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AMENDMENT 29 TO THE REEF FISH FISHERY MANAGEMENT PLAN

(INCLUDING FINAL ENVIRONMENTAL IMPACT STATEMENT AND REGULATORY IMPACT REVIEW)

Effort Management in the Commercial Grouper and Tilefish Fisheries

December 2008

Gulf of Mexico Fishery Management Council
2203 North Lois Avenue, Suite 1100
Tampa, Florida 33607
813-348-1630
813-348-1711 (fax)
888-833-1844 Toll Free
gulfcouncil@gulfcouncil.org
www.gulfcouncil.org

National Oceanic & Atmospheric Administration
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
727-824-5308
727-824-5305 (fax)
http://sero.nmfs.noaa.gov

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ABBREVIATIONS USED IN THIS DOCUMENT

AP	Advisory Panel
APA	Administrative Procedures Act
ACL	Annual Catch Limit
AM	Accountability Measure
BiOp	Biological Opinion
COI	Certificate of Inspection
Council	Gulf of Mexico Fishery Management Council
CZMA	Coastal Zone Management Act
DQA	Data Quality Act
DWG	Deepwater Grouper
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ELMR	Estuarine Living Marine Resources
ESA	Endangered Species Act
F	Fishing Mortality
FLS	Federal Logbook System
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
GSMFC	Gulf States Marine Fisheries Commission
HAPC	Habitat Area of Particular Concern
IFQ	Individual Fishing Quota
ITQ	Individual Transferable Quota
IRFA	Initial Regulatory Flexibility Analysis
LAPP	Limited Access Privilege Program
LNG	Liquefied Natural Gas
LOF	List of Fisheries
M	Natural Mortality
MP	Million Pounds
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	Maximum Fishing Mortality Threshold
MMPA	Marine Mammal Protection Act
MSY	Maximum Sustainable Yield
MSST	Minimum Stock Size Threshold
NMFS	NOAA's National Marine Fisheries Service
NEPA	National Environmental Policy Act
NOS	National Ocean Service
OMB	Office of Management and Budget
OY	Optimum Yield
PRA	Paperwork Reduction Act
RFSAP	Reef Fish Stock Assessment Panel
RA	Regional Administrator
RFA	Regulatory Flexibility Act of 1980
RIR	Regulatory Impact Review
SAV	Submerged Aquatic Vegetation
SBA	Small Business Association

SEDAR	Southeast Data Assessment and Review
SEFSC	Southeast Fisheries Science Center
SFA	Sustainable Fisheries Act
SIA	Social Impact Statement
SEIS	Supplemental Environmental Impact Statement
SFA	Sustainable Fisheries Act
SSBR	Spawning Stock Biomass per Recruit
SPR	Spawning Potential Ratio
SMZ	Special Management Zone
SWG	Shallow Water Grouper
TAC	Total Allowable Catch
TL	Total Length
USCG	United States Coast Guard
VEC	Valued Environmental Component
VMS	Vessel Monitoring System

Final Environmental Impact Statement (FEIS) Cover Sheet

Responsible Agencies and Contact Persons

Gulf of Mexico Fishery Management Council
2203 N. Lois Avenue, Suite 1100
Tampa, Florida 33607
Assane Diagne (assane.diagne@gulfcouncil.org)

813-348-1630
888-833-1844 (toll-free)
813-348-1711 (fax)
gulfcouncil@gulfcouncil.org
http://www.gulfcouncil.org

NOAA Fisheries Service (Lead Agency)
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Susan Gerhart (susan.gerhart@noaa.gov)

727-824-5305
727-824-5583 (fax)
http://sero.nmfs.noaa.gov

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Abstract

Current regulatory measures used in the management of the grouper complex include a license limitation system, quotas, trip limits, minimum size limits, area/gear restrictions, and seasonal closures. Nonetheless, the commercial grouper fishery has become overcapitalized which means the collective harvest capacity of participants is in excess of that required to efficiently harvest the commercial share of the total allowable catch. The overcapitalization observed in the fishery has caused commercial grouper regulations to become increasingly restrictive over time, intensifying derby conditions under which fishermen race to harvest as many fish as possible before the quota is reached. The intensification of derby conditions has, in some years, led to premature closures of the fishery.

Incentives for overcapitalization and derby fishery conditions are expected to be maintained as long as the current management structure persists. Under this management structure, the commercial grouper fishery is expected to continue to be characterized by higher than necessary levels of capital investment, increased operating costs, increased likelihood of shortened seasons, reduced safety at-sea, wide fluctuations in grouper supply and depressed ex-vessel prices. These conditions lead to deteriorating working conditions and profitability for participants.

Therefore, NOAA's National Marine Fisheries Service (NMFS), in collaboration with the Gulf of Mexico Fishery Management Council (Council) has developed this DEIS to describe and analyze management alternatives to rationalize effort and reduce overcapacity in the commercial grouper fishery in order to achieve and maintain optimum yield in this multi-species fishery. These alternatives include: permit endorsements or an individual fishing quota program.

Table of Contents for DEIS

Please note this fishery action is presented as an integrated document. It addresses different applicable laws including the National Environmental Policy Act (NEPA). Therefore, the document does not follow a standard EIS format, however, elements of the DEIS are present and identified in the following table of contents for the DEIS.

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EXECUTIVE SUMMARY

Regulatory measures currently used in the management of tilefish and grouper have resulted in overcapitalized commercial grouper and tilefish fisheries; which means that the collective harvest capacity of fishery vessels and participants is in excess of capacity required to efficiently harvest the commercial share of the total allowable catch (TAC). The overcapitalization in the commercial grouper and tilefish fisheries has caused regulations to become increasingly restrictive over time, heightening incentives for derby behavior and intensifying derby conditions under which fishermen race to harvest as many fish as possible before the quota runs out. The intensification of derby conditions has, in some years, led to premature closures of the fishery.

It is expected that incentives for overcapitalization and derby fishery conditions would be maintained as long as the current management structure persists. Under this scenario, the commercial grouper and tilefish fisheries are expected to continue to be characterized by higher than necessary levels of capital investment, increased operating costs, increased likelihood of shortened seasons, reduced at-sea safety, wide fluctuations in domestic grouper and tilefish supply and, depressed ex-vessel prices; leading to deteriorating working conditions and lower profitability for participants.

The purpose of this amendment is to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain optimum yield (OY) in these multi-species fisheries. Rationalizing effort should mitigate some of the problems resulting from derby fishing conditions or at least prevent the condition from becoming more severe. Reducing overcapitalization should improve profitability of commercial grouper fishermen. Collectively, working conditions, including safety at sea, should improve. Bycatch in the tilefish and grouper fisheries should be reduced, and a flexible and effective integrated management approach for tilefish and the grouper complex and tilefish should follow. Reef Fish Amendment 29 evaluates several management alternatives that could be capable of achieving objectives specified above. Management alternatives considered by the Council in this amendment are summarized below:

SECTION A – Effort, Permits, and Grouper Species Management

ACTION A1 - Effort Management Approach

Alternative 1 would not change the current management structure. The grouper and tilefish fisheries would continue to be managed using a combination of a permit moratorium, quotas, season closures, minimum size limits, and trip limits. **Preferred Alternative 2** would implement a grouper and tilefish individual fishing quota (IFQ) program in the Gulf of Mexico. The implementation of a rights-based management program is expected to decrease the overcapitalization observed in the fleet, lengthen the fishing season and lower operating costs by affording vessels owners more flexibility in their input choices and trip planning, improve market conditions through a steadier supply of fresh fish, increase ex-vessel prices, and, improve safety at sea and working conditions. **Alternative 3** would grant recipients, under specific conditions, an endorsement to harvest grouper and tilefish in the Gulf of Mexico.

ACTION A2 - Permit Stacking

Alternative 1 would not allow commercial reef fish permits to be consolidated. Requirements and regulations relative to commercial reef fish permits would remain unchanged. **Preferred**

Alternative 2 would allow a commercial reef fish permit owner to consolidate several permits into one. The consolidated permit would have a catch history equal to the sum of the catch histories associated with the individual permits. **Preferred Alternative 2** would allow a permit holder to fully benefit from catch histories (s)he is entitled to while simplifying the permit renewal process.

ACTION A3 - Speckled Hind and Warsaw Grouper Classification

Alternative 1 would maintain the composition of the shallow water and deepwater grouper management units, neither contributing to reducing speckled hind and warsaw grouper discards, nor granting additional flexibility to IFQ participants. Dual classifications to the shallow water and deepwater management units for speckled hind (**Alternative 2**) or warsaw grouper (**Alternative 3**) or both (**Preferred Alternative 4**) are expected to result in direct economic benefits due to anticipated reductions in discards and the added flexibility afforded to IFQ participants.

SECTION B - IFQ PROGRAM DESIGN

ACTION B1 - Substantial Participants

Preferred Alternative 1 would not specify individuals that the Council would consider as substantial participants in the commercial grouper and tilefish fisheries. As such, the Council would not place limitations on the minimum number of individuals eligible for the transfer of IFQ shares or annual allocation. The selection of an all inclusive alternative such as **Preferred Alternative 1** frees the Council from future considerations relative to possible omission from the pool of substantial participants of deserving individuals or group(s) of individuals. **Alternatives 2 to 7** consider the inclusion of various groups of individuals in the universe of substantial participants. Individuals under consideration include commercial reef fish permit holders, federally permitted reef fish dealers, reef fish captains and crew members and others who provide necessary services in the reef fish fishery such as restaurant owners and fish house employees.

ACTION B2 - Eligibility for Initial IFQ Shares

Alternative 1 does not specify eligibility requirements for initial IFQ shares. **Preferred Alternative 2** would restrict eligibility for initial IFQ share distribution to commercial reef fish permit holders. Because a moratorium on commercial reef fish permit is in effect in the Gulf of Mexico, the universe of initial participants in the grouper and tilefish fisheries is well defined and would include at most the 1,028 valid or renewable permits on record as of August 31, 2008. **Alternatives 3, 4,** and **5** would include more individuals by adding groups other than commercial fishermen, e.g., reef fish captains and crew, reef fish dealers.

ACTION B3 - Initial Apportionment of IFQ Shares

Alternative 1 does not specify an apportionment method for initial IFQ shares. **Alternative 2** would distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004. **Preferred Alternative 3** would also distribute shares proportionately among eligible participants but provides an allowance for dropping one year. The allowance for dropping a year would allow an eligible participant to potentially boost his/her allocation by

dropping the year with the lowest landings. **Preferred Alternative 3** would account for unforeseen events such as mechanical difficulties, health-related problems and other personal reasons that could temporarily prevent commercial fishermen from operating. **Alternative 4** would distribute IFQ shares among eligible participants using an auction system.

ACTION B4 - IFQ Share Definitions

Alternative 1 does not establish IFQ shares and is therefore incompatible with the implementation of the IFQ program. **Alternative 2** would establish a single grouper IFQ share and a tilefish IFQ share. **Alternative 3** would establish, in addition to tilefish shares, deep water grouper IFQ shares and shallow water grouper IFQ shares. **Preferred Alternative 4** would set species-specific shares, establishing red grouper, gag, other shallow water grouper, deep water grouper, and tilefish shares. This is the best alternative to prevent overfishing while achieving OY.

ACTION B5 - Catch–Quota Balancing: Multiuse allocation and trip allowance

Alternative 1 would not establish multiuse IFQ shares or a trip allowance. **Preferred Alternatives 2** and **3** would specify multiuse allocation for red grouper and gag, respectively. Each alternative includes three options with varying levels of multiuse allocation. **Preferred option 2-c** would allow an IFQ participant to convert 4 % of his red grouper allocation into multiuse allocation valid for harvesting red or gag grouper. **Preferred option 3-c** would allow the conversion of 8 % of gag grouper allocation into multiuse allocation valid for harvesting gag or red grouper. **Preferred options 2-c** and **3-c** are expected to contribute to a reduction in gag and red grouper discards given temporal and geographical fluctuations observed in the red to gag grouper ratios in the Gulf. **Alternative 4** would specify a trip allowance, expressed in percentage points, that would allow commercial fishermen to land a species lacking allocation (either gag or red grouper) and use allocation from the other species (red grouper or gag).

ACTION B6 - Transfer Eligibility Requirements

Alternative 1 would allow any U.S citizen or permanent resident alien to purchase shares or allocation**.** **Alternative 2** would only allow transactions between individuals who own a valid or renewable commercial reef fish permit. **Preferred Alternative 3** restricts transfer to commercial reef fish permit holders during the first five years, but not thereafter. **Preferred Alternative 3,** which would potentially give everybody an opportunity to participate in the grouper and tilefish IFQ**,** is consistent with the Council's preferred definition for substantial participants.

ACTION B7 - Caps on IFQ Share Ownership

Alternative 1, which does not specify a cap on share ownership, does not comply with the Magnuson-Stevens Act. **Alternative 2** would limit the amount of IFQ shares an individual or entity could own to a set percentage of the total shares. **Preferred Alternative 3** would set the caps equal to the maximum share initially assigned to an IFQ participant. **Preferred Alternative 3 Option b** would create separate caps for each type of IFQ share defined in Action B4 in addition to the total share cap.

ACTION B8 - Caps on IFQ Allocation Ownership

Alternative 1 does not specify a cap on annual allocation ownership; thus it does not comply with the Magnuson-Stevens Act. **Alternatives 2** and **3** would limit the total amount of IFQ allocation an individual or entity could fish each year. To allow comparable flexibility levels, **Preferred Alternative 2** sets the same caps for IFQ shares and annual allocations.

ACTION B9 - Adjustments in Annual Allocations of Commercial TACs

Alternative 1 does not specify a predefined strategy for distributing commercial quota adjustments among IFQ shareholders. **Preferred Alternative 2** uses a proportional adjustment strategy, which is more consistent with shareholders' relative involvement in the fishery. **Alternative 3,** which would use an auction system, is vulnerable to criticisms based on equity grounds, especially if the highest bidders are new entrants who did not share the past cost of managing the fishery.

ACTION B10 - Establishment and Structure of an Appeals Process

Alternative 1 does not establish a formal appeals process. **Preferred Alternative 2** requires the Regional Administrator and his support staff resolve disputes. In **Alternative 3** appellants would submit their claims to an appeals board. **Preferred Alternative 4** would require NMFS to reserve three percent of the total available IFQ shares during the first year of the program for use in resolving disputes regarding initial eligibility and IFQ share allocation decisions. Any amount of IFQ shares remaining in this set aside after the appeals process is completed would be proportionately distributed back to all IFQ shareholders based on the amount of IFQ shares they were originally allocated. However, if needed adjustments should exceed the three-percent set aside, then the shares of all IFQ shareholders would be proportionately deducted as needed. **Preferred Alternatives 2** and **4** maintain consistency with the red snapper IFQ program.

ACTION B11 - Use it or Lose it Policy for IFQ Shares

Preferred Alternative 1 would not specify a minimum landings requirement for maintaining IFQ shares. This alternative would be consistent with the red snapper IFQ program. **Alternatives 2** and **3** set minimum utilization thresholds for allotted IFQ shares over a three-year average period.

ACTION B12 - Cost Recovery Plan

Alternative 1, which would not establish a cost recovery system, would not conform to Magnuson-Stevens Act cost recovery provisions. Under **Preferred Alternative 2** IFQ share or allocation holders are responsible for the cost recovery fee. Under **Preferred Alternative 2(b)(ii)** the responsibility for fee collection and submission would reside with the IFQ dealer. **Preferred Alternative 2(c)(ii)** would require submission of the fees on a quarterly basis. These provisions are consistent with the red snapper IFQ program.

ACTION B13 - Guaranteed Loan Program

Preferred Alternative 1 would not establish an IFQ loan program. **Alternatives 2** and **3** consider the implementation of such a loan program, using varying proportions of cost recovery fees collected. Alternative 1 was selected as preferred because the limited amount of resources that could be allocated to the loan program would not significantly affect share distribution within the grouper and tilefish fisheries.

ACTION B14 - Approved Landing Sites

Alternative 1 would not establish approved landing sites for the IFQ program. **Preferred Alternative 2 (Option a)** would allow the sites to be selected by fishermen but approved by NMFS Office of Law Enforcement. **Preferred Alternative 2 (Option a)** would best improve enforcement capabilities while involving input from fishermen.

SECTION C- ENDORSEMENTS

The Council's decision to establish an IFQ program as the preferred effort management approach in the commercial grouper and tilefish fisheries dictates the selection of **Alternative 1** (no action) as the preferred in each of the endorsement related action. **Actions C1, C2, C3** would have established minimum harvest thresholds for endorsement, qualifying years, and, incidental catch provisions, respectively.

FISHERY IMPACT STATEMENT

Introduction

Mandates to conduct Social Impact Assessments (SIA) come from both the National Environmental Policy Act (NEPA) and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). NEPA requires Federal agencies to consider the interactions of natural and human environments by using a "...systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences...in planning and decision-making" [NEPA section 102 (2) (a)]. Under the Council on Environmental Quality's (CEQ, 1986) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, a clarification of the terms "human environment" expanded the interpretation to include the relationship of people with their natural and physical environment (40 CFR 1508.14). Moreover, agencies need to address the aesthetic, historic, cultural, economic, social, or health effects which may be direct, indirect or cumulative (Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1994).

Under the Magnuson-Stevens Act, fishery management plans (FMPs) must "...achieve and maintain, on a continuing basis, the optimum yield from each fishery" [Magnuson-Stevens Act section 2 (b) (4)]. When considering "…a system for limiting access to the fishery in order to achieve optimum yield…" the Secretary of Commerce and Regional Fishery Management Councils are to consider both the social and economic impacts of the system [Magnuson-Stevens Act section 303 (b) (6)]. Recent amendments to the Magnuson-Stevens Act require that FMPs address the impacts of any management measures on the participants in the affected fishery and those participants in other fisheries that may be affected directly or indirectly through the inclusion of a fishery impact statement [Magnuson-Stevens Act section 303 (a) (9)]. National Standard 8, requires that FMPs must consider the impacts upon fishing communities to assure their sustained participation and minimize adverse economic impacts upon those communities [Magnuson-Stevens Act section 301 (a) (8)].

Problems and Methods

Social impacts are generally the consequences to human populations that follow from some type of public or private action. Those consequences may include alterations to "...the ways in which people live, work or play, relate to one another, organize to meet their needs and generally cope as members of a society..." (Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, 1994:1). Social impact analyses can be used to determine possible consequences management actions may have on fishing dependent communities. In order to do a full social impact analysis, it is necessary to identify community participants who depend upon the fisheries in that area and to identify the amount of dependency they have upon a given fishery. Further, it is necessary to understand the other opportunities for employment that exist within the community should fishery management measures become so restrictive that participants must switch their focus to other fisheries or other jobs outside of the fishing industry. Public hearings and scoping meetings may provide input from those concerned with a particular action, but they do not constitute a full overview of those that depend on the fishing industry.

In attempting to assess the social impacts of the proposed amendment it must be noted that community level data deficiencies limit the extent of analysis that can be conducted. As a result, the resultant analysis may not fully predict all social impacts that would be expected to occur.

Although data deficiencies limit the ability to identify fishing dependent communities or fully describe the impacts of changes in fishing regulations on any one community, commercial landings data can be used as a starting point for analyses of possible impacts of this amendment. Demographic information based on census data can then be examined for communities with the highest landings of the appropriate species to derive insight into the structure of these communities and discern the potential social impacts of the alternative management measures on commercial fishermen. Identification of the social impacts on recreational fishermen, the processing sector, the consumer, the fishing communities as a whole, and society as a whole, however, are even more difficult to assess due to even greater data limitations and are not substantially addressed other than in a limited qualitative sense.

Social Impact Assessment Data Needs

Based on an analysis of landings and permit data, few communities in the Gulf of Mexico region can be described as substantially involved in the grouper and tilefish fisheries and fewer, if any could be argued to be dependent on these species. A systematic survey of fishermen who target these species or the communities in this region in which they reside has never been conducted. Changes due to development and the increase of tourism infrastructure have rapidly occurred in coastal Gulf communities, making community descriptions more difficult to prepare and utilize. Nevertheless, defining and understanding the social and economic characteristics of a fishery is critical to good management and, in general, more comprehensive work needs to be conducted for all fisheries in the region.

A critical data need for all Gulf fisheries is community profiles of fishing communities to assist in determining fishery dependence. Community profiles are being developed in selected communities in the Gulf of Mexico region as time and funding allows. Due to the limited funding for contract services, limited in-house staff and staff time, as well as recent need to re-visit communities impacted by hurricanes, the community profiling will take several years to complete.

As community profiles are developed, it will be possible to more fully describe the impacts that new rules and regulations are expected to have on these communities and other similar communities by extension. For each community chosen for profiling, it will be important to understand the historical background of the community and it's involvement with fishing through time. Furthermore, the fishing communities' dependence upon fishing and fishery resources needs to be established. Kathi Kitner suggests that in order to achieve these goals, data needs to be gathered in three or more ways (Kitner 2004).

First, in order to establish both baseline data and to contextualize the information already gathered by survey methods, there is a great need for in-depth, ethnographic study of the different fishing sectors or subcultures. Second, existing literature on social/cultural analyses of fisheries and other sources in social evaluation research need to be evaluated in order to offer a comparative perspective and to guide the SIAs. Third, socio-economic data need to be collected on a continuing basis for both the commercial and recreational sectors, including the for-hire sector. Methods for doing this would include regular collection of social and

economic information in logbooks for the commercial sector, observer data, and dock surveys (Kitner 2004).

The following is a guideline to the types of data needed. This list is not exhaustive or all inclusive and should be revised periodically in order to better reflect on-going and future research efforts (Kitner 2004).

1. Demographic information may include but is not necessarily limited to: population; age; gender; ethnic/race; education; language; marital status; children, (age & gender); residence; household size; household income (fishing/non-fishing); occupational skills; and association with vessels & firms (role & status).

2. Social Structure information may include but is not necessarily limited to: historical participation; description of work patterns; kinship unit, size and structure; organization & affiliation; patterns of communication and cooperation; competition and conflict; spousal and household processes; and communication and integration.

3. In order to understand the culture of the communities that are dependent on fishing, research to gain information may include but is not necessarily limited to: occupational motivation and satisfaction; attitudes and perceptions concerning management; constituent views of their personal future of fishing; psycho-social well-being; and cultural traditions related to fishing (identity and meaning).

4. Fishing community information might include but is not necessarily limited to: identifying communities; dependence upon fishery resources (this includes recreational use); identifying businesses related to that dependence; and determining the number of employees within these businesses and their status.

Note for CEQ Guidance to Section 1502.22

In accordance with the CEQ Guidance for Section 1502.22 of the NEPA (1986), the Council has made "reasonable efforts, in the light of overall costs and state of the art, to obtain missing information which, in its judgment, is important to evaluating significant adverse impacts on the human environment…" However, at this time the Council cannot obtain complete social and community information that will allow the full analysis of social impacts of the proposed action and its alternatives. At this time, it is not possible to fully address environmental justice issues because demographic information on participants in the fishing industry is not available. A complete survey, which would detail race, ethnicity, gender, income, and other demographics of fishermen and those dependent on the fishing industry has not been conducted in the Gulf of Mexico. Therefore, it is not possible to determine if any racial, ethnic, or minority group would be more adversely affected by new regulations than other participant group. Although the demographic data collected by the U.S. Census can be used as a starting point for describing race, ethnicity, gender, and income within the communities that have been identified as substantially involved in the fisheries addressed by this action, this information is not suitable for identifying the specific demographics of those that participate in the fishing industry in a given community and determining whether the characteristics of this group are significantly different from those of the population in general.

1.0 INTRODUCTION

1.1 Background

This amendment analyzes alternatives to rationalize effort and reduce overcapacity in the Gulf of Mexico commercial grouper and tilefish fisheries. The Gulf of Mexico Fishery Management Council (Council) and NOAA's National Marine Fisheries Service (NMFS) regulate the harvest of 15 grouper species. Of the 15 grouper species 13 are harvested and 2 species, Goliath grouper and Nassau grouper, are currently protected. The grouper complex is separated into deepwater (DWG) and shallow water (SWG) components. The SWG component includes red, gag, black, scamp, yellowfin, yellowmouth, rock hind, and red hind grouper. Snowy, yellowedge, speckled hind, warsaw, and misty grouper comprise the DWG complex. The grouper complex supports dynamic recreational and commercial fisheries. The Council and NMFS also cooperatively manage the tilefish fishery as one entity.

In addition to the reef fish permit moratorium implemented in 1992, the commercial grouper fishery is currently managed through annual quotas, trip limits, minimum size limits, and area gear restrictions. To further protect the grouper fishery, the Council and NMFS also implements a seasonal closure between February 15 and March 15, during which time the harvest of the three main shallow water species (red grouper, gag, and black grouper) is prohibited in both the recreational and commercial fisheries. The annual deepwater grouper quota is set at 1.02 million pounds (MP). A trip limit of 6,000 lbs of grouper in aggregate, implemented in 2006, is currently in effect. The aggregate shallow water quota, which includes a 5.31 MP annual red grouper quota, is set at 8.80 MP.

Similar to the grouper fishery, the Council and NMFS manages the commercial tilefish fishery through an annual quota. Secretarial Amendment 1 was implemented July 15, 2004, and established a commercial quota of 0.44 MP gutted weight (GW) for all tilefish in the management unit. The quota was based on the average annual tilefish harvest for the time period 1996-2000. The intended purpose of the Amendment is a pro-active measure to prevent a dramatic increase in Gulf tilefish harvest as a result of a reduction in the deepwater grouper quota and increased restrictions on the overfished Atlantic tilefish fishery.

Based on the recently completed gag stock assessment (SEDAR 10), an additional species-specific quota is being created. The overfishing of gag grouper warrants the establishment of an explicit gag quota. Reef Fish Amendment 30B will set the gag total allowable catch (TAC) and adjust the red grouper TAC. When implemented, Amendment 30B will set the directed gag TAC on a yearly basis for gag during 2009 through 2010 at the yield for each year as defined by the constant F_{OY} projection (based on 75% of F_{MAX}) from the 2007 assessment and reevaluation. TAC in 2009 will be 3.38 MP and TAC in 2010 will be 3.63 MP. TACs for subsequent years will be set in a subsequent amendment, and will remain at the 2010 level until such an amendment is implemented. TAC will be updated and revised, as needed, based on periodic stock

assessments. Amendment 30B will also set the directed red grouper at 7.57 MP. Reef Fish Amendment 30B also includes actions to adjust the commercial shallow water quota and divide it among red grouper and gag species quotas, and other shallow water grouper quota. When implemented, the commercial gag and red grouper quotas will be set by multiplying the TAC for each year by each species' commercial allocation. Under this action, the quota for the commercial other shallow water grouper will be 0.68 MP, which is the average landings for the baseline years of 2001-2004. Although red grouper has a separate quota, it is currently included in the shallow water grouper quota.

Both the grouper and tilefish fisheries remained open throughout 2003. Several closures, however, were experienced in the commercial grouper and tilefish fisheries since 2004, when the shallow water grouper fishery closed on November 15, 2004. The fishery closed on October 10 in 2005, a month earlier than the previous year. Since 2006, yearly fluctuations in the relative abundance of shallow water grouper seem to have resulted in year-round fishing.

The deep water grouper and tilefish fisheries experienced more frequent closures which occurred earlier in the year. The deep water grouper fishery closed on July 15, 2004 and June 2, 2007. As a result, between 2003 and 2007, the season length was reduced by 50 percent. More pronounced reductions in season length were recorded in the tilefish fishery. Although closures were not required in 2003 and 2004, the tilefish fishery closed on November 21, 2005 and on July 22, 2006. In 2007, the commercial tilefish season was closed by April 18, a reduction in season length of more than 60 percent between 2003 and 2007.

In 2005, NMFS implemented a Regulatory Amendment to the Reef Fish Fishery Management Plan (FMP) in response to increasingly shorter fishing seasons. The purpose of the regulatory amendment was to set commercial management measures for the Gulf of Mexico grouper fishery to reduce the adverse socioeconomic effects of derby fishing. Temporary trip limits for the commercial fishery were implemented by NMFS in March 2005. These trip limits were requested by the commercial fishing industry, established through emergency rule, and were effective until February 26, 2006. A regulatory amendment implemented January 1, 2006, established a 6,000-pound GW aggregate DWG and SWG trip limit for the commercial grouper fishery, Trip limits were expected to prolong the commercial grouper fishing year and reduce the adverse socio-economic effects of derby fishing, while still allowing all vessels, including high-capacity vessels, an opportunity to participate in the fishery.

1.2 Purpose and Need for Action

The management of the commercial grouper and tilefish fisheries in the Gulf of Mexico is presently based on a traditional command and control approach. Regulatory measures used in the management of tilefish and the grouper complex include a license limitation system, quotas, trip limits, minimum size limits, area gear restrictions, and season closures. This management scheme has resulted in overcapitalized commercial grouper and tilefish fisheries, which means that the collective harvest capacity of fishery vessels and participants is in excess of that required to efficiently harvest the commercial share of

the TAC. The overcapitalization observed in the fishery has caused commercial grouper regulations to become increasingly restrictive over time, intensifying derby conditions under which fishermen race to harvest as many fish as possible before the quota runs out. The intensification of derby conditions has, in some years, led to premature closures of the fishery.

In 2003, neither the grouper nor the tilefish fisheries were prematurely closed; both fisheries remained open throughout the year. However, several closures were experienced in the commercial grouper and tilefish fisheries since 2004. In 2004, the shallow water grouper fishery closed on November 15. In 2005, the fishery closed on October 10, a month earlier than the previous year. Since 2006, yearly fluctuations in the relative abundance of shallow water grouper seem to have mitigated derby conditions in the fishery.

More frequent and earlier in the year closures were experienced in the deep water grouper and tilefish fisheries. In 2004, the deep water grouper fishery closed on July 15. By 2008, the commercial DWG season ended on May 10. In effect, the DWG season length has been reduced by more than 50 percent in five years, between 2003 and 2008. More pronounced reductions in season length were recorded in the tilefish fishery. While closures were not observed in 2003 and 2004, the tilefish fishery closed on November 21 in 2005, on July 22 in 2006, and on April 18 in 2007. In 2008, the commercial tilefish season was closed on May 10, a reduction in season length of more than 65 percent between 2003 and 2008.

It is anticipated that, under the suite of management measures constituting the current status quo, incentives for derby behavior would persist in the grouper and tilefish fisheries. While it is expected that the underlying incentive structure will persist under the existing regulatory framework, its translation into more premature closures may be mitigated in certain years by changes in the relative abundance of the stocks. In other terms, the fact that in some years certain components of the grouper and tilefish fisheries do not experience a closure, e.g., the shallow water grouper fishery in 2006 and 2007, does indicate a significant change in the prevailing incentive structure for derby behavior. Rather, it is simply an indication of the biological fluctuations in the species (or complex) relative abundance.

It is expected that incentives for overcapitalization and derby fishery conditions would be maintained as long as the current management structure persists. Under this scenario, the commercial grouper and tilefish fisheries are expected to continue to be characterized by higher than necessary levels of capital investment, increased operating costs, increased likelihood of shortened seasons, reduced at-sea safety, wide fluctuations in domestic grouper and tilefish supply and depressed ex-vessel prices; leading to deteriorating working conditions and lower profitability for participants.

The purpose of this amendment is to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain optimum yield (OY) in these multi-species fisheries. Rationalization is defined as “a management plan

that results in an allocation of labor and capital between fishing and other industries that maximizes the net value of production" (Fina, 2003). Terry and Kirkley (2006) defined overcapacity as the difference between harvesting capacity and a management target catch, given the stock conditions associated with that target catch. Excess capacity is defined as the difference between harvest capacity and actual harvests.

Rationalizing effort should mitigate some of the problems resulting from derby fishing conditions or at least prevent the condition from becoming more severe. Reducing overcapitalization should improve profitability of commercial grouper fishermen. Collectively, working conditions including safety at sea should improve and bycatch in the tilefish and grouper fisheries should be reduced, and a flexible and effective integrated management approach for tilefish and the grouper complex and tilefish should follow. This amendment evaluates several management programs that could be capable either independently or in combination of accomplishing the objectives specified above.

1.3 History of Management

The following summary describes only those management actions that affected grouper and tilefish harvest. Reef Fish Amendment 18A and subsequent amendments include a detailed history of modifications to the Reef Fish FMP.

The Reef Fish FMP, including an Environmental Impact Statement (EIS), was implemented in November 1984. The regulations, designed to rebuild declining reef fish stocks, included prohibitions on the use of poisons or explosives, prohibitions on the use of fish traps, roller trawls, and powerhead-equipped spear guns within an inshore stressed area, and directed NMFS to develop data reporting requirements in the reef fish fishery. The FMP estimated a combined maximum sustainable yield (MSY) for all snapper and grouper in aggregate of 51 MP, and set OY equal to 45 MP, which represented the approximate catch level at the time.

<u>Amendments</u>

Amendment 1 (EA/RIR/IRFA), to the Reef Fish FMP, implemented in 1990, set objectives to stabilize long-term population levels of all reef fish species by establishing a survival rate of biomass into the stock of spawning age fish to achieve at least 20 percent spawning stock biomass per recruit (SSBR) by January 1, 2000. Among the grouper management measures implemented were:

- Set a 20-inch total length (TL) minimum size limit on red, Nassau, yellowfin, black, and gag grouper;
- Set a 50-inch TL minimum size limit on jewfish (goliath grouper);

- Set a five-grouper recreational daily bag limit;

- Set an 11.0 MP commercial quota for grouper, with the commercial quota divided into a 92 MP SWG quota and a 1.8 MP DWG quota. SWG were defined as black grouper, gag, red grouper, Nassau grouper, yellowfin grouper, yellowmouth grouper, rock hind, red hind, speckled hind, and scamp (until the SWG quota was filled). DWG were defined as misty grouper, snowy grouper, yellowedge grouper, warsaw grouper, and scamp once the SWG quota was filled. Goliath grouper were not included in the quotas;

- Allowed a two-day possession limit for charter vessels and headboats on trips that extend beyond 24 hours, provided the vessel has two licensed operators aboard as required by the U.S. Coast Guard (USCG), and each passenger can provide a receipt to verify the length of the trip. All other fishermen fishing under a bag limit were limited to a single day possession limit;

- Established a framework procedure for specification of TAC to allow for annual management changes;

- Established a longline and buoy gear boundary at approximately the 50-fathom depth contour west of Cape San Blas, Florida, and the 20-fathom depth contour east of Cape San Blas, inshore of which the directed harvest of reef fish with longlines and buoy gear was prohibited, and the retention of reef fish captured incidentally in other longline operations (e.g., sharks) was limited to the recreational daily bag limit. Subsequent changes to the longline/buoy boundary could be made through the framework procedure for specification of TAC;

- Limited trawl vessels (other than vessels operating in the unsorted groundfish fishery) to the recreational size and daily bag limits of reef fish;

- Established fish trap permits, allowing up to a maximum of 100 fish traps per permit holder;

- Prohibited the use of entangling nets for directed harvest of reef fish. Retention of reef fish caught in entangling nets for other fisheries was limited to the recreational daily bag limit;

- Established a fishing year of January 1 through December 31;

- Extended the stressed area to the entire Gulf coast; and

- Established a commercial reef fish vessel permit.

Amendment 2 (EA/RIR/RFA), implemented in 1990, prohibited the harvest of goliath grouper (jewfish) to provide complete protection for this species in federal waters in response to indications that the population abundance throughout its range was greatly depressed. This amendment was initially implemented by emergency rule.

Amendment 3 (EA/RIR/IRFA), implemented in July 1991, provided additional flexibility in the annual framework procedure for specifying TAC by allowing the target date for rebuilding an overfished stock to be changed. It revised the FMP's primary objective from a 20 percent SSBR target to a 20 percent spawning potential ratio (SPR). The amendment also transferred speckled hind from the SWG quota category to the DWG quota category.

Amendment 4 (EA/RIR/IRFA), implemented in May 1992, established a moratorium on the issuance of new commercial reef fish permits for a maximum period of three years. Amendment 4 also changed the time of year TAC is specified from April to August and included additional species in the reef fish management unit.

Amendment 5 (SEIS/RIR/IRFA), implemented in February 1994, established restrictions on the use of fish traps, created a special management zone (SMZ) with gear restrictions off the Alabama coast, created a framework procedure for establishing future SMZs, 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.

Amendment 7 (EA/RIR/IRFA), implemented in February 1994, established reef fish dealer permitting and record keeping requirements, allowed transfer of fish trap permits and endorsements between immediate family members during the fish trap permit moratorium, and allowed transfer of other reef fish permits or endorsements in the event of the death or disability of the person who was the qualifier for the permit or endorsement. A proposed provision of this amendment that would have required permitted vessels to sell harvested reef fish only to permitted dealers was disapproved by the Secretary of Commerce and was not implemented.

Amendment 9 (EA/RIR/IRFA), implemented in July 1994, provided for collection of red snapper landings and eligibility data from commercial fishermen for the years 1990 through 1992. This amendment also extended the reef fish permit moratorium and red snapper endorsement system through December 31, 1995, in order to continue the existing interim management regime until longer term measures could be implemented.

Amendment 11 (EA/RIR/IRFA) was partially approved by NMFS and implemented in January 1996. The six approved provisions are: (1) limit sale of Gulf reef fish by permitted vessels to permitted reef fish dealers; (2) require that permitted reef fish dealers purchase reef fish caught in Gulf federal waters only from permitted vessels; (3) allow transfer of reef fish permits and fish trap endorsements in the event of death or disability; (4) implement a new reef fish permit moratorium for no more than five years or until December 31, 2000, while the Council considers limited access for the reef fish fishery; (5) allow permit transfers to other persons with vessels by vessel owners (not operators) who qualified for their reef fish permit; and, (6) allow a one time transfer of existing fish trap endorsements to permitted reef fish vessels whose owners have landed reef fish from fish traps in federal waters, as reported on logbooks received by the Science and Research Director of NMFS from November 20, 1992, through February 6, 1994. NMFS

disapproved a proposal to redefine OY from 20 percent SPR (the same level as overfishing) to an SPR corresponding to a fishing mortality rate of $F_{0.1}$ until an alternative operational definition that optimizes ecological, economic, and social benefits to the Nation could be developed. In April 1997, the Council resubmitted the OY definition with a new proposal to redefine OY as 30 percent SPR. The resubmission document was disapproved by NMFS.

Amendment 14 (EA/RIR/IRFA), implemented in March and April 1997, provided for a ten-year phase-out for the fish trap fishery; allowed transfer of fish trap endorsements for the first two years and thereafter only upon death or disability of the endorsement holder, to another vessel owned by the same entity, or to any of the 56 individuals who were fishing traps after November 19, 1992 and were excluded by the moratorium; and prohibited the use of fish traps west of Cape San Blas, Florida. The amendment also provided the Regional Administrator (RA) of NMFS with authority to reopen a fishery prematurely closed before the allocation was reached, and modified the provisions for transfer of commercial reef fish vessel permits. In addition, the amendment prohibited the harvest or possession of Nassau grouper in the Gulf Exclusive Economic Zone (EEZ), consistent with similar prohibitions in Florida state waters, the south Atlantic EEZ, and the Caribbean EEZ.

Amendment 15 (EA/ RIR/IRFA), implemented in January 1998, prohibited harvest of reef fish from traps other than permitted reef fish traps, stone crab traps, or spiny lobster traps.

Amendment 16A (EA/RIR/IRFA), submitted to NMFS in June 1998, was partially approved and implemented on January 10, 2000. The approved measures provided: (1) that the possession of reef fish exhibiting the condition of trap rash on board any vessel with a reef fish permit that is fishing spiny lobster or stone crab traps is prima facie evidence of illegal trap use and is prohibited except for vessels possessing a valid fish trap endorsement; (2) that NMFS establish a system design, implementation schedule, and protocol to require implementation of a vessel monitoring system (VMS) for vessels engaged in the fish trap fishery, with the cost of the vessel equipment, installation, and maintenance to be paid or arranged by the owners as appropriate; and (3) that fish trap vessels submit trip initiation and trip termination reports. Prior to implementing this additional reporting requirement, there will be a one-month fish trap inspection/compliance/education period, at a time determined by the NMFS Regional Administrator and published in the Federal Register. During this window of opportunity, fish trap fishermen will be required to have an appointment with NMFS enforcement for the purpose of having their trap gear, permits, and vessels available for inspection. The disapproved measure was a proposal to prohibit fish traps south of 25.05 degrees north latitude beginning February 7, 2001. The status quo 10-year phase-out of fish traps in areas in the Gulf EEZ is therefore maintained.

Amendment 16B (EA/RIR/IRFA), implemented by NMFS in November 1999 set a recreational daily bag limit of one speckled hind and one Warsaw grouper per vessel, with the prohibition on the sale of these species when caught under the bag limit.

Amendment 17 (EA/RIR/IRFA), was submitted to NMFS in September 1999, and was implemented by NMFS on August 10, 2000. This amendment extended the commercial reef fish permit moratorium for another five years, from its previous expiration date of December 31, 2000, to December 31, 2005, unless replaced sooner by a comprehensive controlled access system. The purpose of the moratorium is to provide a stable environment in the fishery necessary for evaluation and development of a more comprehensive controlled access system for the entire commercial reef fish fishery.

Amendment 18A (SEIS/RIR/IRFA) was implemented on September 8, 2006, except for VMS requirements which were implemented May 6, 2007. This amendment: (1) prohibits vessels from retaining reef fish caught under recreational bag/possession limits when commercial quantities of Gulf reef fish are aboard, (2) adjusts the maximum crew size on charter vessels that also have a commercial reef fish permit and a USCG certificate of inspection (COI) to allow the minimum crew size specified by the COI when the vessel is fishing commercially for more than 12 hours, (3) prohibits the use of reef fish for bait except for sand perch or dwarf sand perch, (4) requires devices and protocols for the safe release in incidentally caught endangered sea turtles and smalltooth sawfish, (5) updates the TAC procedure to incorporate the Southeastern Data Assessment and Review (SEDAR) assessment methodology, (6) changes the permit application process to an annual procedure and simplifies income qualification documentation requirements, and (7) requires electronic VMS aboard vessels with federal reef fish permits, including vessels with both commercial and charter vessel permits.

Amendment 19 (EA/RIR/IRFA), also known as the Generic Amendment Addressing the Establishment of the Tortugas Marine Reserves, or Generic Essential Fish Habitat (EFH) Amendment 2, was implemented on August 19, 2002. This amendment establishes two marine reserves off the Dry Tortugas where fishing for any species and anchoring by fishing vessels is prohibited.

Amendment 20 (EA/RIR/IRFA), implemented July 2003, established a three-year moratorium on the issuance of charter and headboat vessel permits in the recreational for-hire reef fish and coastal migratory pelagic fisheries in the Gulf of Mexico EEZ.

Amendment 21 (EA/RIR/IRFA), implemented in July 2003, continued the Steamboat Lumps and Madison-Swanson reserves for an additional six years, until June 2010. In combination with the initial four-year period (June 2000 - June 2004), this allowed a total of ten years in which to evaluate the effects of these reserves and to provide protection to a portion of the gag spawning aggregations.

Amendment 22 (SEIS/RIR/IRFA), implemented July 5, 2005, specified bycatch reporting methodologies for the reef fish fishery.

Amendment 24 (EA/RIR/IRFA), implemented on August 17, 2005, replaced the commercial reef fish permit moratorium that was set to expire on December 31, 2005 with a permanent limited access system.

Amendment 25 (SEIS/RIR/IRFA), implemented on June 15, 2006, replaced the reef fish for-hire permit moratorium that expired in June 2006 with a permanent limited access system.

Amendment 27 (SEIS/RIR/IRFA), implemented February 2008, requires the use of non-stainless steel circle hooks when using natural baits to fish for Gulf reef fish, and requires the use of venting tools and dehooking devices when participating in the commercial or recreational reef fish fisheries.

Amendment 30A (SEIS/RIR/IRFA), implemented August 2008, revises the greater amberjack rebuilding plan, establishes a rebuilding plan for gray triggerfish, sets measures to constrain recreational and commercial harvests of these species consistent with the rebuilding plans, and establishes accountability measures should harvest exceed that stated in the respective rebuilding plans.

Amendment 30B (EIS/RIR/IRFA), is currently under review. This amendment evaluates actions to set gag thresholds and benchmarks; establish gag and red grouper TAC, interim allocations and AMs; end overfishing of gag; manage gag and red grouper commercial and recreational harvests consistent with TAC; reduce grouper discard mortality; establish marine reserves; and require compliance with federal fishery management regulations by federally permitted reef fish vessels when fishing in state waters. Because regulations ending overfishing for gag will not be implemented by January 1, 2009, the Council has requested NMFS develop an interim rule to put in place such regulations for the 2009 fishing year.

Regulatory Amendments, Emergency and Interim Rules

A July 1991 regulatory amendment, implemented November 12, 1991, provided a one-time increase in the 1991 quota for SWG from 9.2 MP to 9.9 MP to provide the commercial fishery an opportunity to harvest 0.7 MP that went unharvested in 1990.

A November 1991 regulatory amendment, implemented June 22, 1992, raised the 1992 commercial quota for SWG to 9.8 MP after a red grouper stock assessment indicated that the red grouper SPR was substantially above the Council's minimum target of 20 percent.

An August 1999 regulatory amendment, implemented June 19, 2000, increased the commercial size limit for gag from 20 to 24 inches TL, increased the recreational size limit for gag from 20 to 22 inches TL, prohibited commercial sale of gag, black, and red grouper each year from February 15 to March 15 (during the peak of gag spawning season), and established two marine reserves (Steamboat Lumps and Madison-Swanson) that are closed year-round to fishing for all species under the Council’s jurisdiction.

An emergency rule, published February 15, 2005, established a series of trip limits for the commercial grouper fishery in order to extend the commercial fishing season. The trip limit was initially set at 10,000 pounds GW. If on or before August 1 the fishery is estimated to have landed more than 50 percent of either the shallow water grouper or the red grouper quota, then a 7,500-pound trip limit takes effect; and if on or before October 1 the fishery is estimated to have landed more than 75 percent of either the SWG or the red grouper quota, then a 5,500-pound (2,495-kg) trip limit takes effect. [70 FR 8037]

An interim rule, published July 25, 2005, proposed for the period August 9, 2005 through January 23, 2006, a temporary reduction in the recreational red grouper bag limit from two to one fish per person per day, in the aggregate grouper bag limit from five to three grouper per day, and a closure of the recreational fishery, from November-December 2005, for all grouper species [70 FR 42510]. These measures were proposed in response to an overharvest of the recreational allocation of red grouper under the Secretarial Amendment 1 red grouper rebuilding plan. The closed season was applied to all grouper in order to prevent effort shifting from red grouper to other grouper species and an increased bycatch mortality of incidentally caught red grouper. However, the rule was challenged by organizations representing recreational fishing interests. On October 31, 2005, a U.S. District Court judge ruled that an interim rule to end overfishing can only be applied to the species that is undergoing overfishing. Consequently, the reduction in the aggregate grouper bag limit and the application of the closed season to all grouper were overturned. The reduction in the red grouper bag limit to one per person and only the November-December 2005 recreational closed season on red grouper were allowed to proceed. The approves measures were subsequently extended through July 22, 2006, by a temporary rule extension published January 19, 2006 [71 FR 3018]

An October 2005 regulatory amendment, implemented January 1, 2006, established a 6,000-pound GW aggregate DWG and DWG trip limit for the commercial grouper fishery, replacing the 10,000/7,500/5,500-pound step-down trip limit that had been implemented by emergency rule for 2005.

A March 2006 regulatory amendment, implemented July 15, 2006, established a recreational red grouper bag limit of one fish per person per day as part of the five grouper per person aggregate bag limit, and prohibited for-hire vessel captains and crews from retaining bag limits of any grouper while under charter. An additional provision established a recreational closed season for red grouper, gag, and black grouper from February 15 to March 15 each year (matching a previously established commercial closed season) beginning with the 2007 season.

An interim rule for gag is proposed for the 2009 grouper fishing season. If approved and implemented, this rule would: 1) establish a commercial gag quota, 2) establish a two-gag recreational bag limit, 3) require for-hire reef fish permit holders to abide by the more restrictive of state or federal regulations, regardless of where fishing, and 4) establish a two month (February-March) recreational closed season for gag.

Secretarial Amendments

Secretarial Amendment 1, implemented July 15, 2004, established a rebuilding plan, a 5.31 MP GW commercial quota, and a 1.25 MP GW recreational target catch level for red grouper. The amendment also reduced the commercial quota for SWG from 9.35 to 8.8 MP GW and reduced the commercial quota for DWG from 1.35 to 1.02 MP GW. The recreational bag limit for red grouper was also reduced to two fish per person per day.

Tilefish

Tilefish species of the genus *Caulolatilus*, plus the great northern tilefish (also known as golden tilefish or simply tilefish; *Lopholatilus chamaeleonticeps*), were listed in the original Reef Fish FMP in 1981 as "Species included in the Fishery but Not in the Management Unit". Species on this list were included in the FMP for purposes of data collection. They were considered to be species that were not normally targeted, but were taken incidentally to the directed fishery. One additional tilefish species found in the Gulf of Mexico, the sand tilefish (*Malacanthus plumieri*) was not listed. This species is generally considered a shallow water species inhabiting sand and rubble bottoms near reefs and grass beds (FishBase1), but it has also been reported to occur in Pulley Ridge in depths of 196 feet or deeper (USGS2).

Amendment 1 (EA/RIR/IRFA), implemented in 1990, added the tilefish (*Lopholatilus chamaeleonticeps*) and the tilefishes of the genus *Caulolatilus* to the management unit, listing the four *Caulolatilus* species by name: goldface tilefish, blackline tilefish, anchor tilefish, and blueline tilefish. This meant that tilefish (other than sand tilefish) were now subject to permit requirements and other requirements of the Reef Fish FMP. However, no tilefish specific management measures were implemented.

Amendment 12 (EA/RIR/IRFA), implemented in January 1997, established a recreational aggregate bag limit of 20 reef fish for reef fish species not otherwise subject to a bag limit, including tilefish.

Secretarial Amendment 1, implemented July 15, 2004, established a commercial quota of 0.44 MP GW, for all tilefishes in the management unit combined. This quota was equal to the average annual tilefish harvest during 1996-2000. It was implemented as a pro-active measure to prevent an uncontrolled increase in Gulf tilefish harvest as a result of a reduction in the DWG quota and increased restrictions on the overfished Atlantic tilefish fishery.

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 method is under consideration.

[1] http://fishbase.org
[2] http://coastal.er.usgs.gov/pulley-ridge/

If a program to limit access is established, anyone not participating in the fishery or using the fishing method 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 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 a particular 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. A reference to the full Federal Register notice is included with each summary.

November 1, 1989 - Anyone entering the commercial reef fish fishery in the Gulf of Mexico and 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 fisheries for reef fish and coastal migratory pelagics. [63 FR 64031] (In Amendment 20 to the Reef Fish FMP, 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 which may be included are longlines, buoy gear, handlines, rod-and-reel, bandit gear, spear fishing gear, and powerheads used with spears. [65 FR 42978]

October 15, 2004 – the Council is considering the establishment of an IFQ to control participation or effort in the commercial grouper fishery of the Gulf of Mexico. If an IFQ is established, the Council is considering October 15, 2004, as a possible control date regarding the eligibility of catch histories in the commercial grouper fishery [69 FR 67106].

2.0 MANAGEMENT ALTERNATIVES

The format adopted in this section slightly departs from the traditional structure used in previous amendments. In previous amendments to an FMP, management measures considered for implementation are generally organized as successive actions, with each action dealing with a specific issue. For example, Reef Fish Amendment 26, which established an IFQ program in the commercial red snapper fishery, included 11 management actions establishing the IFQ program and dealing with design elements ranging from the duration of the program to its cost recovery provisions. However, the presentation and evaluation of management measures included in Reef Fish Amendment 29 require an alternative format due to the mutually exclusive nature of some of the effort management approaches considered in this amendment and to the two-step decision making process that would be required from the Council. First, the Council has to determine the effort management approach deemed most appropriate to addressing problems in the commercial grouper and tilefish fisheries in the Gulf of Mexico. In addition to the status quo, effort management approaches under consideration in this amendment include the establishment of a grouper and tilefish endorsement program and the implementation of an individual fishing quota (IFQ) program. In the second step, the Council has to focus on the design characteristics corresponding to the selected effort management approach. For example, if the Council determined that an endorsement program constituted the preferred management option, the implementation of such a program would require the definition of endorsement eligibility criteria and the specification of bycatch reduction measures.

Based on the two-step decision making process discussed above, management actions under consideration in this amendment are structured as follows: Section A includes alternative effort management approaches. Additional management measures in Section A consider various commercial reef fish permit stacking scenarios and evaluate alternative classifications of speckled hind and Warsaw grouper within the existing grouper management units. Sections B and C include design elements and provisions corresponding to an individual fishing quota program and an endorsement program, respectively.

2.1. SECTION A - GROUPER AND TILEFISH EFFORT MANAGEMENT

2.1.1 ACTION A1: Selection of an Effort Management Approach

Alternative 1: No Action. Maintain the current management structure in the commercial grouper and tilefish fisheries.

