as currently prescribed.

**Amendment 26** (with SEIS, RIR and IRFA), to be implemented in January 2007, establishes an Individual Fishing Quota (IFQ) Limited Access program for the red snapper fishery in the Gulf of Mexico [71 FR 67447].

### **Control date notices**

Control date notices are used to inform fishermen that a license limitation system or other method of limiting access to a particular fishery or fishing gear is under consideration. If a program to limit access is established, anyone not participating in the fishery or using the fishing gear by the published control date may be ineligible for initial access to participate in the fishery or to use that fishing method. However, a person who does not receive an initial eligibility may be able to enter the fishery or use the fishing method after the limited access system is established by transfer of the eligibility from a current participant, provided the limited access system allows such transfer. Publication of a control date does not obligate the Council to use that date as an initial eligibility criteria. A different date could be used and additional qualification criteria could be established. The announcement of a control date is primarily intended to discourage entry into the fishery or use of the gear based on economic speculation during the Council's deliberation on the issues. The following summarizes control dates that have been established for the Reef Fish FMP.

**November 1, 1989** - Anyone entering the commercial reef fish fishery in the Gulf of Mexico or South Atlantic after November 1, 1989, may not be assured of future access to the reef fish resource if a management regime is developed and implemented that limits the number of participants in the fishery [54 FR 46755].

**November 18, 1998** - The Council is considering whether there is a need to impose additional management measures limiting entry into the recreational-for-hire (i.e., charter vessel and headboat) fisheries for reef fish and coastal migratory pelagic fish in the EEZ of the Gulf of Mexico and, if there is a need, what management measures should be imposed. Possible measures include the establishment of a limited entry program to control participation or effort in the recreational for-hire fishery for reef fish and coastal migratory pelagics. [63 FR 64031]. (In the Charter/Headboat Moratorium Amendment, approved by the Council for submission to NOAA Fisheries in March

2001, a qualifying date of March 29, 2001 was adopted.)

**July 12, 2000** - The Council is considering whether there is a need to limit participation by gear type in the commercial reef fish fisheries in the EEZ of the Gulf of Mexico and, if there is a need, what management measures should be imposed to accomplish this. Possible measures include modifications to the existing limited entry program to control fishery participation, or effort, based on gear type, such as a requirement for a gear endorsement on the commercial reef fish vessel permit for the appropriate gear. Gear types that may be included are longlines, buoy gear, handlines, rod-and-reel, bandit gear, spearfishing gear, and powerheads used with spears [65 FR 42978].

**March 29, 2001** - The Council is considering whether there is a need to limit participation in the reef fish and coastal migratory pelagics charter and headboat fisheries. The intent of this notice is to inform the public that entrants into the charter vessel/headboat fisheries after this date may not be assured of a future access to the reef fish and/or coastal migratory pelagics resources if: 1) an effort limitation management regime is developed and implemented that limits the number of vessels or participants in the fishery; and 2) if the control date notice is used as criterion for eligibility [67 FR 32312].

**November 16, 2004** - The Council is considering the establishment of an IFQ for the commercial grouper fishery of the Gulf of Mexico. To discourage accelerated effort to develop a catch history in the grouper fishery before the IFQ is implemented, it is the intent of the GMFMC to establish IFQ eligibility criteria based on catch histories prior to October 15, 2004.

## **2 PURPOSE AND NEED FOR ACTION**

The purpose of this action is to revise or eliminate some or all of the regulations established by Amendment 23 for vermilion snapper based on the most recent stock assessment. Additional alternatives, beyond those implemented by Amendment 23, were not considered in this amendment because approved regulations implemented by Amendment 23 were determined to be adequate to maintain the vermilion snapper stock at or above optimum yield in the short-term until the stock can be reassessed.

As a result of the previous stock assessment (Porch and Cass-Calay, 2001), which determined the stock was overfished and undergoing overfishing, Amendment 23 was implemented July 8, 2005, to reduce harvest by 25.5 percent and rebuild the stock. The most recent assessment of vermilion snapper (SEDAR 9, 2006) determined the Gulf of Mexico stock in 2004 was not overfished or undergoing overfishing. Additionally, although SSB has been declining over time, the assessment indicated the stock has never been overfished or undergone overfishing. The 2004 fishing mortality rate was approximately 17 percent lower than  $F_{OY}$ . Under projected constant  $F$  levels that existed prior to implementation of Amendment 23, SSB is expected to be stable or increase slightly in the future. Therefore, the current regulations implemented by Amendment 23 after 2004 appear overly restrictive and are resulting in foregone biologically-sound economic and social benefits from the resource.

The proposed actions in this amendment are needed to manage the vermilion snapper stock in compliance with the National Standards in the Magnuson-Stevens Fishery Conservation and



Management Act (MSFCMA). Particularly National Standard 1 requires managers prevent overfishing while achieving on a continuing basis the optimum yield from the fishery. Current management measures are causing the vermilion snapper harvest in the Gulf of Mexico to be less than will achieve OY, resulting in unnecessary lost social and economic benefits.

### 3 MANAGEMENT ALTERNATIVES

This amendment proposes to modify or eliminate some or all regulations established for vermilion snapper by Reef Fish Amendment 23 starting in July, 2005 that are causing the vermilion snapper fishery to be fished at approximately 17 percent below optimum yield. The stock is healthy and the regulations implemented by Amendment 23 are overly restrictive to protect the stock at this time. The alternatives being considered in this amendment only keep or eliminate each specific harvest reduction measure implemented by Amendment 23; they do not provide alternatives to the management measures approved in Amendment 23. Because there is insufficient new information to analyze the expected changes due to the management alternatives being considered in this amendment, the analyses conducted for Amendment 23 are the best available and will be used for purposes of comparing the following alternatives. It is assumed that eliminating any management measures implemented by Amendment 23 will reverse the effects of those measures as described in Amendment 23.

The economic analyses done for the commercial and recreational alternatives use slightly different methodologies and therefore are not directly comparable. The commercial analysis measures changes in net revenue based on expected changes in pounds of vermilion snapper landed; whereas, the recreational analyses measures net revenue and consumer surplus based on changes in numbers of trips caused by the various alternatives (See Section 6.5).

This amendment considers two alternatives. Alternative 1 is the no action alternative and would maintain regulations implemented in Amendment 23. Preferred Alternative 2 would revise some or all of the management measures approved by Amendment 23. **Preferred Alternative 2** contains three subalternatives that can be selected either individually or in combination with one another. **Preferred Alternatives 2a** pertains to both sectors, **2b** pertains only to the recreational fishery, and **2c** pertains only to the commercial fishery. The effects resulting from each of three subalternatives are discussed both individually and collectively.

**Alternative 1:** Status quo, maintain the management measures implemented by Amendment 23.

**Preferred Alternative 2:** Revise selected management measures for vermilion snapper to those prior to the implementation of Reef Fish Amendment 23 by:

**Preferred a.** Reducing the minimum size limit for vermilion snapper from 11 inches to 10 inches TL.

**Preferred b.** Eliminating the 10 fish bag limit for vermilion snapper and retaining the current 20 fish aggregate bag limit for those reef fish species without a species-specific bag limit.

**Preferred c.** Eliminating the April 22 through May 31 commercial closed season for vermilion snapper.

Discussion: **Alternative 1** (No action) maintains the regulations as implemented by Amendment 23. That amendment increased the minimum size limit from 10 to 11 inches TL, established a bag limit of 10 vermilion snapper within the 20 reef fish aggregate bag limit, and established an April 22 through May 31 commercial closed season. Collectively, these alternatives were intended to reduce total harvest by 25.5 percent, a level consistent with the needed rebuilding plan.

Physical and Biological Impacts: Hook-and-line is the primary gear used by the commercial and recreational fisheries to harvest vermilion snapper and overall has a very minor negative effect on hard bottom habitat and no effect on the water column. Hook-and-line gear has the potential to snag and entangle bottom structures. Longlines represent approximately 2-3 percent of the total annual commercial harvest. Bottom longlines have the potential to break or move hard structures on the sea floor, including rocks, corals, sponges, other invertebrates, and algae, when the line sweeps the bottom (Barnette, 2001). Generally, vertical line and bottom longline gears are not believed to have much negative impact on bottom structures and are considerably less destructive than other commercial gears, such as traps and trawls (Barnette, 2001). Maintaining the regulations as implemented by Amendment 23 are expected to slightly increase fishing effort. However, this increase in effort should not adversely affect the quality of the benthic habitat over the long-term.

Size limits are intended to protect immature fish from harvest and must balance the benefits of harvesting larger fish with losses due to natural and release mortality. Larger size limits increase the average size of fish harvested and are intended to allow more fish to survive to older ages thereby increasing the reproductive capacity of the stock. Because fewer fish are available for harvest at larger sizes, more fish are released for every legal-sized fish caught, thus increasing the number of fish discarded dead over the short-term. Vermilion snapper stock biomass is expected to increase over the short-term to higher levels than if regulations are relaxed. The increase in stock abundance is expected to exceed losses associated with dead discards. Adding a 10 vermilion snapper bag limit within the aggregate 20 fish bag limit was expected to have minimal effect on harvest (1.4 percent) and dead discards and therefore will have little effect on the biological environment. Closing the fishery during part of April and all of May would protect vermilion snapper at the beginning of the spawning season. However, the benefits of such a short closure may be diminished if vessels shift effort to open periods. Benefits could also be reduced if large numbers of vermilion snapper are discarded dead during the closure period while targeting other species.

As of 2004, SSB exceeded  $SSB_{OY}$  and would be expected to remain stable or increase slightly based on the projections using constant  $F$  through 2017. Fishing mortality has been increasing from 1981 through 2004. However, the  $F$  in 2004 was approximately 17 percent below  $F_{OY}$  as defined in Amendment 23. Any reduction in harvest since 2004 should increase SSB further above  $SSB_{OY}$  and decrease  $F$  further below  $F_{OY}$  at least for the short term. The vermilion snapper stock would be very healthy compared to other fished stocks in similar habitat, which could improve the available food supply for predators, such as red snapper and greater amberjack, and potentially result in competition for habitat with other species.

Socioeconomic and Administrative Impacts: Under **Alternative 1** (status quo) the recreational

fishery was expected to generate a total 2004 – 2008 consumer surplus of \$5.752 million and net revenue of \$29.864 million. The commercial fishery was expected to generate net revenue of approximately \$41.3 million. Fishing mortality associated with Amendment 23 regulations should be approximately 32% below F associated with removing those regulations; so, harvest should remain proportionally lower and consumer surplus and net revenues should also remain proportionally less than without Amendment 23 regulations. The pressure of coastal development and more stringent fisheries regulations is slowly eroding fishing communities and fisheries infrastructure in the Gulf of Mexico. Maintaining regulations that are more restrictive than necessary to harvest OY are resulting in foregone biologically-sound economic and social benefits from the resource. The current regulations have a small negative impact on administrative and enforcement resources because a closed season requires specific actions such as notice of closure and dockside enforcement

**Preferred Alternative 2a** would reduce the minimum size limit for vermilion snapper from 11 inches to 10 inches TL. Implementing this alternative alone is expected to increase harvest in the recreational sector by 20.4 percent and in the commercial sector by 12.6 percent. Within the recreational sector, headboat fishers are likely to be affected more than charter vessels or private recreational fishers, because they harvested smaller vermilion snapper prior to the new regulations.

Physical and Biological Impacts: In the short-term, this alternative would decrease impacts to benthic habitat because it would take recreational anglers less time to harvest their bag limit of legal-sized fish and decrease the amount of time gear contacts the bottom. However, this is likely to have a minimal effect on the physical environment since few trips target vermilion snapper and few anglers harvest the 10-fish bag limit (see Tables 6.4 and 6.5). The commercial fishery would not substantially decrease fishing effort (i.e. time spent fishing or targeting vermilion snapper) because the mean and median sizes of commercially harvested vermilion snapper are greater than 12 inches.

Collectively, the size limit reduction would be expected to increase harvest by approximately 14 percent and eliminate more than half of the estimated reduction in harvest imposed by Amendment 23. The stock would continue to increase beyond the  $SSB_{OY}$  level but not as high as what would be expected from **Alternative 1, 2b, or 2c**. The size and age structure of the stock would continue to improve but at a slower pace than under any of the other alternatives. Bycatch and dead discards should be reduced in both the recreational and commercial fisheries more so than for any of the other alternatives. Marine Recreational Fisheries Statistical Survey (MRFSS) data from the first six months after the 11-inch size limit was implemented suggests that discards in the recreational fishery increased by 160 percent relative to the average 2002 – 2004 period. Supplemental bycatch discard information from logbooks for the commercial fishery is not yet available.

Socioeconomic and Administrative Impacts: **Preferred Alternative 2a** would be expected to increase consumer surplus by approximately \$0.955 million and net revenue by approximately \$2.969 million for the recreational fishery and to increase commercial net revenue by approximately \$0.640 million. This represents approximately an 11 percent gain for the directed recreational fishery and approximately a 1.5 percent gain for the commercial reef fish fishery.

Most dominant reef fish fisheries are undergoing overfishing and some of those are overfished as

well. The pressure of coastal development and more stringent regulations has slowly eroded fishing communities and the infrastructure needed to support these fisheries. Biologically sustainable increases in harvest of vermilion snapper may help slow further declines in the social structure of the recreational for-hire and commercial reef fish fisheries in the Gulf of Mexico.

**Preferred Alternative 2b** would eliminate the bag limit specific to vermilion snapper but keeps vermilion snapper in the 20 fish aggregate bag limit which includes lane snapper, gray triggerfish, almaco jack, and tilefishes. This alternative should allow recreational vermilion snapper harvest to increase by approximately 1.4 percent and biological impacts are likely to be no different than for Alternative 1. This alternative would be expected to generate a total economic gain of up to \$0.250 million relative to the status quo but virtually no measurable effects to the environments because few recreational anglers harvest 10 fish or more and the harvest change is less than 0.4 percent of the overall vermilion snapper harvest.

**Preferred Alternative 2c** eliminates the commercial season closure that extends from April 22 through the end of May. This alternative is expected to increase the commercial harvest of vermilion snapper by approximately 15.8 percent. The closed season was established during the time of peak harvest and lowest dockside prices so that the closure would be the shortest possible.

Physical and Biological Impacts: Re-opening April 22 through May 31 would likely result in some redistribution of fishing effort and would be expected to increase overall harvest of vermilion snapper by approximately 13 percent, which is slightly less than for **Preferred Alternative 2a**. The stock would continue to increase beyond  $SSB_{OY}$ ; slightly higher than for **Preferred Alternative 2a** but not as high as for **Alternative 1**. The size and age structure of the stock would continue to increase at a slower pace than under **Alternative 1** but more than for **Preferred Alternative 2a**. Bycatch may decrease somewhat because vermilion snapper that were caught while fishing for other species could be kept. However, bycatch would not be decreased as much as under **Preferred Alternative 2a**.

Socioeconomic and Administrative Impacts: **Preferred Alternative 2c** would be expected to increase commercial net revenue by approximately \$0.803 million. This represents approximately a 1.9 percent gain for the commercial reef fish fishery. As with **Preferred Alternative 2a**, the indirect economic and social benefits of selecting **Preferred Alternative 2c** may be to slow further declines in the social structure of the commercial fishery in the Gulf of Mexico. Administrative and enforcement effort would be reduced if there were no closed season to notice or enforce.

Collectively, **Preferred Alternatives 2a-c** would eliminate the management regulations imposed by Amendment 23. Harvest is expected to increase by approximately 25 percent and improve the economic conditions of the fishery. Lowering the minimum size limit and eliminating the seasonal closure are both expected to reduce dead discards. The stock would not continue to increase but should remain above or near the  $SSB_{OY}$  level through 2012. In the long-term, there is the possibility that effort could continue to increase and overfishing could eventually occur; however, periodic stock assessments will be conducted in the future to evaluate whether the status of vermilion snapper has changed. The next stock assessment, scheduled for 2012, will be used to determine whether or not additional management measures are necessary to ensure vermilion snapper are maintained at sustainable levels. Effects to the physical environment are expected to be insignificant relative to status quo. The ecosystem would be indirectly affected by stabilizing the

vermilion snapper stocks at or near OY by changing pressures on predators, competitors and prey. Vermilion snapper are less desirable to fishermen than red snapper or grouper species so stabilizing stock abundance of vermilion snapper should not greatly affect the conduct of the red snapper or grouper fisheries. The socioeconomic environments may benefit indirectly by slowing further declines in the social structure of the commercial and recreational for-hire fishery in the Gulf of Mexico. Enforcement needs are reduced because of the elimination of the closed season.

## **4. AFFECTED ENVIRONMENT**

A summary of the affected environment as reported in Section 7 of Reef Fish Amendment 23 is provided below. For a complete version of the amendment, contact the Council or go online to <http://www.gulfcouncil.org>.

### **4.1 Physical environment**

The GOM is bounded by Cuba, Mexico, and the United States, and has a total area of approximately 600,000 square miles (Gore 1992). Continental shelves occupy about 35 percent of the total GOM area and the west Florida shelf (about 150,000 km<sup>2</sup>) is the second largest shelf in the United States after Alaska. Approximately 450 million metric tons of sediment are deposited annually in the GOM. East of DeSoto Canyon and southward along the Florida coast, sediments are primarily carbonates. To the west of DeSoto Canyon, sediments are terrigenous. Fine sediments are limited to the northern shelf under the influence of the Mississippi and Atchafalaya rivers.

The west Florida shelf provides a large area of hard bottom habitat. It is comprised of low relief hard bottoms that are relict reefs or erosional structures. Some high relief can be found along the shelf edge in waters 130 to 300 m deep. Hard bottom provides extensive areas where reef biota such as corals can become established. These hard bottom areas have become important reef fish fishing areas. Some of these areas such as the Tortugas North and South closed areas, the Florida Middle Ground habitat area of particular concern (HAPC), the Steamboat Lumps and Madison and Swanson closed areas limit fishing activities within their boundaries.

Off the Alabama/Mississippi shelf and shelf break, irregular-shaped aggregates of calcareous organic forms called pinnacles are found. These pinnacles average about 9 m in height and are found in waters about 80 to 130 m deep. In addition to the pinnacles, low-relief hard bottom areas can be found in waters less than 40 m adjacent to Florida and Alabama.

Muddy or sandy terrigenous sediments dominate the Louisiana/Texas shelf, but banks and reefs also occur on the shelf. Mid-shelf banks made of bare, bedded Tertiary limestones, sandstones, claystones, and siltstones are found from water depths of 80 m or less and have relief of 4 to 50 m (Rezak et al. 1985). Relict reefs made of carbonate are found from water depths of 14 to 40 m and have a relief of 1 to 22 m. The Flower Garden Banks National Marine Sanctuary is located about 150 km directly south of the Texas/Louisiana border. This coral reef is perched atop two salt domes rising above the sea floor and ranges from 15 to 40 m deep.

### **4.2 Biological environment**

The biological environment is described in detail in the Final EIS for the Generic Essential Fish Habitat amendment and Amendment 23 and is incorporated herein by reference (GMFMC, 2004a).

#### **4.2.1 Vermilion snapper**

The vermilion snapper, *Rhomboplites aurorubens*, is a small, subtropical snapper that occurs from

North Carolina to Rio de Janeiro, but is most abundant off the southeastern United States and in the Gulf of Campeche (Vergara, 1978). In the Gulf of Mexico, juvenile and adult vermilion snapper are usually found near hard bottom areas off the west-central Florida coast, the Florida Middle Ground, and the Texas Flower Gardens (Smith et al., 1975; Smith, 1976; Nelson, 1988). Eggs and larvae are pelagic. Faunal surveys in the South Atlantic Bight (SAB) indicate vermilion snapper are most common over inshore live-bottom habitats and over shelf-edge, rocky-rubble and rock-outcrop habitats (Grimes et al., 1977, 1982; Barans and Henry, 1984; Chester et al., 1984; Sedberry and Van Dolah, 1984).

Hood and Johnson (1999) found vermilion snapper sampled from the eastern GOM were smaller than those collected during the 1980s from the western GOM. They discounted sampling biases, depth, and movement for accounting for these differences. While they suggested that geographical differences in growth could be responsible for these differences, they also felt increases in fishing pressure may have reduced the average size of fish caught by the fishery. SEDAR 9 (2006) indicated vermilion snapper from the western GOM were significantly older than vermilion snapper collected from the eastern GOM. Schirripa (1996) reported the average size of fish in the GOM commercial fishery decreased from a high of 371 mm TL in 1984 to a low of 320 mm TL in 1993. Over this same time period, landings increased from 1.72 mp in 1984 to 3.89 mp in 1993 (Schirripa, 1996).

Vermilion snapper are considered long-lived, slow-growing fish (Manooch, 1987). The oldest individual aged from the GOM was 26 years old (SEDAR 9, 2006). Initial growth of vermilion snapper is rapid, reaching an average of about 210 mm TL (8.3 inches) by age 1 (Zastrow, 1984; Nelson, 1988; Hood and Johnson, 1999; Allman et al., 2001). Vermilion snapper are commonly as large as 350 mm TL (about 14 inches) and can grow to a maximum size of 600 mm TL (23.6 inches). Most fish caught in the fishery are between 4- and 6-years old (Hood and Johnson, 1999; Allman et al., 2001). Hood and Johnson (1999) and Allman et al. (2001) reported size-at-age is highly variable, making it difficult to estimate age from length. No significant difference in growth rates between males and females have been detected (Hood and Johnson, 1999).

Information on the reproductive biology of vermilion snapper in the GOM is limited. Sex ratio appears to be dependent on location. Most studies reporting sex ratios from the GOM and Puerto Rico are approximately 1:1 (Boardman and Weiler, 1979; Zastrow, 1984; Hood and Johnson, 1999) although Nelson (1988) reported males outnumbered females 1.2:1 and reported females outnumbered males 1.48 to 1 (SEDAR9-DW3, 2005). In the SAB, females consistently outnumbered males, and sex ratios ranged from 1.6:1 to 1.7:1 (Grimes and Huntsman, 1980; Collins and Pinckney, 1988; Cuellar et al., 1996; Zhao et al., 1997). Hood and Johnson (1999) found that most females were sexually mature by 200 mm TL (7.9 inches; age 1). They also did not observe any immature males. The smallest male they sampled was 199 mm TL (7.9 inches). Compared to the findings of Nelson (1988), the size at maturity for females was smaller for Hood and Johnson (1999). They suggested that this decrease in size at maturity could be a result of increased fishing pressure on the stock. SEDAR9-DW3 (2005) found female and male vermilion snapper were mature at lengths ranging from 153 to 555 mm. Of 1,384 female vermilion snapper sampled, only one female was immature. During the spawning season, no females with undeveloped ovaries and no males with undeveloped testes were sampled (SEDAR9-DW3, 2005).

Vermilion snapper are thought to spawn in aggregations. Boardman and Weiler (1979) and Grimes

and Huntsman (1980) found large numbers of fish in the same reproductive state in single collections. Spawning in the GOM occurs from the late spring to early fall (Nelson, 1988; Hood and Johnson, 1999; and SEDAR9-DW3, 2005). Vermilion snapper are batch spawners and batch fecundity has been found to have a positive relationship with fish size (Grimes and Huntsman, 1980; Nelson, 1988; Cuellar et al., 1996; Hood and Johnson, 1999; SEDAR9-DW3, 2005). Age is not an effective predictor of batch fecundity (SEDAR9-DW3, 2005). Annual fecundities are estimated to range from 0.7 to 35 million eggs depending on fish size (SEDAR9-DW3, 2005). Vermilion snapper have been estimated to spawn 87 times annually (SEDAR9-DW3, 2005).

Vermilion snapper prey on fishes, shrimps, crabs, polychaetes, and other benthic invertebrates, cephalopods and planktonic organisms (Grimes, 1979; Allen, 1985, in Froese and Pauly, 2004). In the Northern Gulf, vermilion snapper prey on other fishes as well as benthic and pelagic invertebrates (Nelson, 1988). Sedberry and Cuellar (1993) reported that off the Southeastern U.S., small crustaceans, primarily copepods and decapods (especially planktonic species and larval stages) dominated the diet of small vermilion snapper ( $\leq 50$  mm or 2 inches SL). Larger vermilion snapper shifted their diet to larger amphipods, decapods and teleost fishes.

#### **4.2.2 Other reef fish resources**

The Reef Fish FMP applies to 43 species. Of these, 10 have had stock assessments performed by NOAA Fisheries (red grouper, gag, goliath grouper, yellowedge grouper, red snapper, vermilion snapper, yellowtail snapper, greater amberjack, gray triggerfish, and hogfish). A brief review of the stock assessment results for these species is presented below. More complete descriptions are provided in the Final EIS for the Generic EFH Amendment (GMFMC, 2004b), Amendment 23 (GMFMC, 2004a), and on the Southeast Data Assessment and Review (SEDAR) website <http://www.sefsc.noaa.gov/sedar/>. Of the 10 reef fish species for which stock assessments have been completed and reviewed, NOAA Fisheries Service classifies two as overfished (red snapper, greater amberjack). Red grouper is no longer considered overfished or undergoing overfishing. Gag is undergoing overfishing, but is not overfished. Gray triggerfish is classified as undergoing overfishing and yellowedge grouper is classified as unknown for both overfished and overfishing status. Yellowtail snapper is classified as not overfished or undergoing overfishing. Goliath grouper and Nassau grouper are classified as not undergoing overfishing (harvest of both species is prohibited). Goliath grouper are rebuilding and were estimated to exceed  $SSB_{50\%SPR}$  between 2009 and 2012. The overfished status of Nassau grouper is unknown.

#### **4.2.3 Habitat use by managed reef fish species**

Reef fish are widely distributed in the GOM, occupying both pelagic and benthic habitats during their life cycle. Habitat types for species-specific life history stages can be found in more detail in GMFMC (2004b). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include gray triggerfish, which lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation (SAV). Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf ( $<100$  m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. For example, juvenile red snapper are common on mud bottoms in the northern



Gulf, particularly off Texas through Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC, 1981). More detail on hard bottom substrate and coral can be found in the FMP for Corals and Coral Reefs (GMFMC and SAFMC, 1982).

#### **4.2.4 Environmental sites of special interest**

Tortugas Shrimp Sanctuary - A shrimp nursery ground in the Florida Keys permanently closed to the use of trawls and harvest or possession of shrimp. This results in shrimp growing to about a 47 count/pound before harvest (3,652 square nautical miles).

Cooperative Texas Shrimp Closure - A shrimp nursery ground off Texas cooperatively closed by the Council and the state of Texas for 45 to 60 days out to either 15 or 200 miles. This closure results in shrimp growing to about 39 count/pound (5,475 square nautical miles).

Southwest Florida Seasonal Closure (Shrimp/Stone Crab) - Closure of federal and state waters to shrimping from November 1 through May 20 to protect juvenile stone crab and prevent loss of stone crab traps in trawls (4,051 square nautical miles).

Central Florida Shrimp/Stone Crab Separation Zones - Closure of state and federal waters to either shrimping or crabbing zones from October 5 to May 20 (174 square nautical miles).

Longline/Buoy Gear Area Closure - Permanent closure to use of these gears for reef fish harvest inshore of 20 fathoms off the Florida shelf and inshore of 50 fathoms for the remainder of the Gulf (72,300 square nautical miles).

Florida Middle Grounds HAPC - Pristine coral area protected from use of any fishing gear interfacing with bottom (348 square nautical miles).

Madison/Swanson and Steamboat Lumps Marine Reserves - No-take marine reserves sited on gag spawning aggregation areas where all fishing except for highly migratory species is prohibited (219 square nautical miles).

Stressed Area - Permanent closure Gulf-wide of the nearshore waters to use of fish traps, power heads, and roller trawls (i.e., “rock hopper trawls”) (48,400 square nautical miles).

Flower Garden Banks HAPC - Pristine coral area protected by preventing use of any gear that interacts with the bottom. Subsequently, this area was made a marine sanctuary by NOS (41 square nautical miles).

Pulley Ridge HAPC - A portion of the HAPC where deep-water hermatypic coral reefs are found is closed to anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots (2,300 square nautical miles).

Tortugas North and South Marine Reserves - No-take marine reserves cooperatively implemented by the state of Florida, NOS, the Council, and the National Park Service (see jurisdiction on chart)

(185 square nautical miles).

Alabama Special Management Zone (SMZ) - In the Alabama SMZ, fishing by a vessel operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, or a vessel with such a permit fishing for Gulf reef fish, is limited to hook-and-line gear with no more than 3 hooks. Nonconforming gear is restricted to bag limits, or for reef fish without a bag limit, to 5 percent by weight of all fish aboard.

Individual reef areas and bank HAPCs of the northwestern Gulf including: East and West Flower Garden Banks, Stetson Bank, Sonnier Bank, MacNeil Bank, 29 Fathom, Rankin Bright Bank, Geyer Bank, McGrail Bank, Bouma Bank, Rezak Sidner Bank, Alderice Bank, and Jakkula Bank - Pristine coral areas protected by preventing use of some fishing gear that interacts with the bottom (263.2 square nautical miles). Subsequently, some of these areas were made a marine sanctuary by NOS and this marine sanctuary is currently being revised. Bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots on coral reefs are prohibited in the East and West Flower Garden Banks, McGrail Bank, and on the significant coral resources on Stetson Bank.

#### **4.2.5 Protected species**

Species that may occur in the Gulf of Mexico and are protected under the Endangered Species Act (ESA) include: Six marine mammal species (blue, sei, fin, humpback, sperm, and North Atlantic right whales); five sea turtles (Kemp's Ridley, loggerhead, green, leatherback, and hawksbill); two fish species (Gulf sturgeon and smalltooth sawfish), and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]). There are also many cetaceans in the Gulf of Mexico protected under the MMPA. For information on protected species in the Gulf of Mexico, refer to the final EIS to the Council's Generic EFH amendment (GMFMC, 2004b) and the biological opinion for Reef Fish Amendment 23 (NOAA Fisheries, 2005). Information is also available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/species/>.

The Gulf of Mexico reef fish fishery is classified in the 2006 List of Fisheries as Category III fishery (August 22, 2006; 71 FR 48802). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1 percent of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

The biological opinion prepared for the Gulf reef fish fishery (NOAA Fisheries, 2005) evaluated the effects of all fishing activity authorized under the Reef Fish FMP on threatened and endangered species, in accordance with section 7 of the ESA. The biological opinion, which was based on the best available commercial and scientific data, concluded the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of any threatened or endangered species. An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures deemed necessary and appropriate to minimize the impact of these takes. Terms and conditions to address reporting requirements identified as reasonable and prudent measures did not require any additional regulatory action. However, regulations were needed to ensure any caught sea turtle or smalltooth sawfish incidentally caught

by the fishery is handled in such a way as to minimize stress to the animal and increase its survival rate. The Council addressed these measures in Reef Fish Amendment 18A its associated final rule became effective September 8, 2006 (71 FR 45428).