Preferred Alternative 2: Implement an Individual Fishing Quota Program in the commercial grouper and tilefish fisheries (Section B) (Advisory Panel (AP) Preferred)

Alternative 3: Establish grouper and tilefish endorsements (Section C)

Discussion and Rationale

This management action includes alternative approaches to managing effort in the commercial grouper and tilefish fisheries of the Gulf of Mexico. In addition to the status quo, the Council is considering two effort management approaches to rationalize effort and reduce overcapacity in order to achieve and maintain optimum yield (OY) in the multi-species grouper and tilefish fisheries. Either management measure included in this action is expected to result in an effective and flexible effort management approach. The establishment of a grouper and tilefish endorsement program and the implementation of an IFQ program constitute the effort management measures under consideration in this action.

Alternative 1 would not change the current management structure. The grouper and tilefish fisheries would continue to be managed using a combination of permit moratorium, quotas, season closures, minimum size limits, and trip limits. A moratorium on commercial reef fish permits, in effect since 1990, was made permanent in 2005 (Reef Fish Amendment 24). In 2004, the year of publication of a control date regarding the eligibility of catch histories in the commercial grouper fishery, there were 1,365 valid commercial reef fish permits. By November of 2008, the number of valid commercial reef fish permits had dropped to 879, excluding those permit holders eligible for permit renewal within the year.

The commercial shallow water grouper (SWG) total allowable catch (TAC) is currently set at 8.80 million pounds (MP) gutted weight (GW). The red grouper TAC, which is a portion of the SWG TAC, is set at 5.31 MP. Other shallow water grouper species landed in the Gulf of Mexico include gag, yellowfin, yellowmouth, black grouper, scamp, rock hind, and red hind. Reef Fish Amendment 30B will set a separate TAC for gag grouper of 3.38 MP in 2009.

Existing commercial minimum size limits for shallow water grouper include a 24 inch minimum size for black and gag grouper, a 20 inch minimum for yellowfin and red grouper, and, a 16 inch minimum size limit for scamp. All size limit requirements refer to total length. A month-long seasonal closure from February 15 to March 15 is also in effect in the commercial shallow water grouper fishery for gag, red, and black grouper. An aggregate trip limit of 6,000 pounds GW of SWG and DWG combined has been in effect since 2006.

In the commercial DWG fishery, TAC is currently set at 1.02 MP GW. The commercial tilefish fishery is subject to a TAC of 440,000 pounds GW. There are no size limit requirements for the DWG and tilefish species harvested. **Alternative 1** would maintain current regulations and thereby maintain the current level of impact on the biological and physical environment.

Preferred Alternative 2 would implement a grouper and tilefish IFQ program in the Gulf of Mexico. The implementation of a rights-based management program is expected to decrease the overcapitalization observed in the fleet, lengthen the fishing season and

lower operating costs by affording vessels owners more flexibility in their input choices and trip planning, improve market conditions through a steadier supply of fresh fish, increase ex-vessel prices, and, improve safety at sea and working conditions.

The magnitude of expected effects, i.e., the overall effectiveness of an incentive-based management program in achieving its objectives, depends in large part on the incentive structure resulting from the program design. Key design elements being considered include the choice of measurement units (e.g., gutted vs. whole weight, minimum percent shares) for quota shares and annual harvest privileges, initial apportionment method, monitoring and enforcement provisions. For a multi-species program such as a grouper and tilefish IFQ program under consideration, flexibility measures included to ease catch versus quota holding balancing are of primary importance. Design characteristics including the exclusivity, durability, transferability, security, flexibility, and divisibility of the rights or privileges will collectively determine the "desirability" or quality of the property right or privilege granted to program participants (Scott, 1999).

For incentive adjusting management instruments such as IFQs, individual quota shares can be expressed in pounds of fish (whole or gutted weight) or, more commonly, in percentage of the TAC. Annual harvest privileges are expressed in pounds of fish. In a multi-species fishery, program designers may either elect to implement a series of single species IFQs or establish a multispecies program with or without aggregate shares granting the privilege to harvest more than one species. The discussion below highlights major features and expected impacts of IFQ programs on fishing effort, working conditions, profitability and market conditions, fish stocks, and, enforcement and monitoring.

The rationalization of effort, i.e., the mitigation of overcapacity problems, constitutes one of the main benefits expected from the implementation of an IFQ program. As IFQ shares and annual harvest privileges are traded, marginal and less efficient operations are expected to exit the fishery. The Gulf of Mexico Red Snapper IFQ Program has been successful in reducing the number of participants in the red snapper fishery. In 2007, shares were distributed to 546 initial participants. At the end of that year, only 489 participants remained in the program, a reduction of approximately 10 percent. The anticipated effort consolidation may impact employment in fishing communities.

IFQ programs are expected to impact overall market conditions by eliminating seasonal product gluts and ensuring a steadier supply of fresh fish leading to higher prices; improving product quality and altering product composition (increased percentage of fresh product); and lowering fishermen's operating costs through increased efficiency (optimal trip length and input selection). For fishing operations, the cumulative effect of these impacts is a net gain in profitability. Impacts on the profitability of the processing sector are not as clear. The establishment of an IFQ increases fishermen's bargaining power and thus, allows them to negotiate better prices for their product. For example, the red snapper price per pound increased 15 percent during the first year of the Red Snapper IFQ program. Fishermen were also able to land red snapper year-round, assuming they possessed sufficient allocation, rather than during 10-day mini-seasons at the beginning

of each month. This helped to alleviate market gluts and allowed fishermen to choose when to fish in order to maximize their profits and increase safety at sea.

As indicated by Pascoe et al. p 45 (2002), "… ITQs have been successfully implemented in New Zealand (Clark, Major and Mollett 1988, Clark 1993), Australia (Geen and Nayer 1988, Geen, Neilander and Meany 1993, Kennedy 1994), Iceland (Arnason 1993b), the Netherlands (Davidse 1996) and the USA (Raizin 1993). In each case, the management system has facilitated a restructuring of the industry and a general improvement in the economic performance of the fleet. Fishing effort has generally decreased and depleted stocks have recovered. Reduced fleet sizes have lead to less direct employment at the fishing level, but increased emphasis on processing and marketing of products has lead to an overall increase in related employment."

Similarly, in a testimony before the Senate Subcommittee on Oceans and Fisheries, Sutinen (2001) indicated that "…IFQs have a proven record of accomplishment of promoting sustainable management of fisheries and producing wealth. The scientific evidence is quite clear on these achievements. The Organization for Economic Cooperation and Development (OECD 1997) reviewed management experiences in more than 100 fisheries in 24 member countries. This is the only study I know that systematically compares IFQs with more traditional approaches to fisheries management. The evidence shows that IFQs are an effective means of controlling exploitation, of mitigating the race-to-fish and most of its attendant effects, of generating resource rent and increased profits, and of reducing the number of participants in a fishery." Under derby conditions, vessels owners feel compelled to plan fishing trips regardless of safety considerations (Thomas et al, 1993). Even under inclement or dangerous weather conditions, several vessel owners schedule trips. If they did not, the fish that they would have harvested would be taken by fishermen who elected to be at sea. By contrast, IFQ programs, which eliminate incentives to race for fish, are expected to improve safety at sea and working conditions by allowing fishermen to schedule trips at their convenience, accounting for, among other factors, their safety and overall quality of their working conditions. For example, Smith (2000) reported that USCG search and rescue missions decreased by 50 percent in the first three years of the pacific halibut and sablefish IFQ.

Under an IFQ program, regulatory discards due to season closures are eliminated because fishermen can catch their allocation at their convenience. Discards are further limited because ghost fishing, which refers to fish killed by abandoned or lost gear, is expected to significantly decrease when crew members are not racing for fish (Leal, de Alessi, and Baker, 2005). According to the National Research Council (NRC), a reduction in ghost fishing has resulted from the implementation of IFQ programs in the halibut and sablefish fisheries in Alaska (NRC, 1999). In the Gulf of Mexico, implementation of the red snapper IFQ program and 13" minimum size limit in 2007, resulted in an increase in the number of fish landed per fish discarded. Prior to the IFQ program and size limit change, an average of 1.17 red snapper were landed for every red snapper discarded (SERO 2008). After implementation of the IFQ program and 13" size limit, an average of 4.03 red snapper were landed for every red snapper discarded (SERO 2008). The greatest reductions in discards are from the northern and western Gulf of Mexico. However,

observer data and anecdotal information from fishermen in the eastern Gulf suggests red snapper discards may be increasing off west Florida. Reasons for potential increases in discards include improvements in stock abundance, expansion of stock range, and the limited number of shares that many west Florida commercial fishermen received at the onset of the red snapper IFQ program.

IFQs are also expected to foster resource conservation by providing long term incentives to program participants. As overcapitalization is reduced under an IFQ program, a decrease in adverse impacts to the physical environment should also occur since the number of participants in the fishery has decreased.

Increased incentives to high-grade, i.e., discard fish of a lesser commercial value, constitutes a potential detrimental impact on fish stocks resulting from the implementation of IFQs. In order to maximize the net value of their IFQ shares, fishermen have a vested interest in discarding less desirable fish and only keep the part of the catch that can fetch the highest price (Copes, 1986), thereby increasing the amount of discards. Multi-species programs with inappropriate catch-quota balancing measures could also result in increased discard levels or increase the risk of overexploitation (Sanchirico et al., 2005).

In a recently completed study, Weninger (2008) indicates that the implementation of an IFQ in the grouper and tilefish fisheries would result in efficiency gains, fleet consolidation, and that remaining vessels would benefit from economies of scale. Weninger estimates variable cost savings attributable to the implementation of an IFQ in the grouper and tilefish fisheries between $2.23 and $3.27 million per year. In addition, fixed costs savings, which are difficult to measure, are also anticipated to result from the implementation of the IFQ program. Potential positive impacts on grouper and tilefish prices constitute another expected source of economic benefits resulting from the establishment of an IFQ program. However, economic benefits expected from the implementation of a grouper and tilefish IFQ may be limited by the narrow scope of the program. Commercial reef fish permit holders with zero or very small IFQ shares are still expected to continue to fish for reef fish species that are not managed under an IFQ such as greater amberjack or snappers (excluding red snapper). While they may acquire shares or allocation to legally land their grouper and tilefish catch, they could also generate substantial amounts of discards, curtailing economic benefits to IFQ participants. A reef fish-wide IFQ program would be consistent with the current commercial reef fish permit and is expected to be associated with greater economic benefits.

Effective monitoring and strict enforcement are indispensable to the success of IFQ programs. The monitoring of quota catches and the enforcement of the IFQ program provisions can be difficult because IFQ programs may increase fishermen's incentives to underreport catches. Monitoring and enforcement challenges may be increased in the case of a multi-species fishery or when there are numerous participants in the program. Enforcement difficulties may be further increased by the number and geographical dispersion of authorized landing sites and dealers. For these reasons, IFQ programs can be costly to monitor successfully.

The following text describes program requirements that would be implemented under an IFQ program. Provisions discussed herein apply to grouper and tilefish in or from the Gulf EEZ, to any person aboard a vessel with a Gulf grouper and tilefish IFQ vessel account or to any person with a Gulf grouper and tilefish IFQ dealer endorsement. These provisions apply to Gulf grouper and tilefish regardless of where harvested or possessed. Approval and implementation of the IFQ program will result in the elimination of existing management measures intended to constrain commercial harvest, such as grouper trip limits. Grouper/tilefish IFQ allocations and landings would be measured in terms of gutted weight. This is the standard metric for grouper/tilefish caught commercially and sold to dealers in the Gulf. Shares would be initially distributed at the onset of the program as a percentage equal to or greater than one pound of allocation for each share type. All allocation derived from shares will be rounded to the nearest pound gutted weight. All IFQ share/allocation holders would be required to possess a valid Gulf reef fish permit to harvest grouper/tilefish under the IFQ program. Additionally, vessels harvesting grouper/tilefish would be required to have an IFQ vessel account with sufficient allocation to cover grouper/tilefish being landed. All dealers who purchase grouper/tilefish from an IFQ share/allocation holder would be required to possess a valid federal dealer permit for Gulf reef fish and documentation verifying the dealer is an IFQ participant without which possessing, transporting, selling, purchasing, or processing grouper/tilefish would be prohibited. The documentation would be similar to the red snapper IFQ dealer endorsement. The grouper/tilefish IFQ dealer documentation would be available for download from the IFQ website at no cost to those individuals who possess a valid Gulf reef fish dealer permit and request the documentation. Although Gulf reef fish permits and reef fish dealer permits must be renewed annually at a cost in accordance with established permit fees, the grouper/tilefish IFQ dealer documentation would remain valid as long as the individual possesses a valid reef fish dealer permit and abides by all reporting and cost recovery requirements of the IFQ program.

Possessing, transporting, selling, purchasing, or processing in intrastate or interstate commerce any grouper/tilefish harvested under the commercial IFQ program in violation of the aforementioned restrictions would be prohibited. Possession beyond the harvesting vessel without a NMFS approval transaction code would be prohibited. The approval transaction code would verify the IFQ share/allocation holder had sufficient allocation in his/her account to conduct the sales transaction and that the sales transaction has taken place. Recipients of IFQ dealer permits, including all IFQ share/allocation holders who sell grouper/tilefish directly from their vessel in lieu of a dealer, would be required to abide by all regulations, reporting requirements, and fishery recovery requirements specified in this section for the proposed program.

NMFS would require all IFQ share and allocation transfers be registered with the agency, and would prohibit the carryover transfer of unused portions of annual allocations for use in the next fishing year. Additionally, IFQ share transfers would need to be completed by 6:00 p.m. (eastern time), December 31 to allow NMFS the time necessary for end-of-year program management.

For the fishing trip during which the shareholder's last remaining allocation(s) for all grouper and tilefish would be met or exceeded, the shareholder may exceed the portion of the allocation(s) remaining by up to 10 percent. For example, if a shareholder has 1,000 pounds of DWG allocation remaining on the last fishing trip of the year, but has no remaining red grouper (including multiuse), gag (including multiuse), other SWG, or tilefish allocation, then the shareholder would be allowed to land up to a 100 pound overage of DWG. No overages would be allowed for the other species allocations. From the time of the overage until January 1 of the following fishing year, the IFQ shareholder must retain sufficient shares to ensure that the shareholder will have enough allocation in the following fishing year to repay the current year overage. Share transfers that would violate that requirement will not be allowed. The overage would be allowed only once per year and would be deducted from the shareholder's allocation for the subsequent fishing year.

If multiuse allocation remains on the last fishing trip, then any overages associated with the multiuse allocation would be proportionally deducted from gag and red grouper allocations in the subsequent year based on the amount of gag and red grouper landed. For example, if a shareholder has 1,000 pounds of gag multiuse allocation remaining on their last fishing trip, but has no remaining red grouper (including multiuse), gag, other SWG, DWG, or tilefish allocation, then the shareholder would only be allowed up to a 100 pound overage of gag and red grouper. If the shareholder did exceed his remaining allocation by 10 percent, then 1,100 pounds would have been landed. If the shareholder landed 700 pounds of red grouper and 400 pounds of gag grouper, then 64 pounds of red grouper allocation (= 100 pounds x 700/1100) and 36 pounds of gag allocation (=100 pounds x 400/1100) would be deducted from the shareholders red grouper and gag allocations in the following year. IFQ participants who do not possess IFQ shares but do possess allocation during the fishing year would be prohibited from exceeding their allocation by any amount.

IFQ share and allocation debits and transfers would be tracked using an electronic accounting/reconciliation process developed by NMFS. The IFQ share/allocation holder, dealer, and vessel accounts would record IFQ share/allocation transactions. NMFS would monitor IFQ share/allocation transactions. If IFQ participants indicate an error occurred during completion of a landing transaction, NMFS may require participants to complete a landing transaction correction form.

NMFS will also monitor IFQ shares suspended prior to issuance and other legal actions taken against IFQ share/allocation holders. Only IFQ shares pursuant to sanctions or rule violations would revert to the management program. Any IFQ shares permanently revoked would be redistributed among the existing IFQ shareholders.

The electronic accounting/reconciliation process would be used to collect and monitor the following data and information:

- Landing transactions (i.e. when an IFQ share/allocation holder has sold grouper/tilefish), including the following information:

- Date, time, and location of transaction;
- The actual ex-vessel value of grouper/tilefish;
- The weight of the catch sold;
- Information necessary to identify the fisherman, vessel, and dealer involved in the transaction; and
- Whether the seller has sufficient allocation to complete the sales transaction.

- Issuance of NMFS landing transaction approval codes.

- Reporting of landing notifications and issuance of landing notification confirmation codes.

- Allocation and share transfers between IFQ participants.

IFQ share/allocation holders could electronically purchase additional IFQ allocation and IFQ shares from other IFQ share/allocation holders.

For enforcement purposes, fishermen participating in the IFQ program would be required to offload their grouper/tilefish landings at permitted IFQ dealers between 6:00 a.m. and 6:00 p.m. daily. All persons landing IFQ catch would be able to land 24 hours a day but would be required to notify NMFS enforcement agents three to twelve hours in advance of the time of landing. At sea or at dockage transfers of fish on board IFQ vessels also would be prohibited to facilitate law enforcement activities. Additionally, vessel monitoring systems are currently required for Gulf of Mexico commercial reef fish permit holders and these would aid enforcement in monitoring the Grouper/Tilefish IFQ program.

Alternative 3 would grant recipients, under specific conditions, an endorsement to harvest grouper and tilefish in the Gulf of Mexico. Conditions attached to the endorsement can either apply to all participants or target a predetermined group of participants in the fishery such as the gear used and/or the species sought. For example, the issuance of a gear specific endorsement to the reef fish permit could grant harvesting privileges to longline or vertical line vessels under different stipulations. Previous endorsements in the Gulf of Mexico include the former gillnet and fish trap endorsements. The two-tiered red snapper endorsement, subsequently transformed into licenses, and recently replaced by an IFQ system constitutes another example. Requirements of an endorsement could include: historical participation at a specified level possibly by gear type and/or species group. Clauses usually include a trip limit which determines a maximum allowable harvest per trip. The establishment of a grouper and tilefish endorsement to the reef fish permit would not unduly penalize reef fish permit holders with limited grouper and tilefish landings who elected to specialize in other reef fish fisheries.

While it may constitute a direct approach to limiting the number of participants in a fishery, the long term effectiveness of a permit endorsement program in managing effort is, at best, limited. In the short run, fishing effort could be decreased, especially if a large proportion of fishermen did not qualify for the endorsement. However, remaining participants are expected to gradually increase their effective fishing effort either through vessel, crew, and equipment upgrades or via additional or longer fishing trips; recreating or intensifying derby conditions and possibly leading to shorter fishing seasons. The evolution of fishing effort in the commercial red snapper fishery in the Gulf of Mexico during the former red snapper endorsement system illustrates this pattern. Moreover, excluded fishermen could contribute to increasing grouper and tilefish bycatch levels if they elect to continue to harvest other reef fish species.

Due to its expected lack of lasting impact on fishing effort and derby conditions, the establishment of a permit endorsement is not anticipated to noticeably improve current market conditions in the grouper and tilefish fisheries. Market conditions under a derby fishery are not conducive to improving profitability. The absence of flexibility in trip planning and input mix determination preclude participants from enjoying better working conditions.

The establishment of a permit endorsement is not expected to significantly modify the impact on stocks resulting from the management approach presently in effect. A permit endorsement for the grouper and tilefish fisheries would only allow individuals that are currently fishing for those species to participate in the fishery. Biological impacts are lower when participation in the fishery is restricted to individuals who already have experience in the fishery. An effective permit endorsement system should decrease the number of active vessels and therefore, should decrease adverse impacts on the physical environment.

Under the current limited access management system in effect in the commercial reef fish fishery, the establishment of a permit endorsement is not expected to significantly impact monitoring and enforcement.

2.1.2 ACTION A2: Permit Stacking

Alternative 1: No action - Do not allow commercial reef fish permits to be consolidated.

<u>Preferred Alternative 2</u>: Allow an owner of multiple commercial reef fish permits to consolidate his (hers) permits into one. The consolidated permit would have a catch history equal to the sum of the catch histories associated with the individual permits.

<u>Discussion and Rationale</u>

This action would allow fishermen to consolidate permits and landing histories to one permit. Combined landing histories would be additive for each year. Because the goal of

this amendment is to reduce overcapacity in the fishery, limits on the number of permits that can be consolidated would constrain the potential reduction in permitted vessels. Therefore, alternatives addressing this aspect of permit stacking were not examined, and only two alternatives are being considered—no action or allowing permit stacking without constraints on the number of permits that can be consolidated.

The commercial reef fish permit is issued to an individual(s) or corporation and must be assigned to a single vessel. Commercial reef fish permits have been capped through a moratorium on the issuance of new permits since 1990. Catch by species has been recorded for each commercial fishing trip in the Southeast Fisheries Science Center (SEFSC) logbook program since 1993 and by trip ticket for some Gulf coast states since 1986. Landings history from those records has been used in the past to determine a permit owner's ability to obtain an endorsement for the use of specific gear (traps) or to land certain reef fish species (red snapper). More recently, landings history has been used to establish trip limits and issue IFQ shares in the red snapper fishery. In this amendment, there are alternatives that propose to use landings history to determine if a permit should be approved for an endorsement to catch grouper and tilefish or issued grouper and tilefish IFQ shares.

Regardless of the effort management direction set in this amendment, it may be advantageous to allow permit owners who hold multiple permits to consolidate landings history to one permit and surrender the other permit(s). When a permit is voluntarily surrendered it is no longer valid and will be terminated. This process would be expected to allow the remaining permit to become more valuable to the owner if new regulations are necessary to further reduce effort in the commercial reef fish fishery. It is also likely that removing permits through consolidation of permit history could reduce the overall effective effort potential of the commercial fishery.

Alternative 1 would not allow commercial reef fish permits to be consolidated. Under the No Action alternative, requirements and regulations relative to commercial reef fish permits would remain unchanged. The current universe of 1,080 valid or renewable commercial reef fish permits will continue to constitute the maximum number of reef fish permits. Under **Alternative 1**, the gradual reduction in the number of commercial reef fish permits observed in recent history is expected to continue.

Preferred Alternative 2 would allow a commercial reef fish permit owner to consolidate several permits into one. The consolidated permit would have a catch history equal to the sum of the catch histories associated with the individual permits. **Preferred Alternative 2** would allow a permit holder to fully benefit from catch histories (s)he is entitled to while simplifying the permit renewal process and reducing costs. For example, such a permit holder could install a VMS unit on one of his vessels and transfer catch histories associated to his other permits. **Preferred Alternative 2** could therefore contribute to a faster reduction in the number of permits and ease permit renewal requirements. The reduction in the number of permits would also necessarily lead to a reduction in the number of vessels. The number of permit owners who would consider consolidating multiple permits into one is not known. However, owners of permits with relatively low

harvest levels would be more likely to consider the consolidation that **Preferred Alternative 2** would allow.

This action is primarily administrative and so would have minimal affects on the physical and biological/ecological environments. **Alternative 1**, no action, would not affect the fishery as it is currently prosecuted; therefore, this alternative should have no effect on these environments. **Preferred Alternative 2** could reduce the total number of vessels participating in the fishery. If this reduction in vessels translates to a reduction in effort or the number of trips, then the amount of gear interacting with the physical environment or the amount fish caught could be reduced.

Alternative 1, the no action alternative, would not affect the ongoing reduction in the number of commercial reef fish permits. The implementation of **Preferred Alternative 2** would allow owners of multiple permits to consolidate them into one with a catch history equal to the sum of the corresponding individual permits. **Preferred Alternative 2** is expected to accelerate the reduction in the number of permits. Economic benefits due to savings realized by permit owners and anticipated reductions in administrative costs are anticipated from the implementation of **Preferred Alternative 2**.

Alternative 1, no action, would not increase or decrease the burden of managing the commercial reef fish fishery, and so would have no effect on the administrative environment. **Preferred Alternative 2** would initially adversely effect the administrative environment because permit histories would need to be combined as some permit holders request their permits to be stacked. However, this should provide a long-term benefit to the administrative environment because the number of permits would decrease. This would reduce administrative efforts needed for permit renewal and costs of communicating with fishermen through Fishery Bulletins.

2.1.3 ACTION A3: Speckled Hind and Warsaw Grouper Classification

Alternative 1: No Action - Maintain the current composition of the multi-species deepwater and shallow water grouper units.

Alternative 2: Maintain the current composition of the multi-species deepwater grouper unit and revise the shallow water grouper unit to include speckled hind.

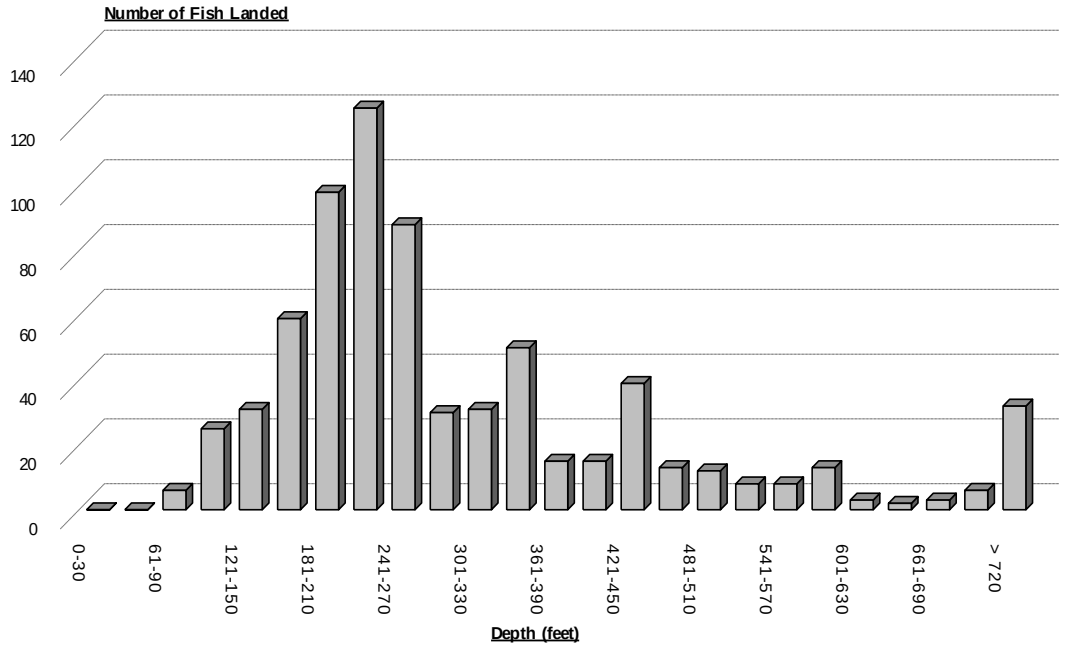
Alternative 3: Maintain the current composition of the multi-species deepwater grouper unit and revise the shallow water grouper unit to include warsaw grouper.

<u>Preferred Alternative 4</u>: Maintain the current composition of the multi-species deepwater grouper unit and revise the shallow water grouper unit to include speckled hind and warsaw grouper.

Discussion and Rationale

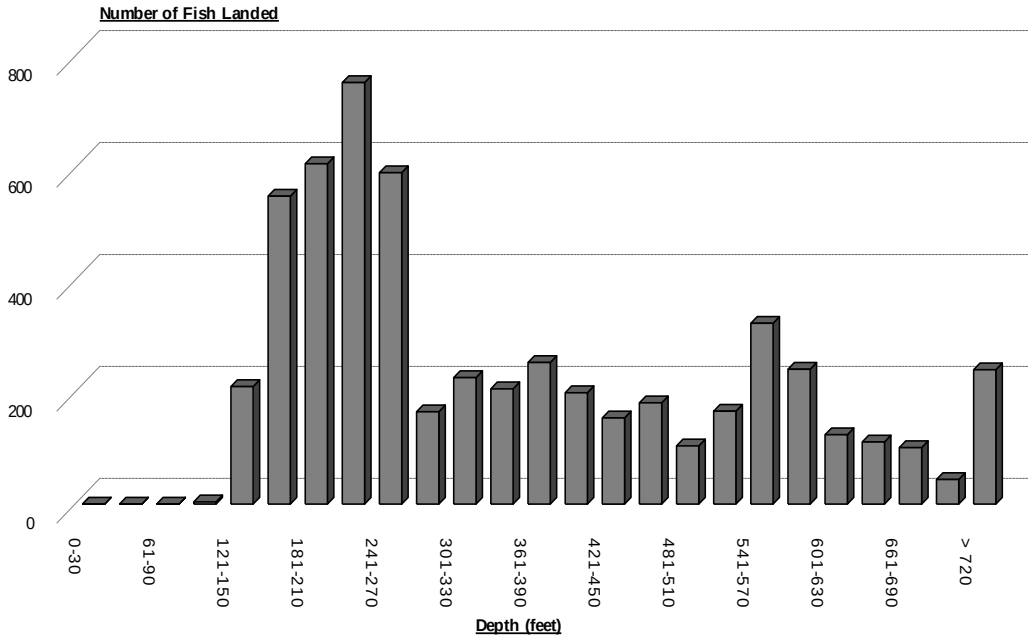
At the October 2007 meeting, the Ad Hoc Grouper IFQ Advisory Panel (AP) made a motion to include speckled hind and warsaw grouper in both the DWG classification and the SWG classification. The AP's reasoning was that the change in classification would provide more flexibility into the IFQ program since warsaw grouper and speckled hind are caught in both shallow water and deep water. If the Council decides not to implement an IFQ program and implements an endorsement program, the change in species classification may reduce bycatch if the DWG fishery closes before the SWG fishery, as it has in years past. In the last four years, approximately 17-20 percent of warsaw landings and 17-31 percent of speckled hind landings were made by vessels on trips not targeting DWG. Nearly 65 percent of warsaw grouper and 50 percent of speckled hind were reportedly captured at depths overlapping where SWG are commonly caught (60-300 feet) (Figures 2.3.1 and 2.3.2). Warsaw grouper discards after the DWG quota closures in 2004-2006 ranged from 37,818 to 146,673 pounds GW. Speckled hind estimated discards after the DWG closures in 2004-2006 range from 864 pounds to 5,352 pounds GW.

Figure 2.3.1 Warsaw Grouper Landings by Depth



Source: NMFS-SERO

Figure 2.3.2 Speckled Hind Landings by Depth



Source: NMFS-SERO

Although **Alternatives 2, 3** and **Preferred Alternative 4** apply both to an IFQ management strategy and non-IFQ management strategy, they would be implemented very differently under each strategy. For example, under a non-IFQ management strategy such as a quota-management system, warsaw grouper and speckled hind would be counted against the DWG quota until the DWG fishery is closed. Warsaw grouper and speckled hind could still be landed but these species would be counted against the SWG quota. Under an IFQ management system, warsaw grouper and speckled hind would be issued as DWG shares. However, when an IFQ fisherman has used all his DWG allocation, warsaw grouper and speckled hind may be landed with "other SWG" allocation. At the August 2008 Council meeting, the Council indicated its intent to allow speckled hind and warsaw grouper to be landed with "other SWG" allocation once a grouper/tilefish fisherman has used up all their DWG allocation.

Alternative 1, which would maintain the composition of the SWG and DWG management units, would neither contribute to reducing speckled hind or warsaw grouper discards, nor grant additional flexibility to IFQ participants. Dual classifications as SWG and DWG for speckled hind (**Alternative 2**) or warsaw grouper (**Alternative 3**) or both

(**Preferred Alternative 4**) are expected to result in direct economic benefits due to anticipated reductions in discards and the added flexibility afforded to IFQ participants. Economic benefits that could be derived from the joint implementation of **Alternatives 2** and **3**, i.e., **Preferred Alternative 4**, could be as much as $450,000. Additional benefits are also expected from positive impacts on other SWG stocks that would have been harvested otherwise.

Switching warsaw grouper and speckled hind to SWG after the DWG closes or after a fisherman no longer has DWG allocation, is not expected to warrant a change in the amount of DWG quota versus SWG quota. This is because warsaw grouper and speckled hind are not target species, such as snowy and yellowedge grouper. The amount of warsaw and speckled hind catch is expected to be minimal compared to other SWG species that are being caught. However, there is the possibility that those fishermen who heavily target DWG may purchase additional SWG allocation just to land more warsaw and speckled hind once they have expended their DWG allocation and no more DWG allocation is available on the market. The establishment of multi-use allocation for DWG and SWG shares to provide flexibility for species that overlap these two categories is not warranted because speckled hind and warsaw landings are secondary species in the commercial grouper fishery.

Alternative 1 would maintain the current management measures, and warsaw grouper and speckled hind would continue to be classified as deepwater grouper. These species will continue to be discarded once the DWG fishery closes. **Alternative 2** would add speckled hind to the SWG management which would allow it to be classified in both management groups. This would reduce discards of speckled hind once the DWG fishery closes. This will also allow fishermen to keep more of the speckled hind they catch.

Alternative 3 would add warsaw grouper to the SWG management which would allow it to be classified in both management groups. This would reduce discards of warsaw grouper once the DWG fishery closes. This will also allow fishermen to keep more of the warsaw grouper they catch.

Preferred Alternative 4 would be a combination **Alternative 2 and 3** and would add warsaw grouper and speckled hind to the SWG management which would allow it to be classified in both management groups. This would reduce discards of warsaw grouper and speckled hind once the DWG fishery closes. This will allow fishermen to keep more of the warsaw grouper and speckled hind they catch. Most fishermen are concerned with returning fish to the water that may or may not live and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

2.2 SECTION B - IFQ PROGRAM DESIGN

The Council may determine, as recommended by the AP, that the implementation of a multi-species individual fishing quota program constitutes the preferred effort management approach to addressing overcapacity problems and rationalizing the

commercial grouper and tilefish fisheries in the Gulf of Mexico. In that event, several design features of the IFQ program, e.g., eligibility requirements and initial apportionment method, have to be specified. In addition to the management measures considering alternative design elements for the IFQ program under consideration, this section lists major requirements for limited access privilege programs listed in the Magnuson-Stevens Act.

It is important to note that under the grouper and tilefish IFQ program considered in this amendment, a valid commercial reef fish permit is required to harvest IFQ allocation. In addition, throughout this amendment, unless explicitly stated, references to commercial reef fish permits relate to valid or renewable (within the one year grace period immediately following expiration) commercial reef fish permits.

Requirements for Limited Access Privilege Programs (LAPPs)

Section 303A(c) in the reauthorized Magnuson-Stevens Act specifies requirements for LAPPs. The following is a list of the topics specified as LAPP requirements that are relevant to the Grouper and Tilefish IFQ Program:

- Goals and objectives of the program
- Program duration and provisions for regular review
- Appeals process
- Allocation
- Transferability

Management alternatives are developed in this amendment for requirements that necessitate further specification by the Council. For example, actions in this document have been established to analyze alternatives for several requirements including but not limited to, initial allocation, transferability, and the appeals process.

Program requirements or characteristics, such as program review and duration of limited access privileges, have been clearly defined in the Magnuson-Stevens Act and may not need further elaboration from the Council. For example, the Magnuson-Stevens Act specifies that a detailed review of the program be conducted within the first five years of implementation of the program and thereafter, no less than once every seven years. Additionally, the Magnuson-Stevens Act addresses the duration for a LAPP. Section 303A(f) indicates a limited access privilege is a permit to be issued for no more than 10 years that will be renewed unless it has been revoked, limited, or modified.

2.2.1 ACTION B1: Substantial Participants

<u>Preferred Alternative 1</u>: No action - Do not define substantial participants

Alternative 2: Commercial reef fish permit holders are considered substantial participants. (AP Preferred)

Alternative 3: Commercial reef fish permit holders and reef fish captains and crew members are considered substantial participants.

Alternative 4: Commercial reef fish permit holders and federally permitted reef fish dealers are considered substantial participants.

Alternative 5: Commercial reef fish permit holders, federally permitted reef fish dealers, and reef fish captains and crew members are considered substantial participants.

Alternative 6: Commercial reef fish permit holders who were defined to have substantially fished in the referendum criteria are considered substantial participants.

Alternative 7: Commercial reef fish permit holders, federally permitted reef fish dealers, reef fish captains and crew members and others who provide necessary services in the reef fish fishery (such as restaurant owners and fish house employees) are considered substantial participants.

<u>Discussion and Rationale</u>

Section 303A(c)(5)(E) of the reauthorized Magnuson-Stevens Act indicates that "In developing a limited access privilege program to harvest fish the Council or the Secretary shall authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council."

This action determines which group(s) of individuals would be considered as substantial participants in the commercial grouper and tilefish fisheries. Upon implementation of an IFQ program, the universe of substantial participants identified by the Council would constitute the minimum number of individuals that would be eligible for the transfer of IFQ shares or annual allocation.

Preferred Alternative 1, no action, would not specify individuals that the Council would consider as substantial participants in the commercial grouper and tilefish fisheries. As such, the Council would not place limitations on the minimum number of individuals eligible for the transfer of IFQ shares or annual allocation. Under **Preferred Alternative 1**, in conjunction with the preferred alternative in Action B6, everybody would eventually be considered eligible for IFQ share or allocation transfer; however, a commercial reef

fish permit would still be needed to fish for grouper and tilefish. The selection of an all inclusive alternative such as **Preferred Alternative 1** frees the Council from future considerations relative to possible omission from the pool of substantial participants of deserving individuals or group(s) of individuals.

Under **Alternative 2,** only commercial reef fish permit holders would be considered as substantial participants. Thus, the universe of substantial participants in the grouper and tilefish fisheries would include the 1,028 permits that are currently valid or renewable (within the one year grace period following expiration).

Alternative 4 would consider as substantial participants commercial reef fish permit holders and federally permitted reef fish dealers. It is worth noting that dealers may already own vessels and have reef fish permits. To the 1,028 commercial reef fish permit holders included in **Alternative 2**, the universe of substantial participants in the grouper and tilefish fisheries under **Alternative 4** would add holders of a valid federal reef fish dealer permits plus dealers eligible to renew their permits during the year. In November 2008, 159 people had federal reef fish dealer permits. Hence, under **Alternative 4**, the total number of substantial participants in the commercial grouper and tilefish fisheries is 1,187, approximately.

Alternative 6 would consider as substantial participants commercial reef fish permit holders that would meet the minimum average landing criterion selected in the referendum criteria. **Alternative 6** would correspond to the smallest number of substantial participants. The average grouper and tilefish landings threshold selected as referendum criterium was 8,000 pounds., The number of substantial participants under this criteria is approximately 300.

Alternatives 3, 5, and **7** would expand the group of substantial participants by adding various constituencies to commercial ref fish permit holders. **Alternative 3** would add reef fish captains and crew members to the pool of substantial participants. For captains and crew members, verifying participation in the grouper or tilefish fisheries is expected to be burdensome. Verification methods might include submission of tax returns forms or certification by vessel owners. Prior to implementing a management alternative that would include captains and crew members as substantial participants in the fishery, participation levels in terms of time in fishery and/or proportion of income earned in the fishery would have to be determined. The number of captains and crew members that would be considered as substantial participants cannot be determined a priori.

Alternative 5 would consider reef fish permit holders, reef fish dealers, and captains and crew members as substantial participants. Under **Alternative 5**, the total number of substantial participants would include the 1,208 commercial reef fish permit holders, the 159 holders of a valid federal reef fish dealer permit, and reef fish captains and crew members.

Alternative 7 would further add to the group of substantial participants by including individuals who provide necessary services in the reef fish fishery. The determination of

the number of individuals that could qualify as substantial participants on the basis of necessary services they provided may be difficult as the definition of what would constitute a necessary service may be very problematic. **Alternative 7** is thus expected to be difficult to implement and, given its potential to include almost everybody, not significantly different from **Alternative 1.**

Determining which group(s) of individuals would be considered as substantial participants in the commercial grouper and tilefish fisheries is not expected to result in direct or indirect economic effects. This action merely defines the minimum number of individuals that would be eligible for the transfer of IFQ shares or annual allocation. In defining the universe of individuals eligible to participate in the transfer of IFQ shares or allocation, in accordance with the Magnuson-Stevens Act, the Council has the latitude to add other individuals or groups to that minimum number. If the Council elected to limit eligibility for IFQ share or allocation transfers to substantial participants only, this action would determine the overall number of potential participants in the program. Under such an assumption this action could have indirect economic effects due to the potential impacts that the number of participants could have on the functioning of the market for IFQ shares and on the consolidation expected in the industry.

Under **Preferred Alternative 1**, in conjunction with the preferred alternative in Action B6, anyone could eventually buy and transfer shares in the program. However, during the first five years of the program, participation would be restricted to only persons with a reef fish permit (see Action B6). Anyone harvesting and landing grouper/tilefish during the first five years or after the first five years must possess a reef fish permit and sufficient allocation to cover the amount of fish being landed. This would be of benefit to those who would not qualify if there were stricter requirements in place. This alternative would not help to reduce the number of participants in these fisheries because the number of people who could potentially be transferred IFQ shares or allocation is endless. With **Alternative 2,** only those who currently have a reef fish permit will be considered substantial participants. This will benefit those who will qualify and decrease the competition in the grouper and tile fish fisheries. On the other hand, captains and crew who now participate, but do not have a reef fish permit in these fisheries will be excluded from receiving an endorsement.

Alternatives 3, 4, 5, and 7 include various definitions for who would qualify as a substantial participant. These alternatives would be of most benefit to those who may not qualify as a substantial participant under stricter criteria. Each of these alternatives would include more participants than **Alternative 2**, but less than **Preferred Alternative 1**. **Alternative 6** would only consider fishermen with commercial reef fish permits who had substantially fished for grouper and tilefish as substantial participants. This will benefit those that will qualify for an endorsement and decrease the competition in the grouper and tile fish fisheries. On the other hand, those who currently own a reef fish permit but who have not substantially fished for grouper of tilefish will be excluded.

By choosing not to define substantial participants, the Council has maintained the maximum flexibility to include various groups in the IFQ program. Although this differs

from the AP preferred alternative of including only reef fish permit holders as substantial participants, preferred alternatives in Actions B2 (Eligibility for Initial IFQ Shares) and B6 (Transfer Eligibility Requirements) would limit participation during the first five years of the program to just those individuals.

2.2.2 ACTION B2: Eligibility for Initial IFQ Shares

Alternative 1: No Action. Do not specify initial eligibility requirements.

<u>Preferred Alternative 2</u>: Restrict initial eligibility to valid commercial reef fish permit holders. (AP Preferred)

Alternative 3: Restrict initial eligibility to valid commercial reef fish permit holders and reef fish captains and crew.

Alternative 4: Restrict initial eligibility to valid commercial reef fish permit holders and federally permitted reef fish dealers.

Alternative 5: Restrict initial eligibility to valid commercial reef fish permit holders, federally permitted reef fish dealers, and reef fish captains and crew members.

<u>Discussion and Rationale</u>

This action establishes qualifications necessary to receive initial shares in the commercial grouper and tilefish IFQ program. Eligibility requirements for the apportionment of initial IFQ shares are indispensable design features of an IFQ program. Without a decision on whom to allow into an IFQ program, the program could not be implemented.

The Magnuson-Stevens Act Section 303A(c)(5)(E) requires an IFQ program to include persons who substantially participate in a fishery, but allows the Council to define substantial participation. The specific language of the Act requires that any IFQ program must "authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery." Under the program proposed in this document, ultimately the "privilege" to harvest fish can be viewed as the annual allocation issued to each shareholder, which may be freely transferred to eligible individuals independently from the underlying share. In light of these facts, the program must at a minimum allow all such substantial participants identified by the Council to hold, acquire, use, or be issued annual allocation, but the statutory provision does not require that all such participants receive initial shares under the program.

It is also important to note eligibility for initial IFQ shares does not guarantee an individual would receive shares. In other terms, meeting initial eligibility criterion is a necessary but not sufficient condition to receive IFQ shares. The amount of initial IFQ

shares granted, if any, will be determined by the apportionment method chosen in Action B3.

The no action alternative, **Alternative 1**, which does not specify eligibility requirements for initial IFQ shares, is incompatible with the implementation of the IFQ program. The selection of **Alternative 1** would be equivalent to taking a step back to the first step of the decision process and selecting a different effort management approach.

Preferred Alternative 2 would restrict eligibility for initial IFQ share distribution to commercial reef fish permit holders. Because a moratorium on commercial reef fish permit is in effect in the Gulf of Mexico, the universe of initial participants in the grouper and tilefish fisheries is well defined and would include at most the 1,028 valid or renewable permits on record as of August 31, 2008. This is the maximum number because some permits that were valid or renewable in August 2008 may be terminated (e.g., due to failure to renew) before the IFQ program is implemented. Reef fish permit holders are usually the owners of the vessels and have invested capital into the fishery.

Of the management alternatives in this action, **Preferred Alternative 2,** which was also the AP's preferred alternative, would correspond to the smallest number of participants eligible to receive initial IFQ shares. Because only commercial reef fish permit holders will be allowed to participate in the referendum to approve the IFQ program under consideration, **Preferred Alternative 2** would also be most likely preferred by those participants. Including more individuals by adding groups other than commercial fishermen, e.g., **Alternatives 3, 4,** and **5**, would increase the pool of participants among whom the TAC must be divided. In this case, some fishermen who have landed sufficient grouper and tilefish to support them in the past may be allocated amounts lower than needed to keep their fishing business viable. It is highly unlikely that such a program would be approved by fishermen in a referendum.

Alternative 3 would make reef fish captains and crew eligible for initial allocation in addition to permit holders. Captains and crew are integral to the fishery and have devoted their time and often risked their lives harvesting grouper and tilefish. Verifying if and when individuals participated in the grouper or tilefish fisheries could be difficult. Methods might include submission of tax return forms or certification by vessel owners (see discussion for Action B1). The Council would need to determine what level of participation (e.g., time in fishery, proportion of income, etc.) would be necessary for consideration of initial eligibility. A key difference from **Alternative 2** is that **Alternative 3** does not set an upper limit for the number of initial participants.

Alternative 4 would initially allocate shares to commercial reef fish permit holders and federally permitted reef fish dealers. Without dealer involvement in the fishery, much of the harvest landed would not reach the market. Combining harvesting and marketing could make businesses more efficient. However, many dealers already own vessels and have reef fish permits. Further, most vessel owners have a relationship with one or more dealers, making the current system relatively efficient. Also, most dealers would have to acquire a commercial reef fish permit to directly fish their allocation.

In addition to the 1,028 valid or renewable commercial reef fish permit holders included in **Alternative 2**, the universe of initial participants in the grouper and tilefish fisheries under **Alternative 4** would include holders of a valid federal reef fish dealer permits and those dealers eligible to renew their permits during the year. In November 2008, 159 people had federal reef fish dealer permits. Hence, under **Alternative 4**, the total number of participants eligible for initial IFQ shares is approximately 1,187.

Alternative 5 would consider reef fish permit holders, reef fish dealers, and captains and crew members for initial eligibility in the IFQ program. Under this alternative, the total number of participants eligible for initial IFQ shares would be the 1,028 commercial reef fish permit holders included in **Alternative 2**, the 159 holders of a valid federal reef fish dealer permit included in **Alternative 4**, and reef fish captains and crew members included in **Alternative 3**. As under **Alternative 3**, this alternative does not cap the total number of eligible participants.

This action would only indirectly affect the physical, biological, or ecological environments by influencing the total number of IFQ shareholders and how the fishery is prosecuted. In general, the amount of effort applied to the fishery would decrease as participation is limited to fewer, more efficient individuals. This would result in less gear and time used in pursuing grouper and, consequently, less adverse impacts. The alternatives in order from lowest to highest physical and biological impacts are **Preferred Alternative 2, Alternative 4, Alternative 3, Alternative 5, and Alternative 1.** However, **Alternative 1** could have a beneficial biological effect because it does not restrict the shares from individuals who do not intend to use them for fishing.

The no action alternative **(Alternative 1)** is too broad and does not provide sufficient guidance for the purpose of initially allocating IFQ shares. Under **Preferred Alternative 2** only commercial reef fish permit holders would be eligible to receive initial IFQ shares and thus enjoy potential windfall profits. **Alternatives 3, 4**, and **5** would broaden the universe of potential recipients of initial IFQ shares by considering reef fish captains and crew members, federally permitted reef fish dealers, or reef fish captains and crew and federally permitted reef fish dealers, respectively. While net economic effects expected to result from alternative eligibility criteria cannot be calculated because the number of potential applicants is not known, it is anticipated that **Preferred Alternative 2**, which restricts initial eligibility to commercial reef fish permit holders, would maximize the likelihood of maintaining viable fishing operations.

Under **Alternative 1** anyone could be eligible for an IFQ program. This would be of benefit to those who would not qualify for an IFQ if there were stricter requirements in place. This alternative would not help to reduce the number of participants in these fisheries because the number of people who could be eligible for an IFQ program is endless. With **Preferred Alternative 2** only those who currently have a reef fish permit could be eligible for an IFQ program. This will benefit those that will qualify for an IFQ and decrease the competition in the grouper and tilefish fisheries. On the other hand, captains and crew who now participate, but do not have a reef fish permit in these

fisheries will be excluded from receiving IFQ shares. **Alternatives 3, 4, and 5** include various definitions for who could be eligible for an IFQ program. These alternatives would be of most benefit to those who would not be able to participate in an IFQ program under stricter criteria. Each of these alternatives would include more participants than **Preferred Alternative 2**, but less than **Alternative 1**

Allowing more individuals to be eligible for initial shares in the IFQ program increases the impacts on the administrative environment. NMFS would need to issue initial IFQ shares and allocation, review and resolve appeals, and set up user accounts. However, if eligibility is restricted, NMFS would need to review proof each individual belongs to one of the eligible groups. Considering both of these impacts, the alternatives in order from lowest to highest administrative impacts are **Preferred Alternative 2, Alternative 4, Alternative 1, Alternative 3, and Alternative 5.**

Section 303A(c)(5) of the Magnuson-Stevens Act requires the Council to establish procedures to ensure fair and equitable allocation when developing a limited access privilege program. Factors to be considered include: current and historical participation, employment in the harvesting and processing sectors, investments in, and dependence upon, the fishery, and the current and historical participation of fishing communities. The Council chose **Alternative 2** as their preferred because it best balances the considerations in Section 303A(c)(5) of the Magnuson-Stevens Act. This alternative is similar to how eligibility was determined for the red snapper IFQ program. The Council felt that reef fish permit holders were most likely to be the current participants in the grouper and tilefish fisheries and therefore should be the ones to initially participate in the IFQ program. Reef fish permit holders are also directly involved in the harvesting sector, have invested in the fishery over time, and are most likely to be dependent upon the fishery. **Alternative 1** could potentially allow people who are not currently fishing or in anyway involved in the fisheries to receive shares. The Council felt the other alternatives would be difficult to implement, especially as concerns captains and crew, because identification of eligible participants would require development of appropriate criteria, plus review and verification of submitted materials. This process could create excessive opportunity for unqualified people to participate in the IFQ program.

2.2.3 ACTION B3: Initial Apportionment of IFQ Shares

Alternative 1: No Action. Do not specify a method for the initial apportionment of IFQ shares.

Alternative 2: Distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004 (AP Preferred).

<u>Preferred Alternative 3</u>: Distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004 with an allowance for dropping 1 year

Alternative 4: Distribute initial IFQ shares through an auction system. All eligible entities (as determined in Action B2) are allowed to place bids.

Note: For 2004, the Council elected to include landings for the whole year. The Council indicated that the inclusion of grouper and tilefish landed in 2004 after the October 15 control date was consistent with the intent of the control date. Furthermore, the non-inclusion of landings between October 15 and December 31, 2004 could negate some of the benefits from using the best five out of six years for initial IFQ share distribution. In 2004, DWG closed July 15, 2004 and SWG closed November 15, 2004. The tilefish fishery was not closed in 2004, therefore, approximately 2½ months of landings were reported after the control date. Throughout this document, unless indicated otherwise, 2004 landings refer to landings recorded during the whole calendar year.

Discussion and Rationale

This action establishes alternative apportionment methods that could be used to distribute initial IFQ shares to eligible program participants, as determined in Action B2. Methods considered would distribute shares proportionately among eligible participants based on their respective grouper and tilefish catch histories for alternative qualifying periods or apportion IFQ shares through an auction system.

Section 303A(c)(5)(A) requires that when developing a LAPP to harvest fish, a Council or the Secretary shall establish procedures to ensure fair and equitable initial allocations, including consideration of: current and historical harvests; employment in the harvesting and processing sectors; investments in, and dependence upon, the fishery; and the current and historical participation of fishing communities. The landings-based criterion proposed in **Preferred Alternative 3** is generally considered the most equitable way to recognize both present and historical participation in the fishery. This allocation strategy would define the initial IFQ share of each eligible participant based on the average annual landings associated with their permits during the Council's selected time frame. Catch history has been used as the primary initial allocation criterion in all U.S. IFQ programs, and is perceived by fishermen to be a quantifiable and verifiable indication of fishery participation. However, catch history can be distorted or substantially shifted from historical trends by speculative entry into the fishery. To prevent this, the Council published a control date of October 15, 2004, to discourage acceleration to develop a catch history in the grouper fishery. The Council intended to only use catch histories prior to this date; however, the inclusion of landings in 2004 after the October 15 control date is consistent with the intent of the control date. Furthermore, the non-inclusion of landings between October 15 and December 31, 2004 could negate some of the benefits from using the best five out of six years for initial IFQ share distribution.