### **4.3 Social and economic environment**

Section 6.4 provides a description of the social and economic environment potentially affected by measures in this amendment, and is incorporated herein by reference. In summary, the vermilion snapper fishery is composed of commercial and recreational sectors. Over the past decade, the commercial fishery has increased its landings and proportionally has been harvesting more fish. Within the commercial sector are fishing vessels, dealers, support industries, and fishing communities. Recreational anglers participate in the vermilion snapper fishery through several fishing modes, such as private/rental, charter boats, and headboats. Charter boats and headboats comprise the for-hire fishery. There are also fishing communities that provide a place of residence, business or employment associated with the recreational fishing. Some of these communities similarly provide residence or business opportunities for the commercial fishing sector.

The vermilion snapper fishery is part of the general reef fish fishery. Some of the commercial vessels that participate in the vermilion snapper fishery also harvest other reef fish species, such as red snapper, grouper, and amberjack. Although some reef fish species are targeted by for-hire vessels, such as red snapper, these vessels generally target a variety of species, including species outside the reef fish fishery management unit such as mackerel.

### **4.4 Administrative environment**

#### **4.4.1 Federal Fishery Management**

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

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce 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 of Commerce (Secretary) is responsible for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the M-SFCMA, and with other applicable laws summarized in Section 8. In most cases, the Secretary has delegated this authority to NMFS.

The Gulf Council is responsible for fishery resources in federal waters of the Gulf of Mexico. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the Gulf coastline is approximately 1,631 miles. Florida has the longest coastline of any state along its the Gulf coast (770 miles), followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of 17 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 at public meetings, on advisory panels (APs) 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 Procedures 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 National Oceanic and Atmospheric Administration’s (NOAA’s) Office of Law Enforcement, the U.S. Coast Guard (USCG), and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the M-SFCMA. These activities are being coordinated by the Council’s Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission’s (GSMFC) Law Enforcement Committee has developed a 5-year “Gulf of Mexico Cooperative Law Enforcement Strategic Plan - 2005-2010.”

#### **4.4.2 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 including enforcement of fishing regulations. Each of the five Gulf states exercises legislative and regulatory authority over their states’ natural resources through discrete administrative units. Although each agency listed below 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. More information about these agencies can be found in GMFMC (2004b) and at the following webpages:

Texas Parks & Wildlife Department - <http://www.tpwd.state.tx.us>

Louisiana Department of Wildlife and Fisheries - <http://www.wlf.state.la.us/>

Mississippi Department of Marine Resources - <http://www.dmr.state.ms.us/>

Alabama Department of Conservation and Natural Resources - <http://www.dcnr.state.al.us/>

Florida Fish and Wildlife Conservation Commission - <http://www.myfwc.com/>

## **5 ENVIRONMENTAL CONSEQUENCES**

This section describes the potential direct, indirect, and cumulative effects on the physical, biological, socioeconomic, and administrative environments associated with each management alternative. The CEQ regulations (40 CFR 1508.8) define direct effects as those “which are caused by the action and occur at the same time and place.” Indirect effects are defined as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” Cumulative effects are defined as “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts could result from individually minor but collectively significant actions taking place over a period of time.”

### **5.1 Harvest alternatives**

Section 3 describes in detail the alternatives the Council is considering to adjust vermilion snapper management measures to achieve optimum yield. Recreational management measures in Amendment 23 increased the size limit to 11 inches TL and set a bag limit of 10 fish within the 20 fish aggregate reef fish bag limit for those species without a species-specific bag limit. Commercial management measures increased the size limit to 11 inches TL and established a season closure from April 22 through May 31. The most recent stock assessment for vermilion snapper indicated the stock is not overfished or undergoing overfishing and never has been (See Section 1.2). Current  $F$  is approximately 17 percent below  $F_{OY}$  and projections indicate the stock will not become overfished or undergo overfishing in the near term if the regulations implemented by Amendment 23 are eliminated.

Twenty months have passed since Amendment 23 was implemented on July 8, 2005. Comparable recreational and commercial landings data are currently available through fall 2006. These landings were compared to 2002 to 2004 average landings to determine if the expected reductions in harvest could be substantiated. Commercial landings in 2005 decreased by approximately 32 percent, and preliminary commercial landings in 2006 decreased by 25 percent. Commercial length frequency data suggest the minimum size limit was effective starting in July 2005. Recreational landings decreased by approximately eight percent in 2005 and increased by approximately 16 percent in 2006. Recreational discards increased by approximately 160 percent in 2005 and decreased by one percent in 2006. The recreational size limit was expected to decrease landings by approximately 20 percent and the bag limit should have added another one percent. Length frequency sampling from MRFSS indicated most fishermen were abiding by the new minimum size limit beginning in September 2005. While these results appear to partly follow the expected trends, the time frame is very short. Thus, analyses of the affects of Amendment 23 regulations remain incomplete until more data become available. So, for the purposes of this Amendment, the expected impacts of Amendment 23 regulations will be used as the basis for changes expected by eliminating those regulations. A copy of Amendment 23 can be obtained by contacting the GMFMC offices or going online at <http://www.gulfcouncil.org>

### **5.2 Direct and indirect effects on the physical environment and their significance**

It is important to minimize habitat impacts to preserve and maintain essential fish habitat. Hard

bottom areas and artificial structures provide shelter for a variety of reef fishes, including vermilion snapper. These habitats also aggregate and concentrate prey species relied upon by vermilion snapper and other reef fishes. Destruction or damage to hard bottom habitat and natural corals could adversely affect vermilion snapper and other reef fishes by reducing the amount of suitable shelter where food sources are concentrated.

Hook-and-line is the primary gear used by the recreational fishery to harvest vermilion snapper and overall is expected to have a very minor negative effect on hard bottom habitat and no effect on the water column. Hook-and-line gear could break hard bottom structures through snagging or entanglement and abrasions to structures could result from lines or weights (Barnette, 2001). Impacts to both soft and hard corals would be greater than impacts associated with hard-bottom areas for the reasons described above. Impacts to natural habitat surrounding artificial reefs are expected to be negligible, because these structures are generally placed in areas less vulnerable to disturbance, such as sand and mud bottom. Lost fishing gear and tackle that is slow to degrade could result in long-term adverse effects if the gear continues to damage habitat over time. Anchoring over hard-bottom areas would also directly damage benthic habitat. However, at least some of the vermilion snapper fishery, particularly headboat and charter boat sectors, drift fish in the water column rather than anchor while fishing thus reducing the amount of bottom contact.

The commercial vermilion snapper fishery uses various forms of vertical lines (rod-and-reel, electric or hydraulic reels, hand lines; Table 6.2) and to a much lesser extent, longlines to harvest vermilion snapper. Vertical lines are used for a majority of the harvest, while longlines represent approximately 2-3 percent of the total annual harvest. Vertical gear and longlines can damage habitat through snagging or entanglement. Longlines can also damage hard bottom structures during retrieval as the line sweeps across the seafloor (Barnette, 2001). Anchoring over hard-bottom areas can also affect benthic habitat by breaking or destroying hard bottom structures. Generally these gears are not believed to have much negative impact on bottom structures and are considerably less destructive than some other commercial gears, such as traps and trawls (Barnette, 2001).

Maintaining the Amendment 23 regulations (**Alternative 1**) will slightly decrease the quality of benthic habitat relative to the other proposed alternatives. However, because vermilion snapper are usually not a primary target species for many fishers and represent only a small component of the overall reef fish fishery, any impacts to the physical environment expected to occur from Alternative 1 will be small. Additionally, vermilion snapper are the least desirable of the two northern Gulf snapper species, and any changes in the harvest of vermilion snapper due to Reef Fish Amendment 23 should not affect the conduct of the red snapper fishery or other fisheries, such as grouper or coastal pelagics.

**Preferred Alternative 2a** would re-establish the 10-inch TL vermilion snapper minimum size limit for recreational and commercial sectors. In the short-term, this alternative would decrease impacts to benthic habitat for the few trips targeting vermilion snapper. It would take recreational anglers less time to harvest their bag limit of legal-sized fish and decrease the amount of time gear contacts the bottom, but this is likely to have a minimal effect since few trips target vermilion snapper (see Tables 6.4 and 6.5). The commercial fishery would not substantially decrease fishing effort (i.e. time spent fishing or targeting vermilion snapper) because the mean and median sizes of commercially harvested vermilion snapper are greater than 12 inches. So, there would be little

positive benefit to the benthic habitat.

**Preferred Alternative 2b** would re-establish the 20-fish aggregate bag limit to include vermilion snapper. The larger bag limit would slightly increase the amount of time gear contacts the bottom because anglers would take longer to reach their bag limit. However, few anglers harvest more than two to four vermilion snapper each trip, therefore the negative impact on bottom habitat would not be expected to be significant.

**Preferred Alternative 2c** would eliminate the April 22 through May 31 commercial closure. Removing the closure may have a slight negative effect on benthic habitat by increasing the small proportion of fishing effort directed specifically at vermilion snapper. The closure is short (40 days) and some of this directed effort could have shifted to the open season; if so, that effort would then spread back out into the previously closed season. The overall effect of this alternative to benthic habitat would likely not be significant.

The indirect effects of **Preferred Alternatives 2a, 2b, and 2c** on the physical environment would also be expected to be insignificant relative to status quo. For the reasons stated above, hook-and-line and longline gear are believed to have a minor effect on both the benthic habitat and the water column, and other gears account for a very small percentage of the harvest. It is unlikely that fishermen have had time to significantly alter their fishing practices since implementation of Amendment 23, so reverting to the previous regulations would have no lasting effect on benthic habitat. Changes to the regulations are not expected to be enough to cause fishermen to target vermilion snapper instead of other species such as red snapper or grouper.

### **5.3 Direct and indirect effects on the biological/ecological environment and their significance**

**Alternative 1**, (no action), would maintain the regulations established by Reef Fish Amendment 23. The 11-inch TL recreational minimum size limit was expected to decrease harvest by 20.4 percent and the 10-fish vermilion snapper bag limit within the 20-reef fish aggregate was expected to reduce harvest by 1.4 percent for a combined reduction of 21.5 percent. Size limits are intended to protect immature fish from harvest and must balance the benefits of harvesting larger fish with losses due to natural mortality and dead discards. Larger size limits were expected to increase the average size of fish harvested and allow more fish to survive to older ages with the intent to increase the reproductive capacity of the stock. However, because larger size limits result in more fish released for every legal-sized fish caught, the number of dead discards also would increase. Stock biomass is expected to increase over the short-term to higher levels under current management measures. Regardless of stock size, the level of bycatch is always greater for higher size limits when compared to lower size limits. The reduction in harvest associated with the 11-inch TL size limit took into account the effect on discards. Although minimum size limits would increase bycatch, the increase in stock abundance exceeds losses associated with dead discards. Adding a 10 vermilion snapper bag limit within the aggregate 20 fish bag limit was expected to have minimal effect on harvest (1.4 percent) and on dead discards.

The commercial minimum size limit of 11-inches TL was expected to reduce harvest by 12.6 percent and the closed season from April 22 through May 31 was expected to reduce harvest by 15.8 percent for a total commercial harvest reduction of 26.3 percent. An 11-inch TL minimum



size limit likely has only minimal benefits to the biological and ecological environment, since the average size of vermilion snapper harvested commercially is greater than 12-inches TL. A larger size limit was expected to increase the size and age structure of the stock and allow more fish to spawn before becoming susceptible to harvest. Closing the fishery during part of April and all of May protected vermilion snapper at the beginning of the spawning season. The benefits of such a short closure could be diminished if effort shifted and vessels targeting vermilion snapper do so more frequently during the open season.

Maintaining the regulations implemented by Amendment 23 would increase stock biomass above levels expected if Amendment 23 regulations are removed. The 2004 assessment indicated the SSB in 2004 was approximately 21 percent above SSB<sub>OY</sub> and projections using constant F were expected to be flat or slightly increased over the next ten years. Landings were reduced by Amendment 23 subsequent to 2004, so SSB under the existing regulations should increase above 2004 levels and landings should increase in the long-term but not as much as would occur if the regulations were removed. The vermilion snapper stock would be very healthy compared to other fished stocks in similar habitat, which could improve the available food supply for predators or result in increased competition with other species.

**Preferred Alternative 2a** would re-establish the 10-inch TL vermilion snapper minimum size limit for recreational and commercial sectors. Collectively, the size limit reduction would be expected to increase harvest by about 14 percent and eliminate more than half of the reductions imposed by Amendment 23. The stock would continue to increase beyond the 2004 SSB level. The size and age structure of the stock would continue to improve but at a slower pace than under Alternative 1. Bycatch would be reduced in both the recreational and commercial fisheries relative to status quo. Information from the first six months after the 11-inch TL size limit was implemented suggests that discards in the recreational fishery increased by 160 percent over a similar time period prior to the increase in the size limit. Supplemental bycatch discard information from logbooks for the commercial fish is not yet available.

**Preferred Alternative 2b** would re-establish the 20-fish aggregate bag limit to include vermilion snapper. The 10 vermilion snapper bag limit was expected to decrease recreational landings by about 1.4 percent but in combination with the size limit, the effect would have been slightly less. Selecting this alternative would reduce the effect of Amendment 23 regulations by less than 0.4 percent and would not result in noticeable or measurable benefits to the biological environment.

**Preferred Alternative 2c** would eliminate the April 22 through May 31 commercial closure. The commercial closure was expected to reduce commercial harvest by approximately 15.8 percent. Eliminating this closed season would reduce the effect of Amendment 23 by about 43 percent. A portion of the spawning season for vermilion snapper would no longer be closed possibly allowing more fishing effort on spawning aggregations. However, since the closed season was only 40 days within a spawning season from late spring to early fall, effort may have shifted to other spawning times negating some of the effect of the closed season. Stock biomass would increase to a higher level than that for Alternative 2a. The size and age structure of the stock would continue to increase but at a slower pace than under Alternative 1 and a quicker pace than Alternative 2a.

Collectively, **Preferred Alternatives 2a, 2b, and 2c** would eliminate the management regulations imposed by Amendment 23. Harvest is expected to increase by approximately 25 percent over

what it would be in future years under status quo management measures. Lowering the minimum size limit and eliminating the seasonal closure are both expected to reduce dead discards. Eliminating the season closure may not provide a significant benefit to the stock since the closure time period represents a small proportion of the overall spawning season.

The stock would not continue to increase but should remain above or near the  $SSB_{OY}$  level. The vermilion snapper stock would remain healthy for the short-term and remain ecologically balanced in respect to other major species in the reef fish fishery. In the long-term, there is the possibility that effort could continue to increase and overfishing could eventually occur. However, based on the trajectory of fishing mortality since 1986,  $F$  may exceed  $F_{OY}$  by 2012 but is unlikely to exceed  $F_{MSY}$  through 2017.