The concept of basing the initial allocation of IFQ shares on landings prior to 2004 may be objectionable to some. Those who have recently purchased permits without historical landings but are now active in the fishery may not qualify for grouper IFQ shares. However, if the Council decided to use years after the control date, a precedent might be set that may encourage fishermen to accelerate landings after future control dates are set.

The Council chose to use 1999 as the start year in determining catch histories based on guidance from the AP. The AP consists of commercial fishermen and dealers who have

been active in the grouper fishery, who have investments and dependence on the fishery, and who are representatives of fishing communities. The AP considered using 1999 as the first year for catch histories because this is a fair, equitable, and accurate representation of who has investments and dependence upon the fishery (both current and historical). Prior to 1999, a series of management measures were implemented that may have caused fishermen who were not as dependent on the fishery to exit. Including years prior to 1999 may not be an accurate representation of current levels of participation. Statistical comparison of permit holder share distributions for 1999-2004 and 1995-2004 revealed no significant differences, indicating eligible IFQ participants would receive similar amounts of shares regardless of the historical time period chosen (source: August 9, 2008, letter to Roy Crabtree from Tom McIlwain). Possible implementation of the IFQ could occur in 2010. By this time, 11 years will have passed since the first eligible year of catch history, 1999.

During the June 2008 Council meeting, the Council considered a longer time series for initial eligibility (1995-2004). Historical data covering the time period between the implementation of mandatory logbooks, i.e., 1993, and 1995 were not considered due to incomplete permit transfer records. The use of incomplete permit transfer records prior to 1995 would result in inaccurate landings assignments and biased initial share allocations. A preliminary analysis was completed to examine differences between the 1999-2004 time series and the 1995-2004 time series (Figures 2.2.3.1 to 2.2.3.8). This analysis was based on reported logbook landings data and did not account for adjustments in gag/black grouper landings due to misidentification or misreporting. Forty-two percent of permits eligible to receive initial IFQ shares or allocation were analyzed. Since differences between using all years versus dropping one year are minimal when landings are compared in aggregate, the landings data were analyzed using the best five out of six years or the best nine out of ten years, unless noted otherwise (e.g. Figure 2.2.3.1 and Figure 2.2.3.6). After considering this analysis, the Council decided that trends between the two time series were very similar and the Council chose to use 1999-2004 as the preferred time series for the decisions discussed previously.

Table 2.2.3.1: Share Distributions and Group Designations

Share Percentage	Group
0 - <0.0001	1
0.0001 - 0.00099	2
0.00100 - 0.00299	3
0.00300 - 0.00499	4
0.00500 - 0.00699	5
0.00700 - 0.00899	6
0.00900 - 0.0199	7
0.0200 - 0.0399	8
0.0400 - 0.0599	9
0.0600 - 0.0799	10
0.0800 - 0.0999	11
0.100 - 0.299	12
0.0300 - 0.499	13
0.500 - 0.699	14
0.700 - 0.899	15
0.900 – 1+	16

Figure 2.2.3.1: Red Grouper Share Distributions (All Years)

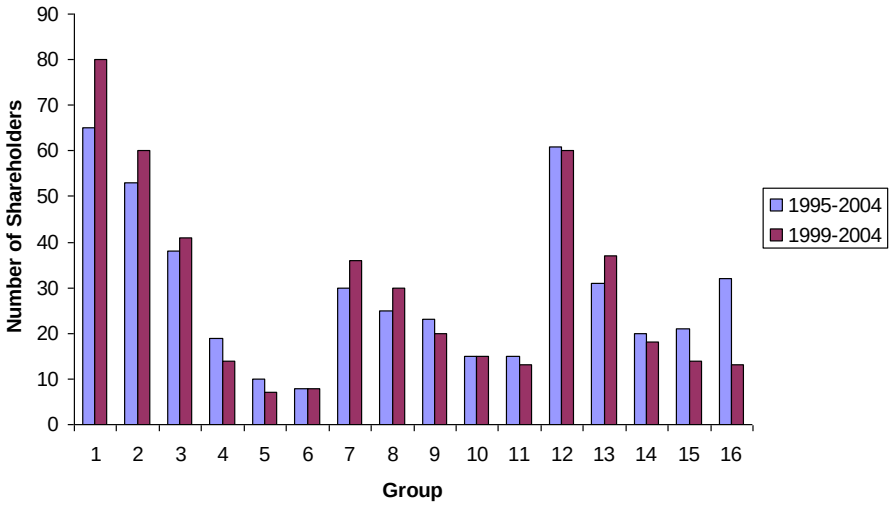


Figure 2.2.3.2: Red Grouper Share Distributions

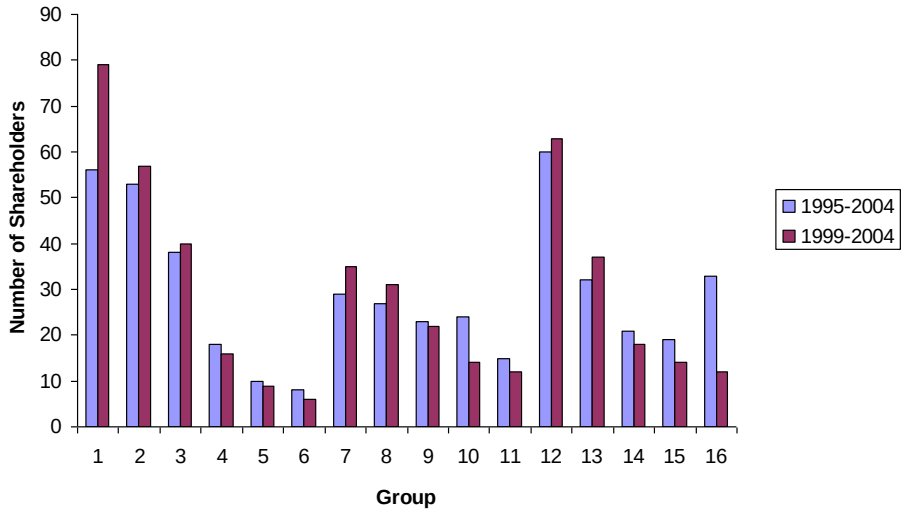


Figure 2.2.3.3: Gag Grouper Share Distributions

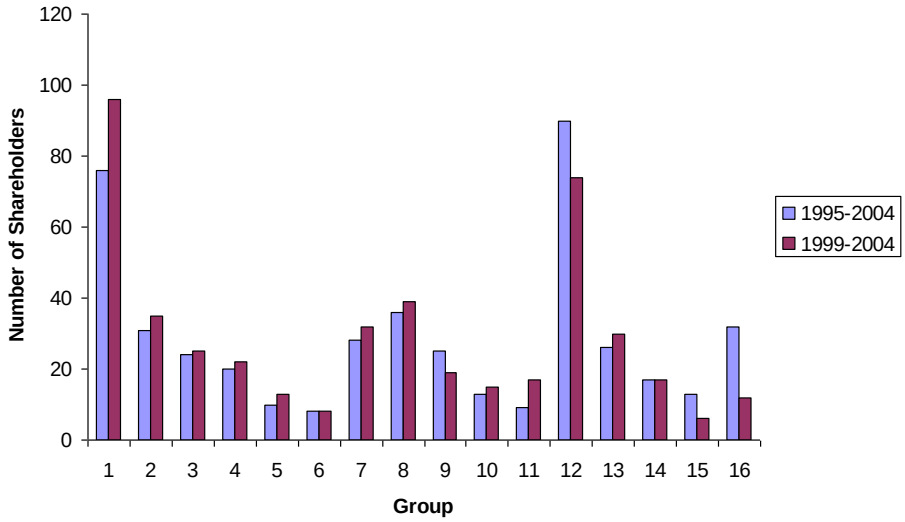


Figure 2.2.3.4: Shallow-water Grouper Share Distributions (without red or gag grouper)

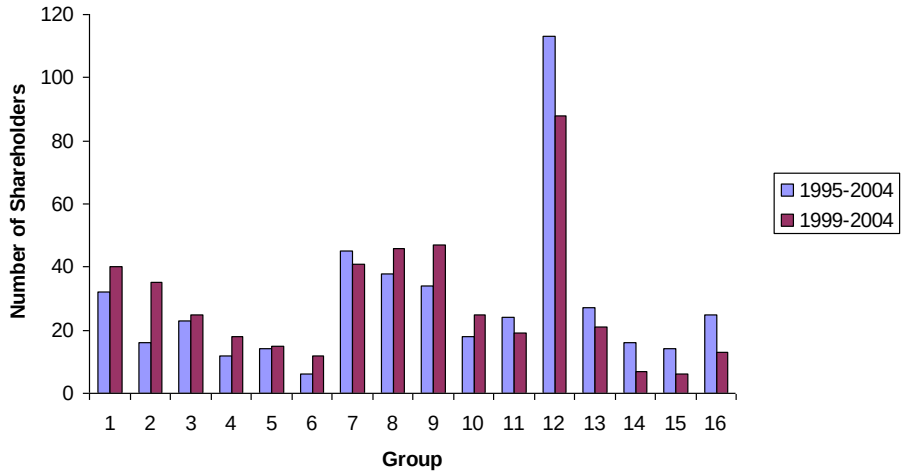


Figure 2.2.3.5: Deepwater Grouper Share Distributions

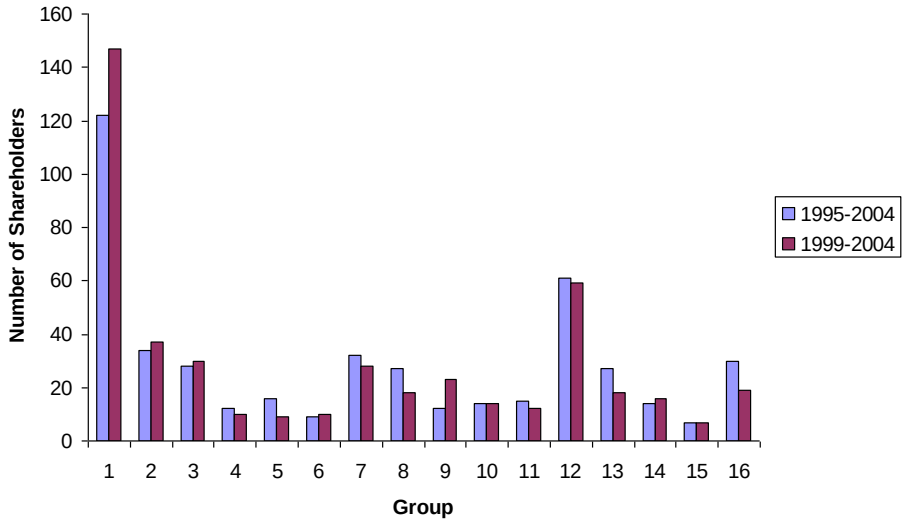


Figure 2.2.3.7: All Grouper Share Distributions

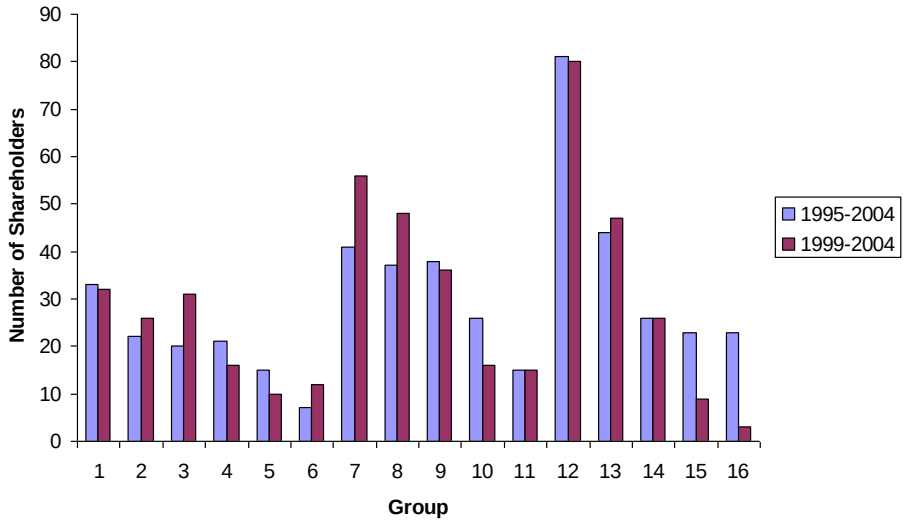
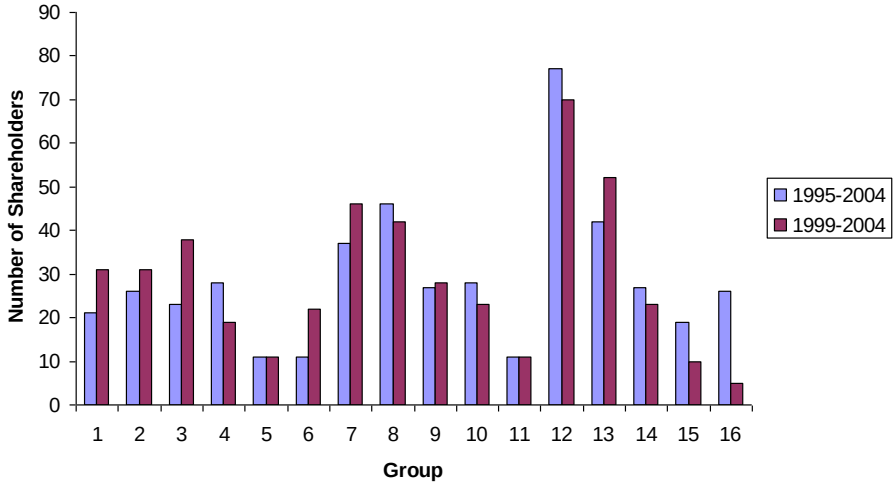


Figure 2.2.3.8: Shallow-water Grouper Share Distributions (including red and gag grouper)



Decisions about how to apportion initial IFQ shares are particularly difficult because management actions must be fair and equitable to the industry. From an economic perspective, the manner in which IFQ shares are initially divided among eligible participants has limited significance on the long-term efficiency of the industry, as long as restrictions on transferability or ownership are minimal. Fishery managers interested in establishing sound policies should deal with equity and fairness considerations in initial allocations, rather than through limitations on IFQ share transferability, which is a crucial feature of an IFQ program.

IFQ programs with restrictive transferability provisions are expected to be less effective in increasing fishery efficiency and profitability than are those with relatively liberal transfer provisions. Equity and fairness, if addressed through IFQ share transferability,

would require imposing increasingly costly restrictions as IFQ shares move from less efficient to more efficient operations. Restricting IFQ share transfers could even negate the intended fairness issue. For example, the price of IFQ shares would be lower if only a limited group of individuals was allowed to buy IFQ shares, compared to a larger group of individuals. Also, non-eligible participants who left the fishery for hardship reasons may be prohibited from buying into the fishery because they do not meet transfer eligibility criteria.

In summary, any negative effects on fishery efficiency resulting from addressing equity and fairness in initial allocations can ultimately be mitigated through liberal transferability provisions. However, such negative effects would not easily be reversed if caused by restrictions on IFQ share transferability.

The definition of an initial apportionment method for IFQ shares is one of the indispensable prerequisites to the implementation of an IFQ program. Therefore, the no action alternative (**Alternative 1**), which does not specify an apportionment method for initial IFQ shares, is incompatible with the implementation of the IFQ program. The selection of **Alternative 1** would be equivalent to taking a step back to Section A, the first step of the decision process, and selecting a preferred effort management approach, excluding the establishment of an IFQ program.

Alternative 2 would distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004. **Alternative 2** is expected to be preferred by those eligible participants with relatively stable annual grouper and tilefish catches during the qualifying years. For example, a fisherman who harvested 1,000 lbs of grouper and tilefish every year during the entire qualifying period (1999-2004) would be better off than a fisher who harvested 1,100 lbs of grouper and tilefish every year for five years but did not land any grouper or tilefish in one of the years.

Preferred Alternative 3 would also distribute shares proportionately among eligible participants, as determined by the Council under Action B2. While it is based on the same qualifying period, i.e., 1999 through 2004, **Preferred Alternative 3** provides an allowance for dropping one year. The allowance for dropping a year would allow an eligible participant to potentially boost his/her allocation by dropping the year with the lowest landings. Using the example discussed in **Alternative 2** above, the second fisherman, who did not land grouper or tilefish in one of the years, would be better off than the one with stable landings throughout the qualifying period. Because a participant's initial allocation is based off his/her catch relative to the industry's catch, dropping a year may or may not boost one's initial allocation. The determination has to be made on a case by case basis. The AP, recognizing that commercial fishermen may be forced to temporarily suspend their operation due to mechanical difficulties, health-related problems or other personal reasons, originally expressed a preference for **Preferred Alternative 3**. However, at the April 2008 AP meeting the AP voted Alternative 2 as there preferred, favoring those who had consistent catch records.

Alternative 4 would distribute IFQ shares among eligible participants using an auction system. If chosen, participants determined eligible under Action B2 could compete with other eligible participants in an auction to buy shares and further their interest in the fishery. The auction system could provide an unfair advantage to those participants who have greater financial resources than smaller participants and possibly lead to consolidation of shares. This alternative may provide less consideration to historical dependence on the fishery since it may allow shares to be distributed to only those eligible participants who can afford to compete in the auction. However, it could be argued that those with historical participation in the fishery may be the most knowledgeable regarding the true value of the shares and therefore, may be in a better position to bid for shares.

Determining the initial apportionment of IFQ shares would not have any direct effects on the physical, biological, and ecological environments. However, initial apportionment could cause indirect benefits if the time periods and resulting catch histories favor fishermen who are more efficient at harvesting grouper.

The specification of an initial apportionment method is indispensable to the establishment of an IFQ program. Thus, **Alternative 1,** the no action alternative, does not constitute a viable option under an IFQ program. **Alternatives 2** and **3** would apportion initial IFQ shares proportionately among eligible participants shares based on average annual tilefish and grouper landings during specified qualifying years. A 6-year period from 1999 to 2004 serves as the qualifying period under **Alternative 2.** The initial IFQ share distribution under **Preferred Alternative 3** also uses the same time interval, but allows participants to drop one year. **Alternatives 2** and **3** may be more reflective of harvest patterns and would benefit those fishermen with greater catch histories over the qualifying years. **Alternative 4**, which would apportionment initial IFQ shares via an auction system, would theoretically be associated with the highest level of net benefits to the Nation. However, its implementation is highly unlikely due to the foreseeable reluctance of fishermen to bid for a resource that is currently available to them free of charge.

Alternative 1 would not specify a method for initial appointment of IFQ shares which would not give the Council a method for appointing shares and there would be no IFQ program. **Alternative 2** would use the years 1999 through 2004 to distribute the IFQ shares. This would have a positive impact on the commercial fishermen who actively harvesting grouper and tilefish for all of these years.

Like **Alternative 2**, **Preferred Alternative 3** would use the years 1999 through 2004 to establish an average to use for distribution of shares but, one year of the years could be dropped. This alternative would benefit the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels or an off year would not bring down their total average. **Alternative 4** would distribute the initial IFQ shares by an auction system. This would benefit those who did not already have a reef fish permit and who not already active in these fisheries because they would have an equal

opportunity to purchase shares. However, this would have a negative impact on the fishermen who already have a reef fish permit and who have actively been participating in these fisheries because they would not receive any special consideration for past participation.

2.2.4 ACTION B4: IFQ Share Definitions

Alternative 1: No Action – Do not establish IFQ shares

Alternative 2: Establish a single grouper IFQ share and a tilefish IFQ share.

Alternative 3: Establish a Deep Water Grouper (DWG) IFQ share; a Shallow Water Grouper (SWG) IFQ share; and a Tilefish IFQ share.

<u>Preferred Alternative 4</u>: Establish IFQ share types as follows: Red grouper, Gag, Other Shallow water grouper, Deep Water grouper; and Tilefish shares. (AP Preferred)

<u>Discussion and Rationale</u>

There are 15 species of groupers currently managed in the Reef Fish FMP. Two are protected (no harvest) and the remaining are currently managed as a shallow water complex (red grouper, gag, black grouper, scamp, yellowfin grouper, red hind, rock hind, yellowmouth grouper) and a deepwater complex (yellowedge grouper, warsaw grouper, snowy grouper, speckled hind and misty grouper). The two dominant species (red and gag) account for about 85 percent of total grouper landings. The tilefish fishery, which is an integral part of the DWG fishery, has a quota of 440,000 pounds

The definition of IFQ share types should be balanced between the need for individual species management (e.g. whether TAC changes are expected for individual species) and industry flexibility to land what is caught rather than increase discards. The less specifically shares are defined, the more restrictive quotas will have to be to prevent overages for the species with the least amount of quota. For example, the combined quotas for DWG and SWG (as defined by Amendment 30B) in 2010 would be 8.59 MP. One may assume that if a total grouper share (**Alternative 2**) is defined that the total allocation associated with this share would be 8.86 MP. However, NMFS is required to prevent overfishing and by having an allocation this large, the potential exists for overfishing to occur for a species managed with a specific quota. Therefore, if **Alternative 2** is chosen as the preferred, the quotas for 2010 would have to be reduced by 27-47 percent. This is less than ideal not only because OY may not be achieved for some species but the amount of reductions needed is calculated from landings data from a fishery operating under management regulations that are different from how the fishery would operate under an IFQ program.

The definition of the type of shares to be issued also constitutes a core element to an IFQ program. Without a decision on what species or groups of species are to be part of an IFQ program, an IFQ program cannot be implemented. Therefore, the status quo alternative (**Alternative 1**), which does not establish IFQ shares, is incompatible with the implementation of the IFQ program. The selection of **Alternative 1** would be equivalent to taking a step back to Section A, the first step of the decision process, and selecting a preferred effort management approach, excluding the establishment of an IFQ program.

Alternative 2 would establish a single grouper IFQ share and a tilefish IFQ share. As stated previously, the amount of allocation associated with a single grouper IFQ share would be based on a 27-47 percent reduction from the combined DWG and SWG quotas. While a reduced quota may be beneficial because more grouper would remain in the water, the fishery would not be managed to OY, as required by National Standard 1 of the Magnuson-Stevens Act. The total tilefish allocation would be 440,000 gutted pounds.

Table 2.2.4.1 presents the distribution of share percentages that would exist in the industry if grouper shares where apportioned based on all the six years of the qualifying period or based on each permit holder's best five years. As expected, a comparison between the two computation methods suggests that using the best five years allows some permit holders to move up to a group corresponding to a higher IFQ share allocation. Using all six years is more beneficial to those fishermen with consistent landings across all years. While they can be significant for an individual permit holder, in the aggregate, differences between the two share distribution methods are minimal. Hence, following evaluations of alternative share definitions are based on share distributions computed using the best five years.

Table 2.2.4.2 presents the distribution of initial grouper shares, expressed in pounds (allocation). This allocation was calculated using the permit holder's best five years. The quota proposed in Amendment 30B was used to determine the allocation distributions. However, as stated previously if this alternative was chosen the quota would have to be reduced by about 27-47 percent to prevent overfishing.

The distribution of initial grouper IFQ shares illustrates most eligible participants in the IFQ program under consideration would receive relatively small initial grouper allocation. Of the 1,028 eligible recipients of initial IFQ shares, 617 would receive less than 0.04 percent of the grouper shares. About 75 percent of the eligible participants would receive less than 0.1 percent of the initial IFQ shares. Nine percent or 93 eligible permit holders would not qualify to receive any initial IFQ shares. A share value of equivalent to one pound is the lowest amount that will be issued to a grouper/tilefish IFQ shareholder. This is equivalent to approximately one fish and mirrors the lowest share value distributed in the red snapper IFQ program.

Table 2.2.4.1: Grouper IFQ Share Percentage by Group (see Table 2.2.3.1)
All Six Years and Best 5 years between 1999 and 2004

Share Percentage	Group	N (6)*	N (5)**	Share Percentage	Group	N(6)	N(5)
0 - <0.0001	1	94	93	0.0400 - 0.0599	9	80	78
0.0001 - 0.00099	2	98	94	0.0600 - 0.0799	10	49	47
0.00100 - 0.00299	3	75	69	0.0800 - 0.0999	11	25	27
0.00300 - 0.00499	4	44	52	0.100 - 0.299	12	148	151
0.00500 - 0.00699	5	35	32	0.0300 - 0.499	13	61	61
0.00700 - 0.00899	6	32	32	0.500 - 0.699	14	29	29
0.00900 - 0.0199	7	128	131	0.700 - 0.899	15	11	12
0.0200 - 0.0399	8	113	114	0.900 – 1+	16	6	6

* All Six Years (N6); ** Best 5 years between 1999 and 2004 (N5); Source: NMFS-SERO

Table 2.2.4.2: Pounds of Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (93)	0	0	9 (78)	3,544	5,307
2 (94)	9	88	10 (47)	5,316	7,079
3 (69)	89	265	11 (27)	7,088	8,851
4 (52)	266	442	12 (151)	8,860	26,491
5 (32)	443	619	13 (61)	26,580	44,211
6 (32)	620	797	14 (29)	44,300	61,931
7 (131)	797	1,763	15 (12)	62,020	79,651
8 (114)	1,772	3,535	16 (6)	79,740+	

* Number of Permits in parentheses; Source: NMFS, SERO

The expected distribution of initial tilefish IFQ shares and allocation are presented in Table 2.2.4.3 and 2.2.4.4. An evaluation of the initial share distribution indicates that most eligible participants in the IFQ program would not receive tilefish initial allocation.

Table 2.2.4.3: Tilefish IFQ Share Percentage by Group
Best 5 years

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	683	0.0400 - 0.0599	9	18
0.0001 - 0.00099	2	64	0.0600 - 0.0799	10	14
0.00100 - 0.00299	3	35	0.0800 - 0.0999	11	8
0.00300 - 0.00499	4	21	0.100 - 0.299	12	43
0.00500 - 0.00699	5	15	0.0300 - 0.499	13	17
0.00700 - 0.00899	6	12	0.500 - 0.699	14	13
0.00900 - 0.0199	7	26	0.700 - 0.899	15	8
0.0200 - 0.0399	8	23	0.900 – 1+	16	28

Source: NMFS-SERO

Table 2.2.4.4: Pounds of Tilefish IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (683)	0	0	9 (18)	176	264
2 (64)	1	4	10 (14)	264	352
3 (35)	4	13	11 (8)	352	440
4 (21)	13	22	12 (43)	440	1,316
5 (15)	22	31	13 (17)	1,320	2,196
6 (12)	31	40	14 (13)	2,200	3,076
7 (26)	40	88	15 (8)	3,080	3,956
8 (23)	88	176	16 (28)	3,960+	

* Number of Permits in parentheses; Based on best 5 years; Source: NMFS, SERO

Under the best scenario for qualifying periods (1999 to 2004 with an allowance for dropping one year), 678 out of 1,028 permit holders eligible to receive tilefish shares during the initial distribution have no recorded tilefish landings and thus, would not receive any tilefish shares. Out of the remaining permit holders, approximately 119 are expected to receive at least 440 lbs of tilefish shares per year. The distribution of initial tilefish IFQ share discussed under **Alternative 2** also applies in subsequent alternatives related to the definition of IFQ shares.

The aggregation of all grouper species constituting the grouper complex into a single grouper IFQ share would be the simplest way to define grouper shares for the IFQ program under consideration. This straight forward approach would be expected to minimize transaction costs and eliminate the need to trade shares to balance catch and quota holdings. However, the establishment of a single grouper share would significantly limit or eliminate impacts on fish stocks expected from management measures targeting a specific species, e.g., a reduction in gag TAC. In addition, **Alternative 2** may further complicate the future establishment of annual catch limits, as required by the Magnuson-Stevens Act.

Alternative 3 would establish, in addition to tilefish shares, DWG shares (yellowedge grouper, warsaw grouper, snowy grouper, misty grouper and speckled hind) and SWG shares (red, gag, black, yellowmouth and yellowfin groupers, red hind, rock hind and scamp). Based on the Council's preferred alternative in Action A3, the classifications of warsaw grouper and speckled hind may change so that warsaw grouper and speckled hind are issued as DWG shares but may be landed with SWG allocation once all the DWG allocation has been expended. It is also worth noting that, consistent with its current classification, scamp would be issued as SWG shares but may be landed with DWG allocation once all SWG allocation has been expended.

Since **Alternative 3** proposes an aggregate SWG share instead of species-specific shares, the quota used to determine the amount of allocation associated with this aggregated share would have to be reduced. This would ensure overfishing is prevented for gag and red grouper. Following the implementation of Amendment 30B, the total SWG quota will be 7.47 MP. However, if **Alternative 3** is chosen as the preferred, this SWG quota would have to be reduced by 15-51 percent, which means the fishery would not be managed at the current OY.

Table 2.2.4.5 presents, the distribution of DWG share percentages. The distribution of initial DWG shares, expressed in pounds, is provided in Table 2.2.4.6. Of the 1,028 eligible recipients of initial IFQ shares, 61 percent would receive less than 0.003 percent of the DWG shares. The distributions of SWG share allocation expressed in percentage points and in pounds (based on Amendment 30B quota) are provided in Tables 2.2.4.7 and 2.2.4.8, respectively. Eleven percent of eligible permit holders would not qualify for SWG shares. Both Tables 2.2.4.6 and 2.2.4.8 represent the distribution of pounds based on quotas without any reductions.

Table 2.2.4.5: Deepwater Grouper IFQ Share Percentage by Group

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	469	0.0400 - 0.0599	9	31
0.0001 - 0.00099	2	81	0.0600 - 0.0799	10	19
0.00100 - 0.00299	3	75	0.0800 - 0.0999	11	12
0.00300 - 0.00499	4	28	0.100 - 0.299	12	90
0.00500 - 0.00699	5	25	0.0300 - 0.499	13	27
0.00700 - 0.00899	6	11	0.500 - 0.699	14	20
0.00900 - 0.0199	7	65	0.700 - 0.899	15	13
0.0200 - 0.0399	8	33	0.900 – 1+	16	30

Source:NMFS-SERO

Table 2.2.4.6: Pounds of Deepwater Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (469)	0	0	9 (31)	408	611
2 (81)	1	10	10 (19)	612	815
3 (75)	10	30	11 (12)	816	1,019
4 (28)	31	51	12 (90)	1,020	3,050
5 (25)	51	71	13 (27)	3,060	5,090
6 (11)	71	92	14 (20)	5,100	7,130
7 (65)	92	203	15 (13)	7,140	9,170
8 (33)	204	407	16 (30)	9,180+	

* Number of Permits in parentheses; Source: NMFS, SERO

Table 2.2.4.7: All Shallow Water Grouper IFQ Share Percentage by Group

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	96	0.0400 - 0.0599	9	70
0.0001 – 0.00099	2	91	0.0600 - 0.0799	10	48
0.00100 - 0.00299	3	73	0.0800 - 0.0999	11	32
0.00300 - 0.00499	4	61	0.100 - 0.299	12	141
0.00500 - 0.00699	5	27	0.0300 - 0.499	13	72
0.00700 - 0.00899	6	36	0.500 - 0.699	14	26
0.00900 - 0.0199	7	125	0.700 - 0.899	15	14
0.0200 - 0.0399	8	113	0.900 – 1+	16	3

Source: NMFS, SERO

Table 2.2.4.8: Pounds of All Shallow Water Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (96)	0	0	9 (70)	3,136	4,696
2 (91)	8	78	10 (48)	4,704	6,264
3 (73)	78	234	11 (32)	6,272	7,832
4 (61)	235	391	12 (141)	7,840	23,442
5 (27)	392	548	13 (72)	23,520	39,122
6 (36)	549	705	14 (26)	39,200	54,802
7 (125)	706	1,560	15 (14)	54,880	70,482
8 (113)	1,568	3,128	16 (3)	70,560	

* Number of Permits in parentheses; Source: NMFS, SERO

The establishment of SWG and DWG shares is relatively closer to the way the grouper fishery is managed. The AP recognized the flexibility that would be associated with these share definitions and originally expressed its preference for **Alternative 3**. However, the total pounds distributed for SWG shares would be much less than the total SWG quota of 7.47 mp proposed in Amendment 30B. After considering this at the April 2008 meeting, the AP chose **Preferred Alternative 4** as the preferred alternative.

Depths at which tilefish and DWG are commonly harvested make any species-specific share definition unproductive due to the amount of dead discards that would be generated under such a scenario. In addition, DWG and tilefish quotas, set at 1.02 MP and 440,000 pounds, respectively are established without species distinction. Hence, the establishment of a DWG and a tilefish share is consistent with the current management of these stocks and is not expected to create additional discards. The allocation associated with DWG and tilefish shares would be equal to the current quotas.

The establishment of a single SWG share considered under **Alternative 3** would grant fishermen the flexibility to adapt to temporal and spatial differences in the relative abundance of shallow water species landed, mainly red and gag grouper. It could be argued that over a sufficiently long period of time, average landings per species would closely track the established TACs, given the annual variability observed in gag and red recruitment. However, a SWG share does not mirror current management measures, which include a separate red grouper TAC. Moreover, Reef Fish Amendment 30B will establish a gag grouper TAC.

Preferred Alternative 4 would set species-specific shares, establishing red grouper, gag, other shallow water grouper, deepwater grouper and tilefish shares. This is the only alternative that could prevent overfishing while achieving OY on a species-specific basis. The distribution of tilefish and DWG share distributions are equivalent to the ones discussed in **Alternative 3**. Red and gag grouper landings which, on average, account for more than 85 percent of SWG landings are discussed in this section. Tables 9–13 provide distributions of red grouper, gag grouper, and other shallow water grouper shares expressed in percentages and pounds (based on Amendment 30B quota).

Following an evaluation of data presented by NMFS, the Council indicated during its August 2008 meeting that instances of misreporting of gag as black grouper (or vice versa) were significant enough to warrant correction. As a result, the Council requested NMFS adjust initial share distributions of gag and other shallow water grouper (which include black grouper) in order to more accurately reflect gag and black grouper landings in the Gulf of Mexico. Adjustments to logbook landings will be made for each fishing trip that reported landing either gag or black grouper, but not both. If a fishing trip only reported landing either gag or black grouper, then total landings for the fishing trip by statistical area will be determined. These landings will then be adjusted using the ratio of gag:black grouper landings observed by dockside interviewers for each statistical area fished. Share distributions presented in Tables 2.2.4.9-13 reflect gag and other shallow water grouper landings adjustments made to account for the misidentification of gag and black grouper in logbooks.

IFQ shares considered under **Preferred Alternative 4** would closely mirror existing and foreseeable commercial portions of the TAC in the grouper and tilefish fisheries. A separate quota is now in effect for each of the following species or species group: shallow water, red grouper, deep water grouper, and tilefish. As previously indicated, the Council will establish a gag grouper quota once Amendment 30B is implemented. These quotas would be used to determine the amount of allocation associated with each species or species group share. Although this share definition would be consistent with management practices in the Gulf, it heightens the need for well designed catch and quota balancing measures to minimize bycatch and allow participants in the program to benefit from most of the IFQ shares they were allotted. This share definition also corresponds to the largest number of different shares which may translate into higher transaction costs and increased administrative burden to track share balances and transfers.

It is important to note that the number and nature of share types identified in **Preferred Alternative 4** may be amended in the future to allow the Council to further its conservation mission or improve the administration of the IFQ program. For example, should a species other than red and gag need additional management as a result of overfishing, the Council may decide to create a quota for that species and issue corresponding IFQ shares. If warranted, adjustments to share definitions would be implemented, most likely at the beginning of a fishing year. Needed adjustments would be made based on IFQ share owners on record at the time of the adjustment.

Table 2.2.4.9: Red Grouper IFQ Share Percentage by Group

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	221	0.0400 - 0.0599	9	55
0.0001 - 0.00099	2	103	0.0600 - 0.0799	10	44
0.00100 - 0.00299	3	89	0.0800 - 0.0999	11	23
0.00300 - 0.00499	4	45	0.100 - 0.299	12	106
0.00500 - 0.00699	5	24	0.0300 - 0.499	13	50
0.00700 - 0.00899	6	21	0.500 - 0.699	14	27
0.00900 - 0.0199	7	103	0.700 - 0.899	15	17
0.0200 - 0.0399	8	74	0.900 – 1+	16	26

Source: NMFS, SERO

Table 2.2.4.10: Pounds of Red Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (221)	0	0	9 (55)	2,300	3,444
2 (103)	6	57	10 (44)	3,450	4,594
3 (89)	58	172	11 (23)	4,600	5,744
4 (45)	173	287	12 (106)	5,750	17,193
5 (24)	288	402	13 (50)	17,250	28,693
6 (21)	403	517	14 (27)	28,750	40,193
7 (103)	518	1,144	15 (17)	40,250	51,693
8 (74)	1,150	2,294	16 (26)	51,750+	

* Number of Permits in parentheses; Source: NMFS, SERO

Table 2.2.4.11: Gag Grouper IFQ Share Percentage by Group

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	122	0.0400 - 0.0599	9	80
0.0001 - 0.00099	2	66	0.0600 - 0.0799	10	56
0.00100 - 0.00299	3	72	0.0800 - 0.0999	11	40
0.00300 - 0.00499	4	49	0.100 - 0.299	12	160
0.00500 - 0.00699	5	37	0.0300 - 0.499	13	57
0.00700 - 0.00899	6	33	0.500 - 0.699	14	23
0.00900 - 0.0199	7	102	0.700 - 0.899	15	13
0.0200 - 0.0399	8	103	0.900 – 1+	16	15

Source: NMFS, SERO

Table 2.2.4.12: Pounds of Gag Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (122)	0	0	9 (80)	564	845
2 (66)	1	14	10 (56)	846	1127
3 (72)	14	42	11 (40)	1128	1409
4 (49)	42	70	12 (160)	1410	4216
5 (37)	71	99	13 (57)	4230	7036
6 (33)	99	127	14 (23)	7050	9856
7 (102)	127	281	15 (13)	9870	12676
8 (103)	282	563	16 (15)	12690+	

* Number of Permits in parentheses; Source: NMFS, SERO

Table 2.2.4.13: Other Shallow Water Grouper IFQ Share Percentage by Group

Share Percentage	Group	N	Share Percentage	Group	N
0 - <0.0001	1	115	0.0400 - 0.0599	9	69
0.0001 - 0.00099	2	71	0.0600 - 0.0799	10	38
0.00100 - 0.00299	3	99	0.0800 - 0.0999	11	45
0.00300 - 0.00499	4	45	0.100 - 0.299	12	144
0.00500 - 0.00699	5	52	0.0300 - 0.499	13	63
0.00700 - 0.00899	6	30	0.500 - 0.699	14	21
0.00900 - 0.0199	7	114	0.700 - 0.899	15	9
0.0200 - 0.0399	8	98	0.900 – 1+	16	15

Source: NMFS, SERO

Table 2.2.4.14: Pounds of Other Shallow Water Grouper IFQ Allocation by Group*

Group	Pounds of Allocation		Group	Pounds of Allocation	
1 (115)	0	0	9 (69)	272	407
2 (71)	1	7	10 (38)	408	543
3 (99)	7	20	11 (45)	544	679
4 (45)	20	34	12 (144)	680	2,033
5 (52)	34	48	13 (63)	2,040	3,393
6 (30)	48	61	14 (21)	3,400	4,753
7 (114)	61	135	15 (9)	4,760	6,113
8 (98)	136	271	16 (15)	6,120+	

* Number of Permits in parentheses; Source: NMFS, SERO

Upon implementation of Reef Fish Amendment 30B, the shallow water grouper will be subdivided into three separate quotas including separate species-specific quotas for red and gag grouper and a quota for all remaining shallow water species. The share types under consideration in **Preferred Alternative 4** would establish IFQ shares for each quota. This IFQ share structure does not adversely impact the ability to protect grouper

species of concern, i.e., red and gag grouper. If warranted, regulators could adjust red or gag grouper quotas. However, the establishment of three share types to prosecute shallow water grouper could potentially result in more discards than **Alternatives 2** or **3** and is expected to increase the amount of work needed from IFQ participants to match their catch to their quota holdings. The consideration of **Preferred Alternative 4** heightens the need for IFQ share trading with minimum transaction costs and the implementation of appropriate flexibility measures to assist IFQ participants in balancing their catch and quota holdings. Compared to **Alternatives 2** and **3**, **Preferred Alternative 4** is expected to generate the greatest economic value because it would correspond to the most detailed set of IFQ shares (Costello and Deacon, 2007) and thus to the most specific fishing rights.

The Council chose **Alternative 4** as their preferred alternative because this was the best alternative to prevent overfishing while achieving OY. **Alternatives 1–3** were less preferred because these alternatives aggregated shares among multiple stocks and would require more precautionary management to assure no stock entered overfishing.

With **Alternative 1**, there is no way to allocate the initial shares which would allow the council to establish an IFQ program. **Alternative 2** would establish a single grouper IFQ share and a tilefish IFQ share. In the case of the tilefish fishery, this would be used to land all tilefish and make applying for shares simpler for the fishermen. Presumably, having a single grouper IFQ share and a single IFQ tilefish share would reduce the number of discards because fishermen could keep all of the fish they catch in these groups until they meet their quota. Although this approach would allow fishermen to keep all of their aggregated grouper catch until they meet their quota, having a single grouper IFQ may be more problematic because it would lump all grouper under one share.

Alternative 3 would establish shares for DWG, shares for SWG, and shares for tilefish. Under this alternative, fishermen could harvest aggregate limits within each grouping, and potentially, this could reduce the amount of discards. This alternative would still only disaggregate grouper in to two groups and there would still be the potential for overharvesting of some species of grouper as fishermen fish their total allocation, and there would be the potential that overharvesting of one species would require that fisheries managers adjust the TAC for the whole complex.

Preferred Alternative 4 would establish shares for red grouper, gag, other SWG, DWG, and tilefish. Under this alternative, fishermen could harvest aggregate quota limits within each grouping, and potentially, this could reduce the amount of discards. This would also allow the Council to adjust the harvest levels within each grouping. This would benefit the fishermen because the overharvesting of a species in one group that would not necessitate the lowering of the quota for the whole grouper complex such as it would in **Alternative 2**.

2.2.5 ACTION B5: Multiuse Allocation and Trip Allowance

Alternative 1: No action. Do not establish multiuse IFQ shares or trip allowances

<u>Preferred Alternative 2</u>: At the beginning of each fishing year, convert a portion of each IFQ participant's red grouper individual species share into multi-use red grouper allocation valid for harvesting red or gag grouper. The amount of red grouper share converted into multi-use red grouper allocation is:

Option a) 1%
Option b). 2%
<u>Preferred Option c</u>) 4%

<u>Preferred Alternative 3</u>: At the beginning of each fishing year, convert a portion of each IFQ participant's gag grouper individual species share into multi-use gag grouper allocation valid for harvesting gag or red grouper. The amount of gag grouper share converted into multi-use gag grouper allocation is:

Option a) 2%
Option b). 4%
<u>Preferred Option c</u>) 8%

Alternative 4: Establish a trip allowance granting IFQ participants the flexibility to land red or gag grouper for which the IFQ participant has no allocation by using allocation from the other species (i.e. red or gag grouper). The amount of red or gag landed under the trip allowance is based on the total landings of the two species and can be up to:

Option a) 5%
Option b) 10%
Option c) 15%

<u>Note</u>: In **Preferred Alternatives 2** and **3**, multiuse allocation would be issued at the beginning of the fishing year to the IFQ shareholder. IFQ shareholders would be allowed to sell multi-use allocation only after exhausting their corresponding species-specific allocation.

In addition to the multiuse alternatives discussed above, **Action A3** would allow fishermen to use "other SWG" allocation to land speckled hind and warsaw grouper once a fisherman has used all their DWG shares. Similarly, current management allows scamp to be counted against the DWG quota if the SWG fishery is closed prior to the DWG fishery. Therefore, the IFQ program would allow fishermen to land scamp using "DWG" allocation once they have used all of their "other SWG" allocation. These landing provisions will increase flexibility while fishing and reduce bycatch.

Discussion and Rationale

This action is only applicable if the Council selects **Alternative 4** in Action B4 as the preferred. **Action B4, Alternative 4**, establishes IFQ share types for red grouper, gag, other SWG, DWG, and tilefishes. Establishing separate shares for gag and red grouper allows the Council to specify multiuse annual allocation for these species.

Without measures such as multiuse allocations or some other form of flexibility to help balance catch versus quota holdings, the IFQ program will most likely generate more discards than the current management structure due to temporal fluctuations (e.g., recruitment pulses) and geographical variations (e.g., different areas of the Gulf) in gag and red grouper abundance.

Multiuse annual allocation and trip allowances allow fishermen to use a small portion of their allocation for one species (either red or gag grouper) to harvest another species (either gag or red grouper) that would otherwise be discarded because the fisherman does not possess allocation for that species. Multiuse allocation would be derived at the beginning of each year by converting a portion of the allocation for red grouper and gag to allocation that could be used for either species. The proportion of multiuse allocation compared to the species-specific allocation should be based on the expected relative availability of the species for which it can be used. Also, the proportion of multiuse allocation should be based on how conservatively the quota is set relative to the target catch level and annual catch limit (ACL). The more conservative a quota is set relative to the target catch level and ACL, the greater the flexibility in issuing multiuse allocation without exceeding the fishing mortality rate that either optimizes yield (target catch level) or the ACL, which would trigger accountability measures. Additional considerations for multiuse allocation may be the dock-side value of the species included and the status of the stocks included. For example, gag is undergoing overfishing and the ex-vessel price is typically 50 cents more per pound than red grouper. Because of the difference in price and the implementation of a gag quota in 2009 through Amendment 30B to the Reef Fish FMP, fishermen would have an economic incentive to use multiuse allocation to harvest more gag and less red grouper. However, this incentive would be diminished by the added cost of discarding red grouper, especially in areas where red grouper are relatively abundant. Fishermen could not use multiuse annual allocation until after they run out of annual allocation for one of the species for which it can be used.

The preferred alternative for ACLs and accountability measures (AMs) in Amendment 30B to the Reef Fish FMP will provide a buffer between the red grouper, gag, and SWG grouper quotas and their respective ACLs (see Table 2.2.5.1). Providing a buffer between the quotas and the ACLs allows multiuse allocation to be specified without allowing the ACL to be exceeded. Table 2.2.5.1 summarizes the annual percent multiuse allocation that could be allowed during 2010-2012 given the allocations, TACs, and quotas specified for red grouper and gag in Amendment 30B. These multiuse allocations represent the maximum multiuse allocation that could be shifted from gag to red grouper or red grouper to gag if all multiuse allocation is used for the same species. For example, in 2010 if fishermen use all of their designated red grouper shares (5.75 MP - 0.3 MP = 5.45 MP) and use all of their red grouper (5.2 percent multiuse = 0.3 MP) and gag

multiuse allocations (8.5 percent multiuse = 0.12 MP) to harvest red grouper, then red grouper landings would equal the ACL (5.87 MP). In contrast, landings for gag would be less than the quota (1.41 MP – 0.12 MP = 1.29 MP).

Table 2.2.5.1 Proposed 2010-12 gag and red grouper quotas and ACLs in Amendment 30B and corresponding maximum multiuse allocations that would prevent ACLs for gag or red grouper from being exceeded.

Commercial Gag				
Year	Quota (lbs gw)	ACL (lbs gw)	Max Multiuse for Red	Pct. Multiuse
2010	1.41	1.71	0.12	8.5%
2011	1.49	1.76	0.12	8.1%
2012	1.56	1.79	0.12	7.7%
Commercial Red Grouper				
Year	Quota (lbs gw)	ACL (lbs gw)	Max Multiuse for Gag	Pct. Multiuse
2010	5.75	5.87	0.3	5.2%
2011	5.75	5.87	0.27	4.7%
2012	5.75	5.87	0.23	4.0%

The following discussion and tables provide two examples of how annual multiuse allocation might work during a fishing year. These examples represent two extremes that may occur when the IFQ is implemented. These examples are based on historical gag/red grouper landing percentages during 1999-2006. During this time period, the proportion of gag to gag plus red grouper commercial landings ranged from 20.8 percent in 2006 to 34.6 percent in 2003 (1999-2006 average = 30.6 percent). For illustration purposes, Example 1 assumes that a fisherman's annual allocation of red grouper in 2010 is 80,300 pounds and of gag is 19,700 pounds. These amounts represent the relative proportion of gag to red grouper quota (Amendment 30B) that will be available to commercial fishermen in 2010. Four percent of the red grouper annual allocation is designated as multiuse (3,212 lbs) for gag and eight percent of the gag annual allocation is designated as multiuse (1,576 lbs) for red grouper leaving 77,088 pounds of red grouper allocation and 18,124 pounds of gag allocation. All 4,788 pounds of multiuse allocation could be used for either species in any combination the fisherman chooses.

EXAMPLE 1: Multiuse annual allocation with high ratio of gag to red grouper catch (1:1.89)					
	Annual Allocation		Multiuse Allocation		
	Red	Gag	Red (4%)	Gag (8%)	Total
Allocated shares	80,300	19,700			100,000
Allocated Shares w/ multiuse allocation	77,088	18,124	3,212	1,576	100,000
Current year catch ratio	654	346			
Catch until no allocation of one species	37,236	19,700			56,936
Allocation Remaining	39,852	0	3,212	0	43,064
Continue using remaining red grouper allocation and multiuse allocation	6,071	3,212			9,283
Total Landings	43,308	22,912			66,220
Allocation remaining with no corresponding gag or multiuse allocation	33,780	0			33,780

For this example, the fisherman holds annual allocation equivalent to 1 pound of gag for every 4.07 pounds of red grouper; however, availability of species during the year yields 1 pound of gag for every 1.89 pounds of red grouper. This represents the 2003 proportion of gag to red grouper landings, which was the highest observed proportion during 1999-2006. Based on this catch rate, 37,236 pounds of red grouper would have been caught by the time all 19,700 pounds of gag allocation (gag allocation + gag multiuse allocation) was used. This leaves 39,852 pounds of red grouper allocation and 3,212 pounds of red grouper multiuse allocation. If all 3,212 pounds of red grouper multiuse allocation is applied to gag then an additional 6,071 pounds of red grouper would be caught on those fishing trips. The fisherman would have caught 22,912 pounds of gag (16.3 percent more than the initial allocation) and 43,308 pounds of red grouper. An allocation of 33,780 pounds of red grouper would remain. If this allocation is fished, and assuming catch rates remain the same, 17,871 pounds of gag would be discarded unless additional gag annual allocation is purchased. In comparison, if no multiuse allocation was allowed then 21,084 pounds of gag would be discarded.

Example 2 is the same as Example 1, except the availability of species during the year yields 1 pound of gag for every 3.81 pounds of red grouper. This represents the 2006 proportion of gag to red grouper landings, which was the lowest observed proportion during 1999-2006. Based on this catch rate, 75,012 pounds of red grouper would have been caught by the time all 19,700 pounds of gag allocation was used. This leaves 2,076 pounds of red grouper allocation and 3,212 pounds of red grouper multiuse allocation. If 1,100 pounds of red grouper multiuse allocation is applied to gag then the remaining red grouper multiuse and red grouper allocation could be used to land 4,188 pounds of red grouper. The fisherman would have caught 79,200 pounds of red grouper (98.6 percent of the initial allocation) and 20,800 pounds of gag (105% of the initial allocation). No allocation would remain for either species; therefore, unlike Example 1 no additional discards would occur. If no multiuse allocation was allowed then 545 pounds of gag would have been discarded while the fisherman harvested the remaining 2,076 pounds of red grouper allocation.

EXAMPLE 2: Multiuse annual allocation with low ratio of gag to red grouper catch ratio (1:3.80)					
	Annual Allocation		Multiuse Allocation		
	Red	Gag	Red (4%)	Gag (8%)	Total
Allocated shares	80,300	19,700			100,000
Allocated Shares w/ multiuse allocation	77,088	18,124	3,212	1,576	100,000
Current year catch ratio	792	208			
Catch until no allocation of one species	75,012	19,700			94,712
Allocation Remaining	2,076	0	3,212	0	5,288
Continue using remaining red grouper allocation and multiuse allocation	4,188	1,100			25,438
Total Landings	79,200	20,800			100,000
Allocation remaining with no corresponding gag or multiuse allocation	0	0			0

A multiuse annual allocation as described herein can cause short term increases in annual harvest of one species with a concomitant decrease in the other. The amount of increase would depend on how much allocation is used during the fishing year and the percent of multiuse allocation allotted. However, in all cases the allowable multiuse allocation would need to be capped at a level that prevents an ACL from being exceeded. The more multiuse allocation allotted, the closer landings may come to the ACL, thereby reducing the probability that overfishing is prevented.

However, it should be noted that the above two examples represent extreme scenarios. It is likely multiuse allocations will result in landings more closely approximating the annual allocation for each species. Table 2.2.5.2 provides estimates of gag and red grouper landings under various multiuse allocations and usage levels. There will be regional differences in how multiuse allocation is used, with fishermen off Southwest Florida likely using multiuse allocation more often to harvest red grouper, while fishermen in the Big Bend and Panhandle of Florida more often using multiuse allocation to harvest gag. Temporal changes in abundance and variability in recruitment of these two species will also affect how multiuse allocation is used from one year to the next. Additionally, implementation of an IFQ program will likely result in allocation or shares of gag and red grouper being transferred or sold amongst fishermen. To maximize business and fishing efficiency, fishermen will likely match their catches of red and gag grouper to the amount of shares they possess. If the Council selects multiuse allocations as their preferred management alternative, NMFS and the Council will need to monitor multiuse allocation use carefully to ensure allocation is not consistently used for one species over another.

Table 2.2.5.2 Estimated 2010 landings of gag and red grouper for various multiuse allocations. Estimates are based on quotas in Amendment 30B to the Reef Fish FMP (red grouper = 5.75 MP and gag = 1.41 MP).

Multiuse Allocation (%)		Multiuse Allocation (lbs)			% Total Multiuse Used for:		Total Landings		% of Quota	
Gag	Red	Gag	Red	Total	Gag	Red	Gag	Red	Gag	Red
2%	1%	28200	57500	85700	100%	0%	1467500	5692500	104.1%	99.0%
2%	1%	28200	57500	85700	75%	25%	1446075	5713925	102.6%	99.4%
2%	1%	28200	57500	85700	50%	50%	1424650	5735350	101.0%	99.7%
2%	1%	28200	57500	85700	25%	75%	1403225	5756775	99.5%	100.1%
2%	1%	28200	57500	85700	0%	100%	1381800	5778200	98.0%	100.5%
4%	2%	56400	115000	171400	100%	0%	1525000	5635000	108.2%	98.0%
4%	2%	56400	115000	171400	75%	25%	1482150	5677850	105.1%	98.7%
4%	2%	56400	115000	171400	50%	50%	1439300	5720700	102.1%	99.5%
4%	2%	56400	115000	171400	25%	75%	1396450	5763550	99.0%	100.2%
4%	2%	56400	115000	171400	0%	100%	1353600	5806400	96.0%	101.0%
7%	4%	98700	230000	328700	100%	0%	1640000	5520000	116.3%	96.0%
7%	4%	98700	230000	328700	75%	25%	1557825	5602175	110.5%	97.4%
7%	4%	98700	230000	328700	50%	50%	1475650	5684350	104.7%	98.9%
7%	4%	98700	230000	328700	25%	75%	1393475	5766525	98.8%	100.3%
7%	4%	98700	230000	328700	0%	100%	1311300	5848700	93.0%	101.7%
8%	4%	112800	230000	342800	100%	0%	1640000	5520000	116.3%	96.0%
8%	4%	112800	230000	342800	75%	25%	1554300	5605700	110.2%	97.5%
8%	4%	112800	230000	342800	50%	50%	1468600	5691400	104.2%	99.0%
8%	4%	112800	230000	342800	25%	75%	1382900	5777100	98.1%	100.5%
8%	4%	112800	230000	342800	0%	100%	1297200	5862800	92.0%	102.0%

Multiuse allocation would be issued at the beginning of the year to the IFQ shareholder. IFQ shareholders would be allowed to sell multiuse allocation only after exhausting their corresponding species-specific allocation. For example, a fisherman could only sell his multiuse red grouper allocation if he has exhausted his red grouper allocation. This provision would prevent shareholders from selling their multiuse allocation and subsequently generating additional discards by fishing without the flexibility afforded by multiuse allocation.

By restricting the transfer of multiuse allocation, individuals would be prevented from acquiring considerable amounts of multiuse allocation relative to their gag and red grouper allocations. Because multiuse allocation will likely be more valuable than species-specific allocation, there is a greater likelihood that fishermen would sell multiuse allocation before gag or red grouper allocation, if allowed. The Council's intent for allowing multiuse allocation is to reduce bycatch; therefore, limiting transfer of multiuse allocation will preserve fishermen's flexibility while fishing.

Alternative 1 would not establish multiuse IFQ shares or a trip allowance. Fishermen would have to rely on buying shares or allocation if they use up allocation of one species (either red or gag grouper) and have remaining allocation of another species. If they do not purchase additional shares or allocation, but continue fishing, then discards of gag or red grouper would occur until the allocation for the other species is used up. Although commercial fishermen could to some extent target species with allocation, discards of the species not having allocation would still likely occur. Discards for **Alternative 1** would be greater than **Preferred Alternatives 2** and **3** and **Alternative 4**, because no multiuse allocation or trip allowances would be specified to reduce bycatch. In the case of red grouper, discard mortality rates are estimated to be 45 percent for the longline fishery and 10 percent for handlines and other gears. In the commercial gag fishery, discard mortality increases with depth. Average mortality in the commercial gag fishery is estimated to be greater than 65 percent. Increased discards can negatively affect these stocks by increasing fishing mortality.

Preferred Alternatives 2 and **3** would specify multiuse allocation for red grouper and gag, respectively. Each alternative includes three sub-alternatives with varying levels of multiuse allocation. Multiuse share allocation percentages would be greater for gag then red grouper because the gag quota/target catch level is substantially lower than the red grouper quota/target catch level. The maximum multiuse allocation allowed for red grouper during 2010-2012 could be 4-5.2 percent and for gag could be 7.7-8.5 percent (see Table 2.2.5.1) based on quotas and ACLs in Amendment 30B.

By allowing multiuse allocation, fishermen are provided greater flexibility while fishing. Fishermen would be allowed to use red grouper multiuse allocation to harvest gag, and gag multiuse allocation to harvest red grouper, only after the allocation of one species is used up. Once allocation for one of these species is used up, then multiuse allocation could be used to harvest additional fish rather than discarding those fish as bycatch while targeting the species with allocation. Allowing multiuse allocation could negatively affect one species, while benefiting another, because any increase in landings of one species would result in a concomitant decrease in the landings of another species. If

landings of one species are consistently greater than the quota over time, than the likelihood of overfishing occurring would be increased. However, multiuse allocation would also benefit gag and red grouper by decreasing overall bycatch and discards. However, greater multiuse allocation could also allow the quota of one species to be exceeded. Since the quotas in Amendment 30B correspond to the yield at F_{OY}, any increases in landings resulting from multiuse shares may diminish the Council's ability to achieve OY. None of the sub-alternatives in **Preferred Alternative 2** or **3** would allow proposed ACLs to be exceeded, except **Preferred Alternative 3(c)**. The multiuse allocation in **Preferred Alternative 3(c)** could result in the ACL for red grouper being exceeded in 2012. However, for this to occur all red grouper allocation would have to be landed, 100 percent of red grouper multiuse allocation would have to be landed as red grouper, and 96 percent of gag multiuse allocation would have to be landed as red grouper. Even if the red grouper ACL is exceeded, it would only be exceeded by 4,800 pounds GW (0.0008 percent of the red grouper quota). There would be no way to exceed the gag grouper ACL if gag multiuse allocation is eight percent. As mentioned earlier, it is unlikely that all gag and red grouper multiuse allocation will be used for a single species. In all likelihood, landings are expected to fluctuate around some long-term average that varies with species availability. If this occurs, then the likelihood of the ACL ever being met is extremely low, as discussed above. This is especially true given that many IFQ programs typically do not harvest the annual allocated quota. For instance in 2007, only 96.3 percent of the Gulf of Mexico red snapper quota was harvested. In order of biological benefits, **Preferred Alternatives 2(c)** and **3(c)** would reduce discards the most, but would also result in a potential increase in fishing mortality for one species with a corresponding decrease in fishing mortality for the other. **Alternatives 2(a)** and **3(a)** would reduce bycatch the least and provide fishermen the least amount of flexibility, but would have a greater probability of optimizing yield and preventing over harvest. Benefits and impacts of **Alternatives 2(b)** and **3(b)** would be intermediate to those of the other alternatives.

Alternative 4 would specify a trip allowance that would allow commercial fishermen to land species (either gag or red grouper) without allocation. The IFQ participant would have to use allocation from another species (either gag or red grouper) to land the species lacking allocation. The amount of the trip allowance could range from 5 to 15 percent of the total gag and red grouper landings per trip. The trip allowance would not be effective until either gag or red grouper allocation was used entirely. If a fishermen still possesses a considerable number of shares of one species once another species allocation is used, then the trip allowances could allow for considerable increases in landings of one species until the fishermen's remaining allocation is used up for the other species. Additionally, nothing would prevent fishermen from selling allocation of one species early in the season. If this occurs and fishermen still possess a large amount of allocation for the other species, then they could take advantage of the trip allowance by continuing to land red or gag grouper without allocation. Unlike **Preferred Alternatives 2** and **3**, the magnitude of multiuse allocation would not be specified at the beginning of the fishing year. Instead, the benefits and impacts of **Alternative 4** would depend on how quickly fishermen use up their allocation of a species. For example, using data summarized in Example 1 and assuming high catch rates of gag to red grouper relative to the initial allocation a fisherman receives, 43,064 pounds of red grouper allocation would be unused

when the gag allocation is used up. If this fisherman continues fishing and retains 5, 10, or 15 percent trip allowances for gag, then an additional 2,153 pounds, 4,360 pounds, and 6,460 pounds of gag would be retained. These amounts represent 11 percent, 22 percent, and 33 percent of the initial allocation, respectively, and exceed the maximum multiuse allocations proposed in **Preferred Alternative 3**. If instead data for Example 2 are used, then the individual's initial gag allocation would be exceeded by 1.3 percent, 2.7 percent, and 4.0 percent for the 5, 10 and 15 percent trip allowances, respectively. **Alternative 4** is likely to have a lower probability of preventing over harvest. Additionally, fishermen may have to discard legal-size gag or red grouper if they do not have sufficient amounts of allocation for the other species on board the vessel. **Alternative 4(b)** and **4(c)** may also allow ACLs to be exceeded, thereby requiring AMs. Relative to the other alternatives in Action B5, **Alternatives 4(b)** and **4(c)** would likely reduce bycatch the most, but would also result in the greatest probability of over harvest.

Alternative 1, which would not establish catch quota balancing measures, may reduce the ability of IFQ participants to limit the amount of red and gag discards generated while harvesting their IFQ allocation. It is highly unlikely, if not impossible, that for a given year all IFQ participants receive IFQ allocation that would exactly match the relative proportion of gag and red grouper that they will harvest during that fishing year. Under **Alternative 1**, the ability of IFQ participants to reduce red and gag grouper discards generated while harvesting their allocation is limited to opportunities to trade IFQ allocation or shares.

Preferred Alternative 2 would allow IFQ participants to use between 1 and 4 percent of their red grouper allocation to land gag grouper. It is expected that the establishment of multi-use red grouper allocation that could be used to land gag grouper would result in substantial economic benefits stemming from reductions in gag grouper discards and from long term positive impacts on red grouper stocks. **Preferred Alternative 3** would establish multi-use gag grouper allocation that could be either used to land gag grouper or harvest red grouper once the participant exhausts his red grouper allocation for that year. Positive economic benefits are expected from the implementation of **Preferred Alternative 3** due to anticipated reductions in red grouper discards and positive impacts on gag grouper stocks.

Alternative 4 would, on a per trip basis, allow IFQ participants to land red grouper (or gag grouper) for which the participant has no allocation with gag grouper (or red grouper) allocation. **Alternative 4** could grant IFQ participants needed flexibility, without the additional burden associated with the establishment of different multiuse shares. Reductions in red and gag grouper discards are expected to result in substantial economic benefits for IFQ participants as well as in positive impacts on red and gag grouper stocks.

Alternative 1 would not establish multiuse IFQ shares or trip allowances. This would have a negative impact on the fishermen who needed to trade shares of grouper or tilefish and would possibly lead to more fish being discarded. Under **Preferred Alternative 2,** at the beginning of each fishing year, NMFS would convert a portion of each fisherman's red grouper shares/allocation into multi-use red grouper allocation valid for harvesting

red or gag grouper. **Preferred Alternative 2** would benefit fishermen who may catch too many gag groupers to convert a portion of their share of red grouper to be used for either.

Under **Preferred Alternative 3,** at the beginning of each fishing year, NMFS would convert a portion of each fisherman's gag grouper shares/allocation into multi-use gag grouper allocation valid for harvesting gag or red grouper. **Preferred Alternative 3** would benefit fishermen who may catch too many red groupers to convert a portion of their share of gag grouper to be used for either.

Alternative 4 would establish a trip allowance granting IFQ participants the flexibility to land red or gag grouper for which the IFQ participant has no allocation by using allocation from the other species (i.e. red or gag grouper). This alternative would provide flexibility on an individual trip basis. The higher the percentage, the more flexibility the fishermen will have to save more of the species they catch and should reduce bycatch.

2.2.6 ACTION B6 Transfer Eligibility Requirements

Alternative 1: No Action. Do not restrict the transfer of shares or allocation. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

Alternative 2: IFQ shares or allocation can only be transferred to commercial reef fish permit holders. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens. (AP Preferred)

<u>Preferred Alternative 3</u>: IFQ shares or allocation can only be transferred to commercial reef fish permit holders during the first five years of the IFQ program and all U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

<u>Discussion and Rationale</u>

This action defines to whom grouper/tilefish IFQ shares or annual allocation can be transferred after initial allocation of shares. Transfer of shares would be permanent and the transferee would receive allocation the following year. Transfer of allocation would only be effective for the current year and the permanent share holder would continue to receive allocation the following year. Transfer costs would be determined by the two parties involved.

A differentiation between management measures addressing IFQ share transfers and measures related to annual allocation transfers is not warranted because IFQ participants would easily circumvent the most restrictive set of transfer requirements. Assuming that annual allocation transfer requirements were more lenient than those corresponding to IFQ share transfers, participants could easily enter into private agreements ensuring the transfer of annual allocation for an extended number of years without transferring IFQ

shares. If the converse were true, participants would simply enter into a succession of short term share transfers, bypassing the more restrictive annual allocation transfers.

A transferable IFQ program would allow the market to reduce fishing capacity, as quota could be consolidated among fewer vessels, which would then have an incentive to fish efficiently to maximize their profits. Fishermen who desired more quota than they received through initial apportionment could purchase additional shares or allocation. Conversely, those fishermen who were apportioned too little quota to make fishing worthwhile could sell their shares or allocation. The amount of shares or allocation that could be transferred would be limited under Actions B7 (Caps on IFQ Share Ownership) and B8 (Caps on IFQ Allocation Ownership).

According to the Magnuson-Stevens Act Section 303A(c)(5)(E), "in developing a limited access privilege program to harvest fish, a Council or Secretary shall authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council." Therefore, the preferred alternative chosen for this action cannot exclude substantial participants as defined in Action B1. Section 303A(c)(1)(D) of the Magnuson-Stevens Act prohibits any person other than a United States citizen or permanent resident alien from participating in a limited access privilege program.

The least restrictive policy (**Alternative 1**) would allow any U.S. citizen or permanent resident alien to purchase shares or allocation**.** Transfer of shares allows consolidation and effort reduction in the fishery; on the other hand, anyone could enter the fishery, including new fishermen or fishermen in other fisheries, such as the mackerel fishery. With a larger field of buyers, the value of shares on the open market should be higher. However, fishing communities may react negatively to any increase in absentee ownership. Openness would also allow transfer to individuals who may not intend to use IFQ shares in support of the commercial fishing industry. The use-it-or-lose-it policy in Action B10 could help keep shares in the industry.

Alternative 2 would only allow transactions between individuals who own a valid or renewable commercial reef fish permit. This restriction would contribute to maintaining grouper and tilefish IFQ shares in the hands of commercial fishermen. A limited access program restricts the number of reef fish permits in the Gulf of Mexico, and these permits can only be obtained from current participants. Thus the number of potential IFQ participants would be limited to the number of reef fish permit holders. As of August 31, 2008, there were 1,028 holders of valid or renewable commercial reef fish permits. The implementation of **Alternative 2,** which constitutes the most restrictive alternative under this action, would conflict with the Council's preferred alternative for substantial participants in Action B1.

Preferred Alternative 3 restricts transfer during the first five years, but not thereafter. This alternative would allow those individuals who have been fishing reef fish in the Gulf of Mexico, and therefore are the most familiar with the fishery, to continue harvesting grouper and tilefish during the early years of the IFQ program. After that, any U.S.

citizen or permanent resident alien can participate. In selecting its preferred transferability eligibility alternative, the Council, considered several elements including concordance with the definition for substantial participants adopted in Action B1 and consistency with transfer eligibility conditions prevailing in the red snapper IFQ. **Preferred Alternative 3,** which would potentially give everybody an opportunity to participate in the grouper and tilefish IFQ**,** is consistent to the Council's preferred definition for substantial participants and adopts the same transfer eligibility requirement as the red snapper IFQ program.

Transferability provisions would indirectly affect the physical and biological environment by influencing the degree of consolidation that can occur. In general, the amount of effort applied to the fishery would decrease as participation is limited to fewer, more efficient individuals. This decreased effort would result in less gear and time used in pursuing grouper and, consequently, less adverse environmental impacts. However, looser restrictions on transfer of allocation could reduce discards by allowing fishermen to buy allocation to cover overages during a trip. In addition, **Alternative 1** could have a beneficial biological effect because it does not restrict shares from being purchased by individuals who do not intend to use them for fishing. The alternatives in order of least restrictive to most restrictive are **Alternative 1, Preferred Alternative 3,** and **Alternative 2.**

Alternative 1, no action, would not place restrictions on eligibility for shares or allocation transfers. All US citizens and permanent resident aliens could engage in share or allocation trading. The absence of limitations on the transferability of IFQ shares or allocation is expected to correspond to the greatest level of economic benefits because it would allow unrestricted trading and hence afford sellers the opportunity to sell to those who would put the resource to its highest valued use and hence pay the highest price.

The implementation of **Alternative 2** would correspond to the smallest universe of potential participants in the grouper and tilefish IFQ program. Due adverse effects on market conditions expected to be associated with thin markets, i.e., markets with limited number of participants and/or transactions, **Alternative 2** is anticipated to correspond to the lowest level of economic benefits.

With a five-year delay, **Preferred Alternative 3** would implement **Alternatives 1** and **2**. **Preferred Alternative 3** limits participation in IFQ share or allocation trading to commercial reef fish permit holders for the first five years of the program and allows all US citizens and permanent resident aliens to participate thereafter. Therefore, **Alternative 2** and **1** are expected to constitute upper and lower bounds for economic benefits associated with **Preferred Alternative 3**, respectively.

Under **Alternative 1**, shares could be transferred to people who are citizens of the United States or permanent resident aliens. This alternative would be beneficial to people who are not currently participants in the grouper or tilefish fisheries, but who would like to participate in the fishery, in that they would be allowed to buy shares as they become available. This alternative would allow for groups such as conservation groups to buy shares and not use them in order to protect the species from harvest, which would not

provide for the maximum OY for the species. Under this alternative, shares on an open market place may obtain a very high value that may make it expensive for many fishermen who are currently in these fisheries to buy more shares, but would be beneficial for the fishermen wishing to sell their shares.

Under **Alternative 2** IFQ shares or allocation can only be transferred to commercial reef fish permit holders. This alternative would reward fishermen with reef fish permits because they would be the only ones allowed to buy shares as they become available. This alternative would not allow for the transfer of shares from a fisherman to family members who do not hold a reef fish permit, which would not allow for a fisherman to pass on his or her fishing privileges to their children, a common practice within fishing families.

Preferred Alternative 3 would require that IFQ shares or allocation can only be transferred to commercial reef fish permit holders during the first five years of the IFQ program and all U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens. **Preferred Alternative 3** would reward the IFQ participants because they would be the only ones allowed to buy shares as they become available for the first five years of the program. For the first five years, this alternative would not allow for the transfer of shares from a fisherman to family members do not also possess a reef fish permit, which would not allow for a fisherman to pass on his or her fishing privileges to their children, a common practice within fishing families.

Allowing more individuals to participate in the IFQ program increases the amount of time dealing with various components of the IFQ program, such as tracking transfers, setting up new accounts, and enforcing ownership caps. The alternatives in order of least to most restrictive are the same as above. However, if eligibility is restricted, NMFS would need to review proof each individual belongs to one of the eligible groups. The alternatives in order from least to most amount of time required to evaluate are **Alternative 1** and **Alternative 2** or **Preferred Alternative 3**.

The Council chose **Alternative 3** as their preferred because it parallels transferability requirements in the red snapper IFQ program. They felt that five years was a reasonable amount of time to establish and refine the grouper IFQ program with limited participants before opening it to everyone. Although **Alternative 1** would allow the largest pool of potential buyers, the Council felt some time was needed for establishing the IFQ program with a smaller number of participants. **Alternative 2** would overly restrict participation.

2.2.7 ACTION B7: Caps on IFQ Share Ownership

Alternative 1: No action. Do not constrain the number or amount of shares that can be owned by a participant in the grouper and tilefish IFQ program.

Alternative 2: No person shall own IFQ shares, which comprise more than the following percent of the quota allocated to the IFQ program. However, persons

entitled to more than the specified ownership cap during initial apportionment will be grandfathered in at their entitled holdings.

The share cap(s) shall be calculated as:

> **Option a) one cap on the total percentage of grouper and tilefish quotas owned by any one person.**
>
> **Option b) separate caps for each type of share as defined in Action B4, plus a cap on the total percentage of grouper and tilefish quotas owned by any one person.**

Each type of share (total or separate) may have the same or different percent caps chosen from sub-options below:

> **Sub-option a) 5 percent;**
> **Sub-option b) 10 percent;**
> **Sub-option c) 15 percent.**

<u>Preferred Alternative 3</u>: No person shall own more IFQ shares than the maximum percentage issued to the recipient of the largest shares at the time of the initial apportionment of IFQ shares. (AP Preferred)

The share cap(s) shall be calculated as:

> **Option a) one cap on the total percentage of grouper and tilefish quotas owned by any one person.**
>
> **<u>Preferred Option b</u>) separate caps for each type of share as defined in Action B4, plus a cap on the total percentage of grouper and tilefish quotas owned by any one person.**

<u>Discussion and Rationale:</u>

Ownership caps are designed to prevent monopolies from developing. The Magnuson-Stevens Act, in Section 303A(c)(5)(D), indicates LAPPs such as IFQs must include provisions to prevent an individual or entity from holding an excess amount of shares. In other terms, an IFQ program must set a cap on share ownership. The lower the cap is set, the more likely the current makeup of the participants by size of operation will be maintained and community structure will be supported. However, if the cap is too low, efficiency will be impaired. If the cap is set below the historical maximum share, those participants above the cap are typically grandfathered in at their historical share. Sale of grandfathered shares has restrictions. Caps apply to shares owned individually and through corporations.

Alternative 1 does not comply with the Magnuson-Stevens Act. National Standard 4 states that management measures should be "carried out in such a manner that no

particular individual, corporation, or other entity acquires an excessive share" of fishing privileges. Without a share cap, accumulation of excessive shares could not be prevented, shares could become concentrated among only a few participants, and those participants could gain excessive market power. As a result, availability of grouper and tilefish could decrease and prices for consumers could increase. National Standard 8 requires management measures take into account sustained participation of fishing communities. If IFQ shares accumulate with only a few participants, the structure of the fishery and its relationship to communities will be disrupted. Conversely, consolidation of shares would increase the efficiency of the fishery, consistent with National Standard 5. Fewer vessels in the fishery would result in lower overall operational costs.

Alternatives 2 and 3 would limit the amount of IFQ shares an individual or entity could own. This amount would include shares owned individually and through a corporation. A cap on share ownership would allow some consolidation while preventing accumulation of excessive shares.

Option a would create a single cap for the entire IFQ program. This is the minimum that must be done to satisfy the Magnuson-Stevens Act requirements. The cap would be based on the quota for all grouper plus the quota for tilefish. Currently the grouper quota is 9.82 MP and the tilefish quota is 440,000 pounds; however, actions in Reef Fish Amendment 30B will change the grouper quota (see Table 2.2.7.1). This option would be less restrictive than **Preferred Option b** and allow a greater amount of consolidation. However, a cap only on the total may allow an individual to obtain an excessive share of one species. For example, if **Preferred Alternative 3** is chosen, the total cap would be 2.07 percent or 212,382 pounds under the current quotas. The quota for tilefish is 440,000 pounds; with only a total cap, a single individual could land 48 percent of the tilefish quota.

Preferred Option b would create separate caps for each type of IFQ share defined in Action B4 and establish a cap on the total percentage of grouper/tilefish owned by any one person. Caps for each type of IFQ share would be specified as a percentage of the quota for gag, red grouper, DWG, and tilefishes, and as a percentage of the allowable catch for other SWG (SWG quota - red grouper and gag quotas). Quotas currently are set for tilefish, DWG, SWG (gag and red grouper included), and red grouper. Amendment 30B will set a gag quota, increase the red grouper quota, and reduce the overall SWG quota. Caps for each share type would be determined by dividing the maximum reported landings by any one person during the qualifying years (best five out of six during 1999-2004) by the total cumulative landings during the qualifying years of all persons eligible to receive IFQ shares. Similarly, the total cap on percentage of TAC owned by any one person would be determined by dividing the total landings of all grouper and tilefish reported by any one person during the qualifying years by the total cumulative grouper and tilefish landings during the qualifying years for all persons eligible to receive IFQ shares (species-specific share caps are therefore not additive in determining the overall percentage cap on TAC).

Preferred Option b is expected to achieve the mandates of Section 303(A)(c)(5) of the Magnuson-Stevens Act by capping the percentage of shares obtained by any one entity at

recent and historical levels (1999-2004). During this timeframe, there were no excessive share issues; thus none are expected under the IFQ program. By capping share percentages at recent and historical landings levels, entities will be prevented from obtaining inequitable concentrations of limited access privileges.

Table 2.2.7.1 was created using the highest five years of landings during 1999-2004 to calculate estimated initial allocation for permit holders during that time. The numbers in parentheses show how many permits would exceed the cap(s) under each option. Estimates would change if a different eligibility period is chosen under Action B3 (Initial Apportionment of IFQ Shares). Also, individuals may own shares in corporations that own permits, increasing the number of participants that would need to be grandfathered in. Although no single permit had average landings exceeding 10 percent **(Sub-option b)** of actual landings for a species, a few permit holders with multiple permits exceeded 10 percent of the quota and would need to be grandfathered in. Only one permit for DWG and one for tilefish would need to be grandfathered in under **Sub-option c**. Participants with shares exceeding a cap must reduce (split) those shares to the ownership cap before selling them.

Preferred Alternative 3 would set the cap(s) equal to the maximum share initially assigned to an IFQ participant (as determined in Action B3). The red snapper IFQ program has a cap of 6.0203% based on the maximum share holdings. This alternative would more closely maintain the structure of the fishery as it was during the eligibility period. This method would also eliminate the need to grandfather in any participants, thereby easing the administrative burden. However, determination of the cap(s) would be complicated by individuals who own multiple permits or are part of multiple corporations that hold IFQ shares. The maximum percent landings shown in Table 2.2.7.1 are for individual permit holders and those with multiple permits in their name. The maximum percent could be higher because participants could own shares in a corporation that owns a permit. Calculation of the actual maximum shares apportioned to one participant could not take place until corporate share holder information is collected. In the red snapper IFQ program, each corporation was required to provide shareholder information by June 4 of the first year of the program and changes as they occur thereafter. Thus the share cap was not set until six months after the implementation of the program. Considering the complexity of this IFQ program with multiple caps for both shares and allocation, corporate shareholder information should be collected before implementation of the IFQ program.

This action would indirectly affect the physical and biological environment by influencing consolidation and therefore the potential level of effort in the fishery. In general, the amount of effort applied to the fishery would decrease as participation is limited to fewer, more efficient individuals. This decreased effort would result in less gear and time used in pursuing grouper and, consequently, less adverse environmental impacts. The alternatives in order of lowest to highest impact on the environment are **Alternatives 2 and 3, Option b; Alternative 2 and 3, Option a; and Alternative 1.** The comparative impacts of **Alternatives 2 and 3** will differ depending on the share definition in Action B4.

Alternative 1, which does not place a cap on IFQ share ownership, provides the potentially best economic environment for the IFQ system to result in a highly efficient harvesting sector. But this may be perceived by some as contrary to the provisions of the Magnuson-Stevens Act, since the potential for acquiring excessive shares may arise. **Preferred Alternative 3** would not result in any IFQ participants being compelled to divest some of their holdings, but it would also tend to disadvantage the "highliners" who may be the most efficient fishery participants. **Alternative 2**, particularly with higher percent caps under a single overall cap, appears to offer a balance between the concern with excessive share holdings and disadvantaging the more efficient fishing operations.

In **Alternative 1,** the number or amount of shares that can be owned by a participant in the grouper and tilefish IFQ program would not be constrained. Not having a cap on the number of shares would allow fishermen to buy up enough shares to make the fishery more profitable for them. Without a cap on the percentage of shares, fishermen, fishing communities and fishing-dependent businesses that traditionally depended on the grouper and tilefish fisheries in some communities may no longer were able to harvest grouper and tilefish, which would have a negative impact on those that now depend on these fisheries. If the number of shares is not capped there may be more of a market for the shares, increasing the price for fishermen who want to sell the shares. This may make it more difficult for new people to enter the fishery due to the cost of buying shares.

Alternative 2 stipulates that no person shall own IFQ shares, which comprise more than the percent of the quota allocated to the IFQ program. Under **Alternative 2** various options and suboptions exist for the total shares a person can own. By capping the total a person can own, more people can participate in these fisheries, which will benefit the people who have historically been active in these fisheries and meet all of the qualifications and will be awarded an IFQ share based on past participation in the grouper and tilefish fisheries.

With **Preferred Alternative 3,** no person shall own more IFQ shares than the maximum percentage issued to the recipient of the largest shares at the time of the initial apportionment of IFQ shares. By capping the total percentage of shares a person can own, more people can participate in the grouper and tilefish fisheries which will benefit the people who have historically been active in these fisheries and who meet all of the qualifications and will be awarded an IFQ share based on past participation in the grouper and tilefish fisheries. Unlike **Alternative 2, Preferred Alternative 3** will continue to provide for a cap on percentages of shares for anyone who receives IFQ shares.

A higher cap would result in greater consolidation and fewer participants in the program. Lower participation and fewer share caps would have a lesser impact on the administrative environment. The alternatives in order of lowest to highest impact on the administrative environment are **Alternatives 2 and 3, Option b; Alternatives 2 and 3, Option a, and Alternative 1.** The comparative impacts of **Alternatives 2 and 3** will differ depending on the share definition in Action B4.

The Council chose **Alternative 3, Option b** as their preferred alternative to maintain consistency with the red snapper IFQ program. This alternative would accommodate all

participants at their current level without need to grandfather in anyone. **Alternative 2** would set an arbitrary cap and would require grandfathering in at least some participants. **Alternative 1** would not be consistent with the Magnuson-Stevens Act. **Option b** allows caps on each type of share chosen in Action B4 which allows better control and flexibility. A single cap, as in **Option a**, might allow a participant to land an excessive amount of a species with a lower quota while unduly restricting his landings of a species with a higher quota.

Table 2.2.7.1 Estimated initial allocation under each share cap alternative in Action B7, considering each alternative in Action B4 (IFQ Share Definitions).

Type of shares		Quota (lbs.)	5% of quota (lbs.)	10% of quota (lbs.)	15% of quota (lbs.)	Maximum percent landings	Maximum % of quota (lbs.)
Total shares (grouper + tilefish)	Current*	10,260,000	513,000 (0)	1,026,000 (0)	1,539,000 (0)	2.07%	212,382
	30B*	9,030,000	451,500 (0)	903,000 (0)	1,354,500 (0)	2.07%	186,921
Action B4 – Alternative 2	**Grouper:***						
	Current	9,820,000	491,000 (0)	982,000 (0)	1,473,000 (0)	2.72%	267,104
	30B	8,590,000	429,500 (0)	859,000 (0)	1,288,500 (0)	2.72%	233,648
	Tilefish	440,000	22,000 (7)	44,000 (1)	66,000 (0)	15.93%	70,092
Action B4 – Alternative 3	**Shallow Water Grouper:***						
	Current	8,800,000	440,000 (0)	880,000 (0)	1,320,000 (0)	1.95%	171,600
	30B	7,570,000	378,500 (0)	757,000 (0)	1,135,500 (0)	1.95%	147,615
	Deep Water Grouper	1,020,000	51,000 (2)	102,000 (1)	153,000 (0)	16.49%	168,198
	Tilefish	440,000	22,000 (7)	44,000 (1)	66,000 (0)	15.93%	70.092
Action B4 – Alternative 4 (30B)	**Red Grouper**	5,750,000	287,500 (0)	575,000 (0)	862,500 (0)	1.98%	113,850
	Gag	1,410,000	70,500 (0)	141,000 (0)	211,500 (0)	2.52%	35,532
	Shallow Water Grouper	410,000	20,500 (0)	41,000 (0)	61,500 (0)	7.69%	31,529
	Deep Water Grouper	1,020,000	51,000 (2)	102,000 (1)	153,000 (0)	16.49%	168,198
	Tilefish	440,000	22,000 (7)	44,000 (1)	66,000 (0)	15.93%	70,092

Maximum shares were estimated using the highest five years of landings during 1999-2004 to calculate estimated shares for permit holders during that time. When appropriate, allocation was also calculated according to changes to quotas when Amendment 30B is implemented. Amendment 30B will change the quotas for red grouper, gag, and shallow water grouper; deepwater grouper and tilefish would not change. Under Action B4, Alternative 4, allocation could only be calculated as that under Amendment 30B because there is no current quota for gag. Maximum percent landings are calculated based on actual landings during 1999-2004. Numbers in parentheses are the number of permit holders (1999-2004) who would have shares exceeding the cap(s) at initial apportionment and would be grandfathered in. These numbers are only estimates because corporate share holder information is not available at this time. *If aggregate shares are issued, the quota will likely be less than the combined quota shown here (see Action B4).

2.2.8 ACTION B8: Caps on IFQ Allocation Ownership

Alternative 1: No action. Do not constrain the amount of allocation that can be owned by a participant in the grouper and tilefish IFQ program each year.

<u>Preferred Alternative 2</u>: Set the allocation cap equal to the corresponding share cap as defined in Action B7. For any single fishing year, no person shall possess allocation in an amount that exceeds the allocation cap. However, persons grandfathered in for more than the total share cap during initial apportionment will also be grandfathered in for more than the allocation cap. (AP Preferred)

Alternative 3: Set the allocation cap equal to the corresponding share cap as defined in Action B7 plus an additional percent of the quota allocated to the IFQ program. For any single fishing year, no person shall possess allocation in an amount that exceeds the allocation cap.

The added percent shall be calculated as:

Option a) 1 percent;
Option b) 2 percent;
Option c) 5 percent.

<u>Discussion and Rationale:</u>

The Magnuson-Stevens Act, in addition to requiring share caps, requires establishment of other measures to prevent an inequitable concentration of limited access privilege. The alternatives for this action set a single allocation cap for the entire grouper/tilefish IFQ program.

Alternative 1 does not comply with the Magnuson-Stevens Act for the same reasons as stated for Action B7, **Alternative 1**. Without an allocation cap, an individual could still purchase an excessive portion of the quota each year, provided other participants were willing to transfer their allocations.

Alternatives 2 and **3** would limit the amount of IFQ allocation an individual or entity could fish each year. A cap on allocation ownership would allow some consolidation while preventing accumulation of excessive allocation. Fishermen who desired more quota than they received through initial apportionment would be limited in how much additional allocation they could purchase. Conversely, those fishermen who were allocated too little quota to make fishing worthwhile would have a more limited pool of participants to whom they could sell their allocation. The allocation cap would be set for all grouper and tilefish species totaled.

Preferred Alternative 2 would be the most restrictive alternative. Individuals at the share cap or grandfathered in above the share cap in Action B7, Alternative 2, could not purchase allocation beyond the amount they receive each year. These individuals could not fish their allocation and then receive more allocation through transfer in the same year. Individuals below

but near the share cap could also face restrictions on transfers. Participants with allocation exceeding the cap due to being grandfathered in must reduce (split) that allocation to the cap before selling it. If **Preferred Alternative 3** is chosen for Action B7, the maximum percent of landings by any one person would be approximately 2.07 percent. This maximum percent could be higher because corporate shareholder information is not available at this time. The Council is only able to determine the maximum cap based on existing permit holder information. Shareholder information will be collected prior to or upon implementation of the IFQ program when determining the maximum cap for the program. If this alternative is chosen for Action B7, under the current quota the allocation cap would be 212,382 pounds per year for all grouper and tilefish species (see Table 2.2.7.1). For the same reasons as discussed in Preferred Alternative 3 Action B7, the cap on allocation is expected to prevent entities from obtaining an inequitable and excessive share of the fishery.

Alternative 3 would allow all participants to purchase additional allocation up to a certain amount, except individuals grandfathered in under the share cap in Action B7, Alternative 2, who were already at or above the allocation cap. This alternative would allow a greater number of individuals to buy allocation, which in turn would increase flexibility of the fishery.

This action would have only indirect effects on the physical and biological environments. A more restrictive cap would reduce flexibility by fishermen to buy allocation to cover overages during a trip. As a result, the potential for regulatory discards could increase. On the other hand, if fishermen could not sell allocation they do not intend to use, that unused allocation could reduce effort and thereby the physical and biological impacts. The alternatives in order of least to most restrictive are **Alternative 1, Alternative 3,** and **Preferred Alternative 2.**

Buying and selling an allocation has the general purpose of allowing short-term adjustments in fishing operations. **Alternative 1** would afford the best scenario for such short-term adjustment, followed by **Alternative 3**, and lastly by **Preferred Alternative 2**. Due to the possibility that some entities would enter into long-term arrangements with other entities to buy up their allocations each year and thereby circumvent the share cap provision, **Alternative 1** may pose some policy and efficiency issues. In such a situation, some form of cap may be necessary, but it appears that the cap imposed under **Alternative 2 or 3** would be too limiting for some entities to make within season adjustments of their fishing operations, unless relatively higher percent caps are chosen for IFQ share ownership.

Alternative 1 would not constrain the amount of allocation that can be owned by a participant in the grouper and tilefish IFQ program each year. This would allow people to have as much allocation as they could get which may concentrate the allocations to just a few people within a given year. This would have a negative impact on others who meet the qualifications to own shares but could not buy any allocation from others. **Preferred Alternative 2** would set the allocation cap equal to the total share cap as defined in Action B7. This alternative would cap how much allocation a fishermen could buy from others and reduce the problem of a few entities controlling the majority of the harvest. Like **Preferred Alternative 2**, **Alternative 3** would also allow fishermen to buy and trade shares if needed. This alternative allows allocations up to the share amount plus different options for one to five percent more. The higher the percentage, the

more a fisherman can adjust his catch, which would be beneficial so they do not have to discard fish if they exceed their quota but can buy allocations.

The impacts on the administrative environment would be greater with a less restrictive cap because more transactions would take place. However, a lack of any cap would have the least amount of impact because enforcement of the cap would not be needed. The alternatives from lowest to highest administrative impacts are **Alternative 1, Alternative 2, and Alternative 3.**

The Council chose **Alternative 2** as their preferred because the allocation cap would be the same as the share cap. This would allow the same amount of control and flexibility as in the preferred alternative for Action B7. They felt no need to allow allocation greater than the share cap as in **Alternative 3**. **Alternative 1** could not be chosen as it does not comply with legal interpretations of the Magnuson-Stevens Act.

2.2.9 ACTION B9 Adjustments in Annual Allocations of Commercial TACs

Alternative 1: No action. Do not specify provisions for annual adjustments in the commercial allocations among IFQ shareholders.

<u>Preferred Alternative 2</u>: Allocate adjustments in the commercial quota proportionately among eligible IFQ shareholders (e.g., those eligible at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment. (AP Preferred)

Alternative 3: Allocate adjustments in the commercial quota through an auction system. All IFQ shareholders are allowed to place bids.

<u>Discussion and Rationale</u>

This action establishes when and how adjustments in commercial grouper and tilefish quotas will be administered. Commercial quota adjustments will be required whenever the Council elects to reallocate grouper or tilefish resources between the commercial and recreational sectors or when TACs are adjusted. When allocations between the commercial and recreational sectors are specified, commercial quotas are determined by multiplying the TAC for a species/species group by the commercial allocation (i.e., commercial quota = TAC × commercial allocation). Adjustments in TAC could occur at the Council's discretion or when the status of a stock changes following a new or updated stock assessment. Commercial quota adjustments due to resource reallocation or adjustments in TACs have no impact on the fundamental nature of the IFQ program. Therefore, a new referendum would not be warranted following such adjustments.

The IFQ program should specify how resulting adjustments (reductions or increases) to the commercial quota would be distributed among IFQ shareholders. In general, there are three alternative means to handle commercial quota adjustments under an IFQ program. The adjustment could either be distributed among IFQ shareholders based on the percentage of the commercial quota each holds at the time of the adjustment, based on some fixed amount equally applied to the amount of quota each IFQ shareholder has, or distributed through an auction where

TAC is awarded to those willing to pay the most. The second option was considered impracticable by the Council as it could put some smaller IFQ shareholders into negative values should TAC be reduced. Therefore, this option was rejected.

Alternative 1 would not specify a predefined strategy for distributing commercial quota adjustments among IFQ shareholders. Consequently, the no action alternative would require the Council address this issue through additional rulemaking if and when a quota adjustment occurred.

Preferred Alternative 2 uses a proportional adjustment strategy, which the AP preferred because it is more consistent with shareholders' relative involvement in the fishery. For this very reason, this type of strategy was favored by the Council and the AP when they developed the red snapper IFQ program.

Alternative 3 uses an auction system which could be used for both increases and decreases in TAC. Under an auction system, shareholders willing to pay the most for the new allocation would receive increases in their total allocation should there be an increase in TAC. Should TAC be decreased, fishermen willing to pay the most to minimize their potential loss in allocation would minimize their losses. Under this scenario, the portion of the commercial quota used to allocate individual shares in the harvest would need to be reduced below the allowed commercial quota. This difference in quota would then be available to an auction. Fishermen willing to pay more to reduce losses in their individual allocation would then receive more pounds.

An example of how an auction could be structured under a situation where TAC was reduced is as follows. Assume in a fishery there are three fishermen A, B, C with 10, 30, and 60 percent of the shares, respectively. If the TAC was 1,000 pounds, then fisherman A would get 100 pounds, B would get 300 pounds, and C would get 600 pounds. Under **Preferred Alternative 2**, if TAC were reduced by 10 percent to 900 pounds, then fisherman A would get 90 pounds, B would get 270 pounds, and C would get 540 pounds. To have an auction you start by cutting more than the required reduction of 10 percent. In this example, TAC would be cut by 20 percent. Thus, fisherman A would get 80 pounds, B would get 240 pounds, and C would get 480 pounds. The extra 10 percent cut would then be available for an auction and a fisherman might be willing to pay to protect himself from reduced landings. If the auction of the extra 100 pounds were made available in 20 pounds increments, fisherman A might win one auction round (20pounds); B might win 3 rounds (60 pounds), and C might win one round (20 pounds). This would result in the distribution of TAC as Fisherman A with 100 pounds, B with 300 pounds, and C with 500 pounds – a total of 900 pounds. Fisherman A and B have protected themselves from the cuts in their individual allocation.

Some IFQ shareholders may find **Alternative 3** unfair because it would award increases in allocation to those able to afford more allocation. However, while they may win or lose some allocation, their shares remain unchanged and initial allocations for each year would remain the same. Therefore, they could save in advance to obtain additional allocation in the following year should they decide to participate in the auction.

With respect to revenues generated by an auction, as stipulated in the Magnuson-Stevens Act 303A(d)(2), these royalties would be deposited in the Limited Access System Administration Fund. This fund would be available for either administering the central registry system, or administering and implementing the Magnuson-Stevens Act in the fishery the fees were collected (MSFCMA 305(h)(5)). If **Alternative 3** were selected as the proposed action, an auction system would need to be developed.

Because the allocation of quota adjustments is largely a socioeconomic and administrative action, this action would not directly affect the physical or biological/ecological environments. The effects of **Alternative 1** would not specify a predefined strategy and so the effects of this alternative would need to be evaluated on a case-specific basis when the Council proposed a distribution strategy related to a specific adjustment. The strategy proposed in **Preferred Alternative 2** would benefit the physical and biological/ecological environments if it would favor more efficient operations. Efficient fishermen generally spend less time pursuing the same amount of fish compared to less efficient fishermen. This would likely minimize fishing interactions with bottom habitat and the occurrence of regulatory discards and bycatch. The auction system proposed in **Alternative 3** would benefit the physical and biological/ecological environments if it would favor more efficient operations. In this case, the effects would be similar to **Preferred Alternative 2**. However, if allocation is purchased by less efficient fishermen, then the effects would be greater than **Preferred Alternative 2**.

Among the alternatives, **Alternative 1** is disruptive to the operation of the IFQ system and also involves higher costs without necessarily resulting in re-enforcing whatever efficiency has developed in the fishery. **Preferred Alternative 2** is the least disruptive to the operation of the IFQ system potentially involves the lowest cost of allocating quota adjustments, and offers the highest opportunity for equity considerations. It, nevertheless, is unlikely to promote efficiency in the fishery. **Alternative 3** offers some potential in efficiently allocating quota adjustments, but it could complicate and thus increase the cost of allocating quota adjustments. It also is highly vulnerable to criticisms based on equity grounds, especially if the highest bidders are new entrants who did not share the past cost of managing the fishery.

Alternative 1 could have a negative impact on the fishermen involved with these fisheries because they would not know from year to year how the allocations would change if the quota is changed. With **Preferred Alternative 2** fishermen would know from year to year that their allocation as a percentage of the total would stay the same and would distribute the increases or decreases in the harvest equally between all of those that had an IFQ share. **Alternative 3** could cause problems in assigning total allocations to fishermen as the TAC is adjusted from year to year. If allocations can be auctioned off, the price may be prohibitive for some fishermen and would keep them from being able to buy allocations from other fishermen later in the season if needed. This alternative could lead to concentration of allocations by just a few entities.

For the administrative environment, **Alternative 1** would require fishery administrators propose and evaluate TAC adjustment allocation strategies on a case-specific basis and would require additional rulemaking. The administrative effects of **Preferred Alternative 2** are not substantially different from **Alternative 1**. Each would provide fishery managers the information they need to allocate TAC increases and decreases among IFQ shareholders. The

administrative effort required to calculate allocation adjustments would be similar for both alternatives. **Alternative 3** would require administrators to develop an auction program, distribute IFQ allocations according to allocation purchased, and administer funds received from the auction.

2.2.10 ACTION B10: Establishment and Structure of an Appeals Process

Alternative 1: No Action. Do not specify provisions for an appeals process associated with the IFQ program.

<u>Preferred Alternative 2</u>: The Regional Administrator (RA) will review, evaluate, and render final decision on appeals. Filing of an appeal based on landings data must be completed within 90 days of the effective date of the final regulations implementing the IFQ program. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS' logbooks. If NMFS' logbooks are not available; the RA may use state landings records. Appellants must submit NMFS' logbooks to support their appeal. (AP Preferred)

Alternative 3: A special board composed of state directors/designees will review, evaluate, and make individual recommendations to RA on appeals. Filing of an appeal must be completed within 90 days of the effective date of the final regulations implementing the IFQ program. Hardship arguments will not be considered.

<u>Preferred Alternative 4</u>: A total of three percent of the current commercial quota will be initially set-aside to resolve appeals. Any amount remaining in the three-percent set-aside after the appeals process has been terminated will be proportionately distributed back to initial IFQ share holders.

<u>Discussion and Rationale:</u>

Initial eligibility and distribution of IFQ shares and allocation can be one of the most controversial aspects of an IFQ program. Section 303(A) of the Magnuson-Stevens Act requires LAPPs to include an appeals process regarding initial allocation. An appeals process would provide a formalized process for hearing and resolving disputes regarding initial distribution of IFQ shares and allocation. Items subject to appeal under the IFQ system are initial eligibility for IFQ shares based on ownership of a Gulf commercial reef fish permit, the accuracy of the amount of landings, and correct assignment of landings to the license owner. In addition, a permit holder can file an appeal and request a reevaluation of his adjusted gag and other SWG landings if he disagrees with gag and other SWG landings (including black grouper) resulting from adjustments made to correct the gag and black misidentification issue detailed in Section 2.2.4. Appeals based on hardship factors will not be considered. Appeals must be submitted to the RA and must contain documentation supporting the basis for the appeal. The RA will review all appeals, render final decisions on the appeals, and advise the appellant of the final decision.

NMFS' records of Gulf commercial reef fish permits are the sole basis for determining ownership of such licenses. A person who believes he/she meets the permit eligibility criteria based on ownership of a vessel under a different name, as may have occurred when ownership has changed from individual to corporate or vice versa, must document his/her continuity of ownership. Landings data for appeals would be based on NMFS' logbooks submitted to and received by the SEFSC by December 31, 2006, for the years 1999 through 2004. If NMFS' logbooks are not available, the RA may use state landings records or data that were submitted in compliance with applicable Federal and state regulations, on or before December 31, 2006, for the years 1999 through 2004. Regardless of whom the Council selected to oversee the proposed appeals process, the final regulations implementing the IFQ program would be binding until amended.

Alternative 1 would not establish a formal appeals process. **Preferred Alternative 2** would require the RA and his or her support staff resolve disputes. The AP chose **Alternative 2** as their preferred alternative. In the Red Snapper IFQ program, the outcome of appeals was decided by the RA. In Reef Fish Amendment 8, the Council adopted an appeals process similar to that in **Alternative 3**, which would require appellants to submit their claims to an appeals board. Each member of the board would then submit his or her individual position on the appeals to the RA, rather than have all members of the board develop a consensus position on the issue.

Preferred Alternative 4 would require NMFS reserve 3 percent of the total shares and TAC/quota available for each share category identified in Action B4 during the first year of the program for use in resolving disputes regarding initial eligibility and IFQ share allocation decisions. The intent of this alternative is to relieve program participants of the burden of having to return shares they were initially allocated because additional participants or needed share adjustments were identified through the appeals process. Any amount of IFQ shares remaining in this set aside after the appeals process is completed would be proportionately distributed back to all IFQ shareholders based on the amount of IFQ shares they were originally allocated. However, if needed adjustments should exceed the three-percent set aside, then the shares of all IFQ shareholders would be proportionately deducted as needed.

The Council chose **Preferred Alternatives 2** and **4** in order to maintain consistency with the red snapper IFQ program. **Alternatives 1** and **3** both deviate from the appeals process that was implemented in the previous IFQ program.

Establishing an appeals process for an IFQ program is an administrative action, and is not expected to directly or indirectly affect the physical, biological, or ecological environments in a positive or negative way.

The establishment of an appeals process and the design of its structure have mainly equity effects. Neither one is expected to have a noticeable effect on the benefits associated with the implementation of the IFQ program. One major reason for this is an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. Economic changes would only be evident if the number of successful appeals were large compared to the number of qualifying persons or vessels.

Alternative 1 would not allow fishermen to appeal any dispute they had over the IFQ process and there would be no appeal process. This alternative would not be beneficial to any of the fishermen who may have a dispute they feel needs to be resolved through an appeals process. **Preferred Alternative 2** (AP Preferred)**,** would require much time of the RA and his/her staff to resolve any potential disputes. However, it would allow fishermen who may have a dispute an avenue for an appeal. This alternative does not allow for any hardship arguments, which could be detrimental to fishermen who wanted to file an appeal based on hardship.

Alternative 3 will allow fishermen to appeal a decision and some fishermen may prefer that a group of people are making the decision on their appeal rather than just one person. This alternative does not allow for any hardship arguments, which could be detrimental to fishermen who wanted to file an appeal based on hardship. **Preferred Alternative 4** would reserve a total of three percent of the shares and TAC/quota associated with each individual share category in Action B4 to be initially set-aside to resolve appeals. This will protect fishermen who are going through the appeals process so that if they win their appeal, then their share of the harvest will be restored. Also, **Preferred Alternative 4** would protect other fishermen with an IFQ share in that if a person wins their appeal, shares would not necessarily need to be taken from the rest of the IFQ holders in order to restore fishing rights to the person or entity who made the appeal.

2.2.11 ACTION B11: Use it or Lose it Policy for IFQ Shares

<u>Preferred Alternative 1</u>: No Action - Do not specify a minimum landings requirement for retaining IFQ shares.

Alternative 2: IFQ shares that remain inactive for <u>three</u> years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 30 percent of the aggregate annual average utilization of allotted IFQ shares over a three-year moving average period, except in case of death or disability. (AP Preferred)

Alternative 3: IFQ shares that remain inactive for <u>three</u> years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 50 percent of the aggregate annual average utilization of allotted IFQ shares over a three-year moving average period, except in case of death or disability.

<u>Discussion and Rationale</u>

The use-it-or-lose-it concept is intended to prevent owners from holding shares and not fishing them. Commercial fishermen are expected to use IFQ shares they hold to generate revenue, rather than forgo potential income by not using IFQ shares they own. This action would establish a limit on how long a person may hold onto their IFQ shares and not fish them. The action would also establish a fishing activity threshold for maintaining IFQ shares. The alternatives are intended to balance the valid health and equipment issues that could prevent a fisherman from using all or some shares for a period of time against the need for continued domestic supply of grouper and tilefish. Leasing annual allocation would be considered as a use.