All of the alternatives would result in indirect effects on the ecosystem. Vermilion snapper occupy similar habitat as other reef fishes, such as red grouper, gag, red snapper, and gray triggerfish. Those species that compete with vermilion snapper for both shelter and food would be expected to be negatively affected by an increase in vermilion snapper (Alternative 1); whereas, if the stock is allowed to stabilize (collectively Alternatives 2a, 2b, and 2c) competitors should stabilize based on current fishing rates for those species. Similarly, predators of vermilion snapper could increase if the abundance of vermilion snapper continues to increase (Alternative 1) or stabilize around current fishing rates for those predators if the vermilion snapper stock is stable. Vermilion snapper are less desirable than red snapper or grouper species so changes in the availability of vermilion snapper brought about by any of the alternatives should not greatly affect the conduct of the red snapper or grouper fisheries.

#### **5.4 Direct and indirect effects on the social and economic environment and their significance**

Under **Alternative 1** (status quo), the recreational fishery was expected to reduce recreational consumer surplus by \$1.016 million and net revenue by \$3.158 million over 2004-2008. The commercial fishery was expected to lose net revenue of approximately \$1.443 million over this same time period (See Section 6.5). Consumer surplus and net revenue is likely to increase some as stock biomass increases. However,  $F$  associated with Amendment 23 regulations should be approximately 32 percent below  $F$  associated with removing those regulations; so, harvest should remain proportionally lower and consumer surplus and net revenues should also remain proportionally less. The fishing mortality rate prior to implementation of the current regulations was approximately 17 percent below  $F_{OY}$ ; therefore, the current regulations result in foregone biologically-sound economic and social benefits from the resource.

**Preferred Alternative 2a** re-establishes the 10-inch minimum size limit for both the recreational and commercial fisheries. **Preferred Alternative 2a** would be expected to increase consumer surplus by approximately \$0.955 million and net revenue by approximately \$2.969 million for the recreational fishery and to increase commercial net revenue by approximately \$0.640 million. **Preferred Alternative 2b** would eliminate the 10-vermilion snapper bag limit within the aggregate reef fish bag limit of 20 fish and is expected to generate a total economic gain of up to \$0.250 million relative to the status quo. **Preferred Alternative 2c** would eliminate the 40-day commercial season closure and is expected to generate an increase in net revenues of approximately \$0.803 million.

**Preferred Alternatives 2a, 2b, and 2c** may benefit the socioeconomic environments indirectly by slowing further declines in the social structure of the commercial and recreational for-hire fishery in the Gulf of Mexico. Most of the dominant reef fish fisheries are undergoing overfishing and some are overfished as well. The pressure of coastal development and more stringent fisheries regulations is slowly eroding fishing communities and fisheries infrastructure. Biologically sustainable relaxation of fishery regulations promotes continued participation by fishermen and supporting infrastructure.

### **5.5 Direct and indirect effects on the administrative environment and their significance**

**Preferred Alternative 2** would require administrators to make minor adjustments to the Reef Fish FMP, but these adjustments fall within the current scope and capacity of the current management system. Changing size and bag limits (**Preferred Alternatives 2a and 2b**) does not affect enforcement levels since size and bag limits will still exist. However, **Preferred Alternative 2c** would eliminate a closed season, thus reducing enforcement needs.

### **5.6 Mitigation measures**

There are no mitigation measures considered because these alternatives will either maintain status quo or eliminate current management measures without biologically compromising the vermilion snapper stock. Economic, social, and administrative environments are improved by any of the action alternatives, while the physical environment is immeasurably changed. The biological condition of vermilion snapper would be slightly worse (lower SSB, higher F) but would still be in better condition than if fished at  $F_{OY}$ . Therefore, no mitigation measures are necessary.

### **5.7 Cumulative Effects**

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

The following cumulative effects analysis applies to fisheries operating in the Gulf of Mexico. The timeframe for the analysis includes both short-term (next five years) and long-term effects (through 2017, the last year used in assessment projections).

Overall, cumulative effects from the actions proposed in this amendment are dependent on future actions within the reef fish fishery, and to a certain extent, the shrimp fishery. Many of the species in the reef fish fishery are either overfished or undergoing overfishing. Rebuilding plans are in effect for red snapper, greater amberjack (Secretarial Amendment 2) and red grouper (Secretarial Amendment 1). Amendments are being developed for gag grouper, greater amberjack, and gray triggerfish based on assessments that determined these stocks were undergoing overfishing. An

interim rule and an amendment are nearing completion that jointly establishes management regulations to end overfishing of red snapper by reducing directed harvest, directed fishery discards, and shrimp trawl bycatch. An amendment establishing an IFQ program for red snapper was implemented January 1, 2007 and an IFQ program for grouper is being developed.

Red snapper, red grouper, gag, greater amberjack, and to a certain extent, vermilion snapper are upper level predators preying primarily on fish, benthic invertebrates, and in some cases, squid (Moran, 1988; Nelson, 1988; Bullock and Smith, 1991; Andalora and Pipitone, 1997). The degree of competition for food resources may increase as stock abundance increases in any one of the species. In addition, vermilion snapper may begin to compete for habitat with red snapper (primarily in the northern Gulf) as the vermilion snapper stock increases or remains near  $SSB_{OY}$  levels. Public testimony from hearings conducted to examine vermilion and red snapper management measures suggests vermilion and red snapper may compete directly for resources as adults and that adult red snapper prey on juvenile vermilion snapper. If that is the case then increased vermilion snapper stocks could support a rebuilding red snapper stock if the northern Gulf primary habitat is prey limited. To assess potential competition, complex models would need to be developed. Currently, models for the Gulf that could address these issues (e.g., Ecopath) are being developed. At this time, the model inputs do not separate snappers; thus the precision of the existing Gulf model is too low to identify competition between red snapper and vermilion snapper (Behzad Mahmoudi, Florida Fish and Wildlife Conservation Commission, personal communication).

Maintaining yield at OY should have a positive benefit to other reef fish resources. The current fishing mortality rate is estimated to be about 17 percent below  $F_{OY}$  so there is a small amount of growth available in this fishery. Most of the dominant reef fish fisheries are undergoing overfishing and some of those are overfished as well. Regulations are becoming more severe to remove excess fishing effort. Even though vermilion snapper is not the target species of most fishing trips, the stock may be able to absorb some of the effort that is being removed from other reef fish species. Fishing communities may benefit from this shift in effort and be less likely to leave the fishery.

The Council has implemented an IFQ system for the directed commercial red snapper fishery. This fishery also catches a large portion of vermilion snapper, which are found in similar habitats as red snapper. Many fishermen will not receive sufficient red snapper IFQ shares to target them over the entire year. These fishermen may turn to other species such as vermilion snapper to supplement their yearly income; thus potentially causing vermilion snapper to undergo overfishing and become overfished in the future. If effort increases beyond the OY level, then maintaining status quo regulations would provide an additional safeguard for preventing overfishing. However, if effort does not increase beyond the OY level, then status quo regulations would result in forgone yield and have negative social and economic effects. Stock assessments will be periodically conducted to carefully monitor the status of vermilion snapper and ensure management measures are appropriate to maintain the stock at healthy, sustainable levels. The next assessment of vermilion snapper is scheduled for 2012.

While not as severe as the shrimp bycatch mortality of juvenile red snapper, vermilion snapper are caught as bycatch of the shrimp fishery. Several amendments to the Shrimp FMP either have or are likely to be implemented that either will reduce bycatch mortality or collect information on this

bycatch. Amendment 9 to the Shrimp FMP implemented the use of bycatch reduction devices (BRDs) in shrimp trawls in the western Gulf. Shrimp Amendment 10 extended the requirement of bycatch reduction devices into the eastern Gulf. Shrimp Amendment 11 requires shrimp vessels fishing in the EEZ to have permits (considered the first step to effort limitation). Amendment 13 established a moratorium on the issuance of new shrimp permits and included alternatives to better obtain bycatch and effort data. The Council is working on Amendment 14, which contains alternatives for caps on effort and Amendment 15, which includes bycatch reduction measures and the requirement for a vessel monitoring systems (VMS) that could allow for closed areas.

### **5.8 Unavoidable adverse effects**

This amendment seeks to reduce the regulations on vermilion snapper because the stock is not overfished or undergoing overfishing and the regulations imposed by Amendment 23 to the Reef Fish FMP are not necessary in the short-term to sustain the stock at sustainable levels. There are no measurable adverse effects of these actions on the physical, biological, economic, social, or administrative environments. Benefits are expected to occur to the social, economic, and administrative environments. Relaxing vermilion snapper regulations is not expected to adversely effect the physical and biological environments over the short-term.

### **5.9 Relationship between short-term uses and long-term productivity**

As defined in the Regulatory Impact Review (RIR; Section 6.4), short-term effects cover the period between 2004 and 2008 and match the definition in Amendment 23. Long-term effects cover the period from 2009 through 2017 and correspond to the last year used in the stock projections based on the most recent assessment of vermilion snapper (SEDAR 9, 2006). Based on that assessment and projections, there is expected to be no difference in vermilion snapper biomass, yield, or fishing mortality over the short- or long-term. Therefore, there are also no measurable economic differences between the short- and long-term periods. If regulatory measures for vermilion snapper are relaxed in the short term and cause fishing mortality rates increase above  $F_{OY}$  over the long term, then there is the potential for losses in biomass and yield, which would result in future negative effects to the social, economic, and administrative environments. Conversely, if regulatory measures implemented in Amendment 23 are maintained and fishing mortality rates remain at current levels over the long term, then increases in biomass will occur and some yield will be forgone. Forgone yield would result in economic losses because of the fisheries' inability to optimize yield.

### **5.10 Irreversible and irretrievable commitments of resources**

Freeman (1992) defines irreversible commitments as “those that cannot be reversed, except perhaps in the long term.” Irretrievable commitments are “those that are lost for a period of time.” If vermilion snapper regulations are relaxed, this amendment would not result in any irreversible or irretrievable commitments of resources. If regulations are not relaxed, then fishermen would forgo yield, resulting in irretrievable economic profits. The results of the actions proposed in this amendment should increase or stabilize the fishery resources in the Gulf without significant adverse effects on other Gulf resources.

## **6 REGULATORY IMPACT REVIEW**

## **6.1 Introduction**

NOAA Fisheries Service requires a RIR for all regulatory actions that are of public interest. The RIR does the following: (1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and, (3) it ensures that the regulatory agency systematically and comprehensively considers available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way.

The RIR also serves as the basis for determining whether the proposed regulation is a "significant regulatory action" under certain criteria provided in Executive Order 12866, and provides the general basis for determining whether the proposed regulation would have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 1980 (RFA).

This RIR analyzes the potential impacts that the alternatives in this regulatory amendment to the Reef Fish FMP would have on participants in the reef fish fishery.

## **6.2 Problems and issues in the fishery**

The specific problems addressed in this proposed regulatory amendment are enumerated and discussed in Sections 1 and 2 and are incorporated herein by reference. The only issue identified for this regulatory amendment is whether to eliminate some or all the management measures for the vermilion snapper fishery implemented through Reef Fish Amendment 23.

## **6.3 Objectives**

Section 2 discusses the specific purpose and need for this plan amendment and is incorporated herein by reference. The objective of this action is to allow the vermilion snapper fishery to harvest at a level closer to optimum yield.

## **6.4 Description of the Fishery**

The following description of the fishery was largely taken from Section 8.4 in Amendment 23. Amendment 23 was completed in 2004 and largely incorporated data through 2002. Currently, commercial and recreational landings data are available through 2005 and the following tables, figures, and discussion taken from Amendment 23 have been updated where possible. However, if a table was the result of a modeling exercise and one or more of the input data sets were not updated then the original results are presented.

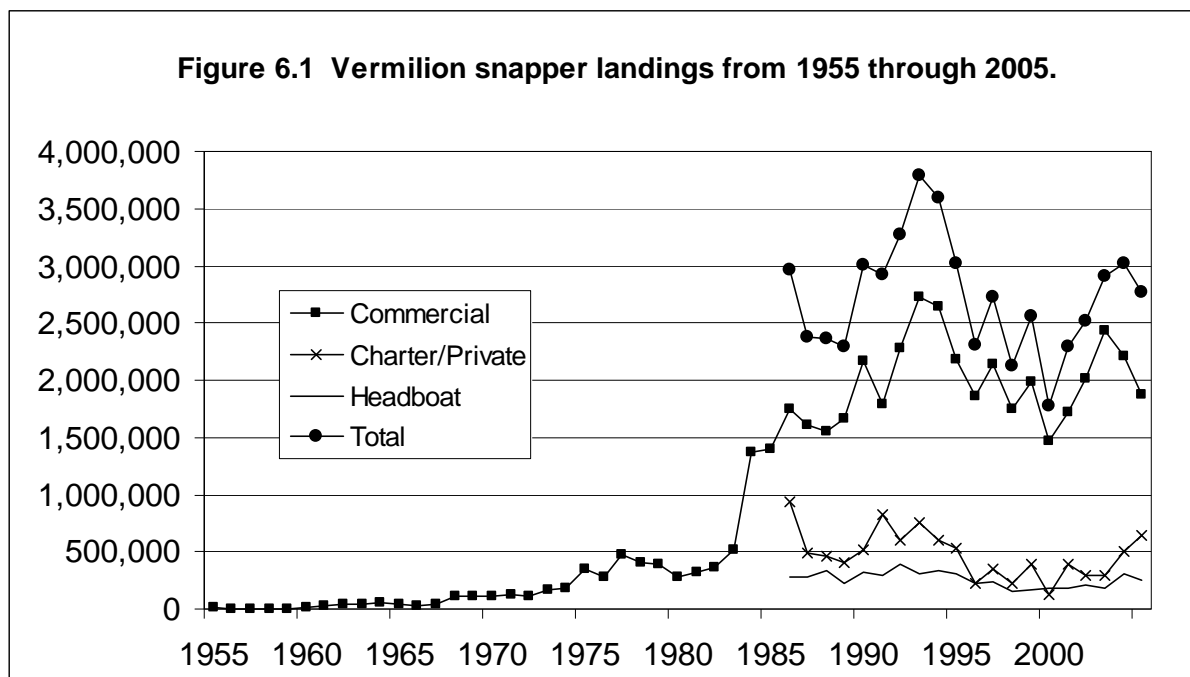
### **6.4.1 Status of the stock**

Section 1 describes the results of the previous stock assessment (Porch and Cass-Calay, 2001), which was the basis for development of Amendment 23 and the current assessment (SEDAR 9 Assessment Report 3, 2006) which is the basis for this amendment. The 2001 assessment

determined that the vermilion snapper stock was overfished and undergoing overfishing. A rebuilding plan was established and the harvest was reduced by approximately 25.5 percent to end overfishing and rebuild the stock. Those regulations were implemented on July 8, 2005 through Amendment 23. The most recent assessment determined that the vermilion snapper stock has never been overfished or undergone overfishing. The primary reason for the change in status between 2001 and 2006 was the incorporation of age specific population dynamics information and the new model's ability to estimate  $SSB_{MSY}$  rather than fix  $SSB_{MSY}$  at 50 percent of virgin biomass.

## 6.4.2 Fishery Characteristics

From 1955 through 2005, total reported landings of vermilion snapper have ranged between 1,300 pounds (1957) and 3.8 mp (1993) (Figure 6.1). Commercial landings slowly increased from the 1950s to 1983, after which reported landings jumped from 812,000 pounds to 1.7 mp in 1984. This increase is mostly due to misreporting approximately 727,000 pounds of vermilion snapper as red snapper in Louisiana and Mississippi (Porch and Cass-Calay, 2001). Total landings increased rapidly through 1993, mostly due to commercial increases. Prior to 1986, MRFSS landings could not be separated by charter or headboat and so charter/ private recreational landings can not be estimated for these years. Since 1993, total landings have steadily declined. Total landings for 2005 were 2.8 mp.