Preferred Alternative 1 would not specify a minimum landings requirement for maintaining IFQ shares. This alternative would be consistent with the Gulf Council's red snapper IFQ program, which does not specify a landings requirement for retaining red snapper IFQ shares. Participants who possess IFQ shares could choose whether or not they want to fish their shares. If shares are not fished, then net benefits to grouper and tilefish would occur as a direct result of less fish being landed. However, by not specifying a use requirement, the number of speculators buying IFQ shares beyond their current harvesting capacity may increase. Additionally, grouper and tilefish fishery yield would not be optimized, in accordance with National Standard 1 of the Magnuson-Stevens Act.

Alternatives 2 and **3** set minimum thresholds for using allotted IFQ shares over a three-year average period. Shareholders would be required to harvest on average either 30 (**Alternative 2**) or 50 percent (**Alternative 3**) of the shares they are allotted. If shareholders do not achieve the minimum landings threshold then their shares would be revoked and proportionally redistributed to the remaining shareholders in the fishery. **Alternative 3** would be more restrictive than **Alternative 2**, and potentially result in more shares being revoked over time. Unlike **Preferred Alternative 1**, these alternatives would increase the likelihood that OY is harvested from the grouper and tilefish fisheries on a continuing basis, as specified by National Standard 1. The use requirement would negatively affect marginally efficient operators, at least in the early stages of the IFQ program. In later stages of the IFQ program, the use requirement would compel fishermen to consolidate IFQ shares to match their catch capacity. If shares are revoked due to the use-it-or-lose-it provision, then redistribution of shares to those more likely to use them may increase the likelihood that yield is optimized for the greatest net benefit to the Nation. Negative consequences of a use it or lose it provision, include greater incentive for fishermen to increase their landings, resulting in higher fishing mortality rates. If fishermen choose not to harvest their allotted IFQ shares in any year (**Preferred Alternative 1**) this would benefit restoration of overfished stocks and stocks undergoing overfishing (e.g., gag) and reduce gear-habitat interactions. Additionally, if IFQ shares are not fished, other fishermen may benefit in terms of higher catch rates.

Economically, it generally would not make sense for fishermen to hold IFQ shares and not use them, because of the cost of not using them by either fishing or selling them. This cost would generally be higher for more efficient operations. In this sense, all alternatives would have the same economic implications. There are, however, situations when IFQ allocations are not used, but in all likelihood non-use of IFQ shares would be due to hardship conditions or to output (e.g., low product price) and input (e.g., fuel cost) market conditions, making the trip unprofitable. In these situations, **Alternatives 2** and more so **Alternative 3** would only penalize IFQ holders for making an economically sound decision. On top of it all, **Alternatives 2 and 3** would prevent IFQ holders from making fish conservation efforts based on economic decisions.

Preferred Alternative 1 would not establish a use-it-or-lose-it clause. This would protect shareholders if they had problems with equipment, labor, their health, or for other reasons did not harvest their quota over a certain time frame, but still wanted to retain their shares. It would be a benefit to the stock recovery if some shares were not fully harvested each year. For these reasons, the Council chose this alternative as their preferred.

Unlike **Preferred Alternative 1, Alternative 2** would allow for the redistribution of shares if a shareholder is inactive for three years. It would be a benefit to the shareholders who are active in the fishery and would receive additional shares. This would be a detriment to fishermen who had been inactive due to problems with equipment, labor, their health, or for other reasons. This would require monitoring on the part of the Council in order to determine who has been inactive or not active at the designated level for three years. At the 2008 April AP Meeting, the AP confirmed that this alternative was their preferred with the caveat the word "disability" be removed.

Alternative 3 would be of benefit to fishermen who experienced problems such as problems with equipment, health, etc., less than **Alternative 2** because if they had harvested at least fifty percent of their share they would be protected from losing their shares. This alternative would allow for the redistribution of shares if a shareholder had not harvested at least 50 percent of their share for three years. It would be a benefit to the shareholders who are active in the fishery and would receive additional shares if any shareholders lost theirs. This would be a detriment to fishermen who had not harvested at least 50 percent of their IFQ share due to problems with equipment, labor, their health (with the exception of disability), or for other reasons. This alternative would require monitoring on the part of NMFS in order to determine who has been inactive or not active at the designated level for three years.

2.2.12 ACTION B12: Cost Recovery Plan

Alternative 1: No action. No IFQ cost recovery plan will be implemented.

<u>Preferred Alternative 2</u>: Implement an IFQ cost recovery plan. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The cost recovery plan will have the following conditions:

<u>Preferred Option a</u>): IFQ cost recovery fees will be calculated at the time of sale of fish to the registered IFQ dealer based on:

<u>Preferred (i)</u> the actual* ex-vessel value of the grouper landings.
(ii) the standard ex-vessel price of the grouper landings as calculated by NMFS.**

Option b). The fee collection and submission shall be the responsibility of:

(i) the IFQ shareholder.
<u>Preferred (ii)</u> the IFQ dealer.

Option c). The collected fees would be submitted to NMFS

<u>Preferred (i)</u> quarterly.
(ii) monthly.

***** actual ex-vessel value is the total monetary sale amount fishermen receive for IFQ landings from registered IFQ dealer/processors operating as shore-side processors.

****** standard ex-vessel price is the ex-vessel price for the previous fishing year and any expected price changes for the current fishing year.

Discussion and Rationale

The Magnuson-Stevens Act requires that LAPPs, such as the grouper/tilefish IFQ program, include provisions to recover management, monitoring, data collection and analysis, and enforcement costs. This includes the cost of computer systems necessary to manage the disbursement and tracking of IFQ share ownership and annual harvest privileges, as well as observer and enforcement programs. It is worth noting that the 2006 reauthorization of the Magnuson-Stevens Act maintains the previously established limit on cost recovery fees. The Magnuson-Stevens Act limits cost recovery fees to 3% of the value of the fishery. In the red snapper IFQ program, the fees are calculated during sale, deducted from the seller's check, and submitted by the dealer to NMFS on a quarterly basis.

Section 303(A) of the Magnuson-Stevens Act requires the Secretary establish a fee to assist in recovering the actual costs directly related to the management and enforcement of any IFQ program. Such a fee may not exceed three percent of the ex-vessel value of fish harvested under any such program, and must be collected at either the time of landing, filing of a landing report, or sale of such fish during a fishing season or in the last quarter of the calendar year in which the fish is harvested. Fees collected must be in addition to any other fees charged under the Magnuson-Stevens Act and must be deposited in the Limited Access System Administration Fund established under Section 305(h)(5)(B) of the Magnuson-Stevens Act. This fee collection provision is intended to help fishery managers recover a portion of the costs of enforcing and administering IFQ programs, including the costs of data collection, management, and distribution.

Alternative 1 would not establish a cost recovery system. **Alternative 1** would not conform to Magunson-Stevens Act cost recovery provisions. Under **Preferred Alternative 2** IFQ share or allocation holders are responsible for the cost recovery fee. **Preferred Alternative 2(a)** provides the option of having the cost recovery fee be based on the actual* or standard** ex-vessel value. Under **Preferred Alternative 2(b)(i)** the responsibility for fee collection and submission would reside with the IFQ shareholder whereas under **Preferred Alternative 2(b)(ii)** the responsibility would reside with the IFQ dealer/processor. **Preferred Alternative 2(c)** would require whoever is responsible for submitting the fees to do so on a quarterly **(i)** or monthly basis **(ii)**.

In the red snapper IFQ program, IFQ shareholders are responsible for the cost recovery fee; dealers are responsible for collection and submission of the cost recovery fee; the cost recovery fee is based on the actual ex-vessel value; and the collected cost recovery fees are submitted to NMFS on a quarterly basis.

Preferred Alternative 2 was chosen as the preferred alternative because the Council determined it would be best to remain consistent with the Gulf of Mexico Red Snapper IFQ program Cost Recovery Plan. Therefore, the Council preferred **Option (a)(i), Option (b)(ii), and Option (c)(i)**. If approved, IFQ shareholders will be responsible for the cost recovery fee but the dealers will be responsible for collecting and submitting the fee, which will be based on the actual ex-

vessel value. The collected cost recovery fees will be submitted to NMFS on a quarterly basis with an annual IFQ dealer ex-vessel value report required at the end of each year.

Under the mandate to recover the cost of an IFQ system, **Alternative 1** becomes a non-viable alternative. It, however, would allow the fishery to collect the full benefits of the IFQ system while shifting the cost to the general public. **Alternative 2** would impose a system to recover cost based on actual or standard ex-vessel price. Determination of actual ex-vessel price appears to be more efficient of the two, since it would not involve people far removed from where actual transactions occurred to make decisions on appropriate price level. On the other hand, leaving the determination of ex-vessel price to fishermen and dealers leaves plenty of room for these individuals to devise ways to minimize payment of cost recovery fees.

Alternative 1 would benefit the IFQ shareholders in that they would not be required to pay for and maintain the paperwork for any type of cost recovery plan. **Preferred Alternative 2** would implement an IFQ cost recovery plan. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. There are various options for how the fees will be recovered. Any of the chosen formulas for cost recovery could be burdensome for the IFQ shareholders and/or the dealers and processors due to the time and cost involved in complying with the regulation. On the other hand, the implementation and maintenance of this program will be expensive and it is important for NMFS to recover some of the costs.

Establishing a cost recovery program for an IFQ program is an administrative action, which would not directly or indirectly affect the physical, biological, or ecological environments. It would simply assist fishery managers in recovering a portion of the actual costs related to managing and enforcing the program, as mandated by the Magnuson-Stevens Act.

2.2.13 ACTION B13: Guaranteed Loan Program

Preferred Alternative 1: No Action - Do not establish an IFQ loan program

Alternative 2: Set aside 15% of cost recovery fees to establish a guaranteed loan program

Alternative 3: Set aside 25% of cost recovery fees to establish a guaranteed loan program (AP Preferred)

Discussion and Rationale

Following the initial apportionment of IFQ shares, individuals who want to participate in the IFQ program or add to their quota holdings have, if they are deemed eligible, to buy shares. It may be difficult, especially for small operations, to gather the funds necessary for the share purchase. This action considers management alternatives that could facilitate the acquisition of IFQ shares by establishing a guaranteed loan program financed with a portion of cost recovery funds.

Preferred Alternative 1, no action, would not establish an IFQ loan program. Under **Preferred Alternative 1**, individuals would have to use private means to pay for the IFQ shares they want to acquire. **Preferred Alternative 1** would not provide assistance to prospective IFQ participants

that do not have sufficient funds to buy shares. **Preferred Alternative 1** would not help small operations enter or increase their level of participation in the IFQ program.

Requirements for limited access privilege assisted purchase programs are discussed in the Magnuson-Stevens Act. Specifically, section 303A(g) stipulates that "…A Council may submit, and the Secretary may approve and implement, a program which reserves up to 25 percent of any fees collected from a fishery under section 304(d)(2) to be used, pursuant to section 53706(a)(7) of title 46, United States Code, to issue obligations that aid in the financing –

> (A) the purchase of limited access privileges in that fishery by fishermen who fish from small vessels; and
>
> (B) the first time purchase of limited access privileges in that fishery by entry level fishermen."

Alternatives 2 and **3** consider the implementation of such a loan program, using varying proportions of cost recovery fees collected. **Alternative 2** would use 15 percent of fees recovered. **Alternative 3** could, all other things equal, support the financing of more loans as it would allocate to the loan program the maximum amount allowed by the Act, i.e., 25 percent of cost recovery fees.

The implementation of either **Alternative 2** or **3** would require a prior determination of what constitutes a small vessel. One avenue would be to consider those who did not meet the minimum average landings threshold to qualify as having "substantially fished" to be considered as fishing from a "small vessel."

Preferred Alternative 1 would not establish an IFQ loan program. Fishermen and entities who want to buy shares would have to use private financing sources. Under **Preferred Alternative 1,** larger operations, which are generally more likely to have access to funding, are anticipated to fare better than smaller ones in the acquisition of additional IFQ shares. **Alternative 2** could allocate about $135,000 or 15 percent of fees recovered to grant loans to first time participants and small fishing operations. **Alternative 3** would set aside 25 percent of fees recovered or approximately $225,000 to assist first time participants and small fishing operations in the acquisition of IFQ shares. In light of the limited funding available for the establishment of an IFQ loan program, neither **Alternative 2** nor **Alternative 3** are expected to significantly affect share distribution within the fishery. However, the diversion of up to 25 percent of fees recovered could jeopardize NMFS' effectiveness in administering the grouper and tilefish IFQ program.

Preferred Alternative 1 would not establish an IFQ loan program to help small operations buy IFQ shares. It may be difficult for some fishermen to buy shares if they can not get a loan from the program, and therefore they would not be able to participate.

Alternative 2 and **3** would set aside a portion of the cost recovery fees for fishermen to borrow to buy shares. **Alternative 3** would be of more benefit to fishermen who need these loans than

Alternative 2 because it sets aside a larger percentage of the cost recovery fees, making more money available to be used for loans.

2.2.14 ACTION B14: Approved Landing Sites

Alternative 1: Do not establish approved landing sites for IFQ programs in the commercial reef fish fisheries

<u>Preferred Alternative 2</u>: Establish approved landing sites for all IFQ programs in the commercial reef fish fisheries. All IFQ participants must land at one of these sites to participate in the IFQ program.

> **<u>Preferred Option (a)</u> Approved landing sites will be selected by fishermen but must be approved by NMFS Office of Law Enforcement.**
>
> **Option (b) Approved landing sites will be selected by the Council and NMFS, based on industry recommendations and resource availability.**

Alternative 3: Landing sites must be approved by OLE in order for IFQ fishermen to use the VMS units as an option to report landing notifications. Landing locations do not need to be approved if they are reported through telephone or an IFQ online accounting system.

<u>Discussion and Rationale</u>

Establishing approved landing sites is intended to aid in enforcing the landing and offloading aspects of the IFQ program. To aid enforcement, landings locations would need to be publicly accessible by land and their geographic location would have to be specifically identifiable. For enforcement purposes, fishermen participating in the IFQ program would be subject to the same landing and offloading requirements that currently exist for the Gulf red snapper IFQ program. Red snapper IFQ fishermen are required to offload their red snapper landings between 6:00 a.m. and 6:00 p.m., local time, daily. All persons landing red snapper IFQ catch are required to notify NMFS enforcement agents between three hours to twelve hours in advance of the time of landing and indicate where the landing would occur and the dealer who will be purchasing the fish. In the red snapper IFQ program, landing sites are being approved by OLE in order for IFQ fishermen to ultimately use VMS as an option to report landing notifications. Approving landing locations in advance would ensure agents for the OLE can find these sites and the sites do exist.

Alternative 1 would not establish approved landing sites for IFQ programs. **Preferred Alternative 2 (Option a)** would allow the sites to be selected by fishermen but approved by NMFS Office of Law Enforcement. This alternative would be a modification of what currently is implemented in the red snapper IFQ program, which allows fishermen to register their landing locations so that VMS can be used as an option to report the three-hour landing notifications. The Council chose **Preferred Alternative 2 (Option a)** because this alternative would best improve enforcement capabilities while involving input from fishermen. **Alternative 2 (Option B)** would have the Council and NMFS select landing sites based on industry recommendation

and resource availability. This option may be more restrictive than option A, especially if certain landing locations are inadvertently omitted by industry recommendations. **Alternative 3** would not require the establishment of approved landing sites in order to participate in the program. However, under this alternative, if the IFQ fishermen would like to use VMS as an option to report the landing notifications, they must register their landing locations.

All alternatives to the status quo would mainly affect the monitoring and enforcement of IFQ landings. If these alternatives enhance monitoring and enforcement of the IFQ program, the likelihood of realizing the expected economic benefits from the IFQ program would increase or at least be preserved. The cost to the IFQ participants would likely be minimal, so that whatever benefits arise from an enhanced monitoring and enforcement activities would directly translate to increases in economic benefits to the entire IFQ participants.

Alternative 1 would not establish approved landing sites for IFQ programs in the commercial reef fish fisheries. This alternative would not impact the fishermen or fishing communities because fishermen could continue to land grouper and tile fish where they wanted as they do now.

With **Preferred Alternative 2** fishermen in the IFQ program would be required to land their catch at established approved landing sites. This would restrict fishermen to locations with approved landings. By requiring that any fish caught under the IFQ program be landed at a approved location, fishermen may have to travel to approved areas in unsafe weather or use more fuel to get to that location. **Option (a)** would be better than **Option b** for the fishermen because it would allow them to choose the approved landing site.

Alternative 3 would require that landing sites be approved by OLE in order for IFQ fishermen to use the VMS units as an option to report landing notifications. Landing locations do not need to be approved if they are reported through telephone or an IFQ online accounting system. With this alternative, fishermen would incur additional operating expenses if they chose to report their landing location via VMS.

Establishing approved landing sites is an administrative action, and is not expected to directly or indirectly affect the physical, biological, or ecological environments in a positive or negative way.

2.3 SECTION C- ENDORSEMENTS

As one of the effort management alternatives under consideration in this amendment, the establishment of an endorsement program could be selected by the Council as the preferred approach to addressing overcapacity problems and rationalizing the commercial grouper and tilefish fisheries. This section, which includes three management actions, specifies eligibility requirements and addresses potential bycatch problems that could arise if an endorsement program was selected as the preferred approach.

2.3.1 ACTION C1: Minimum Harvest Threshold for Endorsements

<u>Preferred Alternative 1</u>: No Action - Do not specify minimum harvest thresholds for grouper and tilefish endorsements

Alternative 2 – The minimum harvest threshold for a grouper and tilefish endorsement to the Reef Fish Permit will be based on average annual landings history during the qualifying years for all groupers and tilefish of:

> **option i: one pound.**
> **option ii: one thousand pounds.**
> **option iii: four thousand pounds.**

Alternative 3 – The minimum harvest threshold for a grouper and tilefish endorsement to the reef fish permit by fishing gear will be based on average annual landings history during the qualifying years for all groupers and tilefish of:

> **Option a: longline grouper and tilefish endorsement will be:**
> **Suboption i: one pound.**
> **Suboption ii: ten thousand pounds.**
> **Suboption iii: fifty thousand pounds.**
>
> **Option b: other gear grouper and tilefish endorsement will be:**
> **Suboption i: one pound.**
> **Suboption ii: five hundred pounds.**
> **Suboption iii: one thousand pounds.**

<u>Discussion and Rationale</u>

Requirements to qualify for an endorsement program are indispensable prerequisites to the implementation of such a program. Therefore, the no action alternative (**Preferred Alternative 1**), which does not specify any eligibility requirement, is incompatible with the implementation of an endorsement program. Under **Preferred Alternative 1**, one would have to go back to Section A, the first step of the decision process, and select a preferred effort management approach, excluding the establishment of an endorsement program.

Remaining alternatives considered under this action specify endorsement eligibility criteria and exclude varying numbers of participants in the grouper and tilefish fisheries. Criteria for endorsement eligibility considered under this action are expressed as minimum average annual grouper and tilefish landings. The time period for these landings is considered under Action C2.

Alternative 2 would grant eligibility for a grouper and tilefish endorsement to any commercial fishermen with a combined average grouper and tilefish harvest of at least one pound to four thousand pounds, depending on the sub-alternative selected. **Option i**, at least one pound, would grant and endorsement to all active participants in the grouper and tilefish fisheries. In practical terms, permit holders who did not land grouper or tilefish during the period considered would not

qualify for the endorsement. A distribution of permit owners based on average grouper and tilefish landings for the preferred qualifying years (between 1999 and 2004 with an allowance for dropping one year) is provided in Table 2.3.1. Under **Alternative 2**, a total of 75 permit owners would be excluded from the endorsement program.

Table 2.3.1 Commercial Ref Fish Permits by Average Grouper and Tilefish landings

Group	**Best 5 years between 1999-2004**	
	Frequency	
	Number	Cumulative
0 lb	75	75
1 to 999 lbs	299	374
1,000 to 3,999 lbs	227	601
4,000 lbs and above	427	1,028
Total	1,028	---

Options ii and **iii** consider more restrictive eligibility criteria for the endorsement program. **Option ii** would require combined tilefish and grouper annual average landings of at least 1,000 pounds to qualify for an endorsement. Based on this threshold**,** 374 permit owners are expected to be excluded from receiving grouper and tilefish endorsements. Under **Option iii**, which would set the minimum average landings threshold at 4,000 pounds, 601 permits owners could be precluded from participating in the commercial grouper and tilefish fisheries. The number of fishermen without a grouper and tilefish endorsement who would elect to participate in other reef fish fisheries is unknown. It is also not possible to quantify the amount of grouper and tilefish discards they may generate while prosecuting reef fish species other than grouper or tilefish.

Alternative 3 would provide endorsements based on gear type. One would be longlines (**Option a**) and the second would be for other gear types such as vertical line, spearfishing, and fish traps (**Option b**). Note that fish traps were phased out of the reef fish fishery in 2007, but this gear was allowed during the 1999-2004 time period selected as qualifying years in **Action C2**. Each option has sub-options specifying the average landings needed over the Action C2 qualifying years. Minimum average landings for longlines (minimum of 1 to 50,000 pounds) are larger than averages for other gear (minimum of 1 to 1,000 pounds) because longline vessels typically have higher landings per trip (Section 3). If the Council selects **Alternative 3** as a preferred, it would have to account for vessels that have multiple gear types in their permit history. For example, it is possible during a permit history, an owner switched from vertical gear to longline gear. Potential lower landings associated with other gear might prevent the vessel owner from getting a longline endorsement, particularly if average landings are selected using a higher average. This might be particularly true for trap fishermen who converted their vessel hydraulic system to retrieve longline gear after the fish trap phase out occurred in February 2007.

Table 2.3.2 Commercial Ref Fish Vessels by Average Grouper and Tilefish Landings and Gear Type

Group	Average of All 6 Years		Average of Best 5 of 6 Years	
	Frequency		Frequency	
	Number	Cumulative	Number	Cumulative
	Longlines			
0	30	30 (9.9%)	30	30 (9.9%)
1 to 9,999 lbs	131	161 (53.3%)	126	156 (51.7%)
10,000 to 49,999 lbs	95	256 (84.8%)	90	246 (81.5%)
50,000 lbs and above	46	302	56	302
TOTAL	302		302	
	Other Gear Types			
0	398	398 (19.8%)	398	398 (19.8%)
1 to 499 lbs	807	1,205 (59.9%)	771	1,169 (58.1%)
500 to 999 lbs	172	1,377 (68.5%)	158	1,327 (66.0%)
1,000 lbs and above	634	2,011	684	2,011
TOTAL	2,011		2,011	

Note: Distribution of landings is solely based on logbook information, and no merging with permits data has been attempted. This is why there are more vessels than permits.

Increasing the minimum average landings to qualify for a gear-based endorsement reduces the number of vessels that would be able to qualify for an endorsement. Table 2.3.2 shows the number of vessels which would qualify for a gear endorsement. Note for this discussion, logbook data were not merged with permit data and it is assumed that changes in the number of vessel logbooks that would allow a vessel to qualify for an endorsement are proportional to the number of permitted vessels which would qualify for an endorsement.

Under **Option a, Sub-option i**, approximately 10 percent of the vessels with longline landings would not be able to qualify for an endorsement because they have no grouper or tilefish landings over the 1999-2004 time period (Table 2.3.2). Under **Option a, Sub-option ii** (10,000 pounds minimum average landings), it is estimated that over half of the vessels with grouper and tilefish longline landings would not be able to receive a permit regardless of whether the whole time period is used (53.3%), or the best five out of six years (51.7%). The number of vessels not able to receive an endorsement increases to over 80 percent if the minimum average landings for the time period is set at 50,000 pounds (**Option a, Sub-option iii**).

Option b would establish an "other" reef fish gear endorsement and would include vessels with landings from gear other than longlines such as bandit, hook-and-line, spearfishing, and fish traps (note: fish traps are no longer allowed). Under **Option b, Sub-option i**, approximately 20 percent of the vessels do not have grouper or tilefish landings and so would not qualify for an "other" gear grouper endorsement (Table 2.3.2). By raising the minimum average landings to 500 pounds (**Option b, Sub-option ii**), approximately 60 percent of vessels would not be able to obtain an "other" gear grouper endorsement regardless of years used. Raising the threshold to

1,000 pounds would decrease the number of eligible vessels by approximately an additional 10 percent (**Option b, Sub-option iii**).

The effects of these options on the physical and biological/ecological environments are likely minimal. **Preferred Alternative 1** would not change the current fishery. **Alternatives 2** and **3**, while reducing the number of vessels in the fishery, would remove vessels with lower average landings (i.e., contributed less to the fishery). Whatever effort is lost to the fishery from these removals is likely to be made up by vessels with higher average landings.

An endorsement system has the potential to reduce the number of boats in the fishery and could potentially reduce effort in the short run. In addition, it has the potential to minimize latent effort in the fishery. **Preferred Alternative 1** is equivalent to having no endorsement at all and so would not change the economic status of the fishery. **Alternative 2** could eliminate boats in the fishery, with the number of excluded boats increasing with more restrictive landing threshold, and thus offers the potential to address overcapacity in the fishery. **Alternative 3** would have similar economic effects as **Alternative 2**, but this time the effects would be distributed by gear types. This alternative contains features that can infuse some level of equity into the inclusion/exclusion of boats if the threshold were made to vary across gear types. An important issue worth recognizing with any type of endorsement system is the short-run nature of its effects. Over time the remaining vessels could adjust their operations to a point that overcapacity would re-appear.

Preferred Alternative 1 would grant an endorsement for grouper and tilefish to all permit holders. This would allow everyone with a permit to continue to fish for grouper and tilefish. This alternative would be of most benefit to fishermen with the lowest harvest levels who may otherwise not receive an endorsement. **Alternative 2** would allow anyone who had a reef fish permit and had caught an average of at least one pound (**Option i**), one thousand pounds (**Option i**i), or four thousand pounds (**Option iii**) during the qualifying years to receive an endorsement. All of these options would exclude fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. Fishermen who have not caught any grouper or tilefish during the qualifying years due to extenuating circumstances such as health issues or problems with their boats, and would be impacted the most. **Option i** would benefit the most fishermen because anyone who landed an average of at least one fish during the qualifying years would be included. **Options ii and iii** would exclude more fishermen than **Option i** from obtaining an endorsement due to the higher average landings requirement. **Alternative 3, Option a,** would allow longline fishermen a grouper and tilefish endorsement if they had a reef fish permit and had caught an average of at least one pound (**sub option i**), ten thousand pounds (**sub option ii**), or fifty thousand pounds (**sub option iii**). As in **Alternative 2**, all of these options would exclude longline fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. **Alternative 3, Option b,** would allow other gear fishermen a grouper and tilefish endorsement if they had: one pound (**sub option i**), five hundred pounds (**sub option ii**), or one thousand pounds (**sub option iii**). All of these options would exclude other gear fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. For **Alternative 2 and 3**, fishermen who have not caught any grouper or tilefish during the qualifying years due to extenuating circumstances

such as health issues or problems with their boats, would be impacted the most because they would not receive an endorsement.

This action is primarily administrative in nature and so will affect the administrative environment. **Preferred Alternative 1**, no action, would not increase or decrease the administrative burden managing the commercial reef fish fishery. **Alternatives 2** and **3** would initially adversely effect the administrative environment because permit histories would need evaluated and some type of appeals process would need to be developed for those fishermen who question the accuracy of their average landings. However, these alternatives should provide a long-term benefit to the administrative environment by identifying those fishermen who participate in the grouper fishery should future actions to limit commercial grouper fishing become necessary. In addition, fewer permits in the fishery should reduce administrative time and effort in permit renewal.

2.3.2 ACTION C2: Qualifying Years

Preferred Alternative 1: No Action - Do not specify qualifying years for endorsement eligibility.

Alternative 2: The qualifying years for obtaining one or more endorsements to the reef fish permit will be from 1999 through 2004

Alternative 3: The qualifying years for obtaining one or more endorsements to the reef fish permit will be from 1999 through 2004 with an allowance for dropping 1 year

Discussion and Rationale

Preferred Alternative 1 would not specify qualifying years for endorsement eligibility. If this alternative were selected, there would be no basis for selecting landings to apply to Action B1. Thus selection of this alternative would be the same as selecting the no action alternative in Action B1.

Alternative 2 would use the qualifying years for grouper/grouper gear endorsements to the reef fish permit from 1999 through 2004. These years were selected to account for past/present participation in the fishery and because the quality of data from logbooks is high. The endpoint of the time period was set at 2004 to reflect a control date set by the Council in October of that year. This control date was established to inform the public the Council is considering the establishment of an IFQ to control participation or effort in the commercial grouper fishery of the Gulf of Mexico. **Alternative 3** uses the same years as **Alternative 2**, but is less restrictive because it allows a fisherman to drop a year. The difference in the number of vessels excluded between using **Alternative 2** over **Alternative 3** is minimal with numbers differing by about 1 percent (Tables 2.3.1 and 2.3.2).

This action is primarily administrative and so would not have any direct effects on the physical and biological/ecological environments. **Preferred Alternative 1**, no action, would not affect the fishery as it is currently prosecuted because selection of this alternative would negate an

endorsement system. **Alternative 2** would be more restrictive than **Alternative 3** by allowing fewer vessels participating in the grouper fishery to receive an endorsement. However this reduction is minimal (about 1 percent of vessels). The effects on these environments would be dictated primarily by the preferred alternative selected in Action C1.

Alternative 1 does not specify the qualifying years of landing for the endorsement, and thus would virtually render the endorsement system unworkable. Both **Alternatives 2 and 3** consider the period 1999-2004 as the qualifying years for calculating vessel landings, with **Alternative 3** allowing permit holders to drop one year for purposes of calculating average landings. The major difference between **Alternatives 2 and 3** is that more vessels would qualify for the higher landing requirement under **Alternative 3**. This latter alternative would thus tend to slightly reduce the adverse economic impacts resulting from adoption of higher landing requirements but it would offer lower potential for addressing overcapacity in the fishery. A comparison between 1993-2006 and 1999-2004 as the qualifying years indicated that more boats would qualify in the endorsement under the longer period. Again, this comparison presents the issue of lower adverse economic impacts with the longer period against the potential for the shorter period to address overcapacity in the fishery.

Preferred Alternative 1 would not give the Council a way to establish who would be eligible for an endorsement. It would not have short term impacts, positive or negative, on the fishermen, fishing-dependent businesses, or fishing communities that are involved with the commercial grouper and tilefish fisheries because it would not change the current way of doing business.

Alternative 2 would use the years 1999 through 2004 to qualify fishermen to receive an endorsement. Unlike **Alternative 3**, with **Alternative 2**, fishermen could not drop one year from the years used to determine an average. This would have a positive impact on the commercial fishermen who actively harvesting grouper and tilefish for all of these years. It would have a negative impact on the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels would bring down their total average.

Like **Alternative 2**, **Alternative 3** would use the years 1999 through 2004 to qualify fishermen to receive an endorsement but one year of those years could be dropped. This alternative would benefit the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels, because an off year would not bring down their total average.

Preferred Alternative 1, no action, would not have any effects on the administrative environment. Selection on this alternative would negate the ability to have an endorsement. **Alternatives 2** and **3** would initially adversely effect the administrative environment because permit histories would need to be evaluated and some type of appeals process would need to be developed for those fishermen who question the accuracy of their average landings for the selected years. Because **Alternative 3** allows fishermen to drop their lowest year, this might reduce the number of fishermen questioning their landings. An endorsement program provides a long-term benefit to the administrative environment by identifying those fishermen who

participate in the grouper fishery should future actions to limit commercial grouper fishing become necessary. With respect to the suboptions for average landings to qualify for an endorsement, the greater the value, the greater the likelihood of a vessel being excluded from getting an endorsement. This could increase the number of fisherman challenging landings.

2.3.3 ACTION C3: Incidental Catch Provisions

<u>Preferred Alternative 1</u>: No Action - Do not establish incidental catch provisions for grouper or tilefish landings for commercial reef fish permits that did not qualify for an endorsement.

Alternative 2: Establish an incidental catch allowance of 200 pounds of grouper and tilefish per trip for commercial reef fish permit holders who did not qualify for an endorsement

Alternative 3: Establish an incidental catch allowance of 500 pounds of grouper and tilefish per trip for commercial reef fish permit holders who did not qualify for an endorsement

<u>Discussion and Rationale</u>

The exclusion of a number of reef fish permit owners from the commercial grouper and tilefish fisheries is expected to result from the establishment of a grouper and tilefish endorsement. More restrictive eligibility requirements, in this case higher average landings thresholds, would result in greater number of permit holders excluded from the fishery. It is anticipated that some of the excluded permit owners would continue to participate in other commercial reef fish fisheries and would have to discard grouper and/or tilefish. This action considers alternatives that would allow fishermen who do not have an endorsement to land their incidental grouper and tilefish catch.

Preferred Alternative 1 would not establish incidental catch provisions to allow those commercial reef fish fishermen that did not qualify for a grouper and tilefish endorsement to land grouper or tilefish that they may incidentally catch while targeting other reef fish species. **Preferred Alternative 1** is not consistent with the Council's continued efforts to implement management measures that contribute to reducing bycatch and bycatch mortality. If it were implemented in conjunction with the establishment of a grouper and tilefish endorsement program, **Preferred Alternative 1** would increase bycatch. The magnitude of the increase would be proportional to the number of permit owners excluded from the grouper and tilefish fisheries and depend on their decision to prosecute other reef fish species.

Alternatives 2 and **3** would establish varying catch allowances that would grant fishermen excluded from the endorsement program the privilege to land grouper or tilefish that they may incidentally catch while prosecuting other reef fish. **Alternatives 2** and **3** establish incidental catch allowances of 200 and 500 pounds per trip, respectively. When evaluating relative benefits that could be anticipated from the two incidental catch allowances, the bycatch reduction potential of an alternative has to be contrasted with the expected effectiveness of the endorsement program in reducing effort. The more lenient the incidental catch allowance, the smaller the reduction in total effective effort reduction on grouper.

This action would allow vessels without grouper endorsements to land incidentally caught grouper within certain limits. **Preferred Alternatives 1**, no action, would not allow vessels without endorsements from landing grouper. This could have a positive effect on the physical environment on areas where grouper are found in high numbers because operators of non-endorsement vessels may fish elsewhere to increase their efficiency to capture non-grouper species. **Alternatives 2** and **3** would allow reef fish fishermen who do not have grouper endorsements to land some grouper. This would reduce the impetus on operators of non-endorsement vessels from avoiding areas with higher densities of grouper.

While a grouper endorsement to the reef fish permit is administrative, precluding fishermen without the endorsement from landing grouper could result in incidental catch of grouper and its associated discard mortality. **Preferred Alternative 1**, no action, would not allow for a catch allowance of grouper, therefore, this alternative could negatively affect grouper by increasing the potential mortality associated with bycatch. In the commercial fishery, gag discard mortality rates were estimated at 67 percent (SEDAR 10 2006), and red grouper discard mortality rates were estimated at 10 percent for handlines and 45 percent for longlines (SEDAR 12 2007). **Alternatives 2** and **3** could reduce grouper bycatch and associated discard mortality by allowing legal sized fish to be landed under a trip limit for non-endorsement vessels. While the landed fish would contribute to the overall fishing mortality on grouper, they would be counted against the quota. Once the quota is met, then the fishery would be closed.

A catch allowance can partly address the discard mortality issue under an endorsement system, but a relatively high bycatch allowance could potentially reduce the economic advantage of boats included in the endorsement. Given this scenario, **Alternative 2** appear to strike a balance between discard mortality and the economic problem posed by a higher bycatch allowance.

Preferred Alternative 1 would not allow fishermen without an endorsement to keep any grouper or tilefish that they caught as bycatch. This may be advantageous to the fishermen that have an endorsement because they would be the only ones who could keep and sell grouper and tilefish. This would be a disadvantage to for the fishermen who do not have an endorsement and would have to throw back any grouper or tilefish that they catch.

Alternative 2 and 3 would allow fishermen without a bycatch allowance to keep a limited number of pounds of grouper and tilefish per trip. This would put fishermen without an endorsement in competition with fishermen who have an endorsement, which those who qualified for an endorsement may think is unfair. On the other hand, it would allow those without an endorsement to keep a limited number of pounds of grouper and tilefish caught as bycatch that will supplement their income when sold at the docks. **Alternative 3** would benefit those without an endorsement more than **Alternative 2**, because it would allow them to keep a higher number of pounds of grouper and tilefish caught as bycatch.

Preferred Alternative 1, no action, would not affect the administrative burden of managing the commercial reef fish fishery. However, it would make both dockside and at-sea enforcement of the grouper endorsement easier. Any non-endorsement vessel having grouper onboard would be in violation of the permit endorsement. **Alternatives 2** and **3** would make enforcement more

difficult to assess if a fisherman is in violation of the endorsement program. In essence, enforcement would need to occur dockside to see if the incidental bycatch allowance level had been exceeded.

3.0 AFFECTED PHYSICAL, BIOLOGICAL AND ECONOMIC ENVIRONMENTS

3.1 Description of Affected Physical Environment

The physical environment for reef fish has been described in detail in the EIS for the Generic Essential Fish Habitat (EFH) Amendment and is incorporated here by reference (GMFMC 2004a). The Gulf has a total area of approximately 600,000 square miles (1.5 million km^2), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel. Oceanic conditions are primarily affected by the Loop Current, the discharge of freshwater into the Northern Gulf, and a semi-permanent, anticyclonic gyre in the western Gulf. Gulf water temperatures range from 12º C to 29º C (54º F to 84º F) depending on time of year and depth of water.

Most harvests of recreational red grouper and other shallow water grouper occur off of Florida over hard-bottom habitat. In the western Gulf, deepwater grouper are harvested over rocky ridges or flat bottom, near banks or 'lumps' (Cass-Calay and Bahnick 2002). Deepwater grouper also occur near the shelf-edge over sand, mud, and shell bottom (Cass-Calay and Bahnick 2002).

Environmental Sites of Special Interest Relevant to Grouper Species (Figure 3.1)

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).

Madison/Swanson and Steamboat Lumps Marine Reserves - No-take marine reserves sited on gag spawning aggregation areas where all fishing except for surface trolling during May through October is prohibited (219 square nautical miles).

Tortugas North and South Marine Reserves - No-take marine reserves cooperatively implemented by the state of Florida, National Ocean Service (NOS), the Council, and the National Park Service (see jurisdiction on chart) (185 square nautical miles). In addition, Generic Amendment 3 for addressing EFH requirements, Habitat Areas of Particular Concern (HAPC), and adverse effects of fishing in the following FMPs of the Gulf: Shrimp, Red Drum, Reef Fish, Stone Crab, Coral and Coral Reefs in the Gulf, and Spiny Lobster and the Coastal Migratory Pelagic resources of the Gulf and South Atlantic (GMFMC 2005a) prohibited the use of anchors in these HAPCs.

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.

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

Pulley Ridge HAPC - A portion of the HAPC where deepwater 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).

Stressed Areas for Reef Fish - Permanent closure Gulf-wide of the near shore waters to use of fish traps, power heads, and roller trawls (i.e., "rock hopper trawls") (48,400 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 three hooks. Nonconforming gear is restricted to bag limits, or for reef fish without a bag limit, to five percent by weight of all fish aboard.

Additionally, Generic Amendment 3 for addressing EFH requirements (GMFMC 2005a) requires a weak link in the tickler chain of bottom trawls on all habitats throughout the Gulf EEZ. A weak link is defined as a length or section of the tickler chain that has a breaking strength less than the chain itself and is easily seen as such when visually inspected. Also, the amendment establishes an education program on the protection of coral reefs when using various fishing gears in coral reef areas for recreational and commercial fishermen.

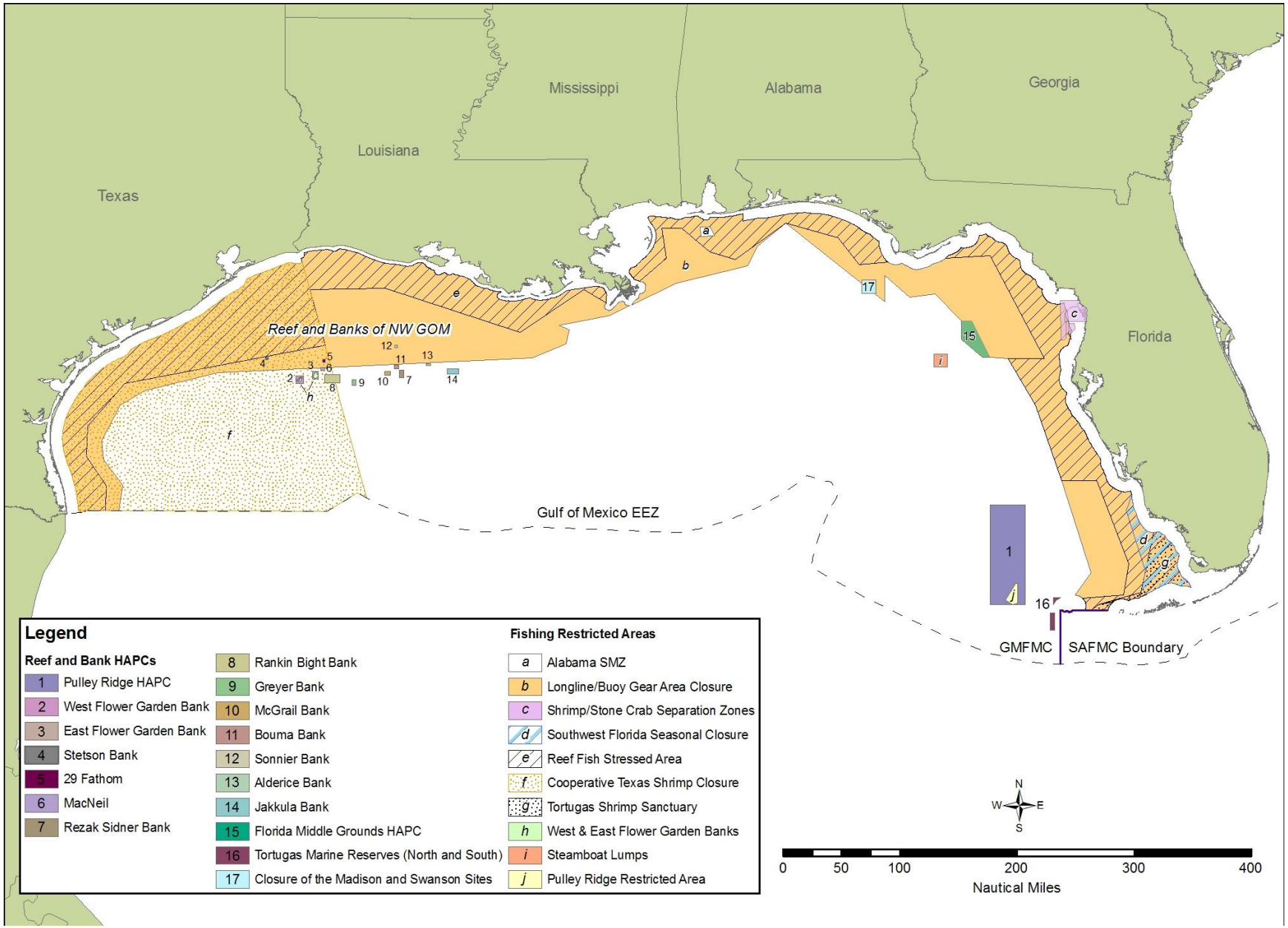


Figure 3.1 Map of most fishery management closed areas in the Gulf of Mexico

3.2 Description of Affected Biological Environment

The biological environment of the Gulf, including the species addressed in this amendment, is described in detail in the final EIS for the Generic Essential Fish Habitat Amendment and is incorporated here by reference (GMFMC 2004a).

Reef Fish

General Information on Reef Fish Species

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

In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages are summarized in Table 3.2.1 and 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 the gray triggerfish that 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. 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).

Table 3.2.1. Summary of habitat utilization by life history stage for species most species in the Reef Fish FMP. This table is adapted from Table 3.2.7 in the final draft of the EIS from the Council's EFH generic amendment (GMFMC 2004a).

Common name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red snapper	Pelagic	Pelagic		Hard bottoms, Sand/shell bottoms, Soft bottoms	Hard bottoms, Sand/shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/shell bottoms
Queen snapper	Pelagic	Pelagic				Hard bottoms	
Mutton snapper	Reefs	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/Banks, Shelf edge/slope
Schoolmaster	Pelagic	Pelagic		Mangroves, SAV	Hard bottoms, Mangroves, Reefs, SAV, Emergent marshes	Hard bottoms, Reefs, SAV	Reefs
Blackfin snapper	Pelagic			Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Cubera snapper	Pelagic			Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray (mangrove) snapper	Pelagic, Reefs	Pelagic, Reefs	SAV	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Dog snapper	Pelagic	Pelagic		SAV	Mangroves, SAV	Reefs, SAV	Reefs
Mahogany snapper	Pelagic	Pelagic		Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms, SAV	
Lane snapper	Pelagic		Reefs, SAV	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk snapper						Shelf edge	
Yellowtail snapper	Pelagic			Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	

Common name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Wenchman	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Shelf edge/slope
Vermilion snapper	Pelagic			Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
Gray triggerfish	Reefs	Drift algae	Drift algae	Drift algae, Mangroves	Drift algae, Mangroves, Reefs	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater amberjack	Pelagic	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser amberjack				Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco jack	Pelagic			Drift algae	Drift algae	Pelagic	Pelagic
Banded rudderfish		Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Hogfish				SAV	SAV	Hard bottoms, Reefs	Reefs
Blueline tilefish	Pelagic	Pelagic				Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
Tilefish	Pelagic, Shelf edge/ slope	Pelagic		Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Dwarf sand perch					Hard bottoms	Hard bottoms, Soft bottoms	
Sand perch						Reefs, SAV, Shoals/ Banks, Soft bottoms	
Rock hind	Pelagic	Pelagic				Hard bottoms, Reefs	Hard bottoms, Reefs
Speckled hind	Pelagic	Pelagic				Hard bottoms, Reefs	Shelf edge/slope
Yellowedge grouper	Pelagic	Pelagic			Hard bottoms	Hard bottoms	
Red hind	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms
Goliath grouper	Pelagic	Pelagic	Man-groves	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
Red grouper	Pelagic	Pelagic		Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	

Common name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Misty grouper	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Hard bottoms
Warsaw grouper	Pelagic	Pelagic			Reefs	Hard bottoms, Shelf edge/slope	
Snowy grouper	Pelagic	Pelagic		Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
Nassau grouper		Pelagic		Reefs, SAV		Hard bottoms, Reefs, Sand/ shell bottoms	Hard bottoms, Reefs, Sand/ shell bottoms
Black grouper	Pelagic	Pelagic		SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth grouper	Pelagic	Pelagic		Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic		SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic		Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin grouper				SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 42 species (Table 3.2.2). Stock assessments have been conducted on 11 species: red snapper (SEDAR 7, 2005), vermilion snapper (Porch and Cass-Calay, 2001; SEDAR 9, 2006a), yellowtail snapper (Muller et al., 2003; SEDAR 3, 2003), gray triggerfish (Valle et al., 2001; SEDAR 9, 2006b), greater amberjack (Turner et al., 2000; SEDAR 9, 2006c), hogfish (Ault et al., 2003; SEDAR 6, 2004a), red grouper (NMFS, 2002; SEDAR 12 2007), gag (Turner et al., 2001; SEDAR 10, 2006), yellowedge grouper (Cass-Calay and Bahnick, 2002), and goliath grouper (Porch et al., 2003; SEDAR 6, 2004b). A review of the Nassau grouper's stock status was conducted by Eklund (1994), and updated estimates of generation times were developed by Legault and Eklund (1998).

Of the 11 species for which stock assessments have been conducted, the second quarter report of the 2007 Status of U.S. Fisheries (http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm) classifies two as overfished (greater amberjack and red snapper), and four as undergoing overfishing (red snapper, gag, gray triggerfish and greater amberjack). The recent assessment for vermilion snapper (SEDAR 9, 2006a) indicates this species is not overfished or undergoing overfishing. Recent assessments for gray triggerfish and gag (SEDAR 9, 2006b and SEDAR 10, 2006, respectively) suggest these two species are experiencing overfishing, and stock recovery for greater amberjack is occurring slower than anticipated. This amendment addresses overfishing for gag grouper. Many of the stock assessments and stock assessment reviews can

be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) Websites.

Status of Grouper Stocks

The current overfishing threshold, or maximum fishing mortality threshold (MFMT), is $F_{30\%\ SPR}$, which is estimated in this assessment to be F = 0.27 for gag grouper. The annual fishing mortality rate has exceeded this threshold every year going back at least to 1991. The most recent four-year average F is about 0.40. Therefore, the gag stock is considered to be undergoing overfishing. An overfished, or minimum stock size threshold (MSST), that is compatible with the SFA has not yet been adopted and approved by NMFS. The pre-SFA threshold was 20 percent SPR, which is estimated by the stock assessment, in terms of equilibrium female spawning stock biomass (SSB), to be about 14.31 million pounds. Since adoption of the SFA, the Council has typically used an MSST based on the formula (1-M)* B_{MSY}, where M is the natural mortality rate and B_{MSY} is the stock size capable of supporting maximum sustainable yield (MSY) on a continuing basis. For gag, the assessment used an estimate of M that varied with age, but average M = 0.14. The assessment estimated $B_{30\%\ SPR}$ (as a proxy for B_{MSY}) in terms of female SSB at 21.41 MP with the corresponding MSST at 18.41 MP. Using an alternative B_{MSY} proxy of B_{MAX}, the MSY biomass level is 27.32 MP, with a corresponding MSST of 23.50 MP. Current (2004) female SSB is estimated to be about 12 thousand metric tons, or about 27 MP. Since the current estimated biomass is above the threshold regardless of which way it is calculated, the stock would have been determined to be not overfished in 2004.

The most recent SEDAR 12 stock assessment for red grouper was completed in early February 2007. The assessment used the Age-Structured Assessment Program (ASAP) model that was the basis for the 2002 assessment and included data from 1986 through 2005. Approximately 99 percent of the landings were from the west coast of Florida and the rest were from Alabama. MSST and MFMT were defined for red grouper in Secretarial Amendment 1 as (1-M)*SS_{MSY} and F_{MSY}, respectively. The red grouper stock assessment concluded that spawning stock size exceeded SS_{MSY} starting in 1999. This compares reasonably well with the results of the 2002 assessment which estimated the stock would be rebuilt by 2003 using a stock–recruit relationship of 0.8, which is similar to the 0.84 estimated by the current assessment. Recovery of the red grouper stock accelerated between 2001 and 2005 as a result of another very strong recruitment year class that occurred in 2000. Fishing mortality on red grouper declined below MFMT starting in 1995 and has fluctuated but remained below MFMT with little trend through 2005. In 2005, fishing mortality was just below the target fishing mortality level of F_{OY}.

Goliath grouper in the Gulf of Mexico was assessed in 2004 for Florida populations as part of SEDAR 06. The assessment agreed with anecdotal information indicating a rapid stock decline in the 1980s. In 1990, a moratorium on Goliath grouper harvest was implemented for both the commercial and recreational fisheries (See Section 1.3 History of Management). Since this harvest moratorium, the Goliath grouper stock has shown indications of recovery; however the extent of the recovery is uncertain. Porch et al. (2006) extended the SEDAR assessment by estimating the level of F under the moratorium based on recommendations from the SEDAR 6 review panel (SEDAR 6, 2004a). The base model suggested that the post-moratorium level of F was similar to the estimate for the MFMT level specified in the Generic SFA Amendment at

about $F_{50\%SPR}$. Based on Porch et al. (2006), the model suggests that there is less than a 40 percent chance the stock will recover to the levels stipulated by the generic SFA within the next 10 years. Therefore, any additional harvest would make a recovery even less likely. However, there is controversy on what the overfishing and overfished thresholds should be for this species. The FWC is currently developing a research program to obtain further information on the stock to better determine its condition.

The status of the yellowedge grouper stock remains essentially undetermined. An age-structured stock assessment model for yellowedge grouper in the U.S. Gulf of Mexico was conducted in 2002 (RFSAP 2002). The model was very sensitive to input parameters, and small changes in highly uncertain parameters resulted large changes in the estimated status of the stock. Therefore, the Reef Fish Stock Assessment Panel (RFSAP) concluded that the analysis of the stock was insufficient to determine the status of the stock relative to the definitions of overfished and overfishing (RFSAP, 2002). However, because of the longevity of yellowedge grouper, they may be particularly susceptible to even relatively low fishing mortality rates. The RFSAP recommended that the commercial yield should not greatly exceed the historical average of 0.84 MP (381 metric tons).

A review of the Nassau grouper's stock status was conducted by Eklund (1994), and updated estimates of generation times were developed by Legault and Eklund (1998). Commercial and recreational landings data from 1986-1991 indicated Nassau grouper harvest had decreased in both pounds landed and average size. As a result of this decrease in yield, the Council prohibited the take and possession of this species in 1996. The stock is currently classified as overfished.

3.3 Description of the Economic Environment

3.3.1 Commercial Sector

Introduction

This section describes the commercial sector of the grouper and tilefish fisheries in the Gulf of Mexico by focusing on the operations of the harvesters and dealers. There is some overlap in the commercial and for-hire operations in the sense that some vessels operate as commercial harvesters some parts of the year and as for-hire operations other parts of the year. Commercial operations of these dual-permitted vessels are included in the commercial fishery description while their for-hire operations are included in the recreational fishery description.