In general, the commercial fishery harvests most vermilion snapper. The proportion of harvest taken by the commercial fishery was variable from 1986 through 1996, but generally increased from approximately 60 percent to 80 percent. Landings from both commercial and recreational sectors generally declined from 1993 until 2000. However, proportionally, the commercial sector has accounted for approximately 79 percent of the harvest between 1996 and 2004. Since 1996, landings recorded for the headboat fishery account for about 41 percent of the recreational landings.

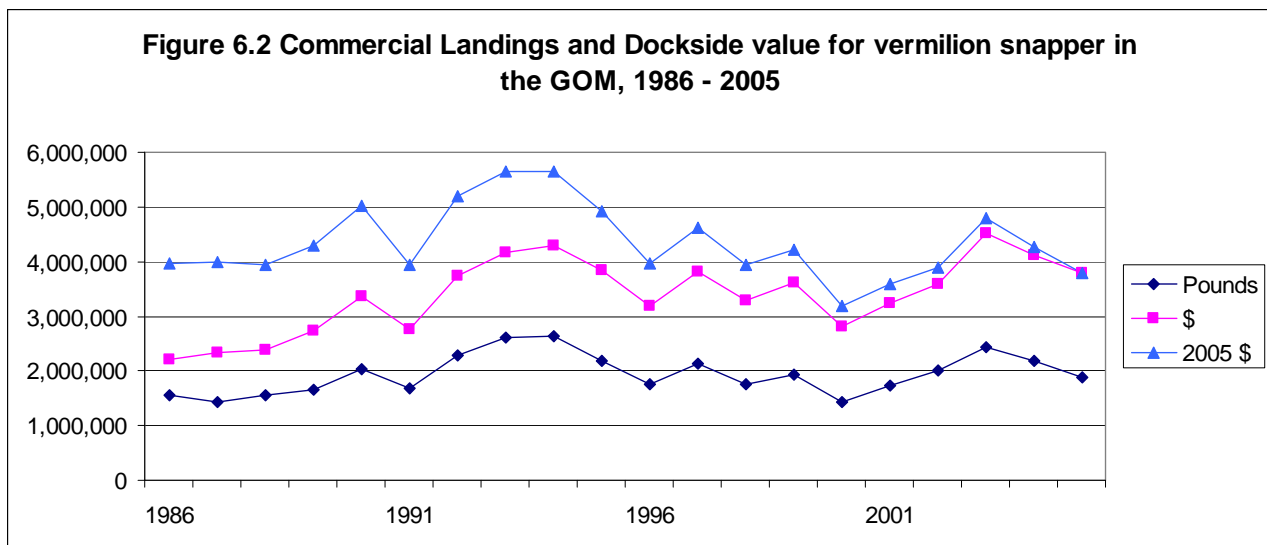
Based on trip interview program (TIP) data that has been collected since 1984, length distributions of vermilion snapper are generally similar between gears. However, there does appear to be a trend of smaller fish being caught off Florida and larger fish being caught off Texas. Fish landed in Florida have a mode of 11 to 12 inches TL compared to a mode of 14 to 15 inches TL for fish caught off Texas. The mode for Louisiana/Mississippi caught fish is intermediate to Florida and Texas fish, while there are insufficient data from Alabama to make any comparisons.



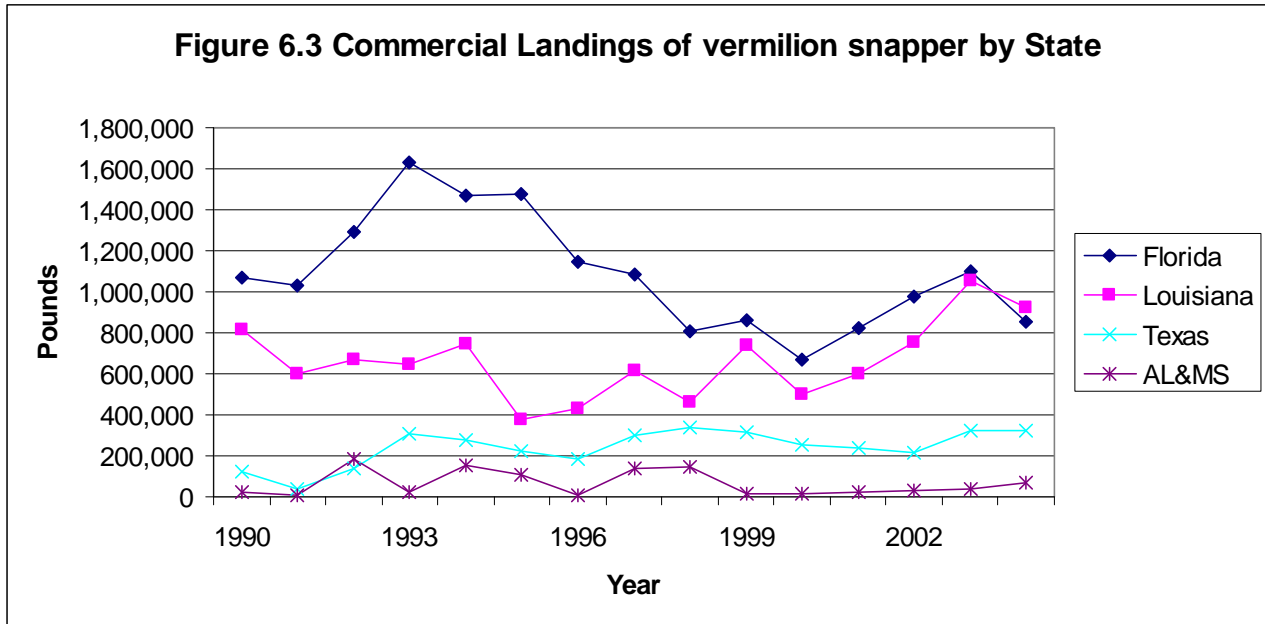
Other than the general management measures affecting the reef fish fishery as a whole, the management of vermilion snapper since 1990 has been based on bag and size limits. A TAC has been specified for this species.

### 6.4.2.1 Commercial fishery

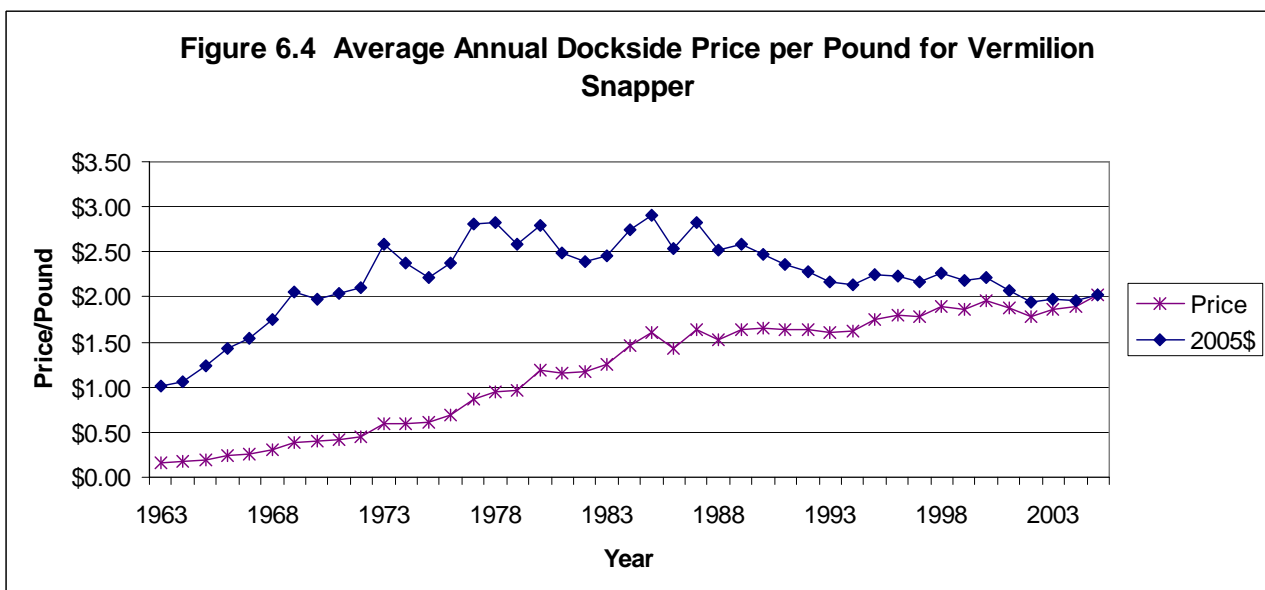
Vermilion snapper are not a primary target species in the commercial reef fish fishery, making up less than 10 percent of the total reef fish commercial landings. Landings and dockside (ex-vessel) values of vermilion snapper in the Gulf from 1986 through 2004 are depicted in Figure 6.2. Dockside values are expressed both in terms of current year dollars and 2005 dollars (i.e., adjusted for inflation). Since 1983, landings of vermilion snapper have risen from approximately 0.5 mp to their peak of 2.7 mp in 1993 (Fig. 6.1). After 1993, landings gradually declined and reached a low of about 1.47 mp in 2000. Landings have generally increased over the last four years. The corresponding dockside, or ex-vessel, revenues tracked the trends in landings, with a peak of about \$4.4 million in 2003. The relatively wide difference in current and real (2005) dockside revenues in the early years reflects the relatively high inflation rate in the 1980's, while the small difference between the two trend lines in more recent years reflects the low inflation rate for the period.



Historically, most vermilion snapper are landed in Florida (Figure 6.3). In recent years, 1998-2004, Florida harvested an average of 45 percent of the total, whereas Louisiana, Texas, and Alabama harvested an average of 37 percent, 15 percent, and 1 percent, respectively. Mississippi's landings are higher than Alabama for those years when landings are reported but due to data confidentiality cannot be reported for recent years. In the last 10 years, landings of vermilion snapper in Texas have slightly increased while landings in Florida have experienced substantial declines.



The price for vermillion snapper has not substantially fluctuated, possibly due to the absence of marked changes in the monthly landings of vermillion snapper. Moreover, the gradual increase of vermillion snapper landings in the early years and their subsequent gradual decline in the later years may have contributed to a relatively stable price structure for vermillion snapper. As can be seen from Figure 6.4, nominal (current year) price for vermillion snapper has gradually increased over the years, leveling out since 1998. This is true despite the decline in landings in the most recent years, which could potentially exercise an upward pressure on prices. Despite a reported close interaction between the red snapper and vermillion snapper fisheries, prices for vermillion snapper have not experienced the type of wild swings in prices that occurred in the red snapper fishery. One other point worth noting in Figure 6.4 is the fact that while nominal prices have increased over the years, real prices (in 2005 dollars) have declined since the early 1980's.



NOAA Fisheries Service lists 27 gear types (including “not coded”) for which vermilion snapper were landed during the period 1955-2002 (Table 6.2). Of these gear types, the top four comprise nearly 98 percent of the reported landings. Trips categorized as combined gears accounted for about 57 percent of the commercial harvest from 1955-2002. The harvest for these trips cannot be proportioned to the gear types used. For those fish that could be associated with specific gear types, most fish (95 percent) are landed with various forms of hand lines and rod and reels. Several types of longlines together accounted for about four percent and gear “not coded” accounted for about seven percent.

Table 6.2. Pounds landed, percent of total, and cumulative percent by gear for vermilion snapper caught in the Gulf of Mexico. Landings are totaled over the time period 1955-2002

Gear type	Pounds landed	Percent of total	Cumulative percent
Combined Gears	22,415,829	57.	57.18
Lines Hand, Other	12,385,616	31.59	88.77
Not Coded	2,737,036	6.98	95.75
Reel, Electric or Hydraulic	881,386	2.25	98.00
Lines Long, Reef Fish	564,567	1.44	99.44
Troll & Hand Lines Combined	109,500	0.28	99.72
Otter Trawl Bottom, Shrimp	86,053	0.22	99.94
Pots And Traps, Fish	18,865	0.05	99.99
Pots And Traps, Blue Crab	3,209	less than 0.01%	greater than 99.99%
Pots And Traps, Spiny Lobster	791		
Otter Trawl Bottom, Fish	500		
Lines Long Set With Hooks	259		
Diving Outfits, Other	107		

Summary characteristics of vessels that landed vermilion snapper from 2000 through 2002 are presented in Table 6.3 taken from Waters (2004). This table combines information from logbooks, general canvass data, and a survey of commercial reef fish vessels in the Gulf. An annual average of 473 boats, taking 3,745 trips, reported commercial landings of vermilion snapper. Most of these boats (82 %) used vertical line gear, and they accounted for almost all (99 %) vermilion snapper landings. Boats that landed vermilion snapper also landed other species (Table 6.3). In fact, catches of other species by vertical line boats were about 2 to 4 times those of vermilion snapper. Vessels using other gear types appear to catch vermilion snapper as incidental to vessels using vertical line.

Table 6.3. Summary characteristics of boats landing vermilion snapper, 2000-2002 (thousand pounds, thousand dollars)

	2000		2001		2002		Ave. 2000-2002	
	V Line	O Gear	V Line	O Gear	V Line	O Gear	V Line	O Gear
No. Of Boats	381	84	395	92	393	74	390	83
No. Of Trips	3,279	228	3,398	256	3,827	248	3,501	244
LBS (VS)	1,489	12	1,732	15	2,049	22	1,757	16
2004\$ (VS)	2,815	23	3,243	28	3,666	39	3,241	30
LBS (OS)	4,358	680	4,825	969	5,353	786	4,845	812
2004\$ (OS)	7,902	1,295	9,325	1,872	10,452	1,479	9,226	1,549
Net Revenues	6,347	964	7,870	1,456	8,890	1,126	7,702	1,182

Source: Waters (2004).

Note:

VS = vermilion snapper

OS = other species caught by boats in the same trip as vermilion snapper

2004\$ = Net revenues (revenues less routine trip costs) in 2004 dollars =

V. Line = Vertical lines

O. Gear = Other gear

Commercial vessels landing reef fish (including vermilion snapper) are required to sell their catch only to fish dealers with federal reef fish permits. Based on information from the permit file, about 227 dealers possess these permits. Most of these dealers are located in Florida (146), with 29 in Louisiana, 18 in Texas, 14 in Alabama, 5 in Mississippi and 15 out of the Gulf States region. There are no earned income or fishery participation requirements to obtain a federal permit for dealers, so the total number of dealers can vary from year to year. Also, some may possess a permit but not actively purchase vermilion snapper or other reef fish species in any given year.

As part of their requirement to submit logbook reports to NMFS, reef fish fishermen have to identify the dealers to whom they sold their fish. Based on 1997-2002 logbook information, an average of 154 reef fish dealers were actively buying vermilion snapper. These dealers were distributed around the Gulf states as follows: 7 in Alabama, 96 in Florida, 22 in Louisiana, 7 in Mississippi, and 22 in Texas. For the period 1997-2002, dealers in Florida purchased annually an average of \$1.6 million of vermilion snapper, followed by dealers in Louisiana with purchases of \$1.1 million, and dealers in Texas with purchases of \$509 thousand. Dealers in Mississippi purchased \$125 thousand worth of vermilion snappers and those in Alabama, \$31 thousand. Dealers often hold multiple types of permits and operate in both Federal and state fisheries. It is unknown what percentage of any of the average dealer's business comes from the vermilion snapper fishery.

Mr. William Antozzi (NMFS SERO, personal communication, 2004) developed a quick view of the

commercial market for vermilion snapper based on information from some fish dealers in the Gulf. The following are some salient features:

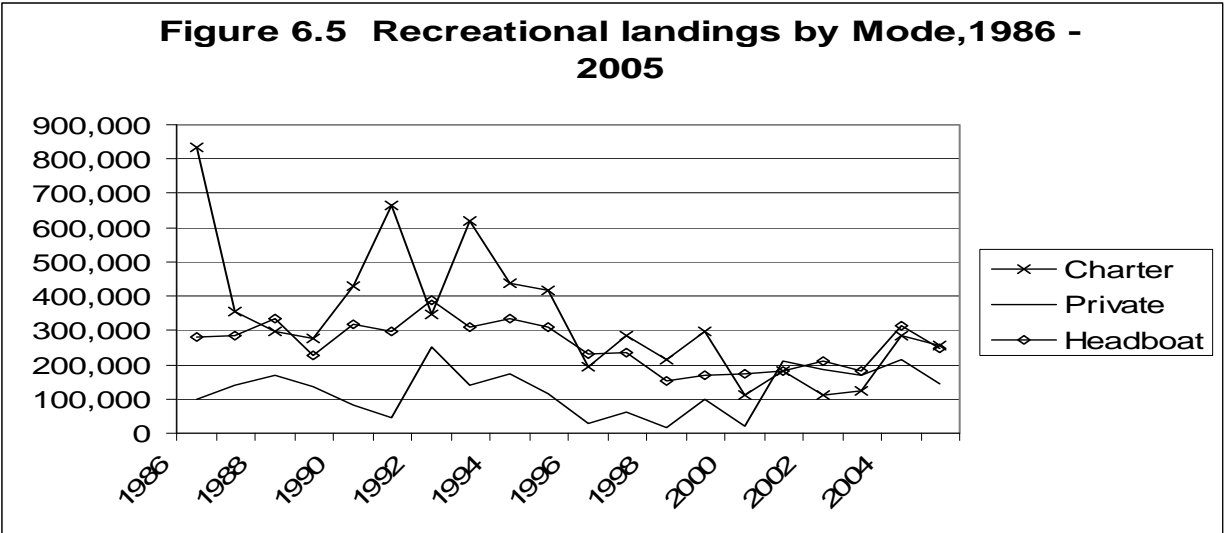
- vermilion snapper occupies a market niche for the small snapper fresh market
- the market is about 2/3 retail (for home preparation) and 1/3 restaurant
- consumers are dominated by ethnic groups, primarily of Asian and Caribbean extraction
- New York, Toronto, and Montreal are the best markets while California and the Gulf are less significant markets
- fish dealers generally adopt a 3-tier or 4-tier pricing, with the smallest (½ to ¾ lb.) commanding a price range of \$1.25 to \$1.75 per pound and the largest (2 lbs. and up), \$2.00 to \$2.50 per pound
- wholesale prices at the New York Fulton Fish Market average at \$0.50 to \$1.00 per pound above the ex-vessel prices
- significant competition comes from snapper imports from Mexico, Panama, and Venezuela

#### **6.4.2.2 Recreational fishery**

The recreational vermilion snapper fishery in the Gulf includes charter boats, headboats (or party boats), and private anglers fishing from shore or private or rental boats. As noted earlier in this section, no TAC has been established for vermilion snapper so there has been no issue related to allocation or quota closures. Essentially, the recreational sector of the vermilion snapper fishery has been regulated via a size limit (currently 11 inches TL) and an aggregate bag limit (currently 10 vermilion snapper are allowed to be kept out of the 20-reef fish aggregate bag limit).

Vermilion snapper landings have been recorded through the MRFSS since 1979; however, data collected prior to 1981 is generally not used, as these data appear to be less reliable than data from later effort (Porch and Cass-Calay, 2001). In addition, headboats were no longer sampled by MRFSS since 1985 when the NOAA Fisheries' Headboat Survey began sampling this segment of the fishery. The Texas Parks and Wildlife Department has conducted their own recreational survey since 1983 and so MRFSS was discontinued in this state.

Headboats have been responsible for approximately 41 percent of the Gulf recreational landings of vermilion snapper, while charter vessels averaged 30 percent, and private recreational fishers averaged 28 percent in recent years (2000–2004, Figure 6.5). Trends in landings between all three sectors show similar downward trends from 1986 through 1997. From 1998 through 2003, landings were variable but show no trend; however, landings increased in 2004. Peak landings occurred in the head boat fishery in 1992 at 390,009 pounds. Peak landings occurred in the charter fishery in 1991 at 665,443 pounds and landings by private recreational fishers peaked in 1992 at 253,816 pounds. Charter vessel landings in 1986 are suspect because that was the first year that MRFSS did not include headboats in their estimation of landings. All of these peaks were in the same time frame and coincided with peaks in commercial landings.



Most recreationally caught vermillion snapper are landed in Florida (Figure 6.6). From 1984 through 2002, Florida has contributed 62 percent of the catch, followed by Alabama at 25 percent, Texas at 11 percent, Louisiana at 1.5 percent, and Mississippi at less than one percent. While the percentage of fish landed in Florida is generally greater than 50 percent, Alabama landings were larger in some years.

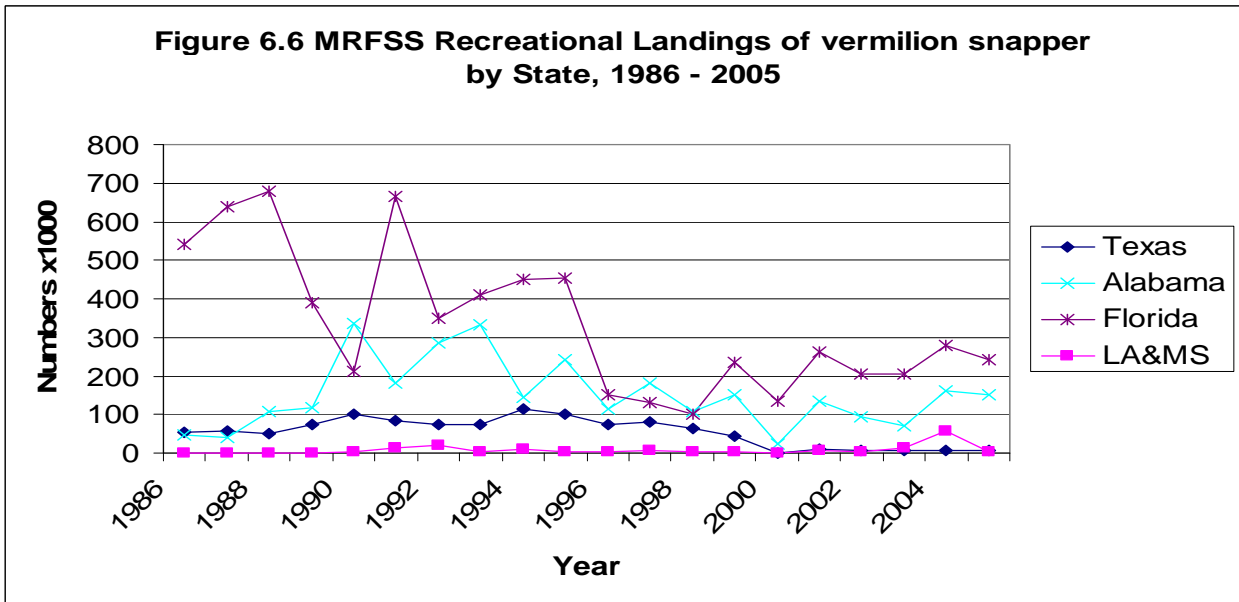


Table 6.4 shows the trend in recreational trips targeting and catching vermillion snapper based on MRFSS data from 1986 through 2002. The total number of recreational trips in the Gulf was relatively stable at below 20 million in the early years and above 20 million in the last three years. Individual angler trips targeting vermillion snapper were rare relative to overall recreational trips (less than 0.05 percent). This condition probably places vermillion snapper at the lower end of targeted species, although it should be noted that most angler trips have no particular species targeted. Targeted trips for vermillion snapper follow no perceptible trend, but large fluctuations

appear during certain periods. In general, however, very few intercepted trips indicate they targeted vermilion snapper and the variability in the estimates is likely more greatly influenced by survey methodology than actual variation in target behavior. Essentially, the strongest message that can be garnered from the data is that vermilion snapper are more of an incidental harvest species than a target species. This is borne out by the substantially higher estimations of catch trips. The number of trips catching vermilion snapper has ranged from approximately 108,000 to 170,000 since 1999. Throughout the period 1986-2002, trips catching vermilion snapper made up less than one percent of all recreational trips. Just like targeted trips, catch trips show no perceptible trend, but unlike targeted trips, catch trips have not experienced very wide fluctuations from year to year since 1986.

Table 6.4. Recreational vermilion snapper effort in the Gulf of Mexico based on MRFSS data, 1986-2002.

	Target Trips		Catch Trips		Total Trips
	Level	% to Total	Level	% to Total	
1986	690	0.00	99,870	0.52	19,039,944
1987	5,445	0.03	154,162	0.96	16,089,446
1988	4,549	0.02	176,315	0.89	19,743,299
1989	605	0.00	122,911	0.79	15,622,510
1990	3,722	0.03	95,163	0.71	13,310,226
1991	9,927	0.05	155,700	0.86	18,173,598
1992	1,217	0.01	166,950	0.92	18,079,250
1993	2,157	0.01	242,039	1.39	17,431,009
1994	1,118	0.01	193,768	1.11	17,503,737
1995	0	0.00	201,653	1.16	17,390,316
1996	1,988	0.01	110,851	0.65	17,032,778
1997	1,121	0.01	146,120	0.79	18,593,084
1998	1,486	0.01	85,452	0.51	16,703,364
1999	4,800	0.03	170,847	1.07	15,893,729
2000	532	0.00	108,417	0.52	21,017,783
2001	11,584	0.05	165,519	0.72	22,889,697
2002	6,985	0.04	146,282	0.74	19,665,578

Notes: Target trips are recreational trips taken by anglers who specified vermilion snapper as their first or second target species regardless of whether vermilion snapper was caught or not. Catch trips are recreational trips taken by anglers who caught vermilion snapper regardless of their target preference. Total trips are recreational trips taken by all anglers in the Gulf of Mexico regardless of the species targeted or caught.

Table 6.5 contains a breakdown of recreational vermilion snapper effort by fishing mode. For both target and catch trips, the shore mode has historically accounted for a relatively small component of recreational vermilion snapper effort. In fact, there are virtually no target trips for the shore mode and catch trips were observed mainly in the early 1990's. Both the charter and private/rental modes have accounted for most of targeted and catch trips for vermilion snapper. Unlike the case with red

snapper where targeted and catch trips have been dominated by the private/rental mode, the charter mode has accounted for relatively more targeted and catch trips for vermilion snapper than the private mode. Private mode catch trips are about a quarter to one-half of charter mode catch trips.

6.5. Recreational vermilion snapper effort in the Gulf of Mexico based on MRFSS data, by mode, 1986-2002.

	Target Trips			Catch Trips		
	Shore	Charter	Private	Shore	Charter	Private
1986	0	690	0	0	79,729	20,141
1987	0	519	4,926	0	93,757	60,404
1988	0	0	4,549	0	113,928	62,387
1989	0	605	0	0	88,656	34,255
1990	0	0	3,722	7,131	65,487	22,545
1991	0	8,691	1,237	14,908	99,867	40,926
1992	0	332	885	3,558	81,668	81,724
1993	352	589	1,216	3,214	151,658	87,167
1994	0	553	565	0	147,833	45,935
1995	0	0	0	0	132,826	68,827
1996	0	0	1,988	0	75,542	35,309
1997	0	1,121	0	0	122,331	23,788
1998	0	530	957	0	71,703	13,749
1999	0	1,272	3,528	0	120,946	49,901
2000	0	247	285	0	86,776	21,641
2001	0	224	11,360	0	87,914	77,606
2002	0	3,162	3,823	832	79,845	65,605

#### 6.4.2.2.1 Private anglers

Approximately 2.7 million anglers fished for marine species in the GOM. These anglers targeted drum about 35 percent of the time and spotted sea trout about 33 percent of the time. Red snapper is the most common reef fish targeted by approximately 4.5 percent of intercepted anglers. Vermilion snapper are not as highly targeted as red snapper.

Social and economic characteristics of private anglers are collected periodically through an economic add-on survey to the MRFSS. The following discussion relies heavily on the economic data add-on conducted during 1997-98 as summarized in Holiman (1999 and 2000). A more detailed summary of the characteristics of the private recreational, charter vessel and headboat fisheries in the Gulf of Mexico can be found in Amendment 23, Section 5.4

Summary results of the 1997-98 survey indicate that the typical angler in the GOM is 44 years old, male (80 %), white (90 %), and employed full time (92 %), with a mean annual household income



of \$42,700 (1997 dollars), and had fished in the state intercepted for an average of 16 years. The average number of fishing trips taken in the 12 months preceding the interview was about 38 and these were mostly (75 %) one-day trips where expenditures on average were less than \$50 (1997 dollars). Seventy-five percent of surveyed anglers reported that they held saltwater licenses, and 59 percent of them owned boats used for recreational saltwater fishing. Those anglers who did not own their own boat spent an average of \$269 per day on boat fees when fishing on a party/charter or rental boat. About 76 percent of these anglers were employed or self-employed and about 23 percent were unemployed, primarily due to retirement.

#### **6.4.2.2 Charter boats, headboats and party boats**

There are about 1,625 charter boats/headboats/party boats with permits that allow them to harvest reef fish within the Gulf. Historically, the majority of these permits are in Florida (over 60 percent), followed by Texas, Louisiana, Alabama and Mississippi. .

The most recent in-depth examinations of the Gulf for-hire fleets were conducted by Holland et al. (1999) and Sutton et al. (1999). Between 1987 and 1997, the number of charter boats on Florida's west coast increased by about 16 percent to 615 vessels and the number of charter boats in the Florida Keys increased about 12 percent to 230 vessels. Most of this growth occurred along the Florida peninsula coast; in contrast, the number of charter boats in the Panhandle region decreased by 8 percent. Charter passenger trips remained stable at about 848,458 passengers on 180,523 trips in 1997 while headboat passenger trips increased to 1,137,362 passengers on 44,655 trips in 1997 (Holland et al., 1999).

The number of charter boats in Alabama, Mississippi, Louisiana, and Texas increased about 105 percent to 430 vessels. In contrast, the number of headboats decreased 12 percent to 23 vessels. The number of passenger trips taken on both charter and headboats increased threefold. In 1997, there were 318,716 charter boat passenger trips and 117,990 headboat passenger trips (Sutton et al., 1999).

#### **Florida charter and headboat industry**

Holland et al. (1999) estimated there were 615 charter and 53 headboats located along the Florida Gulf in 1998 (excluding the Keys). About one-third of Florida charter boats targeted three or less species, two-thirds targeted five or less species and 90 percent targeted nine or less species. About 40 percent of these charter boats did not target particular species. The species targeted by the largest proportion of Florida charter boats were king mackerel (46%), grouper (29%), snapper (27%), dolphin (26%), and billfish (23%). About 60 percent of headboats did not target any particular species. The species targeted by the largest proportion of Florida headboats are snapper and other reef fish (35%), red grouper (29%), gag grouper (23%), and black grouper (16%).