The major sources of data are the Federal Logbook System (FLS) and Accumulated Landings System for the commercial fishery, with price indices taken from the Bureau of Labor Statistics. Specialized studies, either as add-ons to existing data collection programs or as periodic surveys, supplement information from the major data sources. Primarily because of the limitations of the FLS, the years 1993 through 2006 are chosen as the period for the descriptive analysis. The initial year is the first year FLS covered 100 percent of commercial reef fish vessels in the Gulf while the terminal year is the last year with complete FLS information. Basic data were provided by Waters (2008, pers. comm.).

In the following discussion, several species/species groups are presented, namely, reef fish, shallow water grouper (SWG), deepwater grouper (DWG), tilefish, red grouper, and gag. The SWG information includes red grouper and gag plus all other SWG, and the group for reef fish includes all grouper and tilefish, plus all other reef fish.

Annual Landings, Ex-vessel Values, and Effort

The commercial reef fish fishing fleet in the Gulf of Mexico is composed of vessels using different gear types and catching a variety of species. A license limitation program has been in place in the reef fish fishery, and to harvest commercial amounts of reef fish a vessel is required to have an active permit on board. Commercial reef fish permits are renewable every year, although an owner is granted a grace period of one year to renew his permit. Non-renewal of a permit within this grace period results in permanent loss of that particular permit. As of August 31, 2008, there were a total of 1,028 active and renewable reef fish permits.

For the entire 1993-2006 period, Gulf permitted commercial reef fish vessels landed a total of 257 MP of reef fish valued (ex-vessel) at $562 million in nominal prices or $642 million in 2005 (real) prices. In addition, these vessels landed another 17 MP of non-reef fish species valued at $18 million in current prices or $21 million in real prices. The grouper and tilefish fisheries accounted for 52 percent of all reef fish landings and 56 percent of reef fish ex-vessel values.

Gulf permitted commercial reef fish vessels landed annually an average of 7.82 MP of SWG, 1.17 MP of DWG, and 0.52 MP of tilefish. The respective ex-vessel values are $18.91 million, $3.06 million, and $0.77 million in nominal prices, or $21.51 million, $3.49 million, and $0.88 million in real prices. Within the SWG, red grouper and gag dominated the fishery—red grouper accounted for 67 percent of landings and 62 percent of ex-vessel values; gag accounted for 18 percent of landings and 21 percent of ex-vessel values.

Landing and revenue configurations over the years 1993-2006 can be gauged from Table 3.3.1.1, which breaks down average landings and revenues into several periods. One period spans the entire 1993-2006 data years; another covers the years 1999-2004, which is the current preferred base period for determining IFQ shares; and, the other two include the years before and after the 1999-2004 period. In the table, SWG includes gag, red, and other SWG a. The column "Reef" includes all reef fish species.

Average landings for all subject species rose from the first period (1993-1998) to the next but fell in the third period (2005-2006), thus landings for all subject species were highest in the 1999-2004 period. Landings in the third period, however, remained higher than those in the first period. Red grouper landings rose by about 21 percent from the first to the second period and fell by 13 percent in the third period. Gag landings showed a dramatic increase of 122 percent from the first to the second period and fell by 19 percent in the third period. Landings of all SWG rose by 31 percent in the second period and fell by 17 percent in the third period. DWG landings rose by about 27 percent in the second period and fell by 21 percent in the third quarter, bringing the third period's landing of deepwater grouper close to those of the first period. Tilefish landings rose by only 5 percent in the second period and fell by about the same percentage in the third period.

Nominal (current) and real (adjusted for inflation) ex-vessel revenues rose and fell from one period to the next in the same manner as landings, with two exceptions regarding changes in the nominal ex-vessels which showed very slight increases in the third period for red grouper and tilefish. In general, this implies that the second period (1999-2004) registered the highest ex-vessel values for all subject species. Nominal ex-vessel values rose in the second period by 34 percent, 143 percent, 47 percent, 45 percent, and 17 percent for red grouper, gag, SWG, DWG, and tilefish, respectively. A substantial portion of these increases were due to inflation as can be inferred from the corresponding increases in real revenues of 16 percent, 112 percent, 28 percent, 26 percent, and 1 percent for the respective species. Decreases in the third period ranges from 7 percent for tilefish to 21 percent for deepwater grouper.

Table 3.3.1.1 Average Annual Landings and Revenues for Selected Species, 1993-2006.

Period	Red Grouper	Gag	SWG	DWG	Tilefish	Reef
			Landings (1,000 lbs)			
1993-98	4,790	850	6,840	1,047	507	17,584
1999-04	5,831	1,885	8,946	1,331	534	19,756
2005-06	5,074	1,525	7,389	1,053	510	16,598
1993-06	5,276	1,390	7,821	1,170	519	18,374
			Nominal Value ($1,000)			
1993-98	9,854	2,243	15,057	2,488	697	34,097
1999-04	13,223	5,453	22,136	3,604	814	44,895
2005-06	13,360	4,915	20,779	3,150	841	44,252
1993-06	11,799	4,000	18,908	3,061	768	40,176
			Real Value ($1,000)			
1993-98	12,494	2,814	19,045	3,145	880	43,173
1999-04	14,541	5,959	24,301	3,956	893	49,265
2005-06	13,155	4,868	20,499	3,123	830	43,595
1993-06	13,466	4,455	21,505	3,489	879	45,844

The number of boats actively participating in the fishery may be considered one measure of effort in the fishery. For the entire 1993-2006 period, the number of boats harvesting at least one pound of selected species averaged at 765 for red grouper, 591 for gag, 977 for SWG, 376 for DWG, 212 for tilefish, and 1,123 for reef fish. While landings in the grouper and tilefish fishery in particular and reef fish fishery in general have shown patterns of increases and decreases, the number of boats actively participating in the fishery (except for gag) shows a pattern of decline over time. This pattern can be inferred from Table 3.3.1.2, which displays the average number of boats harvesting at least one pound of selected species over several sub-periods in 1993-2006. For reef fish as a whole, the number of boats in the fishery fell from an average high of 1,246 in the first period (1993-1998) to an average low of 895 in the third period (2005-2006). A similar pattern can be observed for the grouper fishery and all its component fisheries, except gag. The average number of boats fell from 797 for red grouper, 1,059 for SWG, 399 for DWG, and 231 for tilefish in the first period to its respective low of 765, 977, 376, and 212 in the third period. Only in the gag fishery did the number of boats rise from 530 in the first period to 655 in the second period, but it did fall in the third period to 591. This increase in the number of boats from the first period to the second could very well explain for part of the large increase in gag landings in the second period. The fall in the number of boats in the third period for all fisheries

considered here could be due to fish stock, natural, and economic conditions. Treatment of this causal scenario is beyond the scope of this section.

The downward trend in the number of boats landing reef fish is partly reflected in the number of trips taken by the remaining boats, but the decline in trips is not as dramatic as that for boats (see Table 3.3.1.1). Before it fell in the third period, the number of trips, except for tilefish and reef fish, increased in the second period, and this increase could partly explain the increases in landings in the second period. Trips landing at least one pound of selected species averaged annually at 6,627 with a range 5,824 to 7,074 for red grouper, 4,825 with a range of 3,884 to 5,820 for gag, 9,860 with a range of 7,764 to 10,405 for SWG, 2,144 with a range of 1,397 to 2,437 for DWG, 834 with range of 904 to 665 for tilefish, and 14,698 with range of 11,630 to 15,359 for reef fish.

Days away from port may be considered another indicator of fishing effort in the fishery. This indicator, however, may not exactly reflect the time spent for fishing since boats have to travel to fishing areas before they actually fish. This is true even with vessels that move around while fishing, such as those employing longline and troll gear types. At any rate, the general pattern over time can provide some broad indications of the trend in fishing days. As can be deduced from Table 3.3.1.2, the pattern over time of days away from port generally mimics that of the number of trips. Days away from port rose in the second period for red grouper, gag, and deepwater grouper while they dropped for the other species. The third period, however, registered declines in days away from port for all selected species. Days away from port of boats landing at least one pound of selected species averaged annually at 32,531 with a range 28,165 to 33,363 for red grouper, 21,133 with a range of 17,432 for gag, 42,333 with a range of 34,433 to 44,079 for SWG, 12,634 with a range of 8,089 to 13,875 for DWG, 6,332 with range of 4,598 to 6,862 for tilefish, and 52,498 with range of 43,035 to 55,204 for reef fish.

One conclusion that can be drawn from the three indicators of fishing effort pertains to the kind of effort movement over time. With certain limitations, the general conclusion is that effort declined for all selected species, with peaks generally occurring in the second period (1999-2004). There are several potential reasons for the decline in effort for the selected species, such as the increase in fishing cost (particular fuel cost in recent years), increase in harvesting efficiency, more restrictive regulations particularly for the grouper fishery, and even improvements in the stock status of certain species may contribute to the decline in fishing effort. However, more research is needed to determine which factors did contribute, or contribute significantly, to such decline in fishing effort.

Table 3.3.1.2. Average number of boats, trips, and days away from port for trips landing at least one pound of selected species, 1993-2006.

Period	Red G	Gag	SWG	DWG	Tilefish	Reef Fish
			Boats			
1993-98	797	530	1,059	399	231	1,246
1999-04	767	655	958	368	193	1,075
2005-06	666	579	791	330	215	895
1993-06	765	591	977	376	212	1,123
			Trips			

1993-98	6,449	3,884	10,013	2,101	904	15,359
1999-04	7,074	5,820	10,405	2,437	820	15,059
2005-06	5,824	4,664	7,764	1,397	665	11,630
1993-06	6,627	4,825	9,860	2,144	834	14,698
			Days Away from Port			
1993-98	33,154	17,432	44,079	12,909	6,862	55,204
1999-04	33,363	24,698	43,219	13,875	6,380	52,946
2005-06	28,165	21,543	34,433	8,089	4,598	43,035
1993-06	32,531	21,133	42,333	12,634	6,332	52,498

Seasonal Characteristics

Fish stock, market, and harvesting conditions in addition to the regulatory regime are some of the factors that shape the seasonal characteristics of the reef fish fishery in general and the grouper and tilefish fisheries in particular. How these factors affect seasonal behavior of the fishery will not be explored here.

The monthly pattern of landings and ex-vessel prices may be gleaned from Table 3.3.1.3. Monthly landings of reef fish as a whole follows a rather straightforward pattern: landings increased in February and March, then fell in a steady fashion the rest of the year. Red grouper, gag, and overall SWG landings follow an almost similar pattern: landings declined in February and March presumably due to the spawning closure, rose in the next few months, and declined in the last three months of the year. DWG and tilefish appear to follow a similar pattern, but somewhat different from the other species: landings increased for a few months starting in February and starting some time in May or June slowly declined throughout the rest of the year. For all groups, except DWG, landings experienced a perceptible uptick in October.

For the period 1993-2006, landings averaged monthly at 440,000 pounds for red grouper, 116,000 pounds for gag, 652,000 pounds for SWG, 97,000 pounds for DWG, 43,000 pounds for tilefish, and 1,531,000 pounds for reef fish. Peak landings occurred in June for red grouper and SWG, January for gag, May for DWG and tilefish, and March for all reef fish. Monthly landings ranged from 301 to 572 thousand pounds for red grouper, 73 to 170 thousand pounds for gag, 520 to 800 thousand pounds for SWG, 61 to 160 thousand pounds for DWG, 32 to 62 thousand pounds for tilefish, and 1,331 to 1,844 thousand pounds for reef fish.

Average monthly prices of all selected species, with the exception of tilefish, follow a similar pattern. They reached a peak in March, steadily fell until their trough in June, and then gradually rose but only to fall off slightly in the last two months of the year. The peak monthly price for tilefish occurred in January but the trough still occurred in June as with the rest of the selected species. Gag commanded the highest prices in all months, followed by DWG, then SWG, and then by red grouper and all reef fish. Tilefish had the lowest monthly prices. The clear difference in prices for various species, particularly between gag and red grouper, could indicate certain level of product differentiation in the marketing of the species.

As may be expected, prices for SWG fell in between the high gag prices and low red grouper prices. The landings dominance of red grouper in the SWG complex brought down the prices for

SWG nearer to the red grouper prices than to those of gag. Lower prices for other reef fish also brought down the prices for reef fish further below the red grouper prices.

After adjusting for inflation, monthly prices per pound for red grouper averaged $2.58 and ranged from $2.25 to $2.90; those for gag averaged at $3.20 and ranged from $2.96 to $3.49; those for SWG averaged at $2.77 and ranged from $2.44 to $3.11; those for DWG averaged at $3.00 and ranged from $2.69 to $3.16; those for tilefish averaged at $1.17 and ranged from $1.53 to $1.89; and, those for reef fish averaged at $2.49 and ranged from $2.23 to $2.76.

Some general measures of effort in the grouper and tilefish fisheries, such as the number of boats, trips, and days away from port, also exhibit certain forms of seasonality. The seasonal patterns for these measures of effort averaged over the 1993-2006 period can be inferred from Table 3.3.1.3. Practically for all selected species, the average number of boats landing at least one pound of the selected species follows a similar pattern. The number of boats increased over the first few months, peaked in May (March for DWG), and declined slightly through the rest of the year. A similar pattern can also be observed for the number of trips taken by these vessels. Trips increased in the first few months, peaked also in May (March for DWG and reef fish), and declined slightly through the rest of the year. The pattern for the number of days away from port is more uniform than those for number of boats and trips. With no exception, days away from port increased in the first few months, peaked in May, and declined throughout the rest of the year.

The monthly number of boats landing at least one pound of selected species averaged at 327 for red grouper, 239 for gag, 447 for SWG, 118 for DWG, 53 for tilefish and 544 for reef fish. The monthly number of trips averaged at 552 for red grouper, 402 for gag, 822 for SWG, 179 for DWG, 69 for tilefish, and 1,225 for reef fish. Monthly days away from port averaged at 2,711 for red grouper, 1,761 for gag, 3,528 for SWG, 1,053 for DWG, 528 for tilefish, and 4,375 for reef fish.

Table 3.3.1.3. Average monthly number of boats, trips, and days away from port for trips landing at least one pound of selected species, 1993-2006.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
						Boats						
Red G	312	283	300	347	385	374	367	358	323	314	286	277
Gag	227	229	229	271	281	265	250	236	221	235	215	207
SWG	405	441	460	498	520	492	468	451	424	428	394	383
DWG	91	142	164	152	155	143	106	99	100	94	85	84
Tilefish	38	43	57	54	80	73	55	60	54	44	44	42
Reef Fish	469	567	593	606	613	575	567	534	506	522	491	481
						Trips						
Red G	527	416	455	587	693	670	673	642	538	527	460	440
Gag	391	366	369	477	507	455	424	393	350	396	354	342
SWG	728	800	858	946	998	921	887	835	745	778	695	669
DWG	121	230	282	248	236	215	152	145	148	135	120	114
Tilefish	49	52	73	67	106	99	72	81	69	55	57	54
Reef Fish	936	1,488	1,607	1,449	1,374	1,232	1,223	1,108	1,040	1,152	1,045	1,045
						Days Away						

Red G	2,538	2,162	2,275	2,929	3,373	3,326	3,255	3,156	2,588	2,536	2,203	2,189
Gag	1,701	1,463	1,513	2,028	2,255	2,167	2,004	1,892	1,558	1,665	1,426	1,460
SWG	3,129	3,050	3,346	3,889	4,416	4,274	4,070	3,936	3,305	3,228	2,857	2,832
DWG	814	1,044	1,328	1,311	1,518	1,416	986	1,012	897	793	759	757
Tilefish	361	374	582	518	825	765	523	621	512	423	430	399
Reef Fish	3,621	4,294	4,771	4,855	5,252	5,034	4,870	4,639	3,990	3,982	3,587	3,603

Distribution by Gear Type in the Grouper and Tilefish Fisheries

Various gear types are used in the harvest of reef fish. In the particular case of the grouper and tilefish fisheries, vertical/handlines and longlines are the two dominant gear types, with traps comprising a distant third gear type. There are, however, variations in gear dominance depending on the species caught. One should recall that since February 2007, traps have been prohibited for use in harvesting reef fish. How landings from traps would be distributed among the remaining gear types cannot be determined. The performance of the fishery in 2007 may yield some information, but this is not pursued here.

Table 3.3.1.4 presents several fishery performance measures by gear type. In terms of landings, longlines have dominated the grouper and tilefish fisheries. Handlines have been the dominant gear in the gag fishery. Except for fish traps, all the other gear types accounted for relatively small amounts of grouper and tilefish landings. In addition, trap catches only matter in the SWG fishery. The distribution of revenues mimics that of landings. That is, longlines generated the most ex-vessel revenues for all fisheries, except gag wherein handlines accounted for most of the ex-vessel revenues. In terms of the number of boats, number of trips, and days away from port, handlines dominated the grouper and tilefish fisheries. With more handline boats in all fisheries considered here, it is only logical to expect that handlines would account for more trips and days away from port than any other gear types in all subject fisheries.

Table 3.3.1.4. Selected fishery performance measures by gear type, 1993-2006.

	Diving	Handlines	Longlines	Other Gear	Traps	Trolling
			Landings (thousand pounds)			
Red Grouper	10	1,299	3,203	8	754	2
Gag	30	893	448	5	12	3
SWG	52	2,907	4,040	18	796	8
DWG	0	198	966	1	4	1
Tilefish	0	20	497	0	1	0
			Revenues (thousand dollars)			
Red Grouper	26	3,296	8,250	22	1,866	6
Gag	95	2,870	1,427	16	37	11
SWG	159	8,399	10,875	52	1,996	24
DWG	1	462	2,585	2	8	2
Tilefish	0	29	847	1	1	1
			Boats			
Red Grouper	42	586	146	10	65	12
Gag	31	465	112	5	28	14
SWG	50	791	165	14	67	27
DWG	4	262	127	2	8	5

Tilefish	1	121	98	1	4	1
			Trips			
Red Grouper	210	4,509	1,298	28	562	21
Gag	172	3,654	788	17	158	35
SWG	324	7,344	1,475	43	612	63
DWG	324	7,344	1,475	43	612	63
Tilefish	1	364	457	1	8	2
			Days Away			
Red Grouper	350	17,229	11,749	122	3,035	46
Gag	276	12,451	7,411	47	890	58
SWG	489	25,217	13,203	153	3,151	121
DWG	10	5,951	6,546	16	90	22
Tilefish	3	2,086	4,187	7	44	6

Distribution by Area in the Grouper and Tilefish Fisheries

Since grouper caught in the Gulf are landed mostly in Florida, distribution of landings by area is presented by combining Alabama through Texas (AL-TX) as one area and separating Florida into three areas—Southwest FL (Monroe to Charlotte), West-Central FL (Sarasota to Citrus), and Northwest FL (Levy to Escambia), and other areas. Although the case for tilefish is a little different, since substantial landings also occur in the Gulf states other than Florida, the geographic division is maintained to provide more information on the distribution of grouper.

Table 3.3.1.5 presents several fishery performance measures by area which are identical to those presented by gear type. For the period 1993-2006, West-Central FL led all other areas in the red grouper landings, followed by Northwest FL, then by Southwest FL, and lastly by AL-TX and other areas. For gag landings, AL-TX led the group, followed by West-Central FL, Northwest FL, and Southwest FL. It should be noted that the combined gag landings of the three Florida areas significantly outweighed those of AL-TX. West-Central FL also led in the landings of SWG, followed by Northwest FL, AL-TX, and Southwest FL. In DWG landings, AL-TX led all areas, followed by West-Central FL, Southwest FL, and Northwest FL. Again, the combined DWG landings of all Florida areas outweighed those of AL-TX. It is only for DWG that Southwest FL had more landings than Northwest FL. Tilefish is a little different story, with AL-TX leading all areas in landings, followed by West-Central FL, Northwest FL, and Southwest FL.

The revenue configuration by area essentially mimics that of the landing configuration. West-Central FL had the highest revenues for red grouper and SWG while AL-TX had the highest revenues in gag, DWG, and tilefish. Again it should be stressed that when all Florida areas area combined, AL-TX had the highest revenues only in tilefish.

In terms of the number of boats landing at least one pound of selected species, AL-TX led all areas for all selected species. Considering the landing/revenue contribution of this area to total landing/revenue of grouper and tilefish, it would appear that many boats in this area caught relatively small amounts of fish, possibly even with respect to DWG and tilefish. Within Florida, West-Central FL registered more boats than the rest for all selected species. Northwest FL had more boats than Southwest FL for red grouper and gag, but not for SWG, DWG, and

tilefish. In the case of SWG, it is either that many boats in Southwest FL caught few pounds of SWG or that many boats in the area caught more other (than red grouper and gag) shallow water grouper. The configuration of trips and days away from port is practically similar to that of boats, indicating that on average trips and days away from port are directly related to the number of boats in the area.

Table 3.3.1.5. Distribution of average landings, revenues, boats, trips, and days away from port by area in the Gulf, 1993-2006.

	AL-TX	Northwest FL	W-Central FL	Southwest FL	Others
			Landings (thousand pounds)		
Red Grouper	659	1,224	2,455	836	103
Gag	476	364	457	79	14
SWG	1,678	1,772	3,157	1,067	147
DWG	667	49	315	115	23
Tilefish	349	48	73	38	11
			Revenues (thousand dollars)		
Red Grouper	1,667	3,075	6,304	2,148	271
Gag	1,519	1,170	1,462	256	48
SWG	4,866	4,815	8,533	2,879	412
DWG	2,005	148	937	333	65
Tilefish	625	84	98	54	19
			Boats		
Red Grouper	274	239	260	234	62
Gag	289	182	198	87	36
SWG	441	258	271	269	88
DWG	217	55	101	75	27
Tilefish	119	28	59	46	14
			Trips		
Red Grouper	2,077	1,455	1,901	1,042	153
Gag	2,177	1,093	1,211	266	78
SWG	4,408	1,733	2,094	1,401	224
DWG	1,483	102	315	195	49
Tilefish	508	51	138	114	22
			Days Away from Port		
Red Grouper	6,884	7,536	11,530	5,776	804
Gag	6,634	4,758	7,425	1,965	351
SWG	14,404	8,048	12,137	6,663	1,080
DWG	6,871	842	3,172	1,417	332
Tilefish	3,430	459	1,475	795	173

Species Composition

As a multi-species fishery, a fishing trip in the reef fish fishery in general and grouper and tilefish fisheries in particular catches a variety of species. To reduce clutter in the next two tables, per trip species composition is presented by major species grouping. An exception to this is the explicit consideration of red grouper and gag, because they comprise the majority of species under consideration in this amendment.

Table 3.3.1.6 presents the percent distribution of species caught in trips landing at least one pound of selected species. The set of percents under the sub-heading "Red Grouper" pertains to the percent composition of species caught in trips landing at least one pound of red grouper. Similar description applies to the other sub-headings. All numbers are calculated as percent to the total reef and non-reef fish species caught in a trip. Given this method, the sum of reef fish and non-reef fish number should add to 100 percent. Also, the sum of SWG, DWG, tilefish, snappers, ORF (other reef fish) should equal the number for reef fish. In addition, the sum of red grouper, gag, and OSWG (other shallow water grouper) should equal the number for SWG. Take for example the first row of numbers under the red grouper sub-heading. Reef fish (93.7 percent) plus non-reef fish (6.3 percent) equals 100 percent. Also, the sum of SWG (69.6 percent), DWG (2.9 percent), tilefish (0.9 percent), snappers (9.5 percent), ORF (10.7 percent) is equal to the number for reef fish (93.7 percent). And the sum of red grouper, gag, and OSWG is equal to SWG (52.0 + 7.8 + 9.9 = 69.6 percent, approximately).

It is not surprising that for trips landing at least one pound of red grouper, or gag, or SWG, the dominant species group caught was SWG (see Table 3.3.1.6). It is, however, a little interesting to notice from the table that for trips landing at least one pound of DWG, the dominant species group was not DWG but snappers. In fact, there was more SWG caught on those trips than DWG. For trips landing at least one pound of tilefish, this species was the dominant species group caught for the entire 1993-2006 period and all three sub-periods. Within the SWG group, red grouper was clearly the dominant species caught in trips landing at least one pound of any of the selected species.

On trips landing at least one pound of red grouper, the share of SWG rose in the second period but fell in the third period. A similar scenario happened with respect to the share of red grouper, gag, OSWG, and DWG. The share of tilefish fell in the second period and remained the same in the third period. Snappers caught in those trips increased over time from about 9.5 percent to 14.3 percent. On trips landing at least one pound of gag, the share of SWG increased over time, from 59.5 percent in the first period to 65.6 percent in the second period and 68.7 percent in the third period. The share of DWG increased in the second period and fell in the third period; that for tilefish fell in the second period and remained the same in the third period. The share of snappers fell slightly over time. On trips landing at least one pound of SWG the share of SWG rose in the second period and fell in the third period; that for red grouper increased over time, from 34.1 percent in the first period to 38.8 percent in the third period; that for gag rose in the second period and slightly fell in the third period; that for DWG slightly rose over time; and, that for tilefish fell in the second period and slightly increased in the third period. On these trips, the share of snappers remained at a little above 25 percent. On trips landing at least one pound of DWG, the share of SWG rose over time, from 21.7 percent in the first period to 28.6 percent in the third period; those shares for red grouper and gag rose over time, and more especially for gag which rose from 2.1 percent in the first period to 6.9 percent in third; that DWG slightly rose in the second period and rose even higher in the third period; that for tilefish fell in the second period but rose in the third. On these trips, the share of snappers stayed at over 30 percent. On trips landing at least one pound of tilefish, the share of SWG rose in the second period and fell in the third; that for red grouper fell over the years; that for gag significantly increased in the second period and slightly fell in the third; that for DWG rose in the second period and fell in the

third; that tilefish steadily rose over time. On these trips, the share of snappers stayed relatively high at 17 to 23 percent.

Table 3.3.1.6. Percent species composition on trips landing at least one pound of selected species, 1993-2006.

Period	Red G	Gag	OSWG	SWG	DWG	Tilefish	Snappers	ORF	Reef	Non-Reef	All Species
					Red Grouper						
1993-98	55.4	10.6	12.7	78.7	3.5	0.6	9.7	4.8	97.3	2.7	100.0
1999-04	52.1	19.2	10.7	82.0	3.5	0.4	9.6	2.5	98.1	1.9	100.0
2004-06	52.4	18.0	8.1	78.5	2.4	0.4	14.6	2.3	98.3	1.7	100.0
1993-06	53.3	15.9	10.9	80.2	3.3	0.5	10.6	3.3	97.8	2.2	100.0
					Gag						
1993-98	43.7	20.1	3.9	67.8	5.2	0.7	18.2	5.8	97.7	2.3	100.0
1999-04	41.4	26.7	3.7	71.8	5.5	0.5	17.6	3.3	98.7	1.3	100.0
2004-06	46.7	23.6	3.8	74.1	4.6	0.4	16.9	2.6	98.7	1.3	100.0
1993-06	43.2	23.8	3.8	70.8	5.2	0.5	17.7	4.1	98.4	1.6	100.0
					SWG						
1993-98	36.9	8.3	11.1	56.3	6.1	1.1	27.4	6.2	97.2	2.8	100.0
1999-04	36.7	15.3	9.6	61.6	5.8	0.7	26.3	3.6	98.0	2.0	100.0
2004-06	39.3	14.5	7.4	61.2	5.8	0.6	27.9	2.7	98.2	1.8	100.0
1993-06	37.3	12.7	9.7	59.6	5.9	0.8	27.0	4.3	97.7	2.3	100.0
					DWG						
1993-98	15.4	2.9	7.2	25.5	23.4	5.3	37.1	5.5	96.8	3.2	100.0
1999-04	15.0	8.1	7.4	30.5	23.8	4.3	36.1	3.7	98.4	1.6	100.0
2004-06	16.2	8.3	6.4	30.9	29.2	4.3	32.1	2.4	99.0	1.0	100.0
1993-06	15.3	6.3	7.2	28.7	24.7	4.7	35.7	4.1	97.9	2.1	100.0
					Tilefish						
1993-98	11.3	2.2	7.5	21.1	34.8	13.0	23.7	5.1	97.6	2.4	100.0
1999-04	9.2	5.9	6.7	21.8	43.3	13.3	17.0	3.1	98.5	1.5	100.0
2004-06	9.5	5.5	5.1	20.1	40.4	15.5	19.7	2.9	98.5	1.5	100.0
1993-06	10.1	4.5	6.7	21.2	39.6	13.6	19.9	3.8	98.2	1.8	100.0

Vessels by Landing Categories

Vessels in the reef fish fishery caught not only several species but also varying amounts of the species. Table 3.3.1.7 presents landing categories of vessels landing at least one pound of red grouper, gag, SWG, DWG, or tilefish, using average landings per boat over the years 1993-2006 and 1999-2004. The species columns indicate that boats of varying landing categories landed at least one pound of that particular species. Take for example the first row of the table, with landing category of 1 to 499 pounds. In 1993-2006, an average of 976 boats landed at least one pound of red grouper, 739 boats landed at least one pound of gag, and so on. Since boats land a variety of species, the numbers within this landing category are not additive across species. However, boats are additive across landing categories within each species.

As can be observed from Table 3.3.1.7, boats are concentrated in the lower end of the distribution regardless of the period and/or species considered. Of particular interest in this

amendment is perhaps the last column--boats landing at least one pound of grouper or tilefish. For the period 1993-2006, there were 927 boats in the lowest category and 472 boats in the highest category. In 1999-2004, only 415 boats were in the lowest category and 298 boats in the highest category. This indicates that many boats fell out of the fishery between these two time periods, implying further that several boats active in the years before 1999 or after 2004 were not active in the in-between years. And they could be the same or different boats. In both 1993-2006 and 1999-2004 periods, the lowest two categories included 32 to 39 percent of all boats, and the rest of the boats were practically evenly spread out across the remaining categories.

Table 3.3.1.7. Number of boats by average landing category for trips landing at least one pound of selected species, 1993-2006 and 1999-2004.

Class	Red Grouper	Gag	SWG	DWG	Tilefish	Grouper/Tilefish
			1993-2006			
1 - 499 lbs	976	739	956	665	447	927
500-999 lbs	194	184	261	113	62	263
1000-3999 lbs	401	350	510	170	99	519
4000-9,999 lbs	230	233	303	102	55	307
10,000-49,999 lbs	302	293	489	160	85	481
=> 50,000 lbs	306	102	404	77	29	472
			1999-2004			
1 - 499 lbs	498	418	434	364	222	415
500-999 lbs	144	107	137	58	35	141
1000-3999 lbs	250	267	297	103	65	285
4000-9,999 lbs	147	197	246	76	33	237
10,000-49,999 lbs	210	212	326	111	46	342
=> 50,000 lbs	191	52	261	41	15	298

Boats using different gear types land varying amounts of fish, so the distribution of boats across various landing categories would vary by gear type. To provide some insights into this issue, a table similar to the one above is presented with added information on gear types used, but to avoid clutter only those boats landing at least one pound of grouper or tilefish are included (see Table 3.3.1.8). There are several additional information provided by this table. First, handline and longline boats dominate the fishery in all landing categories. Second, there are more handline boats composing each landing category than boats using other gear types. Third, handline and longline boats become more dominant as one moves from lower to higher landing categories. Fourth, there are more longline boats than handline boats in the highest category, regardless of the period considered although there would be even more longline boats under the 1999-2004 period.

Table 3.3.1.8. Number of boats by average landing category, by gear type, for trips landing at least one pound of grouper or tilefish, 1993-2006 and 1999-2004.

Category	Diving	Handlines	Longlines	Other Gear	Traps	Troll
			1993-2006			
1-499 lbs	126	963	39	103	62	191
500-999 lbs	29	247	23	15	22	31

1000-3999 lbs	52	535	48	27	33	35
4000-9999 lbs	18	318	33	14	27	3
10000-49000 lbs	14	459	83	4	43	0
=> 50000 lbs	2	202	208	0	60	0
		1999-2004				
1-499	74	437	17	26	13	115
500-999	9	131	11	3	4	14
1000-3999	30	308	26	11	9	17
4000-9999	12	236	20	6	6	2
10000-49000	7	310	51	2	25	0
=> 50000	0	112	146	0	36	0

Fish Dealers

There are currently 159 Gulf reef fish dealers with active permits, but since the reef fish dealer permitting system in the Gulf is an open access program, the number of dealers can vary from year to year. For the period 2004-2007, these dealers handled an average of 10.8 MP of grouper and tilefish valued at $25.4 million. These dealer transactions were distributed as follows: Florida, with 10 MP worth $23.5 million; Alabama and Mississippi, with 102,000 pounds worth $222,000; Louisiana, with 270,000 pounds worth $592,000: and, Texas, with 434,000 pounds worth $1.03 million. The rest of transactions were handled by dealers outside of the Gulf.

The dominance of Florida in terms of the number of boats, landings, and dealer transactions implies that most of the direct and indirect effects of regulatory changes for grouper and tilefish would fall on fishery participants in Florida. As such, rippling effects of those regulations would be felt in communities and support industries in the area.

Imports

Seafood imports are in general the major source of seafood products in the U.S, and this is also true in the reef fish fishery. Table 3.3.1.9 summarizes imports of snappers and groupers into the U.S. As can be gleaned from the table, imports steadily increased over the 1993-2006 period, from a low of 22 MP in 1994 to a high of 49.7 MP in 2005, with a slight drop in 2006. This is in contrast to domestic production of all reef fish in the Gulf which, although averaging at 18.4 MP annually, had been declining since its peak in 2002 (see Figure 3.3.1.1). In addition, the lowest import level of 22 MP in 1994 is higher than the highest reef fish production of 20.5 MP in 2002. Although the levels of domestic production and imports are not totally comparable for a variety of reasons, such as fresh versus frozen, the difference in magnitude still indicates the dominance of imports in the reef fish market.

The value of imports also rose steadily over the years, from a low of $42.3 million (after adjusting for inflation) to its highest level of $101.7 million in 2006. The value of domestic production, on the other hand, rose slightly in the first years but declined after reaching its peak of $50.1 million in 2001. In 2006, the value of domestic reef fish production stood at $43.5 million, which is less than half of that of imports. Again, it should be noted that the two values

are not strictly comparable, but the difference in magnitude still signifies the large market share of imports in the domestic market for reef fish.

Table 3.3.1.9. U.S. imports of snapper and grouper, combined fresh and frozen (Q=Quantity in million pounds, product weight), (V=Value in million dollars, f.a.s., foreign port), (VR=Real value in millions of 2006 dollars, f.a.s., foreign port)

Year	Q	V	VR
1993	24.1	32.9	45.5
1994	22.0	30.9	42.3
1995	28.2	38.5	50.8
1996	33.0	47.5	61.3
1997	40.3	58.0	74.9
1998	38.8	58.5	77.4
1999	35.4	53.9	70.8
2000	38.7	63.0	78.2
2001	39.5	62.3	76.4
2002	42.6	69.5	87.3
2003	44.5	73.3	87.4
2004	43.1	75.6	84.9
2005	49.7	93.1	97.5
2006	48.6	101.7	101.7

3.3.2 Recreational Sector

Since this amendment is mainly concerned with the grouper and tilefish commercial fisheries, only a general summary of description of the recreational sector is presented. Additional information on the Gulf of Mexico recreational fishery is provided in Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), Reef Fish Amendment 25/Coastal Migratory Pelagics Amendment 17 (GMFMC 2005b), the 2005 recreational fishery grouper regulatory amendment (GMFMC 2005c), Reef Fish Amendment 30A, and especially Reef Fish Amendment 30B, and is incorporated herein by reference.

Anglers

In 2005, more than 3.3 million in-state anglers (anglers who fished within their state of residence) took 23 million trips (inclusive of visitor trips) and caught over 154 million fish. These totals do not include activity occurring solely in Texas (all modes) or in the headboat sector (all Gulf states). More than 70 percent of these anglers fished in Florida, followed by, in decreasing order, Louisiana, Alabama, and Mississippi. Similarly, Florida accounted for a large percentage of the trips (70 percent), followed in order by Louisiana, Alabama, and Mississippi. The most commonly caught non-bait species were spotted seatrout, red drum, gray snapper, white grunt, sand seatrout, sheepshead, red snapper, king mackerel, and Spanish mackerel.

Total recreational effort in terms of trips from all fishing modes including charterboats, for all species from Florida through Louisiana averaged at 19.5 million trips annually. This effort

remained about flat from 1993 through 1996, increased in 1997, but subsequently fell to its lowest level of 15.9 in 1999. It then registered a relatively fast growth in the 2000s.

The headboat data do not support the estimation of target effort. Nevertheless, there is information on headboat angler trips, and this may be deemed to represent headboat angler effort. This effort has averaged at 244,387 days annually, with a range of 190,090 days in 2005 to 317,991 days in 1994. It has slowly declined over the years, with occasional increases in certain years. The West Florida/Alabama region has accounted for most of the effort and has been the major force in slightly downward trend of overall effort. Angler days in Louisiana and Texas have remained relatively flat through the years. Louisiana has the lowest number of headboat angler days.

Social and economic characteristics of recreational anglers are collected periodically as an add-on survey to the MRFSS. Holiman (1999) and Holiman (2000) summarize the data from the 1997-1998 survey. The typical Gulf marine recreational angler was 44 years old, male (80 percent), white (90 percent), employed full time (92 percent), and had an average annual household income of $42,700. The average number of years fished in the state was 16. The average number of fishing trips taken in the 12 months preceding the interview was approximately 38 and these trips were mostly (75 percent) one-day trips. The average expenditure on the intercepted trip was less than $50. Seventy-five percent of the surveyed anglers reported they held saltwater licenses, and 59 percent 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 the surveyed anglers were employed or self-employed and the majority of those unemployed were retired.

Haab et al. (2001) estimated the following values associated with the private/rental fishing mode. The economic loss per trip from closing a fishing site ranged from $1.44 in Alabama to $71.84 in West (Gulf) Florida. The loss was also estimated to be relatively high in Louisiana. The economic loss per trip from unavailability (closure) of snapper-grouper ranged from $0.30 in Alabama to $5.24 in West Florida, whereas the value of a unit increase in the catch of snapper-grouper ranged from $0.27 in Alabama to $4.15 in West Florida. For all fishing modes, the economic loss per trip from closing a fishing site ranged from $1.84 in Alabama to $54.14 in West Florida, whereas the economic value from a unit increase in the catch of bottom fish (which include other reef fish species) ranged from $3.47 in Alabama to $3.65 in West Florida.

For-hire Vessels

A federal for-hire vessel permit has been required for reef fish since 1996 and the sector currently operates under a limited access system (GMFMC 2005b). Prior to the implementation of the current moratorium, NMFS had issued 3,340 permits associated with 1,779 unique vessels. Of these vessels, 1,625 had reef fish permits (GMFMC 2005b).

The for-hire sector is comprised of charter vessels and headboats (party boats). Although charter vessels tend to be smaller, on average, than headboats, the key distinction between the two types of operations is that the fee charged on charter boat or trip is for the entire vessel, regardless of

how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

In support of the development of the current limited access system, permits data were evaluated to identify summary characteristics of the fleet (GMFMC 2005b). This evaluation revealed that approximately 79 percent of the fleet had a maximum capacity of six or fewer passengers, 82 percent were in the 21-50 foot length range, and 70 percent had engines ranging from 101-600 horsepower. Sixty-one vessels had passenger capacity greater than 60 passengers. Individual ownership is the dominant form of ownership type (69 percent), with less than a third of vessels corporate-owned. Florida was the homeport of 61 percent of all federally permitted for-hire vessels, followed by Texas (13 percent), Alabama (8 percent), Louisiana (8 percent), and Mississippi (4 percent).

Financial information on the for-hire vessels in the Gulf is not routinely collected. But based on available data from two studies conducted in 1998-1999 and summarized in Holland et al. (1999) and Sutton et al. (1999) information may be presented to provide some financial information on for-hire vessels. Headboats earn substantially higher revenues than charterboats. The average charterboat is estimated to generate $76,960 in annual revenues and $36,758 in annual profits, whereas the appropriate values for the average headboat are $404,172 and $338,209, respectively. On average, both types of operations are profitable, with headboat operations showing a relatively large profit figure. As mentioned above, however, the calculation of costs does not take into account fixed costs, which would be expected to be much larger for headboats. For both charterboats and headboats, the number of passengers carried per trip is about half of the maximum passenger capacity. Therefore, substantial excess capacity exists in the sector.

4.0 AFFECTED SOCIAL AND ADMINISTRATIVE ENVIRONMENTS

4.1 Description of the Social Environment

As described in the fishery impact statement, there is little data to adequately describe the affected environment for communities dependent on the grouper and tilefish fisheries. However, a combination of secondary data, including landings data, federal permits data, and census data, can be analyzed as a starting point to identify some of the communities that may be affected by the proposed changes in regulations. Fishing communities were ranked according to the dealer-reported number of pounds landed and value for the grouper and tilefish fisheries for 2004-2007. This data revealed that a substantial portion of grouper and tilefish are historically landed off west Florida and south Texas. Permits data were also examined to determine where permit concentrations existed. As a result of these examinations, Madeira Beach and Panama City, Florida, and Port Isabel, Texas, were selected as representative communities for the grouper and tilefish fisheries. These communities ranked in the top six by landings for 2004-2007. These communities are selected from the 147 cities with recorded shallow water grouper. Of these 147 cities, 44 cities had landings with a cumulative (4-year) value of $100,000 or more (1 each in Alabama, Louisiana, and Texas, and 41 in Florida). Sixteen cities, all in Florida, had a cumulative landed value of $1,000,000 or more of shallow water grouper over the same period.

Data from the 1990 and 2000 US Censuses (Census) was used for the descriptions of the profiled communities in order to examine changes in the communities over that time period and to elicit possible insights into continuing changes. The demographics tables provided below are taken from Impact Assessment, Inc. (2005).

Although secondary data have been used in the description of representative and potentially affected communities, as well as in the subsequent impact assessment, problems with the use of secondary data are noted. The first problem pertains to anchoring dependence or impacts with a specific community. While landings and permits data can be associated with a community based on address information, this information may not fully reveal the relevant location linkages. Landings data will reflect where the fish are brought to shore, but may not reflect either the homeport or address of the owner, operator, or crew. Permit addresses can reflect a home address or a business address, neither of which need be the port address. Similar conditions are possible for processors and associated industries and services. As the price of waterfront property continues to rise, it is becoming more common for fishermen and others working in the fishing industry to live inland in more affordable communities and not in the communities where they work. These location problems complicate the ability to identify fishing communities as a specific location where people dependent on marine resources live and work.

The second problem pertains to the use of census data for identifying people dependent on fishing resources in a given community. First, a complete census is only conducted every ten years. In the span of ten years, substantial change can occur in a community due to changes in the population, the increasing pressure to develop waterfront property for uses other than for support of the fishing industry, natural disaster, and other causes. Second, seasonal employees who work in fishing dependent areas may be missed if they happen to not be residing in the community at the time of the census. Third, the census combines fishing occupations with farming, forestry, and hunting occupations under a common occupation category. Therefore, it is impossible to determine actual employment in the fishing industry using census data. Finally, fishing may be a part time or seasonal occupation for many people who may report their occupation under another category.

Despite these problems, this secondary data can be used to describe communities identified as substantially involved in fishing and evaluate the impacts of proposed regulation. Census data can be used to develop insights on how a community ranks in terms of income, home ownership, educational levels, etc. It should be noted, however, that the information on race, ethnicity, and minority status should not be extrapolated to the fishing industry. The broad scope of the census coverage relative to the typically small population of individuals involved in the fishing industries in most, though not all, Southeast communities, prevents meaningful extrapolation of these variables to the fishery population. As a result, the census data is used with caution as a starting point to understand the dynamics of particular communities.

As discussed above, more resources need to be invested in conducting community research in order to support better understanding of the dynamics of fishing dependency within individual communities and to be able to assess the social impacts of proposed changes in fishing

regulations. As more community profiles are completed, better descriptions of social impacts can be provided. Until that time, secondary data must suffice as a starting point.

Two additional points should be acknowledged that relate to potential impacts of the current and future proposed management actions. First, several species in the reef fish complex are subject to harvest restrictions because they are undergoing overfishing or are overfished. Due to fishing conditions and regulations in general, it is becoming increasingly more difficult for fishermen to switch target species. As a result of these restrictions and general price and economic conditions, even small adverse changes in fishing regulations have the potential to impact communities that depend on these fisheries.

While the implementation of an IFQ program for the grouper and tilefish fishery may be viewed as a positive action to some and an adverse action to others, an IFQ program would, nevertheless, be expected to alter the dependency individual participants, and their associated communities, have on the fishery. As such, it is important that the evaluation of social impacts consider the diversity of fishermen and communities in terms of fishing and other occupational opportunity for those dependent or substantially involved in the fishery.

Communities Substantially Involved Grouper and Tilefish Fisheries

The following information provides a description of the three communities that have been selected as representative of Gulf communities substantial involved in the grouper and tilefish these fisheries and would be most likely to be impacted by the proposed regulations.

Madeira Beach, Florida (incorporated, pop. 4,511)

Location and Overview. Madeira Beach is located on a barrier island just west of St. Petersburg and north of John's Pass on Florida's central west coast. The town is one of several beachfront communities in the area with both a well-established population of year-round inhabitants, and a range of services and attractions suitable for tourists and seasonal residents.

History. Madeira Beach was incorporated in 1947. According to Wilson et al (1998), offshore fishing in Madeira Beach began as bandit reel fishing for grouper in the 1960's. There were two fish houses supported primarily by charter fishing and a small commercial operation. It was during the early 1970's that two vessels began experimenting with long line fishing, but were initially unsuccessful. Later, several vessels began using long lines successfully for swordfish, but as swordfish stocks began to diminish in the Gulf, they were forced to expand their fishing territory to the eastern seaboard. It was on return trips that these vessels began to experiment with long lines in deeper water, thereby discovering an abundance of tilefish and yellow edge grouper. Reportedly, 95 percent of the fishing fleet in Madeira Beach was using long lines (Wilson et al. 1998). There were four fish houses in Madeira Beach at the time, dealing primarily in grouper, but also swordfish, shark, and other species. Approximately 100 vessels were working from there during the latter part of the 20th century (Impact Assessment, Inc. 2005).

Current Conditions. The 2000 census enumerated 4,511 persons, up from 4,225 in 1990. The community is undergoing change, as waterfront property values increase and condominium development ensues. There are three fish houses in Madeira Beach and approximately 70 commercial vessels moor in the area. The town is sometimes referred to as the "Grouper Capital of the World" as the majority of snapper-grouper in the U.S. is landed here. The fish is an important recreational catch as well. Lucas (2001) reported an estimated 87 long line and 48 bandit reel vessels call Madeira their homeport. Moreover, Lucas found that most captains and crew lived nearby, with over 40 captains living in Madeira, and the rest within 30 minutes away. Overall direct employment, related to vessels and fish houses, was approximately 441 persons in 2000. These numbers are likely less today than in the past, as the number of fish houses and vessels have decreased.

With regard to recreational fishing, there are four marinas, including a public marina with over 90 slips. Many residents own their own boat and fish in the Gulf. Support industries do exist, as there are several bait and tackle shops, recreational boat yards, and other related businesses. The community continues to hold a Seafood Festival in October.

Residents of Madeira Beach, Florida had the following number of reef fish permits: in 2004 there were 16, 2005 there were 13, 2006 there were 15, and in 2007 there were 14. In the 2000 census, 0.7 percent of the population listed their occupation under the category for farming, fishing, and forestry, a decrease from the 1.4 percent who were in this category in 1990. In 200, 0.0 percent listed their occupation under the agriculture, forestry, fishing, and hunting category also a decrease from the 1.4 percent listed in 1990. Following the demographic table are tables that help to describe the presence of fishing in Madeira Beach in 2003 including a table of infrastructure that was observed in the community and primary fishing-related businesses that were listed in the phone books when Impact Assessment, Inc. conducted research for the Southeast Regional Office (Impact Assessment, Inc. 2005).

Madeira Beach Demographics for 1990 and 2000
U.S. Census Data for 1990 and 2000 (Impact Assessment Inc. 2005)

Factor	**1990**	**2000**
Total population	4,225	4,511
Gender Ratio M/F (Number)	2,156/2,069	2,376/2,135
Age (Percent of total population)		
Under 18 years of age	8.7	8.2
18 to 64 years of age	65.7	69.8
65 years and over	25.6	22.0
Ethnicity or Race (Number)		
White	4,160	4,378
Black or African American	10	12
American Indian and Alaskan Native	7	14
Asian	32	26
Native Hawaiian and other Pacific Islander	--	2
Some other race	16	30
Two or more races	--	49
Hispanic or Latino (any race)	105	107
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	4.2	2.6

Percent high school graduate or higher	83.8	87.3
Percent with a Bachelor's degree or higher	19.5	22.2
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	4.5	6.8
Percent who speak English less than very well	1.5	2.0
Household income (Median $)	24,748	36,671
Poverty Status (Percent of population with income below poverty line)	8.4	9.8
Percent female headed household	5.3	5.3
Home Ownership (Number)		
Owner occupied	1,290	1,454
Renter occupied	940	1,074
Value Owner-occupied Housing (Median $)	111,400	171,000
Monthly Contract Rent (Median $)	392	555
Employment Status (Population 16 yrs and over)		
Percent in the labor force	58.5	61.5
Percent of civilian labor force unemployed	2.7	4.4
Occupation (Percent in workforce)**		
Management, professional, and related occupations	--	30.4
Service occupations	--	22.1
Sales and office occupations	--	28.9
Farming, fishing, and forestry occupations	1.4	0.7
Construction, extraction, and maintenance occupations	--	10.6
Production, transportation, and material moving occupations	--	7.2
Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting	1.4	0.0†
Manufacturing	7.5	7.0
Percent government workers	8.2	4.5
Commuting to Work (Workers 16 yrs and over)		
Percent in carpools	8.7	14.7
Percent using public transportation	2.2	1.6
Mean travel time to work (minutes)	--	23.1
Percent worked outside of county of residence	10.6	16.0

**Differences in the types of data the U.S. Census Bureau used to generate Occupation and Industry percentages in 1990 and 2000 preclude valid comparisons between those census years.
†Year 2000 figures include mining in this group; 1990 figures do not. Mining includes the offshore oil industry workforce.

Fishing Infrastructure and Services Observed in Madeira Beach in 2003

This information was obtained in 2003 during preliminary research conducted by Impact Assessment, Inc. under a contract for NMFS for the preliminary identification of fishing communities. The research team drove through the community and made notes of what fishing infrastructure and businesses were observed. This methodology serves as a starting point for describing fishing related infrastructure and businesses, but is not an all inclusive account of what exists in the community.

Infrastructure or Service	Quantity
Air fill stations (diving)	2
Boat yards/ Boat builders (recreational/commercial)	3
Churches with maritime theme	1
Docking facilities (commercial)	4

Fishing Gear, Electronics, Welding, and other repair	4 (2 com/2 rec)
Fishing associations (recreational/commercial)	1 (com)
Fish processors, Wholesale Fish House	5
Fisheries research laboratories	0
Fishing monuments/ festivals	1
Fishing pier	0
Hotels/Inns (dockside)	Many
Marine railways/haul out facilities	0
Museums—fishing/marine-related	0
Net makers	0
NMFS or state fisheries office (port agent, etc.)	0
Public boat ramps	2
Recreational docks/marinas	4
Bait & Tackle/fishing supplies	5
Recreational Fishing Tournaments	0
Sea Grant Extension office	0
Seafood restaurants	Many
Seafood retail markets	2
Trucking operations	1
Site-seeing/pleasure tours	7+
Charter/Head Boats	3+
Commercial Boats	40

Source: Impact Assessment, Inc 2005.

Primary Fishing-related Businesses Listed for Madeira Beach in 2003

Type of Business	Frequency
Boat Builder/Broker	3
Boat Rentals & Pier	10
Boat Rentals & Pier; Marina	1
Marina	3
Processor; Wholesale Seafood Dealer	1
Retail/Wholesale Seafood Dealer	1
Total	19

This information was obtained in 2003 during preliminary research conducted by Impact Assessment, Inc. under a contract for NMFS for the preliminary identification of fishing communities. The research team used the local yellow pages in each community to determine which businesses were listed (Impact Assessment, Inc 2005)

Panama City, Florida (incorporated, pop. 36,417)

Location and Overview. Panama City is located on St. Andrews Bay just inland from the Gulf in the central Panhandle region. The city is typically accessed by U.S. Highway 98 and State Highway 22. Tallahassee is nearly 100 miles to the southwest. Local and visiting fishing vessels access the Gulf through the channel at St. Andrew Bay, roughly two miles from the waterfront.

History. The town was named in 1906 under the leadership of developer G.M. West, and incorporated in 1909. Development focused on the waterfront, where numerous piers, a post office, and the city jail were built. In 1908, the Atlanta and St. Andrew Bay Railroad connected Panama City with cities to the north. In 1913, Panama City became the seat of Bay County.

Current Conditions and Trends. The 2000 census enumerated 36,417 persons in Panama City, up from 34,378 in 1990. More than 6,700 residents are employed at neighboring Tyndal Air Force Base. The U.S. Navy maintains a 648-acre Coastal Systems Station in the area, and employs approximately 2,200 persons, many of whom reside in Panama City. Many residents are employed in positions associated with regional commerce and government.

There are numerous commercial and recreational fishing businesses in Panama City. At least 100 commercial and charter vessels moor at various harbors. Several wholesale fish houses handle a wide variety of finfish and shellfish, and there are numerous bait and tackle shops, ship stores, boat builders and dealers, fishing piers, and marinas where charter fishing is offered. There were nine active processors in 2000, employing a total of 55 persons on average that year. In short, there is considerable infrastructure for both commercial and recreational fishing.

Residents of Panama City, Florida had the following number of reef fish permits: in 2004 there were 77, 2005 there were 77, 2006 there were 74, and in 2007 there were 68. In the 2000 census, 0.4 percent of the population listed their occupation under the category for farming, fishing, and forestry, a decrease from the 1.5 percent who were in this category in 1990. In 2000, 0.5 percent listed their occupation under the agriculture, forestry, fishing, and hunting category also a decrease from the 1.5 percent listed in 1990. Following the demographic table are tables that help to describe the presence of fishing in Panama City in 2003 including a table of infrastructure that was observed in the community and primary fishing-related businesses that were listed in the phone books when Impact Assessment, Inc. conducted research for the Southeast Regional Office (Impact Assessment, Inc. 2005).

Panama City Demographics for 1990 and 2000
U.S. Census Data for 1990 and 2000 (Impact Assessment Inc. 2005)

Factor	**1990**	**2000**
Total population	34,378	36,417
Gender Ratio M/F (Number)	16,094/18,284	17,683/18,734
Age (Percent of total population)		
Under 18 years of age	24.5	23.0
18 to 64 years of age	58.5	61.1
65 years and over	17.0	15.9
Ethnicity or Race (Number)		
White	25,954	26,819
Black or African American	7,500	7,813
American Indian and Alaskan Native	215	231
Asian	583	564
Native Hawaiian and other Pacific Islander	--	28
Some other race	126	274
Two or more races	--	688
Hispanic or Latino (any race)	460	1,060
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	12.1	6.7

Percent high school graduate or higher	70.3	79.2
Percent with a Bachelor's degree or higher	16.7	18.9
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	5.3	7.2
Percent who speak English less than very well	1.9	2.0
Household income (Median $)	26,629	31,572
Poverty Status (Percent of population with income below poverty line)	19.6	17.2
Percent female headed household	23.0	15.4
Home Ownership (Number)		
Owner occupied	8,193	8,565
Renter occupied	5,860	6,254
Value Owner-occupied Housing (Median $)	49,800	75,800
Monthly Contract Rent (Median $)	279	526
Employment Status (Population 16 yrs and over)		
Percent in the labor force	58.6	56.4
Percent of civilian labor force unemployed	8.0	5.8
Occupation (Percent in workforce)**		
Management, professional, and related occupations	--	32.2
Service occupations	--	20.8
Sales and office occupations	--	27.7
Farming, fishing, and forestry occupations	1.5	0.4
Construction, extraction, and maintenance occupations	--	8.6
Production, transportation, and material moving occupations	--	10.4
Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting	1.5	0.5†
Manufacturing	7.7	7.0
Percent government workers	20.4	18.6
Commuting to Work (Workers 16 yrs and over)		
Percent in carpools	12.5	13.7
Percent using public transportation	0.2	0.7
Mean travel time to work (minutes)	--	18.6
Percent worked outside of county of residence	1.8	3.3

**Differences in the types of data the U.S. Census Bureau used to generate Occupation and Industry percentages in 1990 and 2000 preclude valid comparisons between those census years. †Year 2000 figures include mining; 1990 figures do not. Mining includes the offshore oil industry workforce.

Fishing Infrastructure in Panama City, Florida as of January 2008.

Infrastructure or Service	Quantity
Air fill stations (diving)	Several
Bars/clubs (dockside or in town)	Several
Boat yards/ Boat builders (recreational/commercial)	Several
Churches with maritime theme	None observed
Docking facilities (commercial)	4
Fishing Gear, Electronics, Welding, and other repair	25
Fishing associations (recreational/commercial)	3
Fish processors, Wholesale Fish House	6
Fisheries research laboratories	1

Fishing monuments	0
Fishing pier	3
Hotels/Inns (dockside)	6
Marine railways/haul out facilities	0
Museums—fishing/marine-related	1
Net makers	10
NMFS or state fisheries office (port agent, etc.)	1 Fed/1State
Public boat ramps	30
Recreational docks/marinas	28
Bait & Tackle/fishing supplies	108
Recreational Fishing Tournaments	Several
Sea Grant Extension office	0
Seafood restaurants	100+
Seafood retail markets	20+
Trucking operations	0
Site-seeing/pleasure tours	12
Charter/Head Boats	100+
Commercial Boats	100+

Source: Impact Assessment, Inc 2005.
This chart was also updated by the NMFS' port agent in January 2008 to reflect current infrastructure that is in Panama City.

Primary Fishing-related Businesses Listed for Panama City in 2003

Type of Business	Frequency
Boat Builder/Broker	44
Boat Builder/Broker; Boat Rentals & Pier	1
Boat Builder/Broker; Diving & Fishing Equipment	1
Boat Builder/Broker; Marina	13
Boat Rentals & Pier	15
Boat Rentals & Pier; Marina	1
Marina	17
Retail Seafood Dealer	19
Retail/Wholesale Seafood Dealer	2
Wholesale Seafood Dealer	4
Total	117

This information was obtained in 2003 during preliminary research conducted by Impact Assessment, Inc. under a contract for NMFS for the preliminary identification of fishing communities. The research team used the local yellow pages in each community to determine which businesses were listed (Impact Assessment, Inc 2005).
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Port Isabel (incorporated, pop. 4,865)

Location and Overview. Port Isabel is adjacent to the Laguna Madre on the easternmost tip of Cameron County. The area is also considered the eastern terminus of the Rio Grande Valley.

Harlingen is 35 miles to the northwest and Brownsville is 22 miles to the west-southwest. State Highways 100 and 48 are the main thoroughfares. The Queen Isabella Parkway connects Port Isabel to South Padre Island by a series of bridges, and there are close economic and social ties between residents in both towns. The Gulf of Mexico is easily reached from Port Isabel via the Brazos-Santiago Pass, some three miles to the east.

The contemporary economy of Port Isabel is based in tourism, commercial fisheries, and petroleum industry support services (Garza 2002). The surrounding estuarine and nearshore marine waters are popular destinations for recreational anglers. Speckled trout, redfish, drum, sheepshead, sand trout, and snook are some of the more popular species found in local waters. Port Isabel residents stage an annual "Shrimp Fiesta," which includes a blessing of the fleets.

History. Spanish explorers found safe anchorage in the area in the early eighteenth century and named their settlement Punta de Santa Isabel after their queen. Spanish and Mexican ranchers and farmers later established a lucrative cotton-farming operation here in the 1830s. In 1859, Port Isabel exported $10 million dollars worth of cotton. Port Isabel was incorporated in 1928. The shrimp industry became a viable enterprise in the 1950s (Port Isabel Chamber of Commerce 2003). Port Isabel captains and crew harvested 7,136,000 pounds of shrimp in 1960 alone. About 41 million pounds of shrimp were harvested in the 1990s (Garza 2002).

Current Conditions and Trends. The 2000 census enumerated 4,865 persons in Port Isabel, an increase of 398 persons from 1990. Residents in the workforce were primarily employed in service and sales/office positions in 2000, with indication that many commuted to jobs in Brownsville and other cities. Four percent of residents reported farming, fishing, or forestry as their primary occupation, with fishing as the leading employment sector in this category.

Numerous Port Isabel businesses support recreational and commercial fishing activities. Commercial fishing vessels have access to various docking facilities, two seafood trucking operations, seafood processors, wholesalers, and boat yards. Two fishing piers, eight marinas, a public boat ramp, six bait and tackle shops, and 18 charter/head boats and sight-seeing boats sustain Port Isabel's recreational fishing industry. A fisheries research laboratory is based in Port Isabel. Residents and visitors may purchase seafood from a variety of retail markets, and there are numerous seafood restaurants in the area.

Residents of Port Isabel, Texas had the following number of reef fish permits: in 2004 there were 3, 2005 there were 3, 2006 there were 3, and in 2007 there were 3.

Following the demographic table are tables that help to describe the presence of fishing in Port Isabel in 2003 including a table of infrastructure that was observed in the community and primary fishing-related businesses that were listed in the phone books when Impact Assessment, Inc. conducted research for the Southeast Regional Office (Impact Assessment, Inc. 2005).

Table 1. Port Isabel Demographics for 1990 and 2000
U.S. Census Data for 1990 and 2000 (Impact Assessment Inc. 2005)

Factor	1990	2000
Total population	4,467	4,865

Gender Ratio M/F (Number)	2,136/2,331	2,358/2,507
Age (Percent of total population)		
Under 18 years of age	33.2	30.4
18 to 64 years of age	56.5	57.4
65 years and over	10.3	12.2
Ethnicity or Race (Number)		
White	3,938	3,876
Black or African American	25	50
American Indian and Alaskan Native	6	16
Asian	10	12
Native Hawaiian and other Pacific Islander	N/A	5
Some other race	488	756
Two or more races	N/A	150
Hispanic or Latino (any race)	3,337	3,619
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	29.8	24.3
Percent high school graduate or higher	49.1	59.1
Percent with a Bachelor's degree or higher	7.3	12.3
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	73.7	71.3
Percent who speak English less than very well	39.2	28.9
Household income (Median $)	15,275	25,323
Poverty Status (Percent of population with income below poverty line)	39.0	27.3
Percent female headed household	14.6	16.6
Home Ownership (Number)		
Owner occupied	808	984
Renter occupied	555	665
Value Owner-occupied Housing (Median $)	48,300	58,900
Monthly Contract Rent (Median $)	229	405
Employment Status (Population 16 yrs and over)		
Percent in the labor force	62.9	57.2
Percent of civilian labor force unemployed	5.5	4.4
Occupation (Percent in workforce)**		
Management, professional, and related occupations	N/A	17.7
Service occupations	N/A	29.6
Sales and office occupations	N/A	27.6
Farming, fishing, and forestry occupations	4.7	3.8
Construction, extraction, and maintenance occupations	N/A	9.8
Production, transportation, and material moving occupations	N/A	11.5

Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting	4.7	6.1
Mining (includes the offshore oil/gas industry workforce)	0.0	0.0
Manufacturing	3.6	3.5
Percent government workers	16.1	13.5
Commuting to Work (Workers 16 yrs and over)		
Mean travel time to work (minutes)	N/A	16.8
Percent worked outside of county of residence	0.1	4.3

**Differences in the types of data the U.S. Census Bureau used to generate Occupation and Industry percentages in 1990 and 2000 preclude valid comparisons between those census years.

Table 2. Fishing Infrastructure and Services Observed in Port Isabel in 2003

Infrastructure or Service	Quantity
Air fill stations (diving)	1
Boat yards/ Boat builders (recreational/commercial)	1
Churches with maritime theme	1
Docking facilities (commercial)	3
Fishing Gear, Electronics, Welding, and other repair	7-8
Fishing associations (recreational/commercial)	2
Fish processors, Wholesale fish house	1
Fisheries research laboratories	1
Fishing monuments	1
Fishing pier	2
Hotels/Inns (dockside)	0
Marine railways/haul out facilities	0
Museums—fishing/marine-related	1
Net makers	1
NMFS or state fisheries office (port agent, etc.)	1
Public boat ramps	1
Recreational docks/marinas	8
Bait & Tackle/fishing supplies	5-6
Recreational Fishing Tournaments	1
Sea Grant Extension office	0
Seafood restaurants	2-4
Seafood retail markets	3
Trucking operations	2
Site-seeing/pleasure tours	8
Charter/Head Boats	10
Commercial Boats	50 +

Source: Impact Assessment, Inc 2005.

Table 3. Primary Fishing-related Businesses Listed for Port Isabel in 2003

Type of Business	Frequency
Boat Builder/Broker	5
Boat Rentals & Pier	6
Processor	1
Retail Seafood Dealer	2
Wholesale Seafood Dealer	3
Total	17

Source: Impact Assessment, Inc 2005.

4.2 Description of the Administrative Environment

Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the 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 Secretary and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Section 10. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the 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 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative 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 NOAA's Office of Law Enforcement, the USCG, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council's Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission's (GSMFC) Law Enforcement Committee have developed a five-year "Gulf Cooperative Law Enforcement Strategic Plan - 2006-2011."

State Fishery Management

The purpose of state representation at the council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf States exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each state's primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004a).

Table 3.2.2 Species of the reef fish FMP. Species in bold have had stock assessments. *Deepwater groupers (Note: if the shallow water grouper quota is filled, then scamp are considered a deepwater grouper); **Protected groupers

Common Name	Scientific Name	Stock Status
Balistidae--Triggerfishes		
Gray triggerfish	Balistes capriscus	Overfishing, overfished unknown
Carangidae--Jacks		
Greater amberjack	Seriola dumerili	Overfished overfishing
Lesser amberjack	Seriola fasciata	Unknown
Almaco jack	Seriola rivoliana	Unknown
Banded rudderfish	Seriola zonata	Unknown
Labridae--Wrasses		
Hogfish	Lachnolaimus maximus	Unknown
Lutjanidae--Snappers		
Queen snapper	Etelis oculatus	Unknown
Mutton snapper	Lutjanus analis	Unknown
Schoolmaster	Lutjanus apodus	Unknown
Blackfin snapper	Lutjanus buccanella	Unknown
Red snapper	Lutjanus campechanus	Overfished overfishing
Cubera snapper	Lutjanus cyanopterus	Unknown
Gray (mangrove) snapper	Lutjanus griseus	Unknown
Dog snapper	Lutjanus jocu	Unknown
Mahogany snapper	Lutjanus mahogoni	Unknown
Lane snapper	Lutjanus synagris	Unknown
Silk snapper	Lutjanus vivanus	Unknown
Yellowtail snapper	Ocyurus chrysurus	Not overfishing, not overfished
Wenchman	Pristipomoides aquilonaris	Unknown
Vermilion snapper	Rhomboplites aurorubens	Not overfished, not overfishing
Malacanthidae--Tilefishes		
Goldface tilefish	Caulolatilus chrysops	Unknown
Blackline tilefish	Caulolatilus cyanops	Unknown
Anchor tilefish	Caulolatilus intermedius	Unknown
Blueline tilefish	Caulolatilus microps	Unknown
(Golden) Tilefish	Lopholatilus chamaeleonticeps	Unknown
Serranidae--Groupers		
Dwarf sand perch	Diplectrum bivittatum	Unknown
Sand perch	Diplectrum formosum	Unknown
Rock hind	Epinephelus adscensionis	Unknown
Yellowfin grouper	Mycteroperca venenosa	Unknown
Scamp	Mycteroperca phenax	Unknown
Red hind	Epinephelus guttatus	Unknown
****Goliath grouper**	Epinephelus itajara	Unknown not overfishing
****Nassau grouper**	Epinephelus striatus	Unknown not overfishing
Red grouper	Epinephelus morio	Not overfished, not overfishing
Gag	Mycteroperca microlepis	Overfishing, overfished unknown
Yellowmouth grouper	Mycteroperca interstitialis	Unknown
Black grouper	Mycteroperca bonaci	Unknown
***Yellowedge grouper**	Epinephelus flavolimbatus	Unknown
*Snowy grouper	Epinephelus niveatus	Unknown
*Warsaw grouper	Epinephelus nigritus	Unknown
*Misty grouper	Epinephelus mystacinus	Unknown
*Speckled hind	Epinephelus drummondhayi	Unknown

Protected Species

There are 28 different species of marine mammals that may occur in the Gulf. All 28 species are protected under the Marine Mammal Protection Act (MMPA) and six are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback and North Atlantic right whales). Other species protected under the ESA occurring in the Gulf include five sea turtle species (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*]). Information on the distribution, biology, and abundance of these protected species in the Gulf is included in final EIS to the Council's Generic EFH amendment (GMFMC, 2004a), the February 2005 ESA biological opinion on the reef fish fishery (NMFS 2005) and Acropora Status Review (Acropora Biological Review Team 2005). Marine Mammal Stock Assessment Reports and additional information are also available on the NMFS Office of Protected Species website: http://www.nmfs.noaa.gov/pr/species/.

The Gulf reef fish fishery is classified in the 2007 MMPA List of Fisheries as Category III fishery (71 FR 247). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to one 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. Dolphins are the only species documented as interacting with this fishery. Bottlenose dolphins may predate and depredate on the bait, catch, and/or released discards of the reef fish fishery.

All five species of sea turtles are adversely affected by the Gulf reef fish fishery. Incidental captures are relatively infrequent for commercial vertical line vessels and recreational hook-and-line components of the reef fishery. Sea turtle are more frequently encountered by commercial longline vessels, with an estimated 974 (95% C.I. = 444-2,137) hardshell turtles captured between July 2006 and December 2007 (SEFSC 2008). Captured sea turtles can be released alive or can be found dead upon retrieval of the gear as a result of forced submergence. Sea turtles released alive may later succumb to injuries sustained at the time of capture or from exacerbated trauma from fishing hooks or lines that were ingested, entangling, or otherwise still attached when they were released. Sea turtle release gear and handling protocols are required to minimize post-release mortality.

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

5.0 ENVIRONMENTAL CONSEQUENCES

This section provides the scientific and analytical basis for comparing management alternatives described in Section 4.0. The potential direct, indirect, and cumulative effects on the physical, biological, ecological, socioeconomic, and administrative environments for each management alternative are described below. This section also describes: 1) any unavoidable adverse effects resulting from the proposed action, 2) the relationship between short-term uses of man's environment and long-term productivity, and 3) any irreversible or irretrievable commitments of resources resulting from implementation of the proposed action.

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 "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions."

5.1 SECTION A – EFFORT, PERMITS, & GROUPER SPECIES MANAGEMENT

5.1.1 ACTION A1: Selection of an Effort Management Approach

5.1.1.1 Direct and Indirect Effects on the Physical Environment

This action is largely socioeconomic and administrative in nature, and would not directly affect the physical, biological, or ecological environments. However, alternatives for this action could have indirect effects by influencing the total number of grouper and tilefish fishermen and how the fishery is prosecuted. Both endorsement and IFQ programs intend to reduce effort in the grouper and tilefish fisheries. Impacts on the physical environment would increase with more vessels in the fishery due to more interactions of gear with the bottom habitat.

Grouper and tilefish are bottom dwelling fish, and fishing methods must consequently place the gear on or near the bottom where it may interact with the habitat. The primary gear types used in the commercial fisheries are bottom longlines and bandit rigs. Recreational fishermen predominately use rod and reel. Spearfishing also constitutes a small part of both recreational and commercial grouper fishing. Fish traps were used in the commercial grouper fishery until February 7, 2007, when their use became prohibited in the Gulf of Mexico EEZ.

Longline gear directly contacts the bottom. The potential for adverse impacts is dependent on the type of habitat the gear is set on, the presence or absence of current, and the behavior of fish after being hooked. In addition, lines can drag across the surface for considerable distances during retrieval and dislodge lightweight organisms such as invertebrates. Both longlines and handlines can entangle on coral reef and other hard bottom and cause physical damage. Anchors or weights on bottom longlines can also impact and damage the bottom habitat (Barnette, 2001).

Vertical-line gear is less likely to contact the bottom than longlines, but still has the potential to snag and entangle bottom structures and cause tear-offs or abrasions (Barnette 2001). If vertical-line gear is lost or improperly disposed of, it can entangle marine life. Entangled gear often becomes fouled with algal growth. If fouled gear becomes entangled on corals, the algae may eventually overgrow and kill the coral.

Traps set on live substrate can cause damage to corals, gorgonians, sponges, and submerged aquatic vegetation. However, the Council phased out traps in February 2007 and this gear no longer impacts habitat in the Gulf of Mexico. Spearfishing has minimal effects on the bottom, although divers may cause damage by coming in contact with habitat while spearfishing.

Alternative 1 would maintain current regulations and thereby maintain the current level of impact on the physical environment. **Alternatives 2 and 3** should each decrease the number of active vessels and therefore should decrease adverse impacts on the physical environment. However, the criteria for participation in either program will influence the level of the reduction in impacts. Less restrictive criteria could result in more vessels in the fishery. Unrestricted access to the each program would allow more inexperienced fishermen to participate. Fishermen who are less efficient would spend more time fishing for the same catch of fish, thereby increasing the amount of interaction of gear with the bottom.

5.1.1.2 Direct and Indirect Effects on the Biological/Ecological Environment

Alternative 1 would maintain the same level of biological impacts currently in the fishery. The Gulf commercial grouper fishery is overcapitalized, which means the collective harvest capacity of fishery vessels and participants is in excess of that required to efficiently take their share of the TAC. This overcapacity has caused commercial regulations to become increasingly restrictive over time, resulting in derby-type conditions, under which participants compete with each other to harvest as many fish as possible before the quota is taken. Derby conditions can adversely affect the biological and ecological environments by reducing the ability of fishermen to avoid or minimize incidental catches of other reef fish species. Further, current conditions allow fishermen with little experience into the fishery, which reduces overall fishery efficiency. On the other hand, if fewer fishers participate in the fishery, then potentially more bycatch of grouper and tilefish will be discarded by fishers not in the program.

The IFQ program in **Preferred Alternative 2** would promote efficiency by providing fishermen more flexibility to choose when, where, and how they want to fish, and the incentive to prosecute the fishery in a way that maximizes their profits. Reduced fishing effort and the rate of bycatch would benefit target and non-target species, as well as the habitat within which they occur. A lack of derby conditions may allow fishermen more time to treat and release bycatch in a manner that results in greater survival.

Biological and ecological benefits could be realized if IFQ shareholders have incentives to ensure the fishery is productive (and IFQ shares valuable) over the long term (NRC, 1999) and are encouraged to prosecute the fishery in a more conservative manner. The privilege represented by IFQ shares and allocation could promote greater industry cooperation with management, enforcement, and researchers to identify, develop, and implement needed

conservation and management measures. This privilege may also increase "self-policing," which would help reduce illegal activities and improve overall fishery compliance.

This alternative could have an additional beneficial biological effect if not all allocation is used within a year and TAC is not reached. If participation is not restricted, shares or allocation can be purchased by individuals who do not intend to fish. Also, some fishermen may not fish their allocation in a particular year for social, economic, or legal reasons. In the first year of the red snapper IFQ (2007), over 122,000 pounds of allocation were not landed. Unused allocation would reduce the directed catch, fishing effort, the amount of bycatch, and the number of regulatory discards.

Negative biological and ecological impacts could also occur. Individuals who are not included in the grouper and tilefish IFQ may still fish for other species and take grouper and tilefish incidentally. Fewer fishers with IFQ shares could mean more regulatory discards by fishers without shares.

The IFQ program could promote high grading which could negatively impact the target species. High grading is when fishermen keep only the largest fish and discard smaller ones. Generally, IFQ programs are expected to increase fishermen's incentive to high grade (NRC, 1999), which typically occurs when the price is significantly different between fish of different sizes.

Alternative 3 would only allow individuals that are currently fishing for grouper and tilefish to participate in the fishery. Biological impacts are lower when participation in the fishery is restricted to individuals who already have experience in the fishery. Generally, the effort applied to the fishery can be expected to decrease as participation is consolidated among fewer, more efficient individuals. This decreased effort would result in less gear and time used in pursuing grouper and tilefish and, consequently, less adverse impacts in the form regulatory discards and bycatch of non-target species. The higher the minimum harvest threshold is set, the fewer the participants that will remain in the fishery and the higher their level of efficiency will be.

Some individuals with reef fish permits that do not qualify for endorsements will continue to fish for other species and may have grouper and tilefish bycatch. Action C3 would create allowances for bycatch in this situation. Some fishermen not included in the program may shift their effort to other species, thus increasing fishing mortality in those fisheries.

5.1.1.3 Direct and Indirect Effects on the Economic Environment

Alternative 1, no action, would perpetuate the management structure in effect in the tilefish and grouper fisheries. Measures currently used in the management of tilefish and grouper include a license limitation system, quotas, trip limits, minimum size limits, area gear restrictions, and season closures. This management scheme has resulted in overcapitalized commercial grouper and tilefish fisheries; which means that the collective harvest capacity of fishery vessels and participants is in excess of that required to efficiently harvest the commercial share of the TAC. This management structure is expected maintain incentives for overcapitalization and derby fishery conditions. Thus, under **Alternative 1**, the commercial grouper and tilefish fisheries are anticipated to continue to be characterized by higher than necessary levels of capital investment,

increased operating costs, shortened seasons, limited at-sea safety, fluctuations in grouper and tilefish supply, and depressed ex-vessel prices, resulting in a dissipation of rents that could be derived from the fisheries.

Under **Preferred Alternative 2**, the management of the commercial grouper and tilefish fisheries would no longer be based on a limited entry system with season closures. **Preferred Alternative 2** would fundamentally change the incentive structure in the fishery by implementing an IFQ program. The establishment of an IFQ program is anticipated to decrease the overcapitalization observed in the fleet, lengthen fishing seasons and lower operating costs by affording vessel owners more flexibility in their input selection and trip planning, improve market conditions through a steadier supply of fresh fish, and increase ex-vessel prices.

A recently completed study suggests that the implementation of an IFQ would result in efficiency gains, fleet consolidation, and that remaining vessels would benefit from economies of scale (Weninger 2008). Weninger estimates variable cost savings attributable to the implementation of an IFQ in the grouper and tilefish fisheries between $2.23 and $3.24 million per year. In addition, fixed costs savings, which are difficult to estimate, are also expected to result from the implementation of the IFQ program. Potential positive impacts on grouper and tilefish prices constitute another expected source of economic benefits resulting from the establishment of an IFQ program.

Although an IFQ program is expected to reduce overcapacity in the fishery, the speed of removal of excess capital will depend on several factors such as the amount of initial quota allocated; the malleability of capital; opportunities outside the fishery; vessel markets for those wishing to sell and exit the fishery; transferability rules; and availability of credit. In fisheries where earnings outside the fishery covered by IFQs are low, the vessel owner will probably continue fishing with an old boat as long as it covers its variable costs. Therefore, significant changes in fleet size and structure may take longer as vessels reach the end of their economic lives. Conversely, if there are significant earning possibilities in other fisheries, the structural change under IFQs will be faster (Grafton, 1996). One other aspect of costs for an IFQ program is employment losses and increased management, monitoring, and enforcement costs. Consolidation of IFQ shares would result in fewer vessels and reduced crew requirements. These employment losses would have adverse trickle down effects on small fishing communities where job opportunities may be scarce or skills of displaced fishermen are low.

Alternative 3 would establish grouper and tilefish endorsements. Depending on minimum landings thresholds selected for endorsement eligibility, a number of grouper and tilefish fishermen would be excluded from these fisheries. Higher minimum average landings requirements would correspond to more stringent endorsement qualification criteria and hence would exclude a larger number of permit holders from the fisheries. The greater the number of permit owners prevented from prosecuting tilefish and grouper, the more economic benefits are expected to be enjoyed by remaining participants. However, economic benefits derived from the establishment of grouper and tilefish endorsements are expected to be short lived because over time, participants in these fisheries are expected to gradually increase their usage of the unregulated inputs to harvest as much as possible. In essence, the establishment of an

endorsement program would not fundamentally alter the incentive structure prevailing in the tilefish and grouper fisheries under the status quo.

5.1.1.4 Direct and Indirect Effects on the Social Environment

Alternative 1 would maintain the current management structure in the commercial grouper and tilefish fisheries. With this alternative, there would not be any short term impacts, positive or negative, on the fishermen, fishing-dependent businesses, or fishing communities that are involved with the commercial grouper and tilefish fisheries because it would not change the current way of doing business. However, in the long term, **Alternative 1** would not end the derby style fishing, which can lead to an early closure of the fisheries once the TAC has been met. **Alternative 1** would not help to reduce overcapacity in these fisheries. Fishermen, communities, and fishing dependent businesses could be negatively impacted if the quota is met early requiring an early closure of the fisheries.

Preferred Alternative 2 would implement an IFQ Program in the commercial grouper and tilefish fisheries. If an IFQ system is implemented under **Preferred Alternative 2**, the fishermen who are participants in the program will benefit from being able to plan their fishing trips around inclement weather conditions. This will eliminate the derby fishing that exists now and will help to stabilize the fishery so that presumably fish can be harvested all year. This will have a positive impact on those that work at the docks and in the processing sector, because fish will be harvested all year which in turn creates jobs throughout the year. Under the current system, derby fishing exists which forces fishermen to fish in bad weather and the season is subject to early closure when the TAC is met. This has a negative impact on the fishermen and the people who are dependent on the processing sector because there can be fluctuations in the employment market, and a loss of jobs when the fishery closes.

Preferred Alternative 2 will have a negative impact on the fishermen who do not qualify for a quota share and are no longer able to participate in these fisheries. If quotas are designated based on current or past participation, someone who has been out of the fishery due to illness, problems with their boat, or other circumstances will no longer be able to participate in these fisheries. Some fishermen may not harvest a substantial amount of grouper or tilefish, but it may supplement the other fisheries they are involved with. Due to regulations that limit fishing due to moratoriums, IFQs, or other management measures, fishermen may not be able to target other species to make up the loss from being blocked out of the grouper and tilefish fisheries. If they can not make enough income from targeting other species, to cover the loss from the grouper and tilefish fisheries, they may have to exit the fishing industry if they can no longer make a living from fishing.

Alternative 3 would establish grouper and tilefish endorsements and would have a negative impact on the fishermen who would not received an endorsement to harvest grouper or tilefish due to such factors as their current level of harvest or gear type. Even if the amount of grouper or tilefish individual fishermen harvests is small, if they are left out of the endorsement, they may not be able to make up lost income by targeting other species. This could have a negative impact on other species the displaced fishermen may choose to target. On the other hand, it is becoming

more difficult for fishermen to target other species due to restrictions on species that are already in place such as moratoriums on the number of permits, quotas, etc. If fishermen are closed out of the grouper or tilefish fisheries due to the limitations of the endorsements, and they can not make enough income from targeting other species, they may have to exit the fishing industry if they can no longer make a living from fishing.

If the Council chooses to grant endorsements, in the short term, the fishermen who obtain an endorsement would benefit from having less competition in fisheries they participate in. This may allow the season to stay open longer and presumably there would be more fish for each fisherman involved to harvest.

Alternative 3 would help to reduce fishing effort in the short term, in the long term, the remaining participants may increase the amount they harvest, and derby fishing could continue. With **Alternative 3**, there would still be a chance the fisheries could close early if the TAC is met which could lead to a loss of jobs in the processing sector.

5.1.1.5 Direct and Indirect Effects on the Administrative Environment

Maintaining the status quo, **Alternative 1**, would be the least burdensome of the alternatives because staff are already administering the current management structure (i.e. renewing and transferring Gulf reef fish permits and predictions of when the fishery will take its seasonal quotas). An endorsement program, **Alternative 3**, would be more burdensome to administer than the status quo, requiring permits to be evaluated for landings history and issuing endorsements to eligible individuals. However, the administrative requirements of the IFQ program proposed in **Preferred Alternative 2** are expected to be the most burdensome. Some of the new requirements of an IFQ program would include issuing IFQ shares and allocation, reviewing and resolving appeals, tracking share and allocation transfers, tracking landing notifications and transactions, enforcing share ownership and allocation caps, monitoring and accounting for cost recovery fees, and developing an on-line software program to track many of these IFQ activities. These administrative functions would be performed by NMFS staff and NOAA's Office of Law Enforcement. Several provisions could be implemented that would alleviate staffing and resource burdens associated with an IFQ program, including a prohibition on share transactions at the end of the year and a cost recovery fee. These items exist in the red snapper IFQ program.

5.1.2 ACTION A2: Permit Stacking Action

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

Effects on the physical and biological/ecological environments from reef fish fishing are described in detail in sections 5.A1.1 and 5.A1.2. This action is primarily administrative and so would not have any direct effects on the physical or biological/ecological environments. **Alternative 1**, no action, would not affect the fishery as it is currently prosecuted; therefore, this alternative should have no effect on the physical environment. **Preferred Alternative 2** could reduce the total number of vessels participating in the fishery. If this reduction in vessels

translates to a reduction in effort or the number of trips, then the amount of gear interacting with the bottom and the amount of reef fish harvested could be reduced. Thus this alternative would indirectly, but beneficially effect the physical environment. For the biological/ecological environment, less targeted species could benefit because the focus of harvesting strategies by fishermen would be towards species commanding higher dockside prices. Major species in the reef fish fishery such as red grouper, gag, and greater amberjack are protected by quotas designed to protect them from overfishing.

5.1.2.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 would not affect the gradual reduction in the number of commercial reef fish permits observed in recent history. Neither direct nor indirect economic effects are expected from the implementation of **Alternative 1**. For permit holders, current permit renewal procedures would continue to be applicable.

Alternative 2 could potentially hasten the reduction in the number of commercial reef fish permits. Currently, commercial reef fish permits are issued to an individual or entity such as a corporation and must be assigned to a single vessel. Owners of multiple permits have to fulfill regulatory requirements for the continued validity of each permit. Some of these requirements, such as the VMS requirement, can be costly to implement. It is likely that a number of owners of multiple permits would consolidate their holdings into fewer permits, thereby realizing some savings. Permits with relatively small catch histories appear to be more likely to be consolidated. Under an IFQ program, owners of these consolidated permits would simply receive IFQ shares corresponding to the aggregated catch history; which could simplify their operations. It is also possible that the consolidated permits have more value than the sum of individual permits that were aggregated because the resulting catch history may qualify the owner for a given program while none of the initial permits would. For example, depending on the minimum landings requirements, a consolidated permit may qualify its owner for an endorsement program or make him eligible to participate in a referendum while none of the initial permits would, when considered separately. Finally, a consolidated permit may be easier to sell due to the greater catch history associated with it. Difficulties that may be encountered when attempting to acquire additional permits constitute a potential drawback for permit holders who would consider consolidating several permits into one. It is not possible at this time to predict the number of permit owners that would consolidate permits or the resulting number of commercial reef fish permits. However, the implementation of **Alternative 2** is expected to result in positive economic benefits due to potential savings for permit holders and long term reductions in administrative costs.

<u>Summary</u>

Alternative 1, the no action alternative, would not affect the ongoing reduction in the number of commercial reef fish permits. The implementation of **Alternative 2** would allow owners of multiple permits to consolidate them into one with a catch history equal to the sum of the corresponding individual permits. **Alternative 2** is expected to accelerate the reduction in the number of permits. Economic benefits due to savings realized by permit owners and anticipated reductions in administrative costs are anticipated from the implementation of **Alternative 2**.

5.1.2.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would be no action, and would not allow commercial reef fish permits to be consolidated. This alternative is administrative and would not have any short term impacts, positive or negative, on the fishermen, fishing-dependent businesses, or fishing communities that are involved with the commercial grouper and tilefish fisheries because it would not change the current way of doing business.

Preferred Alternative 2 would allow a single owner of multiple commercial reef fish permits to consolidate his (hers) permits into one. The consolidated permit would have a catch history equal to the sum of the catch histories associated with the individual permits. Allowing permit holders to combine their permits may be advantageous to the fishermen with low harvest levels of individual species because they would have one total for reef fish landings. This may allow them to qualify for programs that require a certain total of landings which they may not have with any individual species. **Preferred Alternative 2** would also reduce the number of permits required by individual fishermen in the program and make the permit renewal process easier for fishermen.

5.1.2.4 Direct and Indirect Effects on the Administrative Environment

This action is primarily an administrative in nature. **Alternative 1**, no action, would not increase or decrease the administrative burden managing the commercial reef fish fishery. **Preferred Alternative 2** would initially adversely effect the administrative environment because permit histories would need to be combined as some permit holders request their permits to be stacked. However, this should provide a long-term benefit to the administrative environment because the number of permits would decrease. This would reduce administrative efforts needed for permit renewal and communicating with fishermen through Fishery Bulletins.

5.1.3 ACTION A3: Speckled Hind and Warsaw Grouper Classification

5.1.3.1 Direct and Indirect Effects on the Physical Environment

A detailed description of the direct and indirect effects of an IFQ program for grouper on the physical environment is provided in Section 5.1.1 **Alternatives 1**, **2, 3,** and **Preferred Alternative 4** are similar since effort is not expected to change under either of the alternatives. If fishing effort is not expected to increase or decrease, then there is no change in the effect on the physical environment.

5.1.3.2 Direct and Indirect Effects on the Biological/Ecological Environment

A detailed description of the direct and indirect effects of an IFQ program for grouper on the biological and ecological environment is provided in Section 5.1.1. **Alternative 1** would maintain warsaw grouper and speckled hind as DWG species. Under the current management system, once the DWG fishery closes, bycatch of these two species would still be an issue.

When the DWG fishery closed in 2004–2006, estimated discards of warsaw grouper and speckled hind ranged from 37,818 to 146,673 pounds GW and from 864 to 5,352 pounds GW, respectively. Speckled hind is more often associated with SWG landings than warsaw and therefore, more likely to be discarded as bycatch when the DWG fishery closes (Figures 5.2.3 and 5.2.4).

Figure 5.2.3 Warsaw Grouper, Speckled Hind, and Deepwater Grouper Landings by Area Fished (2004-2006 Average Landings - in percentage points)

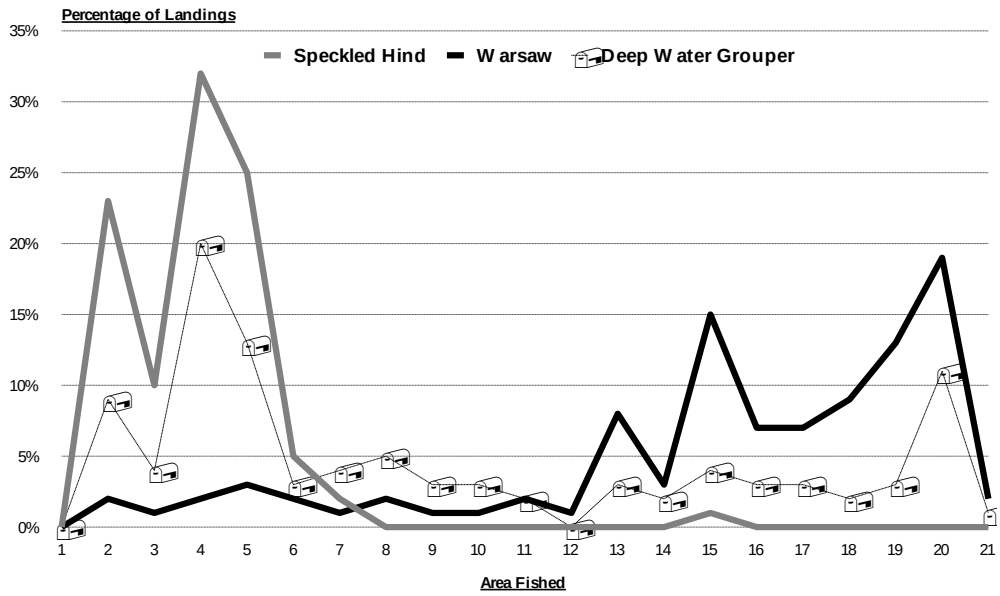
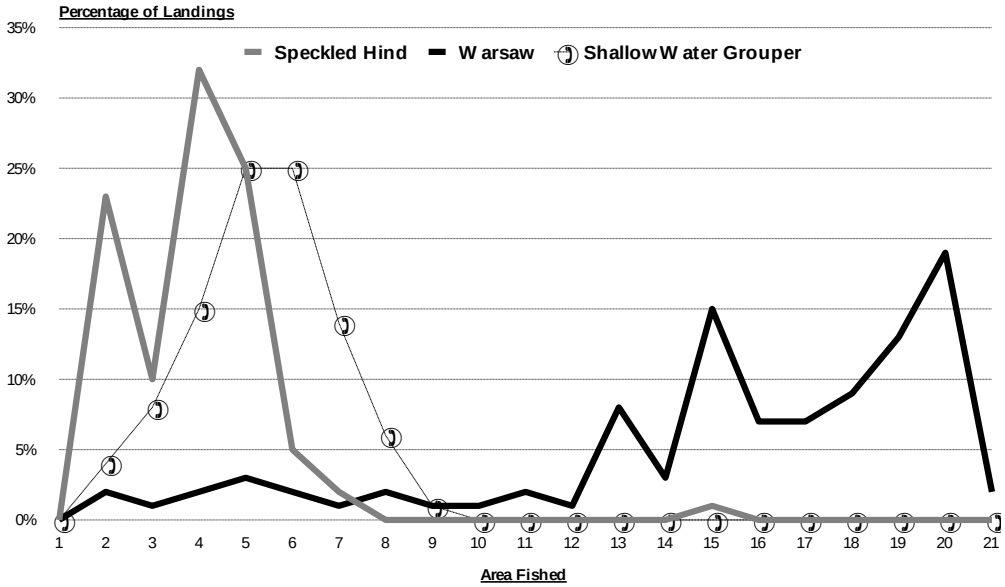


Figure 5.2.4 Warsaw Grouper, Speckled Hind, and Shallow Water Grouper Landings by Area Fished (2004-2006 Average Landings - in percentage points)



Alternatives 2, 3 and **Preferred Alternative 4** would directly affect the biological environment by revising the SWG unit to include speckled hind, warsaw grouper or both, respectively. Under a non-IFQ management system, bycatch of speckled hind and warsaw grouper could decrease which may benefit these stocks. However, allowing these species to be counted against the SWG quota could increase landings and fishing mortality for these species. The overfishing and overfished status of these species is unknown so it is difficult to predict the magnitude these types of changes would have on these species. Once the DWG fishery closes, warsaw grouper and speckled hind landings would be deducted from the SWG quota. This may benefit other SWG stocks, such as red and gag grouper, because the SWG quota may be met sooner than usual because the landings of warsaw grouper and speckled hind are now being included under the this quota.

Under an IFQ management system, revising the SWG unit to include warsaw grouper and speckled hind could benefit warsaw grouper and speckled hind because bycatch of these species may decrease if individuals can use SWG allocation to land these species once their DWG allocation has been expended. However, landings of these species could increase which would increase fishing mortality. Since the overfishing and overfished status of these stocks is unknown, the exact effect on the stocks is difficult to predict. If IFQ shares are defined as SWG and DWG (Action B4, Alternative 3), other SWG species such as red and gag grouper could benefit from SWG allocation being used to cover warsaw and speckled hind landings because these fish may not be landed if there is not enough allocation.

Alternative 1 would provide the least benefit to the biological environment, resulting in the greatest bycatch and fishing mortality rates. The biological effects of **Alternatives 2, 3** and **Preferred Alternative 4** would be similar and would provide the most benefit to the biological environment, resulting in less bycatch and possibly contribute to the restoration of stocks that are overfished and/or undergoing overfishing. **Alternative 2** may provide more benefit to speckled hind than **Alternative 3** would to warsaw grouper since speckled hind is more likely to be caught with SWG landings. **Preferred Alternative 4** would combine both benefits.

5.1.3.3 Direct and Indirect Effects on the Economic Environment

Alternative 1 would maintain the current composition of management units in the grouper complex. Warsaw grouper and speckled hind would continue to be classified as DWG. Under **Alternative 1**, it is expected that warsaw grouper and speckled hind would continue to be discarded once the DWG fishery closes. If the Council elects to implement an IFQ program, these species would be counted against the DWG IFQ shares. However, the close association of speckled hind with SWG would indicate that IFQ participants would have to acquire DWG shares to land speckled hind they are likely to catch while prosecuting red, gag, or other SWG species. The value of warsaw grouper and speckled hind that may be discarded under a non-IFQ scenario can be considered as an upper-bound for the adverse economic effects expected from **Alternative 1**. Between 2004 and 2006, when the DWG fishery closed, estimated discards of warsaw grouper and speckled hind ranged from 37,818 to 146,673 pounds GW and from 864 to 5,352 pounds GW, respectively. Using a price of $3.0 per pound for warsaw and speckled hind, adverse economic effects would range from $116,000 to $$56,000, approximately.

Alternative 2 would add speckled hind to the SWG management unit and maintain its DWG classification. The dual classification of speckled hind as SWG and DWG is expected to result in direct economic benefits due to anticipated reductions in discards and/or the added flexibility afforded to fishermen. Under the current management framework or another non-IFQ scenario, speckled hind discards following a closure of the DWG fishery would be eliminated. Potential economic benefits associated with the elimination of these discards are expected to range from $2,500 to $16,000, approximately. Given the approximately 8 to 1 ratio between SWG and DWG quotas, DWG shares may be difficult to acquire and require a premium, especially towards the end of the fishing year. Therefore, the flexibility to land speckled hind with SWG allocation is expected to result in added economic benefits for IFQ participants. Additional benefits would result from the positive impacts on other SWG that would have been harvested instead. Under an IFQ, fishermen would be able to land speckled hind without having to find DWG shares.

Alternative 3 would add warsaw grouper to the SWG management unit and maintain its DWG classification. The categorization as both SWG and DWG is anticipated to be associated with direct positive economic effects stemming from expected reductions in discards of warsaw grouper and/or the added flexibility afforded to fishermen. Under a non-IFQ scenario, benefits that could be derived from the elimination of warsaw discards that would result from the implementation of **Alternative 3** are estimated to range from $113,000 to $440,000, approximately. As indicated for speckled hind under the previous alternative, the ability to land warsaw grouper with any SWG share is expected to yield economic benefits to IFQ participants. In addition, benefits are expected to result from positive impacts on the stocks of other SWG that would have been harvested otherwise.

Preferred Alternative 4 would jointly implement **Alternatives 2** and **4** and is expected to benefit both stocks. Economic benefits that could be derived from the joint implementation of **Alternatives 2** and **4** could be as much as $450,000. Additional benefits are also expected from positive impacts on other SWG stocks that would have been harvested.

5.1.3.4 Direct and Indirect Effects on the Social Environment

Alternative 1 would maintain the current composition of the multi-species DWG and SWG units. Under **Alternative 1, w**arsaw grouper and speckled hind would continue to be classified as DWG. These species will continue to be discarded once the DWG fishery closes. Fishermen will be using bait and spending time handling fish they can not keep. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

Alternative 2 would maintain the current composition of the multi-species DWG unit and revise the SWG unit to include speckled hind. **Alternative 2** would add speckled hind to the SWG unit which would allow it to be classified in both management groups. This would reduce discards of speckled hind once the DWG fishery closes. This will allow fishermen to keep more of the speckled hind they catch. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

Alternative 3 would maintain the current composition of the multi-species DWG unit and revise the SWG unit to include warsaw grouper. **Alternative 3** would add warsaw grouper to the SWG unit which would allow it to be classified in both management groups. This would reduce discards of warsaw grouper once the DWG fishery closes. This will also allow fishermen to keep more of the warsaw grouper they catch. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

Preferred Alternative 4 would maintain the current composition of the multi-species DWG unit and revise the SWG unit to include speckled hind and warsaw grouper. **Preferred Alternative 4** would add warsaw grouper and speckled hind to the SWG unit which would allow it to be classified in both management groups. This would reduce discards of warsaw grouper and speckled hind once the DWG fishery closes. This will allow fishermen to keep more of the warsaw grouper and speckled hind they catch. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

5.1.3.5 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not change the status of warsaw grouper and speckled hind as solely DWG species. Therefore, the effect on the administrative environment would not change from status quo conditions, in which these species are tracked as part of the DWG quota. **Alternatives 2, 3** and **Preferred Alternative 4** would create more of an administrative burden than **Alternative 1** because NMFS would have to track warsaw grouper and speckled hind not only as DWG but now also as SWG. Under a non-IFQ management system these species would be counted against the SWG quota once the DWG fishery closes. Under an IFQ management system, these species would count against SWG allocation once an IFQ fisherman has expended all of the DWG allocation. An additional administrative burden would be placed on enforcement agents because they would have to be aware of when warsaw grouper and speckled hind should be enforced as DWG versus SWG species.

5.2 SECTION B - IFQ PROGRAM DESIGN

5.2.1 ACTION B1: Substantial Participants

5.2.1.1 Direct and Indirect Effects on the Physical Environment

This action would not directly affect the physical, biological, or ecological environments. However, alternatives for this action could have indirect effects by influencing the total number of IFQ shareholders and how the fishery is prosecuted.

Preferred Alternative 1 would not define substantial participation in the grouper and tilefish fisheries. Most of the impacts associated with this alternative would be the same as those described for Action A1, Alternative 1 to not create a limited access program. The exception would be that derby conditions would no longer exist.

The other alternatives each restrict participation in the program to individuals who already have some experience in the fishery. Generally, the amount of effort applied to the fishery can be expected to decrease as participation is consolidated among fewer, more efficient individuals. This would result in less gear and time used in pursuing fish and, consequently, less adverse impacts in the form of habitat interactions, regulatory discards, and bycatch of non-target species.

Alternatives 2-5 and 7 include all reef fish permit holders. Reef fish permits are currently required to fish for grouper and tilefish in the Gulf of Mexico. Thus, including these permit holders will include the individuals who are currently participating in the fishery. The environmental impacts should be similar to those described in Action A1 for the IFQ program in general.

Alternatives 4, 5 and 7 include federally permitted reef fish dealers. Dealers would most likely not fish their allocation, but transfer it to other participants in the program. Thus, no additional physical or biological impacts are expected by including dealers in the IFQ program.

Alternatives 3, 5, and 7 include reef fish captains and crew. These individual often have the highest level of direct participation in the fishery because they are the ones that are on the boats catching the fish. Presumably these people would be the most efficient at deploying gear and capturing fish, and would have the lowest impact on the physical and biological environment.

Alternative 6 includes only individuals who have landed 8,000 pounds of grouper and tilefish as defined in the referendum criteria. The impacts associated with this alternative are similar to those described in Action A1, Alternative 2 for a grouper and tilefish endorsement program. In general, the referendum criteria include more efficient participants, which would result in lower impacts on the environment.

Alternative 7 includes other individuals who provide necessary services in the reef fish fishery (such as restaurant owners and fish house employees). These individuals would be the least experienced at fishing and the least efficient. Therefore, the environmental impacts would be greater than each of the other alternatives except **Alternative 1**.

5.2.1.2 Direct and Indirect Effects on the Economic Environment

Determining which group(s) of individuals would be considered as substantial participants in the commercial grouper and tilefish fisheries is not expected to result in direct or indirect economic effects. This action merely defines the minimum number of individuals that would be eligible to trade in or receive transferred IFQ shares. In defining the universe of individuals eligible to participate in the transfer of IFQ shares, in accordance with the Magnuson-Stevens Act, the Council has the latitude to add other individuals or groups to that minimum number. If the Council elected to limit eligibility for IFQ share transfers to substantial participants, this action would determine the overall number of potential participants in the program. Under such an assumption this action could have indirect economic effects due to the potential impacts that the number of participants could have on the functioning of the market for IFQ shares and on the consolidation expected in the industry.

5.2.1.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not define anyone as a substantial participant, and thus would not limit who could be eligible for the transfer of IFQ shares or annual allocation. This alternative would not directly help reduce the number of share or allocation transfer participants because the number of people who could participate is endless. With **Alternative 2** only those who currently have a reef fish permit will be considered substantial participants. **Alternatives 3, 4, 5, and 7** include various definitions for who would qualify as a substantial participant and could be eligible for the transfer of IFQ shares or annual allocation. Each of these alternatives would include more participants than **Alternative 2**, but less than **Alternative 1**. **Alternative 7** would allow more people to be considered a substantial participant than in all of the other alternatives except for **Alternative 1. Alternative 6** would only consider fishermen with commercial reef fish permits who had substantially fished for grouper and tilefish as substantial participants. **Alternative 6** would correspond to the smallest number of substantial participants. However, it is important to note that this action simply defines the minimum number of individuals that would be eligible for the transfer of IFQ shares or annual allocation. The action is only expected to have indirect social effects because the overall number of participants in the IFQ program depends on the transferability provisions (Action B6) set by the Council.

5.2.1.4 Direct and Indirect Effects on the Administrative Environment

Allowing more individuals to participate in the IFQ program increases the amount of administrative burden involved in implementing the program. For example, the amount of time implementing the various components of the IFQ program, such as issuing IFQ shares and allocation, reviewing and resolving appeals, tracking share and allocation transfers, tracking landing notifications and transactions, enforcing a share ownership cap, monitoring and accounting for cost recovery fees, increases with the number of participants. Depending on which alternative is chosen, the number of potential participants in the IFQ program varies. **Alternatives 3, 4, 5, and 7** would allow reef fish captain and crew, reef fish dealers and others who provide necessary services in the reef fish fishery to participate in the program. Unlike the commercial reef fish permits, there is no system limiting the entry of these participants, and therefore, there is potentially no cap on the amount of individuals that may enter the program. **Alternatives 2** and **6** are more restrictive in defining who would be eligible to participate in the program.

The administrative burden is also expected to increase if NMFS has to develop or review criteria to determine who are considered reef fish captains and crew members (**Alternatives 3, 5** and **7**) and who are considered to provide necessary services in the reef fish fishery (**Alternative 7**). Additionally, all the alternatives would require NMFS review documentation demonstrating status as a commercial reef fish permit holder. **Alternatives 4, 5, and 7** would require NMFS review documentation demonstrating status as a commercial reef fish dealer. However, the administrative burden would be less for reviewing the status of commercial reef fish permit holders and dealers because these individuals are already defined by a permitting system. **Alternative 7** would create the most burden on the administrative environment because this alternative would create the maximum amount of participants eligible to participate in the IFQ

program that NMFS would have to identify and track. **Alternative 1** would create the least amount of administrative burden because substantial participants would not be defined.