Major activity centers for charter boats in Florida are: Destin, Ft Myers, Ft Myers Beach, Islamorada, Key West, Marathon, Naples, Panama City, Panama City Beach, and Pensacola. The average charter boat was 37 feet in length and carried a maximum of 6 passengers. Average boat fees were \$348 for half-day, \$554 for full-day, and \$1,349 for overnight trips. Forty-seven percent of Florida trips were half-day, 50 percent were full day and 3 percent were overnight trips. Almost all charter trips (98%) were made to federal waters (Holland et al., 1999).

Major activity centers for headboats in Florida are: Clearwater, Destin, Ft. Myers, Ft. Myers Beach, Islamorada, Key West, Marathon, Panama City, and Panama City Beach. Average Florida headboat fees were \$29 for half-day and \$45 for full day trips. Of the total number of trips, 80 percent were half-day, and 20 percent were full day. About two-thirds of these trips were in federal waters offshore and 36 percent of the headboats took 100 percent of their trips in federal waters (Holland et. al., 1999).

### **Charter and headboat industry in Alabama, Mississippi, Louisiana, and Texas**

Most of the following discussion is taken from Sutton et al. (1999). Some information from this study should be viewed with caution since some charter industry participants have expressed concerns with respect to the financial sections of the study, notably the underestimation of revenues and cost of engines. A more complete summary of this study can be found in Amendment 23, Section 5.4.

Sutton et al. (1999) estimated there were 430 charter and 23 headboats operating out of the four-state area. Of the charter boat operators sampled, 85.4 percent held Gulf reef fish charter permits, 83.3 percent held coastal migratory pelagic permits. The average charter boat was 39 feet long, with a total passenger capacity of 12 people. Most offered half-day trips (63 %) and full-day trips (98 %). About 48 percent offered overnight trips. Average boat base fees were \$417 for half-day, \$762 for full-day, and \$1,993 for overnight trips. The average headboat was 72 feet long, with a total passenger capacity of 60 people. All boats offered half-day trips, 81 percent offered full-day, and 57 percent offered overnight trips. Average headboat base fees were \$41 for half-day trips, \$64 for full-day trips and \$200 for overnight trips.

The majority of charter boats in the four-state area reported targeting snapper (91%), king mackerel (89%), cobia (76%), tuna (55%), and amberjack. The species receiving the largest percentage of effort by charter boats in the four-state area were snapper (49%), king mackerel (10%), red drum (6%), cobia (6%), tuna (5%), and speckled trout (5%). The majority of headboat/party boat operators reported targeting snapper (100%), king mackerel (85%), shark (65%), tuna (55%), and amberjack (50%). The species receiving the largest percentage of total effort by headboats/party boats in the four-state area were snapper (70%), king mackerel (12%), amberjack (5%), and shark (5%).

Major activity centers for charter boats in the four-state area are: South Padre Island, Port Aransas, and Galveston/Freeport in Texas; Grand Isle-Empire-Venice in Louisiana; Gulfport-Biloxi in Mississippi; and Orange Beach-Gulf Shores in Alabama. Major activity centers for headboats in the four-state area are: South Padre Island, Port Aransas, and Galveston/Freeport in Texas and Orange Beach-Gulf Shores in Alabama

#### **6.4.3 Fishing communities**

Some notable issues regarding the characteristics of fishing communities potentially affected by regulations on the reef fish fishery are contained in Amendment 22 to the Reef Fish FMP and Secretarial Amendment 1 and are incorporated herein by reference. Salient features of discussions on fishing communities contained in these documents are highlighted below.

The addresses of permit owners for the 156 bottom longline vessels are clustered in Florida: Cortez, Madeira Beach, Miami, St. Petersburg, and Tampa. The permit owner addresses for 894 vertical line vessels are clustered in: Apalachicola, Carrabelle, Cedar Key, Clearwater, Crystal River, Destin, Ft. Myers, Indian Rocks Beach, Madeira Beach, Marathon, Panacea, Panama City, Pensacola, Nokomis, St. Petersburg, Steinhatchee, Tampa, Tarpon Springs, and Yankeetown in Florida; Orange Beach, AL; New Orleans, LA; Pascagoula, MS; and Houston, TX. Vessels used for diving to catch reef fish do not show a clear cluster but are found in several areas of the Gulf. There are more than three reef fish permitted dealers with a facility in these locations: Cameron, LA; Galveston, TX; and Destin, Ft. Myers Beach, Key West, Madeira Beach, Marathon, Panama City, Pensacola, St. Petersburg, Tampa, and Tarpon Springs, FL.

The permit owner addresses for charter/headboat holders of reef fish permits are clustered in these areas: Apalachicola, Carrabelle, Clearwater, Destin, Marathon, Naples, Panama City Beach, Pensacola, Sarasota/Nokomis/Englewood in Florida; Orange Beach, AL; Biloxi, MS; Chauvin, LA; Freeport, Galveston, Houston, Port Aransas in Texas. It should be noted that in the NOAA Fisheries' data files, some owners listed ports where vessels were documented rather than actual homeports.

In general, these areas have small populations, many with less than 7,000 persons (Apalachicola, Carrabelle, Cedar Key, Cortez, Homosassa, Ft. Myers Beach, Everglades City, Madeira Beach, and Stock Island). Several of these areas have an unusually high rate of less than high school graduation, some as high as 50 percent. With exceptions (Carrabelle, 13.6% and Cedar Key, 12.2%) many of the areas have relatively low percentages, 2-3 percent, counted as employed in agriculture, forestry and fishing. These types of demographic statistics provide an idea of the background and labor market conditions within which the various fishing activities operate. Small, isolated areas with low educational attainment among the labor force indicate relatively few alternatives for the labor force. In these cases, losing fishing as a labor choice would impact the area relatively more than equally situated areas with a more educated workforce.

The Generic Essential Fish Habitat Amendment (GMFMC, 2004b) provides more extensive characterization of fishing communities throughout the Gulf coasts. The fishing communities included in the characterizations are: (1) Alabama: Fairhope, Gulf Shores, Orange Beach, Bayou La Batre, and Dauphin Island; (2) Florida: Pensacola, Gulf Breeze, Ft. Walton Beach, Destin, Panama City, Panama City Beach, Port St. Joseph, Apalachicola, Eastpoint, Carrabelle, St. Marks, Horseshoe Beach, Cedar Key, Yankeetown, Inglis, Crystal River, Homosassa, New Port Richey, Tarpon Springs, Clearwater, Madeira Beach, St. Petersburg, Tampa, Cortez, Matlacha, Bokeelia, Ft. Myers Beach, Naples, Marco Island, Everglades, Key Largo, Islamorada, Marathon, Big Pine Key-Summerland Key, and Key West; (3) Louisiana: Venice, Empire, Grand Isle, Golden Meadow, Cutoff, Chauvin, Dulac, Houma, Delcambre, Morgan City, and Cameron; (4) Mississippi: Pascagoula, Gautier, Biloxi, and Gulfport; and, (5) Texas: Port Arthur, Galveston, Freeport, Palacios, Port Lavaca, Seadrift, Rockport, Port Aransas, Aransas Pass, Brownsville, Port Isabel, and South Padre Island.

These various areas identified as fishing communities include practically all fishing communities associated with the vermilion snapper fishery, since this fishery is closely associated with the rest of the reef fish fishery. The following are the major homeports for dealers of vermilion snapper: Bon

Secour in Alabama; Apalachicola, Ft. Walton Beach, Panama City, Pensacola, St. Petersburg and Tarpon Springs in Florida; Cameron, Golden Meadow, Grand Isle, and Venice in Louisiana; Pascagoula, Mississippi; and, Galveston, Texas. Because this information is based on logbook records, it is highly likely that these are the cities where dealers of vermilion snapper conduct their business.

## **6.5 Impacts of management alternatives**

### **6.5.1 Introduction**

The discussions in Sections 3 and 5 comprise part of the impact analysis for RIR purposes and are incorporated herein by reference. Current assessment projections indicate that stock biomass will remain stable or increase slightly without the measures implemented by Amendment 23 and with no appreciable change in pre-Amendment 23 fishing mortality rates. This framework amendment only offers alternatives to eliminate each of the management measures implemented by Amendment 23. The analytical approach adopted to estimate the expected economic effects of the alternatives considered this framework action is to take the reverse of the expected short-term impacts of the parallel actions in Amendment 23. Since stock biomass and fishing mortality rates are expected to remain stable, the long-term economic effects should match those in the short-term, as reduced by the discount rate (7 percent) used for calculating present value.

Although the following analysis and discussion is based on the results presented in Amendment 23, it should be noted that the actual numerical representation of the impacts of the Amendment 23 actions likely vary slightly from those projected since the projections represented expected impacts over 2004-2008, while the measures in Amendment 23 were actually not implemented until mid-2005. Thus, while the behavioral aspects of the actions would be expected to be the same (i.e., the same amount of fewer fish harvested or trips taken), the numerical representation of the net economic impacts of these changes would change as a result of discounting over different time periods (the net present value of a constant stream of revenues from 2005-2009 would be less than that of a constant stream from 2004-2008). As a result of the delayed implementation of Amendment 23, the expected impacts results are slightly out of sync. Taking these results and reversing them to reflect the benefits of eliminating the restrictions imposed by Amendment 23, as is the methodological approach adopted by this analysis, will continue this condition and increase the absolute magnitude of difference (the difference between 2007-2011 and 2004-2008 would be greater than the difference between 2005-2009 and 2004-2008). The following analysis does not attempt to correct for this. However, failure to adjust the discount period only affects the magnitude of the results and not the ranking of or percent changes caused by alternatives and, hence, the results presented constitute adequate proxies for the true expected impacts.

The primary analytical tool used for the RIR in Amendment 23 was a model developed by Waters (2004) and Carter (2004) that combines biological information about the vermilion snapper stock with economic information about the fishery. The biological parameters of the model were based on the 1999 stock assessment, with projections on the status of the stock given certain TAC levels. The economic component of the model considers a commercial sector and a recreational sector. The recreational sector includes the for-hire fleet and private recreational anglers. The model for the recreational sector outputs consumer surplus and net revenue changes caused by expected changes in trips as a result of changes in vermilion snapper regulations. The model for the

commercial sector outputs net revenue changes caused by expected changes in pounds of vermilion snapper landed as a result of changes in vermilion snapper regulations. Section 5.5.2.2 in Amendment 23 has a full discussion of the model, the input data, and how the output parameters (consumer surplus and net present value) are calculated for the various sectors in the fishery

### 6.5.2 Recreational fishery

**Alternative 1** is the no action alternative and would not result in any harvest increase. **Preferred Alternative 2a** would reduce the minimum size limit from 11 inches TL to 10 inches TL for both the commercial and recreational fisheries. **Preferred Alternative 2b** would eliminate the 10 fish bag limit within the 20 fish aggregate bag limit for those reef fish with no specific bag limit.

The combined short-term effects of implementing the 11-inch minimum size limit and 10-fish bag limit for vermilion snapper within the 20-fish aggregate bag limit under Amendment 23 were an expected reduction in consumer surplus of 15 percent (\$1.016 million, this and all subsequent value impacts are in terms of 2005 dollars) and a reduction in net revenue in the recreational sector of 9.6 percent (\$3.158 million) over the period 2004-2008. Therefore, **Alternative 1** (status quo) would be expected to result in these losses to the recreational sector in the short-term (next four years). **Preferred Alternatives 2a and 2b** would re-establish the original 10-inch minimum size limit and eliminate the vermilion snapper specific bag limit, respectively. Collectively, the effect of these two alternatives would be an expected increase to consumer surplus and net revenues by \$1.016 million and \$3.158 million, respectively, relative to the status quo. Since the size limit accounted for 94 percent of the total projected change in recreational yield, the results for each measure are expected to be proportional to the contribution to harvest, such that **Preferred Alternative 2a** is assumed to result in an increase to consumer surplus of approximately \$0.955 million and an increase in net revenue by about \$2.969 million, or a total of approximately \$3.924 million. The comparable values for **Preferred Alternative 2b** are \$0.061 million and \$0.189 million, respectively, or a total of approximately \$0.250 million

### 6.5.3 Commercial fishery

**Alternative 1** is the no action alternative and would not affect any harvest increase in any sector of the fishery. **Preferred Alternative 2a** would reduce the minimum size from 11 inches TL to 10 inches TL for both the commercial and recreational fisheries. **Preferred Alternative 2c** eliminates the 40 day commercial closed season from April 22 through May 31.

The combined short-term effect of implementing the 11-inch minimum size limit and 40 day closed period under Amendment 23 was an expected reduction in net revenue of 3.4 percent (\$1.443 million) over the period 2004-2008. Therefore, **Alternative 1** (status quo) would be expected to result in these losses to the commercial sector in the short-term (next four years).

**Preferred Alternatives 2a and 2c** would re-establish the original 10-inch minimum size limit and no closed season respectively. Collectively, the effect of these two alternatives would be expected to increase net revenues to the commercial sector by \$1.443 million (3.5 percent). **Preferred Alternative 2a** would be expected to contribute \$0.640 million of this total; whereas, **Preferred Alternative 2c** would be expected to contribute \$0.803 million.

## 6.6 Private and public costs

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

Council costs	
document preparation, meetings, public hearings, and information dissemination	\$60,000
NMFS administrative costs	
document preparation, meetings, and review	\$119,000
Industry cost of permit and reporting program	none
NMFS cost of permit and reporting	none
Enforcement	none

The Council and NOAA Fisheries' costs of document preparation are based on staff time, work outsourcing, travel, printing and any other relevant items where funds were expended directly for this specific action. No additional permits or reporting requirements are proposed in this amendment, so there are no corresponding costs. Since the management measures proposed in this amendment are essentially reversals of existing management measures to vermilion snapper, enforcement should not be affected.

## 6.7 Determination of a significant regulatory action

Pursuant to E.O. 12866, a regulation is considered a "significant regulatory action" if it is likely to result in a rule that may: a) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; c) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or d) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

The maximum expected impacts of the actions considered in this amendment would be an increase in net revenues of approximately \$4.6 million over the short-term (four-years) This impact would clearly not meet the \$100 million threshold. This amendment would eliminate previous regulatory action and should improve economic conditions in the commercial and recreational reef fish fishery. Actions taken in this amendment would not be expected to interfere or create inconsistency with an action of another agency, including state fishing agencies. At present, none of the entities that would be expected to be affected by this amendment participate in any government-sponsored entitlement, grants, user fees, or loan programs. Permit fees are the only fees that may approximate user fees and they would not be expected to be affected by these actions. The measures in this amendment would not be expected to raise novel legal or policy issue.

Since none of the significance standards would be expected to be met, this action, if enacted, would not constitute a significant regulatory action.

## **7 REGULATORY FLEXIBILITY ANALYSIS**

### **7.1 Introduction**

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

In addition to analyses conducted for the Regulatory Impact Review (RIR), the RFA requires: (1) a description of the reasons why action by the agency is being considered; (2) a succinct statement of the objectives of, and legal basis for, the proposed rule; (3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; (4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; and, (5) an identification, to the extent practicable, of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed rule.

In addition to the information provided in this section, additional information on the expected economic impacts of the proposed action are included in Sections 5.0 and 6.0 and is included herein by reference.

### **7.2 Description of the reasons why action by the agency is being considered**

The need and purpose of the actions are set forth in Section 2 of this document and incorporated herein by reference.

### **7.3 Statement of the objectives of, and legal basis for, the proposed rule**

The purpose and need for this proposed action are provided in Section 2 and are incorporated herein by reference. The primary objective of this action is to eliminate management measures that are causing the vermilion snapper fishery to be fished at a rate below optimum yield, which is resulting in the unnecessary loss of social and economic benefits. These regulations are no longer required because the vermilion snapper stock has been determined to be healthy, not overfished or undergoing overfishing. The Magnuson-Stevens Fishery Conservation and Management Act provides the legal basis for the rule.

### **7.4 Description and estimate of the number of small entities to which the proposed rule will apply**



The Small Business Administration (SBA) defines a small business operating in the finfish industry as one that is independently owned and operated, is not dominant in its field of operation, and has annual receipts not in excess of \$4.0 million (NAICS code 114111, finfish fishing). The appropriate revenue benchmark for a vessel operating in the for-hire sector is \$6.5 million (NAICS codes 487210, scenic and sightseeing water transportation, or 713990, amusement and recreation industries). Instead of a receipts threshold, the SBA uses an employment threshold for dealers and processors, with the appropriate values of fewer than 100 employees, or fewer than 500 employees for the two types of entities.

The measures in this proposed action would be expected to affect commercial reef fish operations, for-hire vessels operating in the reef fish fishery, dealers and processors that receive vermilion snapper. In 1992, when the moratorium on the issuance of new reef fish commercial permits first began, a total of 2,200 permits were issued. As of October 2003, there were 1,158 active commercial reef fish permits. Of these entities, 441 vessels reported logbook landing of vermilion snapper, with most using vertical line gear. Waters (2004) developed trip and revenue profit profile of vessels that landed vermilion snapper over the period 2000-2004. During this period, the average vessel generated revenues of \$65,200 of which \$7,400 was from vermilion snapper. These estimates included all vessels that landed at least 1 pound of vermilion snapper and all the trips taken by these vessels regardless of whether vermilion snapper was caught on that trip. These estimates are assumed to be lower bound estimates, however, since landings of all commercial species, whether from Federal or state fisheries, are not required to be recorded or captured by the logbook program, which captures only reef fish and coastal pelagics harvests.

An estimated 1,625 for-hire vessels are permitted to harvest reef fish in the Gulf of Mexico. This sector is comprised of charter boats that are generally smaller and charge a fee on a vessel basis, and headboats that are larger and charge a fee per angler.

Based on the works of Holland et al. (1999) and Sutton et al. (1999), Carter (2004) developed earnings profiles for charter and headboats in the Gulf using information on the number of trips by categories (half-day, full-day, overnight), number of passengers, base fees, and angler days. On average, charter boats are estimated to generate gross revenues ranging from \$58,000 in the eastern Gulf to \$81,000 in the western Gulf, or an overall average of \$64,000. The comparable values for headboats are \$281,000 and \$550,000, or an overall average of \$400,000.

Based on the gross revenue and employment profiles presented above, all commercial and for-hire fishing vessels and reef fish dealers potentially affected by the proposed regulations are determined, for the purpose of this analysis, to be small business entities.

A federal permit is required for a fish dealer to purchase reef fish from commercial vessels. Based on permits files, there are 227 dealers holding permits to buy and sell reef fish species. All reef fish processors would be included in this total since a processor must be a dealer. Dealers often hold multiple types of permits and operate in both Federal and state fisheries. It is unknown what percentage of any of the average dealer's business comes from the vermilion snapper fishery

Average employment information per reef fish dealer is unknown. Although dealers and processors are not synonymous entities, Keithly and Martin (1997), reported total employment for reef fish

processors in the Southeast at approximately 700 individuals, both part and full time. While all processors must be dealers, a dealer need not be a processor. Further, processing is a much more labor-intensive exercise than dealing. Therefore, given the employment estimate for the processing sector (700 persons) and the total number of dealers operating in the reef fish fishery (227), it is assumed that the average number of employees per dealer and processor would be unlikely to surpass the SBA employment benchmark and, for the purpose of this analysis, it is determined that all dealers that would be affected by this action are small entities.

#### **7.5 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records**

None of the measures considered in this amendment would alter existing reporting and record-keeping requirements.

#### **7.6 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule**

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

#### **7.7 Description of economic impacts on small entities**

The proposed rule would be expected to increase net revenues in the commercial vermilion snapper fishery by approximately \$1.443 million, or approximately 3.5 percent of total average net revenues relative to the 2000-2002 fishery. From 2000-2004, an average of 441 vessels operated in the commercial vermilion snapper fishery, averaging approximately \$65,200 in average gross revenues. Spread over these 441 vessels, the increased net revenues expected to be generated as a result of the proposed rule equate to approximately \$3,300 per vessel or approximately 5 percent of average gross revenues.

Within the for-hire sector, the proposed rule would be expected to result in an increase of approximately \$3.158 million in net revenues. It is not possible to determine how many of the 1,625 entities permitted to operate in this fishery would be affected. If evenly distributed across all said entities, the expected increase in net revenues would equate to approximately \$1,900 per entity, or approximately 12 percent per entity.

The impact of the proposed rule on reef fish dealers cannot be determined with available data. However, although the current measures were projected to result in an approximate 26 percent reduction in vermilion snapper harvests, which would be recovered under the proposed rule, the vermilion snapper fishery comprises less than 10 percent of the total commercial reef fishery. Hence, the additional commercial harvests, and resultant effect on revenues or profits, that would be expected to occur as a result of the proposed rule, however, are not expected to be substantial relative to overall commercial reef fish sales.

#### **7.8 Description of significant alternatives to the proposed rule and discussion of how the alternatives attempt to minimize economic impacts on small entities**

Two alternatives, including the status quo, were considered for this proposed rule. The status quo would maintain current regulations in the fishery and resulting in the loss of biologically-supported economic benefits. The second alternative allowed the continuation or suspension of the individual components of current vermilion snapper regulations. The continuation of any of these individual components would be expected to, similar to the status quo, result in the continued loss of economic benefits to the fishery. The **Preferred Alternatives 2a, 2b, and 2c** would rescind current regulations that have been determined to be unnecessary from a biological perspective and would be expected to result in increased economic and social benefits to the fishery.

## 8 FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT (FONSI)

National Oceanic and Atmospheric Administration Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, NOAA Fisheries Service provided policy and guidance on July 22, 2005, for preparing a FONSI. The Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant in making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria, CEQ’s context and intensity criteria, and NOAA Fisheries Service FONSI preparation guidelines. These include:

*1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

Response: No. The 2006 stock assessment revised the outlook of the Gulf vermilion snapper stock based on new information previously not available during the last assessment. The assessment concluded the stock is not overfished or undergoing overfishing and never has been. The assessment used data through 2004 and the regulations implemented by Amendment 23 were not in place until after that time (July 8, 2005). Alleviating some or all of these regulations is expected to maintain SSB above the SSB<sub>OY</sub> level at least over the short-term (next five years). Over the long-term, if fishing mortality increases, overfishing could occur. However, stock assessments will be conducted periodically (next assessment is scheduled for 2012) to evaluate whether the status of vermilion snapper has changed and determine whether or not additional management measures are necessary to maintain a the vermilion snapper stock at sustainable levels.

*2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

Response: No. Alleviating some or all the regulations in Amendment 23 may slightly reduce pressure on other reef fish species, such as red snapper, groupers, gray triggerfish, and greater amberjack. Ongoing Council management actions, which are discussed in Section 5.7, are addressing overfishing of these species to ensure their sustainability is not jeopardized.

*3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the M-SFCMA and identified in FMPs?*

Response: No. The proposed action does not measurably alter the manner in which the fishery is conducted or the amount of fishing on reef fish habitat. Most fishermen harvesting vermilion snapper use hook-and-line gear, which has a very minor effect on hard bottom habitat. Additionally, as described in Section 4.2.4, there are numerous marine protected areas, HAPCs, and other areas in the Gulf that protect EFH and other marine habitats. None of the measures proposed in this amendment would alter the regulatory protections afforded to habitat by these protected areas.

*4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

Response: No. The proposed action does not measurably alter the manner in which the fishery is conducted or the amount of fishing in the reef fish fishery. Consequently, there would be no impacts to public health or safety from this action, adverse or positive.

*5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

Response: No. The proposed action does not measurably alter the manner in which the fishery is conducted or the amount of fishing in the reef fish fishery, thus it would not have any effect on endangered or threatened species or marine mammals. The Gulf of Mexico reef fish fishery is classified in the 2006 List of Fisheries as a Category III fishery (August 22, 2006; 71 FR 48802). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1 percent 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. Additionally, the biological opinion prepared for the Gulf reef fish fishery (NMFS, 2005b) concluded the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of any threatened or endangered species. The biological opinion did identify reasonable and prudent measures deemed necessary and appropriate to minimize the impact to protected species. The Council addressed these measures in Reef Fish Amendment 18A, which became effective September 8, 2006 (71 FR 45428).

*6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

Response: No. The relationships among species in the marine ecosystem are complex and poorly understood. As a result, the nature and magnitude of ecological effects are difficult to predict with any accuracy. Increases in the allowable harvest would alter the abundance of vermilion snapper, which is likely to have ecological effects. Increases in harvest and decreases in overall vermilion snapper abundance could allow forage species and competitor species to increase in abundance. Species relying on vermilion snapper as prey will be negatively affected by increased removals by

fishermen. However, the overall changes in vermilion snapper abundance and harvest are relatively small when considering the entire reef fish complex, and therefore are not expected to substantially affect biodiversity or ecosystem function.

*7) Are significant social or economic impacts interrelated with natural or physical environmental effects?*

Response: No. Social and economic impacts are positive and small (see Section 5.4) while natural and physical environmental effects (see Sections 5.1 and 5.2) are not measurable but are likely to be smaller and positive as well. The impacts to the socioeconomic structure of the fishery and the impacts to the natural and physical environment of this action are interrelated but not significant.

*8) Are the effects on the quality of the human environment likely to be highly controversial?*

Response: No. This action is the result of a new stock assessment using improved information, which indicated the fishery was never overfished or undergoing overfishing. Therefore, the regulations implemented in 2005 by Amendment 23 are now considered unnecessary to maintain vermilion snapper harvest at optimal levels. There should be no controversy associated with removing these regulations.

*9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

Response: No. The action does not measurably change the way in which the fishery is conducted or the amount of fishing in the reef fish fishery. The proposed action applies only in federal waters, and would not affect any identified on-shore areas, wetlands, or scenic rivers. No historic or cultural resources are identified in the federal waters of the GOM. Several ecologically sensitive areas, which are identified in Section 4.2.4 are already closed or managed to protect significant ecologically sensitive areas.

*10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

Response: No. The action modifies existing management measures. Social, economic, and administrative environments are reasonably well known and the expected effects do not carry unique or unknown risks. Additionally, because the actions proposed in this amendment were recently implemented in 2005, reversing these effects is expected to have similar but opposite biological, social, and economic impacts as those estimated in Amendment 23.

*11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

Response: No. The proposed action does not relate to other actions either recently implemented or proposed for the reef fish fishery. Some of the other actions may have significant negative impacts on the human environment due to the biological status of several dominant species in the reef fish fishery. This action has small but positive impacts to the same human environment without

negative impacts to the biological environment. Thus, the cumulatively significant negative impacts of other recent and proposed actions in the reef fish fishery are slightly improved by this action.

*12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?*

Response: No. This action affects only federal waters, and would not affect any such identified on-shore areas. No historic or cultural resources are identified in the federal waters.

*13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

Response: No. None of the proposed actions could be expected to result in the introduction or spread of nonindigenous species because the proposed actions only alter regulations for domestically caught vermilion snapper native to the Gulf of Mexico.

*14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?*

Response: No. The action does not set a precedent, nor does it represent a decision in principal about a future consideration. Management measures are often changed in response to the results of a stock assessment. In this instance, the most recent vermilion snapper stock assessment incorporated data and research recommendations made during review of a previous stock assessment. The most recent vermilion snapper stock assessment was considered an improvement over the previous assessment and ultimately resulted in a change of stock status. The action only modifies existing established management measures in the Reef Fish FMP in response to the outcome of this assessment.

*15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

Response: No. The action is consistent within the requirements of the M-SFCMA and will modify federal regulation. State laws currently either match those that will be implemented by this action or match the regulations currently in place. States have procedures to change state fishing regulations to match federal regulations. In most cases, states can enact those laws in timely fashion to coincide with the implementation date of federal laws.

*16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

Response: No. This action will cause no adverse biological effects and result in slightly positive effects to the human environment. As discussed in the “Cumulative Impacts” section herein and #1 and #2 of this FONSI, there should be no adverse impacts to non-target species by this action alone or in combination with past or reasonably foreseeable future actions.

## DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for this regulatory amendment in accordance with the framework procedures of the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico, it is hereby determined that the action to modify the regulations for vermilion snapper will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all impacts of the proposed action have been addressed to reach the conclusion of no significant positive or negative impacts. Accordingly, preparation of a Supplemental Environmental Impact Statement for this action is not necessary.

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Assistant Administrator for Fisheries, NOAA

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Date

## 9 OTHER APPLICABLE LAWS

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

### **Administrative Procedures Act**

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, 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 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 NOAA regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state’s coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary of Commerce, 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. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

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

Scientific information and data are key components of FMPs and amendments and the use of best available information is the second national standard under the M-SFCMA. 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 should also undergo quality control prior to being used by the agency and a pre-dissemination review performed. Note that the pre-dissemination review will be performed.

### **Endangered Species Act**

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires federal agencies 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.

### **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 (LOF) 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 LOF 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.

### **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 OMB before requesting most types of fishery information from the public.

### **Executive Orders**

#### **E.O. 12612: Federalism**

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

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

No Federalism issues have been identified relative to the action proposed in this amendment. Therefore, consultation with state officials under Executive Order 12612 is not necessary.

### **Essential Fish Habitat**

The amended MSFCMA included a new habitat conservation provision known as 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 EIS (GMFMC 2004b) to address the new EFH requirements contained within the MSFCMA. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation was conducted for this action and concluded this action will not adversely affect EFH.

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### **11 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE AMENDMENT/ENVIRONMENTAL ASSESSMENT ARE SENT**

#### List of Agencies:

Gulf of Mexico Fishery Management Council's

- Scientific and Statistical Committee
- Socioeconomic Assessment Panel

National Marine Fisheries Service

- Southeast Fisheries Science Center
- Southeast Regional Office

#### State Agencies

- Texas Department of Wildlife and Fisheries
- Louisiana Department of Wildlife and Fisheries
- Mississippi Department of Marine Resources
- Alabama Department of Conservation and Natural Resources
- Florida Fish and Wildlife Conservation Commission

Partial List of Organizations:

- Coastal Conservation Association
- Fishermen's Advocacy Organization
- Fishing Rights Alliance
- Gulf Fishermen's Association
- Recreational Fishing Alliance
- Southeast Fisheries Association
- Southern Offshore Fishing Association
- U.S. Coast Guard
- Environmental Protection Agency

Responsible Agency:

Gulf of Mexico Fishery Management Council  
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