5.2.2 ACTION B2: Eligibility for Initial IFQ Shares

Alternatives in this action define who is eligible to receive IFQ shares during the initial distribution. **Alternative 1** does not set eligibility requirements; each of the other alternatives includes commercial reef fish permit holders. **Alternative 2** does not include any other individuals; **Alternative 3** includes captains and crew members; **Alternative 4** includes federally permitted reef fish dealers; and **Alternative 5** includes both dealers and reef fish captains and crew members.

5.2.2.1 Direct and Indirect Effects on the Physical and Biological/Ecological Environments

This action would not directly affect the physical, biological, or ecological environments. However, alternatives for this action could have indirect effects by influencing the total number of IFQ shareholders and how the fishery is prosecuted.

Alternative 1 would not restrict participation in the IFQ program. Most of the impacts associated with this alternative would be the same as those described for Action A1, Alternative 1 to not create a limited access program. The exception would be derby conditions would no longer exist.

The other alternatives restrict initial participation in the program to individuals who already have some experience in the fishery. Generally, the amount of effort applied to the fishery would decrease as participation is limited to fewer, more efficient individuals. This would result in less gear and time used in pursuing grouper and, consequently, less adverse impacts in the form of habitat interactions, regulatory discards, and bycatch of non-target species as described in Action A1.

5.2.2.2 Direct and Indirect Effects on the Economic Environment

Alternative 1, which would not specify initial eligibility requirements, would be incompatible with the effective implementation of an IFQ program. **Alternative 1** is too broad and does not provide sufficient guidance for purposes of initially allocating IFQ shares. Under the no action alternative, anybody could potentially apply for eligibility to receiving IFQ shares during the initial distribution, regardless of their past participation or current involvement in the commercial grouper and tilefish fisheries. Remaining alternatives specify the universe of individuals or entities that would be eligible for initial IFQ shares. Initial recipients of IFQ shares would benefit from any windfall profits associated with the IFQ program. Windfall profits are those profits that are realized when a person sells quota shares they did not purchase (NRC, 1999). Revenues generated from the sale of initially allocated IFQ shares constitute windfall profits. These profits are not available to subsequent owners of quota shares because they must purchase their shares.

Alternative 2 would allocate initial IFQ shares only to commercial reef fish permit holders. **Alternatives 3, 4,** and **5** would broaden the universe of potential recipients of initial IFQ shares

by adding reef fish captains and crew, federally permitted reef fish dealers, or reef fish captains and crew and federally permitted reef fish dealers, respectively. The broader the universe of individuals eligible for initial IFQ shares, the smaller the average potential windfall profits per participant. **Alternatives 3, 4,** and **5** would all allow for the continued participation by fishermen who have been active in the commercial grouper and tilefish fisheries. Net economic effects associated with alternative eligibility criteria under consideration cannot be estimated at this time, as the number of potential applicants is not known. However, the likelihood of maintaining viable fishing operations is expected to be greater under **Alternative 2**, which limits the distribution of initial IFQ shares to commercial reef fish permit holders only. Understandably, this likelihood is expected to be inversely proportional to the number of potential applicants, other than commercial reef fish permit holders, considered for initial IFQ shares.

Summary

The no action alternative **(Alternative 1)** is too broad and does not provide sufficient guidance for the purpose of initially allocating IFQ shares. Under **Alternative 2** only commercial reef fish permit holders would be eligible to receive initial IFQ shares and thus enjoy potential windfall profits. **Alternatives 3, 4**, and **5** would broaden the universe of potential recipients of initial IFQ shares by considering reef fish captains and crew members, federally permitted reef fish dealers, or reef fish captains and crew and federally permitted reef fish dealers, respectively. While net economic effects expected to result from alternative eligibility criteria cannot be calculated because the number of potential applicants is not known, it is anticipated that **Alternative 2**, which restricts initial eligibility to commercial reef fish permit holders, would maximize the likelihood of maintaining viable fishing operations.

5.2.2.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not specify initial eligibility requirements anyone could apply for an IFQ. This would be of benefit to those who would not qualify for an IFQ if there were stricter requirements in place. This alternative would not help to reduce the number of participants in these fisheries because the number of people who could apply for an IFQ is endless.

Preferred Alternative 2 would restrict initial eligibility to valid commercial reef fish permit holders and only those who currently have a reef fish permit can apply for an IFQ. This will benefit those that will qualify for an IFQ and will decrease the competition in the grouper and tile fish fisheries. On the other hand, captains and crew who now participate, but do not have a reef fish permit in these fisheries will be excluded from receiving an IFQ. There are fishermen who now work as crew or captains who do not own their own boats but who may have plans in the future to buy their own boat and would want an IFQ. This is especially problematic for younger fishermen who may work on the boats owned by relatives, or who are just starting in the business. Under **Preferred Alternative 2**, they would not be able to obtain an IFQ unless endorsements became available due to people exiting the fisheries.

Alternatives 3, 4, and 5 include various definitions for who would qualify for an IFQ. These alternatives would be of most benefit to those who may not qualify an IFQ under stricter criteria. Each of these alternatives would include more participants than **Alternative 2**, but less than

Alternative 1. There are many people who are dependent on the grouper and tile fish fisheries who may think they should have an opportunity to apply for an IFQ. **Alternative 5** would allow more people to apply for an IFQ than in all of the other alternatives except for **Alternative 1.** If the pool of potential applicants continues to be large, then there may still be too much competition in the fisheries.

5.2.2.4 Direct and Indirect Effects on the Administrative Environment

Allowing more individuals eligibility for initial allocation in the IFQ program increases the amount of administrative burden involved in implementing the program as described in Action B1. Depending on which alternative is chosen, the number of potential participants in the IFQ program varies. **Alternative 1** would potentially include the most participants and have the greatest amount of work to implement. **Alternative 2** would include at most 1,028 participants (number of reef fish permits) and potentially have the lowest administrative burden. **Alternative 4** would include at most 1,187 participants. **Alternatives 3 and 5** would allow reef fish captain and crew to participate in the program. Unlike the commercial reef fish permits and dealer permits, no system limits the entry of these participants, and therefore, there is no cap on the number of individuals who may be eligible for the program.

The administrative burden would increase if NMFS must develop or review criteria to determine who to consider reef fish captains and crew members (**Alternatives 3 and 5**). Additionally, **Alternatives 2** and **4** would require NMFS review documentation demonstrating status as a commercial reef fish permit holder or dealer. However, the administrative burden would be less for **Alternatives 2** and **4** than **Alternatives 3** and **5** because these individuals are already defined by a permitting system. **Alternative 1** would not restrict eligibility so NMFS would not need to determine status for any participants.

5.2.3 ACTION B3: Initial Apportionment of IFQ Shares

5.2.3.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Determining the initial apportionment of IFQ shares would not have any direct effects on the physical, biological, and ecological environments. However, should the apportionment method selected (time periods and resulting catch histories or auction) favor fishermen who are more efficient at harvesting tilefish and grouper, this could indirectly benefit the physical, biological, and ecological environment. Fishermen who are more efficient would spend less time fishing for the same catch of fish, reducing the amount of interaction between gear with the bottom as described in Action A1, Preferred Alternative 3. More efficient fishermen would also have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. However, because catch histories follow the permit, not the individual or vessel, it is difficult to determine whether **Alternatives 2** or **3** would provide the greatest protection to the physical, biological and ecological environment compared to status quo (**Alternative 1**). The auction system (**Alternative 4**), which could quickly transfer access to the grouper and tilefish fisheries to the most efficient fishermen, would have positive effects on the

physical, biological, and ecological environment. **Alternative 4** would lead to a decrease in gear interaction with the benthic habitat and in the level of discards and bycatch.

5.2.3.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 does not constitute a viable management alternative; the non-specification of an initial apportionment method would essentially prevent the establishment of an IFQ program. **Alternatives 2** and **3** would distribute initial IFQ shares proportionately among eligible participants based on average annual tilefish and grouper landings during specified qualifying years. **Alternative 2** bases the initial share distribution on a six-year period from 1999 to 2004. The initial IFQ share apportionment under **Alternative 3** is also based on the same time interval, but offers an allowance for dropping one year. Apportionment methods considered under **Alternatives 2** and **3** may be favored by fishermen in that they are more reflective of harvest patterns and would potentially reward performance. Those permit holders with greater catch histories stand to benefit from the implementation of either **Alternative 2** or **3**. All other things equal, **Alternative 2** would favor permit holders with relatively stable annual landings over the qualifying years. **Alternative 3** would benefit permit holders who suffered a set-back and were unable to perform at their usual level during one of the years included in the qualification period.

It does not necessarily follow that those with the largest catch histories are the most efficient harvesters because efficiency would consider the level of input use per unit harvested. However, if we assumed that largest catch histories corresponded to more efficient operations, then initial apportionment alternatives that are based on catch histories may be beneficial in terms of net benefits to the Nation. Under **Alternatives 2** or **3**, holders of permits with the largest catch histories stand to enjoy the largest windfall profits.

Rather than relying on catch histories for the distribution of initial IFQ shares, **Alternative 4** would apportion initial IFQ shares by auctioning them. An auction-based initial apportionment would grant the use of the resource to those who value it the most, i.e., the most efficient producers. In addition, auctioning initial IFQ shares would transfer a part or the totality of potential windfall profits from individual permit holders back to the public. The partial transfer or elimination of private windfall profits is considered as a favorable outcome of an auction-based distribution by those who question the fairness and equity of granting exclusive use rights of a public resource to a limited number of private individuals and entities. Auction-based apportionment of IFQ shares were tried in Estonia and Russia, but were both short-lived, primarily due to the reluctance from fishermen (Huppert, 2007). For the grouper and tilefish IFQ program under consideration in this amendment, given the predictable unwillingness of fishermen to pay for a resource that is currently available to them free of charge and the Magnuson-Stevens Act requirement to conduct a referendum prior to implementing any multi-species limited access privilege program in the Gulf of Mexico, the establishment of an IFQ system with an auction-based initial apportionment of shares is highly unlikely. In practical terms, fishermen could simply elect to continue harvesting grouper and tilefish under the current management structure rather than agreeing to pay for the use of the resource. While **Alternative 4** would correspond to the highest level of short run net benefits to the Nation, the implementation of an auction system for the initial distribution of IFQ shares is highly improbable. In the long term, the initial distribution of harvesting privileges may not

significantly impact the long-term efficiency of the industry as long as restrictions on transferability or ownership are minimal.

Summary

The specification of an initial apportionment method is indispensable to the establishment of an IFQ program. Thus, **Alternative 1,** the no action alternative, does not constitute a viable option under an IFQ program. **Alternatives 2** and **3** would apportion initial IFQ shares proportionately among eligible participants shares based on average annual tilefish and grouper landings during specified qualifying years. A six-year period from 1999 to 2004 serves as the qualifying period under **Alternative 2.** The initial IFQ share distribution under **Alternative 3** also uses the same time interval, but allows participants to drop one year. **Alternatives 2** and **3** may be more reflective of harvest patterns and would benefit those fishermen with greater catch histories over the qualifying years. **Alternative 4**, which would apportionment initial IFQ shares via an auction system, would theoretically be associated with the highest level of net benefits to the Nation. However, its implementation is highly unlikely due to the foreseeable reluctance of fishermen to bid for a resource that is currently available to them free of charge.

5.2.3.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not specify a method for initial appointment of IFQ shares which would not give the Council a method for appointing shares and there would be no IFQ program. Potentially, this would open up the shares to anyone who wants to apply for an IFQ, regardless of whether or not they fish for grouper or tilefish. If too many people applied for a share, then no one would be able to make a profit from fishing for grouper or tilefish. There is a chance that environmental groups, or others wishing to preserve the species, will apply for shares and not use them which would not make optimal use of the fishery. This would not offer any protection from competition for the fishermen who have already invested in the equipment needed for the grouper and tilefish fisheries and who have participated in these fisheries over the years. They would have to compete with everyone else for a share, which presumably could be small.

Alternative 2 would distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004. This would have a positive impact on the commercial fishermen who actively harvesting grouper and tilefish for all of these years. It would have a negative impact on the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels would bring down their total average.

Like **Alternative 2**, **Preferred Alternative 3** would use the years 1999 through 2004 to establish an average to use for distribution of shares but one year of the years could be dropped. This alternative would benefit the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels, because an off year would not bring down their total average.

Alternative 4 would distribute initial IFQ shares through an auction system. All eligible entities (as determined in Action B2) would be allowed to place bids. This would benefit those who did not already have a reef fish permit and who not already active in these fisheries because they would have an equal opportunity to purchase shares. However, this would have a negative impact on the fishermen who already have a reef fish permit and who have actively been participating in these fisheries because they would not receive any special consideration for past participation. Also, at auction the price of shares may be too expensive for some fishermen to buy. If fishermen who are active participants in the grouper and tilefish fisheries now are unable to purchase shares at an auction, then they will no longer be able to participate in these fisheries. If they can no longer harvest grouper and tilefish, they may have to exit the fishing industry due to decrease in profits.

5.2.3.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not provide a mechanism to allocate shares, which would not be compatible with the implementation of an IFQ program. Expected administrative effects would depend on the subsequent effort management approach selected. The number of eligible participants would not differ between **Alternatives 2** and **3**. Thus, a similar amount of staff time would be required for **Alternatives 2** and **3** to calculate landings history by year for each shareholder. These alternatives therefore, would have greater administrative requirements than **Alternative 1**. **Alternative 4** would greatly affect the administrative environment because it requires the greatest amount of staff time and resources to establish and complete an auction.

5.2.4 ACTION B4: IFQ Share Definitions

5.2.4.1 Direct and Indirect Effects on the Physical Environment

A detailed description of the direct and indirect effects of an IFQ program for grouper on the physical environment is provided in Section 5.1.1.

The effects of defining shares for the IFQ program on the physical environment are expected to be minor; however, the alternatives are expected to differ to some extent depending on the amount of allocation associated with each share definition. This is because there is an associated level of effort that would allow each allocation to be harvested. Alternatives that reduce the amount of allocation to be distributed would likely have a lower level of fishing effort. Lower levels of effort would result in greater benefits to the physical environment because fishing related interactions with habitat would be reduced.

Given that potential quotas used to determine allocation under **Alternatives 2** and **3** are below the current quotas and the quotas to be implemented by Reef Fish Amendment 30B, **Preferred Alternative 4** would affect the physical environment more than **Alternatives 2** and **3**. This is because more effort could be directed towards grouper with a higher quota. The potential quotas for **Alternative 3** are slightly greater than those of **Alternative 2**. Therefore, **Alternative 3** would have more negative effects on the physical environment than **Alternative 2**.

5.2.4.2 Direct and Indirect Effects on the Biological/Ecological Environment

A detailed description of the direct and indirect effects of an IFQ program for grouper on the biological and ecological environment is provided in Section 5.1.1.

Depending on the alternative chosen to define the IFQ shares, the quota used to determine the amount of allocation (pounds of grouper/tilefish) varies. The broader the shares are defined the more restrictive the quota is that determines the amount of allocation associated with those shares. Alternatives that necessitate the use of a reduced quota would likely have a lower level of fishing mortality. Lower levels of fishing mortality would result in greater benefits to the biological/ecological environment because fewer fish would be removed from the population.

Alternative 1, no action, would be equivalent to taking a step back to Section A (see Section 5.1.1), the first step of the decision process, and selecting a preferred effort management approach, excluding the establishment of an IFQ program. The effects of the actions in Section A on the biological, physical, and ecological environments are discussed in that section.

Alternative 2 requires a reduction in quota of 27-47 percent since DWG and SWG species are aggregated into a single share. Species in the SWG complex most likely would not be harvested to their maximum capacity, and therefore, would benefit from a reduced quota because more fish would remain in the population. From a National Standard 1 perspective, this would prevent OY from being attained by the fishery. Since the quota is reduced, fishing mortality could decrease. However, if fishermen continue to fish for other reef fish species in the similar habitat as grouper and they have expended all their allocation, bycatch levels of grouper could increase. Fishing mortality is not expected to increase or decrease by defining the tilefish share because the quota used to determine the amount of allocation to be distributed with the shares does not change from current conditions.

Since the SWG species are aggregated into a single share in **Alternative 3,** the SWG quota would be reduced by 15-51 percent to prevent overfishing of either one of the indicator species, i.e. red or gag grouper. By reducing the quota, there is a chance that OY may not be achieved for one of these species. With a reduction in quota, fishing mortality may decrease. However, bycatch of grouper may increase if fishermen choose to fish for species in similar habitats for grouper and do not have any allocation to cover the grouper catch. As mentioned above, fishing mortality is not expected to increase by using the DWG or tilefish quotas to determine allocation for the DWG and tilefish shares because the quotas are not changing from status quo.

The share definitions in **Preferred Alternative 4** are species-specific and therefore, fishing mortality would not change because new quotas are not needed for these share definitions. This is the only alternative that would prevent overfishing, while achieving OY.

Given that potential quotas used to determine allocation under **Alternatives 2** and **3** are less than those for **Preferred Alternative 4**, **Preferred Alternative 4** would negatively affect the biological/ecological environment more than **Alternatives 2 and 3**. This is because a greater fishing mortality rate would be directed towards grouper with a higher quota. The potential quota for **Alternative 3** is slightly greater than that of **Alternative 2** because the shares are

defined more specifically. Therefore, **Alternative 3** would require a higher fishing mortality rate to harvest the quota and, therefore, have more negative effects on the biological and ecological environment than **Alternative 2.**

Indirect effects of these alternatives on the biological and ecological environment are not well understood. Changes in the population size and structure as a result of shifting fishing selectivity and increases in stock abundance could lead to changes in the abundance of other reef fish species that compete with grouper and tilefish for shelter and food. Predators of grouper species could increase if grouper abundance is increased, while species competing for similar resources as groupers could potentially decrease in abundance if less food and/or shelter are less available.

5.2.4.3 Direct and Indirect Effects on the Economic Environment

Alternative 1, no action**,** would not establish IFQ shares. The implementation of the no action alternative would be incompatible with the establishment of an IFQ program. **Alternatives 2, 3,** and **4** consider different approaches to defining IFQ shares for the program under consideration.

Alternative 2 takes a simplified approach and establishes a tilefish IFQ share and a generic grouper IFQ share. The tilefish share, which would be used to land all tilefish species, is consistent with the existing quota. The tilefish share would be easily implemented and would not increase the likelihood of over harvesting tilefish. In addition, attempts to establish species-specific shares in the tilefish fishery are not recommended as they would result in significant increases in discard levels due to water depths at which this fishery is prosecuted.

The establishment of a single grouper share, valid to land all grouper species, is expected to grant the highest degree of flexibility to IFQ program participants, simplify IFQ share trading, and lower transaction costs. Thus, the establishment of a single grouper share is anticipated to result in positive economic effects. However, the implementation of **Alternative 2** would not be consistent with the prevailing species-specific management because it would not allow regulators to control landings of grouper species of concern. As such, it may result in the overfishing of some grouper species. For example, given the relative magnitude of the SWG and DWG quotas (approximately 8 to 1), and closures recorded in the DWG fishery in recent years, it is possible that some DWG species would be overfished. In addition, within the SWG quota, the gag grouper quota to be implemented by Reef Fish Amendment 30 B would not be enforceable under an IFQ program with a generic grouper share. To mitigate the risk of over harvesting grouper species of concern, e.g., gag grouper, the aggregate grouper quota has to be reduced by as much as 4.16 MP or 47 percent.

While it has the potential of significantly reducing discards in the grouper fishery and allowing IFQ program participants to land all their catch without having to acquire species-specific shares, the flexibility afforded by the establishment of single grouper share under **Alternative 2** could be associated with adverse economic effects in excess of $12 million. In addition, the establishment of a generic grouper share is expected to reduce the rent that can be generated from the commercial grouper fishery because, the less specific harvest rights are, the lower the rent they can generate (Costello and Deacon, 2007).

Alternative 3 would establish a tilefish IFQ share. As previously indicated, the establishment of a tilefish share valid to land all tilefish species, would be in accordance with the existing tilefish quota and is not expected to increase the likelihood of over harvesting tilefish. For the grouper fishery, **Alternative 3** would establish a SWG IFQ share and a DWG IFQ share. The establishment of SWG and DWG IFQ shares is consistent with management units that currently exist in the grouper fishery. SWG and DWG shares are also expected to contribute to reducing discards because, compared to species-specific shares, efforts by IFQ participants to match their catch to their quota holdings would be significantly eased. For reasons aforementioned, the establishment of a single DWG share would be consistent with the existing DWG quota and would constitute the preferred course of action.

The establishment of a SWG share would eliminate the need for trading to acquire shares of a given SWG species. However, the flexibility to harvest SWG with a single share type would result in a dilution of regulators' abilities to control quantities harvested on a specific-species basis and hence would increase the likelihood of over harvesting species of concern such as gag grouper. For this reason, the SWG quota, which amendment 30B will set at 7.47 MP, would have to be reduced by as much as 51 percent. Although it would simplify catch and quota balancing efforts and could reduce discards, the establishment of a SWG share under consideration in **Alternative 3** could result in adverse economic effects estimated at more than $11.5 million.

Alternative 4 would establish five distinct IFQ share types. Tilefish, deep water grouper, red grouper, gag grouper, and other shallow water grouper (excluding red and gag grouper) IFQ shares would be created under **Alternative 4**. As discussed under **Alternatives 2** and **3**, the establishment of DWG shares and tilefish shares would be consistent with existing quotas and constitutes the preferred course of action for these two species groups.

Upon implementation of Reef Fish Amendment 30B, the SWG will be subdivided into three separate quotas including, separate species-specific quotas for red and gag grouper and a quota for all remaining SWG species. The share types under consideration in **Alternative 4** would establish IFQ shares for each quota. This IFQ share structure does not adversely impact the ability to protect grouper species of concern, i.e., red and gag grouper. If warranted, regulators could adjust red or gag grouper quotas. However, the establishment of three share types to prosecute SWG could potentially result in more discards than **Alternatives 2** or **3** and is expected to increase the amount of work needed from IFQ participants to match their catch to their quota holdings. The consideration of **Alternative 4** heightens the need for IFQ share trading with minimum transaction costs and the implementation of appropriate flexibility measures to assist IFQ participants in balancing their catch and quota holdings. Compared to **Alternatives 2** and **3**, **Alternative 4** is expected to generate the greatest economic value because it would correspond to the most detailed set of IFQ shares (Costello and Deacon, 2007) and thus to the most specific fishing rights.

5.2.4.4 Direct and Indirect Effects on the Social Environment

With **Alternative 1**, there is no way to allocate the initial shares which would not allow the council to establish an IFQ program.

Alternative 2 would establish a single grouper IFQ share and a tilefish IFQ share. In the case of the tilefish fishery, this would be used to land all tilefish and make applying for shares simpler for the fishermen. Presumably, having a single grouper IFQ share and a single IFQ tilefish share would reduce the number of discards because fishermen could keep all of the fish they catch in these groups until they meet their quota. Although this approach would allow fishermen to keep all of their aggregated grouper catch until they meet their quota, having a single grouper IFQ may be more problematic because it would lump all grouper under one share. This may lead to overfishing for some species of grouper and would prevent fishermen for fishing for other species if overfishing of one species necessitates a closure of the fisheries.

Alternative 3 would establish IFQs with shares for DWG, shares for SWG, and shares for tilefish. Under this alternative, fishermen could harvest aggregate limits within each grouping, and potentially, this could reduce the amount of discards. This alternative would still only disaggregate grouper in to two groups and there would still be the potential for overharvesting of some species of grouper as fishermen fish their total IFQ.

Preferred Alternative 4 would establish IFQs with shares for red grouper, gag, other SWG, DWG, and tilefish. Under this alternative, fishermen could harvest aggregate quota limits within each grouping, and potentially, this could reduce the amount of discards. This would also allow the Council to adjust the harvest levels within each grouping. This would benefit the fishermen because the over harvesting of a species in one group that would not necessitate the lowering of the quota for the whole grouper complex such as it would in **Alternative 2**.

5.2.4.5 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not affect the administrative environment. Without defining IFQ shares, an IFQ program could not exist. The effects on the administrative environment of not having an IFQ program are discussed in Section 5.1. **Alternatives 2 through 4** would require NMFS to issue and track share balances and transfers. **Alternative 2** would establish the least amount of shares and therefore, would be less of an administrative burden to track. **Preferred Alternative 4** would establish the most amount of shares, and would be the most administratively burdensome to track.

5.2.5 ACTION B5: Multiuse Allocation and Trip Allowance

5.2.5.1 Direct and Indirect Effects on the Physical Environment

A detailed description of the direct and indirect effects of an IFQ program for grouper is provided in Section 5.1.1, and is incorporated here by reference. An IFQ program would directly benefit the physical environment by reducing capacity and consolidating overcapacity. **Alternative 1** would not provide fishermen with multiuse allocation or a trip allowance and therefore is likely to provide no benefit to the physical environment. Fishermen would have to purchase allocation from other fishermen once they use up their allotted allocation for a species. If they do not buy additional shares or allocation, then more effort may be expended to harvest their remaining allocation. **Preferred Alternatives 2** and **3** and **Alternative 4** would provide benefits to the physical environment, because IFQ participants would be afforded greater

flexibility in using allocation when harvesting gag and red grouper. The greater the multiuse allocation or trip allowance specified, the less effort potentially expended to harvest all of a fisherman's IFQ allocation. Less effort would result in less habitat-gear interactions, unless there is a shift in usage/effort to gears that may have greater negative impacts on the physical environment. Overall, benefits to the physical environment are expected to be small relative to status quo, because trip allowances and multiuse allocation represent a small portion of the overall grouper and reef fish landings (both commercial and recreational).

5.2.5.2 Direct and Indirect Effects on the Biological/Ecological Environment

Multiuse annual allocation and trip allowances allow fishermen to use a small portion of their allocation for one species (either red or gag grouper) to harvest another species (either gag or red grouper) that would otherwise be discarded because the fisherman does not possess allocation for that species. Multiuse allocation should be based on relative availability of the species for which it can be used and where the quota is set in relation to the ACL. The more conservative a quota is set relative to the ACL, the greater the flexibility in issuing multiuse allocation without exceeding the fishing mortality rate that either optimizes yield or the ACL, which would trigger accountability measures.

Alternative 1 would not establish multiuse IFQ allocation or a trip allowance. Fishermen would have to rely on buying allocation if they use up allocation of one species (either red or gag grouper) and have remaining allocation of another species. If they do not purchase additional allocation, but continue fishing, then discards of gag or red grouper would occur until the allocation for the other species is used up. Although commercial fishermen could to some extent target species with allocation, discards of the species not having allocation would still potentially occur. Discards for **Alternative 1** would be greater than **Alternatives 2-4**, because no multiuse allocation or trip allowances would be specified to reduce bycatch. In the case of red grouper, discard mortality rates are estimated to be 45 percent for the longline fishery and 10 percent for handlines and other gears. In the commercial gag fishery, discard mortality increases with depth. Average mortality in the commercial gag fishery is estimated to be greater than 65 percent.

In Section 2.2.5, Examples 1 and 2 provide a comparison of discards with and without multiuse allocation. In these examples, four percent of red grouper allocation was designated for multiuse and eight percent of gag allocation was designated for multiuse. In Example 1, not allowing multiuse allocation would result in gag discards being 3,203 pounds greater (~18 percent) than if the fisherman was allowed to use multiuse allocation. In Example 2, not allowing multiuse allocation would result in gag discards being 2,076 pounds (100 percent, since no additional discards would occur using multiuse shares) greater than if the fisherman was allowed to use multiuse allocation. Not allowing multiuse allocation is expected to negatively impact the stock by increasing discards and overall fishing mortality. The extent of any increases in discards and discard mortality would depend on how quickly individual fishermen use up allocation of one species, the relative availability of gag versus red grouper, and whether or not fishermen choose to purchase allocation from other fishermen.

Preferred Alternatives 2 and **3** would specify multiuse allocation for red grouper and gag, respectively. Each alternative includes three subalternatives with varying levels of multiuse

allocation. Multiuse allocation percentages for gag range from 2 to 8 percent and for red grouper range from 1 to 4 percent. The maximum multiuse allocation allowed for red grouper during 2010-2012 would be 4-5.2 percent and for gag would be 7.7-8.5 percent (see Table 2.2.1 in Section 2.2.5) based on quotas and ACLs in Amendment 30B. If multiuse allocation is greater than these maximum levels, then ACLs could potentially be exceeded if fishermen use all of their allocation for one species and all or most of their multiuse allocation for that same species. As discussed in Section 2.3.5, higher multiuse allocations are potentially feasible if fishermen choose to use less than 100 percent of their combined multiuse gag and red grouper allocations for a single species; however, there is no guarantee this will occur and therefore multiuse allocation must be set assuming most gag and red grouper multiuse allocation would be used for a single species. If more liberal maximum multiuse allocations are considered, then the potential for ACLs to be exceeded is increased.

By allowing multiuse allocation, fishermen are provided greater flexibility while fishing. Allowing multiuse allocation could negatively affect one species, while benefiting another, because any increase in landings of one species would result in a concomitant decrease in the landings of another species. The more multiuse allocation allowed, the greater the expected reduction in bycatch and discards. However, greater multiuse allocation would also potentially allow the yield at Foy to be exceeded for one species, unless the Council sets quotas below the level that produces OY. Any increases in landings resulting from multiuse allocation may diminish the Council's ability to achieve OY and prevent overfishing. However, given that fishermen are unlikely to use all of their multiuse allocation for a single species (due to regional differences in availability, share transfer, and other considerations) there is a low likelihood that the maximum multiuse allocations proposed in **Preferred Alternatives 2** and **3** would result in ACLs being met. None of the subalternatives in **Preferred Alternatives 2** or **3** would allow proposed ACLs to be exceeded, except **Preferred Alternative 3(c)**. The multiuse allocation in **Preferred Alternative 3(c)** exceeds the maximum allowable multiuse allocation level for gag (in one out of the three years considered) and could result in a very small probability of the ACL for red grouper being exceeded in 2012 if all red grouper allocation is harvested, all red grouper multiuse allocation is used to harvest red grouper, and 96 percent of gag multiuse allocation is used to harvest red grouper. If all multiuse allocation is used for red grouper in 2012, then the red grouper ACL would be exceeded by 4,800 pounds (0.0008 percent of red grouper quota). If the ACL is exceeded, then accountability measures (AMs) in Amendment 30B would be triggered.

In order of biological benefits, **Preferred Alternatives 2(c)** and **3(c)** would reduce discards the most, but could also result in a potential increase in fishing mortality for one species with a corresponding decrease in fishing mortality for the other. **Alternatives 2(a)** and **3(a)** would reduce bycatch the least and provide fishermen the least amount of flexibility, but would have a greater probability of optimizing yield and preventing overfishing. Benefits and impacts of **Alternatives 2(b)** and **3(b)** would be intermediate to those of the other alternatives. Discards for **Preferred Alternatives 2** and **3** would be less than those resulting from **Alternative 1.**

Alternative 4 would specify a trip allowance that would allow commercial fishermen to land species (either gag or red grouper) without allocation. The IFQ participant would have to use allocation from another species (either gag or red grouper) to land the species lacking allocation.

Proposed trip allowances range from 5 to 15 percent of the total gag and red grouper landings per trip. These allowances would not be effective until a fisherman uses either all gag or all red grouper allocation. If a fishermen still possesses a considerable amount of allocation of one species once another species allocation is used, then the trip allowances could allow for considerable increases in landings of one species until the fishermen's remaining allocation is used up for the other species. Unlike **Preferred Alternatives 2** and **3**, the amount of multiuse allocation would not be capped at the beginning of the fishing year. Instead, the benefits and impacts of **Alternative 4** would depend on how quickly fishermen use up their allocation of a species. In Section 2.3.5, it was estimated the proposed trip allowances for **Alternatives 4(b)** and **4(c)** may exceed the maximum multiuse allocations proposed for gag in **Preferred Alternative 3**. **Alternative 4** is likely to have the lowest probability of preventing overfishing. **Alternative 4(b)** and **4(c)** may also allow ACLs to be exceeded, thereby requiring AMs. Relative to the other alternatives in Action B5, **Alternative 4** would likely reduce bycatch the most, but would also result in the greatest probability of overfishing occurring.

In summary, **Alternative 1** would not reduce discards and may increase discard mortality. **Preferred Alternatives 2** and **3** and **Alternative 4** would reduce discards and provide greater flexibility to fishermen. However, landings of one species may increase with a concomitant decrease in the landings of another species (either gag or red grouper). This may increase the probability of over harvesting and prevent yield from being optimized. The extent of any benefits would depend on how much multiuse allocation is allotted, whether or not ACLs are exceeded, and whether or not fishermen would actively trade or sell allocation if they were not allotted multiuse allocation. In order of overall benefits, **Preferred Alternatives 2** and **3** are expected to provide the most benefits, followed by **Alternatives 1** and **4**.

5.2.5.3 Direct and Indirect Effects on the Economic Environment

The establishment of appropriate catch quota balancing measures constitutes an essential element of well functioning multi-species IFQ programs. For the grouper and tilefish IFQ program under consideration, temporal and spatial fluctuations in the relative abundance of red and gag grouper, the two major species of the grouper complex, is expected to be a determining factor in the ability of IFQ participants to balance their gag and red grouper holdings and landings.

Alternative 1 would not establish catch quota balancing measures. As such, **Alternative 1** may reduce the ability of IFQ participants to limit the amount of red and gag discards generated while harvesting their IFQ allocation. It is highly unlikely, if not impossible, that for a given year all IFQ participants receive IFQ allocation that would exactly match the relative proportion of gag and red grouper that they will harvest during that fishing year. The trading of allocation is expected, to some extent, to allow IFQ participants to find a better balance between their quota holdings and catch. Under **Alternative 1**, no additional catch quota balancing measure would be available to IFQ participants. Therefore, the ability of IFQ participants to reduce red and gag grouper discards generated while harvesting their allocation is limited to opportunities to trade for IFQ allocation.

Preferred Alternative 2 would allow IFQ participants who have run out of gag allocation to land gag grouper using red grouper allocation. Options considered under **Preferred Alternative**

2 would allow IFQ participants to use between 1 and 4 percent of their red grouper allocation to land gag grouper. This flexibility measure is expected to be beneficial when the gag to red grouper shares ratio is smaller than the gag to red grouper landings ratio. IFQ participants facing this imbalance are expected to first increase their gag grouper holdings through allocation trading and second, use the flexibility measure to narrow the gap between holdings and catch. The percentage of red grouper that could be converted to gag is constrained by the potential for over harvesting gag that may exist. The percentage selected has to be compatible with the ACL to be implemented in Reef Fish Amendment 30B. Based on estimates presented in Table 2.2.5.1, percentages of multi-use red grouper shares under consideration may be consistent with ACLs. In addition, these estimates do not account for possible temporal fluctuations or regional differences in red to gag ratios across the Gulf. The number of IFQ participants that would make use of this flexibility measure is not known. Furthermore, the extent to which they would use this provision cannot be determined at this time. However, it is expected that the establishment of multi-use red grouper shares that could be used to land gag grouper would result in substantial economic benefits. Anticipated benefits would stem from reductions in the number of gag grouper discarded and from the long term positive impacts on red grouper stocks; using multi-use shares to harvest gag grouper would also reduce red grouper harvests.

Preferred Alternative 3 would establish multi-use gag grouper shares that could be either used to land gag grouper or harvest red grouper once the participant exhausts his red grouper allocation for that year. The percentage of the gag grouper shares to be converted to multi-use gag shares ranges from 2 percent under **Option a** to 8 percent under **Preferred Option c.** As with multi-use red grouper shares considered in **Preferred Alternative 2,** this catch-quota balancing measure would assist IFQ participants in reducing the amount of discards generated while harvesting their IFQ shares. In this case, it is the amount of red grouper discards that could be reduced. This measure is expected to benefit IFQ participants when the landed red grouper to landed gag grouper ratio is greater than the red to gag grouper IFQ holdings ratio, i.e., when participants land, in comparison to gag grouper, relatively more red grouper than their IFQ holdings. The number of IFQ participants susceptible to land red grouper with multi-use shares and the extent to which they would use these shares is not known at this time. However, positive economic benefits are expected from the implementation of **Preferred Alternative 3** due to anticipated reductions in red grouper discards and positive impacts on gag grouper stocks.

Alternative 4 would, on a per trip basis, allow IFQ participants to land red grouper (gag grouper) for which the participant has no allocation with gag grouper (red grouper) allocation. The implementation of **Alternative 4** could grant IFQ participants the flexibility that **Alternatives 2** and **3** combined could provide, without the additional burden associated with the establishment of two different multi-use shares. However, the establishment of a trip allowance could be more challenging in terms of controlling harvest levels for species of concern, especially in the absence of well functioning markets for IFQ shares. Trip allowance percentages considered range from 5 to 15 percent. Higher trip allowance percentages would afford more flexibility to IFQ participants and hence greater potential for reductions in red and gag grouper discards. However, all other things equal, additional flexibility is associated with an increased likelihood of harvesting red and gag grouper above their respective ACLs. It is worth noting that red to gag grouper ratios are not expected to be uniform throughout a fishing season across the Gulf. Therefore, geographical and temporal variations in red to gag grouper ratios are expected

to limit the probability of over harvesting red or gag grouper. Excess landings of red (gag) in one part of the Gulf are expected to be mitigated by deficits in red (gag) grouper landings in another part of the Gulf. The probability of over harvesting red or gag grouper is further reduced when opportunities to trade IFQ shares are considered. On balance, the resulting likelihood for over harvesting red or gag grouper may be significantly reduced. Quantities of red and gag grouper that would be landed under the trip allowance are not known. However, reductions in red and gag grouper discards are expected to result in substantial economic benefits for IFQ participants as well as in positive impacts on red and gag grouper stocks.

5.2.5.4 Direct and Indirect Effects on the Social Environment

Alternative 1 would not establish multiuse IFQ shares or trip allowances. This would have a negative impact on the fishermen who needed to trade allocation of grouper or tilefish and would possibly lead to more fish being discarded.

Under **Preferred Alternative 2,** at the beginning of each fishing year, fishermen can convert a portion of each of their IFQ allocation for red grouper individual species share into multi-use red grouper allocation valid for harvesting red or gag grouper. This would benefit fishermen who may catch too many gag groupers to convert a portion of their share of red grouper to be used for either. This would reduce the number of discards among fishermen who might catch too many gag grouper and allow them to keep more of what they catch. **Option c** would benefit fishermen most, because this would allow them to convert the most gag grouper allocation to gag or red grouper allocation and keep more of the gag grouper they catch.

Under **Preferred Alternative 3,** at the beginning of each fishing year, fishermen can convert a portion of each of their IFQ allocation for gag grouper individual species share into multi-use gag grouper allocation valid for harvesting gag or red grouper. This would benefit fishermen who may catch too many red groupers to convert a portion of their allocation of gag grouper to be used for either. This would reduce the number of discards among fishermen who might catch too many red and allow them to keep more of what they catch. **Option c** would benefit the fishermen most, because this would allow them to convert the most red grouper allocation to gag or red grouper allocation and keep more of the red grouper they catch.

Alternative 4 would establish a trip allowance granting IFQ participants the flexibility to land red or gag grouper for which the IFQ participant has no allocation by using allocation from the other species (i.e. red or gag grouper). The amount of red or gag landed under the trip allowance is based on the total landings of the two species. This alternative would provide flexibility on an individual trip basis. The higher the percentage, the more flexibility the fishermen will have to save more of the species they catch and should reduce bycatch.

5.2.5.5 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not directly affect the administrative environment. Once fishermen use their allotted allocation, they would have to purchase allocation from other fishermen. NMFS would be indirectly affected by the transfer of allocation, which would need to be tracked throughout the year. Such tracking and recordkeeping is part of the normal activities of

monitoring an IFQ program. **Preferred Alternatives 2** and **3** would increase the burden on enforcement and SERO staff to track multiuse allocation usage. These alternatives may benefit the administrative environment if multiuse allocation allows for discards and discard mortality rates to be reduced. However, these alternatives may also negatively impact the administrative environment by reducing the likelihood that Council management objectives and Magnuson-Stevens Act mandates are met. For example, multiuse allocation may increase the probability that overfishing for one species occurs, while decreasing the probability that overfishing occurs on another species. If the probability of overfishing is increased, then there would be a greater likelihood that the Council and NMFS would have to take future action to end overfishing if it occurs. **Alternative 4** is similar to **Preferred Alternatives 2** and **3**, except it would allow fishermen flexibility to land red or gag grouper on trips after they run out of allocation for one of those species. However, unlike **Preferred Alternatives 2** or **3**, the amount of multiuse allocation for trip allowances would not be specified and capped at the beginning of the fishing year. Instead, the benefits and impacts of **Alternative 4** would depend on how quickly fishermen use up their allocation of a species. If fishermen use up their allocation of one species quickly, then trip allowances could result in increases in landings of the species lacking allocation until the allocation for the other species is used up. Because multiuse allocation would only be capped on individual trips and not capped at a maximum level for the entire year, **Alternative 4** could negatively impact the administrative environment by allowing ACLs to be exceeded and overfishing to occur. If ACLs are exceeded, then NMFS would be required to implement accountability measures either in-season or in the following season. In order of greatest to least impact on the administrative environment, **Alternative 4** would also complicate enforcement, since dockside landings of one species would be contingent on the landings of another grouper species. **Alternative 4** would have the most impact on the administrative environment, followed by **Preferred Alternatives 2** and **3**, and then **Alternative 1**.

5.2.6 ACTION B6: Transfer Eligibility Requirements

Management alternatives considered in this action define who can buy shares or allocation from participants in the IFQ program, and in turn become participants themselves. The preferred alternative must include substantial participants as defined in Action B1. **Alternative 1** allows transfer of shares or allocation to any U.S. citizen or permanent resident alien. Under **Alternative 2,** only reef fish permit holders are eligible to participate in the IFQ program. **Preferred Alternative 3** includes all reef fish permit holders for the first five years, and then all U.S. citizens or permanent resident aliens thereafter.

5.2.6.1 Direct and Indirect Effects on the Physical Environment

Transferability provisions would indirectly affect grouper stocks, non-target species, and their habitat by influencing the degree of consolidation that can occur under the proposed program and the manner in which the fishery is prosecuted.

The most recent gag stock assessment (SEDAR 10 2006) adopted variable release mortalities with depth which ranged from 6 percent near the surface to 95 percent for gag caught at depths of 312 feet (52 fathoms) or deeper. The depth data are less complete for red grouper, so the most

recent red grouper stock assessment (SEDAR 12 2007) did not partition release mortality by depth for this species. The stock assessment established a red grouper mortality rate of 45 percent for longlines and 10 percent for all other gear. National Standard 9 of the Magnuson-Stevens Act requires management measures minimize bycatch and the mortality of bycatch that cannot be avoided. Transfer of allocation can reduce the level of discards of the target species. In the Gulf red snapper IFQ program, if a fisherman exceeds his allocation on a fishing trip he can buy allocation from another participant before landing his catch, rather than throwing back the excess fish. Allowing transfer of allocation among grouper/tilefish IFQ participants could have a similar beneficial effect. If transfer requirements restrict entry into the IFQ program, individuals not included may still fish for other species and take grouper and tilefish incidentally. The fewer fishermen who have IFQ shares, the more regulatory discards there will be by fishermen without allocation.

Alternative 1 would not restrict participation in the IFQ program. Most of the impacts associated with this alternative would be the same as those described for Action A1, Alternative 1 to not create a limited access program. The exception would be derby conditions would no longer exist. However, competition would be expected to encourage increased efficiency and a conservation ethic, as those investing in IFQ shares would want the maximum return possible on their investment. **Alternative 1** could have a beneficial biological effect because it does not restrict purchase of shares by individuals who do not intend to use them for fishing. Having unused shares would reduce fishing effort, and thus reduce the directed catch below the quota, the amount of bycatch, and the amount of interactions between fishing gear and the physical environment.

The other alternatives restrict participation in the program to individuals who already have some experience in the fishery. Generally, the amount of effort applied to the fishery would decrease as participation consolidates among fewer, more efficient individuals. The result would be less gear and time used in pursuing grouper and, consequently, less adverse impacts in the form of habitat interactions, regulatory discards, and bycatch of non-target species as described in Action B1. The impacts associated with **Preferred Alternative 3** would be the same as **Alternative 2** during the first five years of the IFQ program and then the same as **Alternative 1** thereafter.

5.2.6.2 Direct and Indirect Effects on the Economic Environment

Under **Alternative 1,** no action**,** U.S. citizenship or permanent residency would constitute the only criterion to be eligible for the transfer of IFQ shares. **Alternative 1** would correspond to the largest potential market for IFQ shares. The greater number of potential buyers is expected to have a positive impact on the market for IFQ shares; yielding relatively higher prices. Under **Alternative 1**, less efficient fishermen are expected to find it more difficult to acquire shares. Under Alternative 1, various organizations, including conservation groups could buy shares and not use the allocation in order to protect the species from harvest, which would not provide for OY.

Under **Alternative 2,** the universe of potential participants in the IFQ participants would be limited to reef fish permit holders. **Alternative 2** would reward reef fish permit holders because they would be the only ones allowed to buy shares as they become available. It may not be

beneficial to persons wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited, which is expected to result in thin markets and adversely impact the price for shares.

Preferred Alternative 3 would implement **Alternative 2** for the first five years then establish **Alternative 1** as eligibility criteria for participation in IFQ share or allocation trading. **Preferred Alternative 3** limits participation in IFQ share or allocation trading to commercial reef fish permit holders for the first five years of the program and allows all US citizens and permanent resident aliens to participate thereafter. Therefore, **Alternatives 2** and **1** are expected to constitute upper and lower bounds for economic benefits associated with **Preferred Alternative 3**, respectively.

Transfer restrictions are usually developed to address concerns that implementing the IFQ program would change the status quo too rapidly or too dramatically. Willen and Brown (2000) concluded, "with unrestricted transfers…, we would expect quota to gravitate into the sector that is willing and able to pay the highest price. The sector able to pay the highest price would, in principle, also be the one generating the highest rents and hence the highest efficiency benefits from the resource." Economists would argue the free flow of quota across sectors would produce the highest overall benefits from the IFQ shares. Persons arguing against the free transfer of quota are often concerned with resource rent distributions after the transfers. Persons that want to sell quota shares would likely prefer to have limited, if any restrictions placed on transfers to increase the prices. Limiting restrictions on transfers would also likely result in larger windfall profits for the recipients of initial IFQ shares. Buyers would tend to want the competition for shares limited, to keep the price lower. The actual change in price that would result from the various alternatives being considered cannot be estimated but in general markets with fewer restrictions on the number of potential participants are expected to function better and are more susceptible to putting the commodity for sale, e.g., IFQ shares to their highest valued use; hence resulting in higher prices for the buyers.

It is worth noting that the selection of a preferred alternative is constrained by the universe of substantial participants selected in Action B1. As indicated by the Magnuson-Stevens Act, all substantial participants have to be eligible for IFQ share transfer. Substantial participation constitutes a sufficient, but not necessary condition for transfer eligibility. For the purposes of IFQ share or allocation transfer, the Council may add other individuals but cannot deny eligibility to substantial participants. The selection of **Preferred Alternative 1** frees the Council from future considerations relative to the possible omission from the universe of substantial participants of deserving individuals or group(s) of individuals.

5.2.6.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not restrict the transfer of shares or allocation. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens. This alternative would be beneficial to people who are not currently participants in the grouper or tilefish fisheries, but who would like to participate in the fishery, in that they would be allowed to buy shares as they become available. This alternative would allow for groups such as conservation groups to buy shares and

not use them in order to protect the species from harvest, which would not provide for the maximum sustainable yield for the species. Under this alternative, shares on an open market place may obtain a very high value that may make it too expensive for most fishermen who are currently in these fisheries to buy more shares, but would be beneficial for the fishermen wishing to sell their shares.

Under **Alternative 2,** IFQ shares or allocation can only be transferred to commercial reef fish permit holders. This alternative would reward fishermen with reef fish permits because they would be the only ones allowed to buy shares as they become available. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited which may keep the price for shares at a lower cost. It would not allow fishermen who do not currently hold a reef fish permit to enter into the fishery and that would prevent new people from participating in this fishery. This alternative would not allow for the transfer of shares from a fisherman to family members who do not hold a reef fish permit, which would not allow for a fisherman to pass on his or her fishing privileges to their children, which is a common practice within fishing families.

Preferred Alternative 3 would require that IFQ shares or allocation can only be transferred to commercial reef fish permit holders during the first five years of the IFQ program and all U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

Preferred Alternative 3 would reward the IFQ participants because they would be the only ones allowed to buy shares as they become available for the first five years of the program. During those five years IFQ shareholders may be able to buy more shares at a lower cost than they would be if shares were available to more people. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited which would keep the price for shares at a lower cost. It would not allow fishermen who are not IFQ participants to enter into the fishery which would prevent new people from participating in this fishery. This alternative would not allow for the transfer of shares from a fisherman to family members who were not IFQ participants, which would not allow for a fisherman to pass on his or her fishing privileges to their children, a common practice within fishing families.

5.2.6.4 Direct and Indirect Effects on the Administrative Environment

Allowing more individuals to participate in the IFQ program increases the amount of administrative burden in conducting the program. For example, the amount of time dealing with the various components of the IFQ program, such as tracking share and allocation transfers, setting up new accounts, and enforcing ownership caps, increases with the number of participants. Depending on which alternative is chosen, the number of potential participants in the IFQ program varies. **Alternative 1** would create the greatest burden on the administrative environment because this alternative would create the maximum number of participants in the IFQ program and NMFS would need to create new accounts and track all participants. **Preferred Alternative 3** would potentially have the same number of participants as **Alternative 1**, but the administrative burden would be spread over more time. **Alternative 2** is more restrictive in

defining eligibility to participate in the program. **Alternatives 2 and 3** would require NMFS review documentation demonstrating status as a commercial reef fish permit holder.

5.2.7 ACTION B7: Caps on IFQ Share Ownership

The alternatives for this action set caps on the amount of shares any one participant can own. **Alternative 1** does not set any share cap(s). **Alternative 2** sets share cap(s) to a specific percentage and **Preferred Alternative 3** sets share cap(s) to the maximum shares assigned to a participant during initial apportionment.

5.2.7.1 Direct and Indirect Effects on Physical, Biological, and Ecological Environments

This action would not directly affect the physical, biological, or ecological environments. However, alternatives for this action could have indirect effects by influencing the total number of IFQ shareholders.

A share cap could increase the amount of consolidation in the fishery. If ownership caps limit the consolidation, then **Alternatives 2 and 3** would limit the proposed program's effectiveness in providing the environmental benefits described in Action A1. **Alternative 1** would not limit consolidation in the fishery and would maximize these benefits. **Option a** for **Alternatives 2 and 3** would create one cap for all groupers and tilefish. This would allow a greater amount of consolidation than **Option b**, and therefore lower potential impacts.

5.2.7.2 Direct and Indirect Effects on the Economic Environment

National Standard 4 of the Magnuson-Stevens Act provides, in effect, that fishery management programs like an IFQ should not allow any particular individual, corporation, or other entity to acquire an excessive share of the fishing privileges. This standard addresses the concern that allowing persons to control excessive amounts of a fishery could negatively impact other harvesters, processors, and in some instances consumers of that resource. The standard does not define what an excessive share is and leaves that decision for each Council to make depending on the structure of the fisheries under their management.

The NRC study (1999) "Sharing the Fish," stated ownership and use caps are generally favored as a means to prevent excessive shares (or the ownership of a disproportionate amount of shares by a single person or entity). In fisheries with excess capital, it is likely issuance of transferable quota shares, or other individual harvest rights, will result in some consolidation, as excess capacity leaves the fishery. While this consolidation might be favored on economic efficiency grounds (e.g., for exploiting economies of scale), concentration of share holdings in a relatively few individuals or entities can result in excessive market power. The concentration of market power can affect working conditions, prices, and wages paid to crew, and harm small participants in a fishery. Although caps on ownership and use of shares are generally viewed as a means to prevent excessive concentration of shares, the level of the cap could vary among fisheries depending on the particular nature of the fishery and the objectives of the cap.

Alternative 1 places no restriction on the amount of share ownership. Selecting this alternative would allow persons eligible to purchase IFQ shares on the market regardless of their level of share ownership. The likely result would be to allow the fishery to function more efficiently as productive privileges would be allocated to the most efficient producers. While this alternative offers the highest probability of not meeting the federal mandate to prevent excessive consolidation of shares, the eventual ownership configuration may turn out to be not only the most efficient but also the right level for competition to flourish. The presence at this time of several entities that would likely remain in the fishery under the IFQ program could potentially exert the necessary effort to prevent shares from being acquired by a few entities.

The grouper/tilefish fishery is subject to a fair amount of competition with substitute species available from other domestic fishery production and from imports. Given the choices consumers have in the market, it is unlikely consolidation of the grouper/tilefish fishery would substantially impact consumers. Fish buyers may be impacted if the harvesters they traditionally buy from leave the fishery. Also business in the communities that have traditionally supported the grouper/tilefish fishery could be affected if the remaining fleet sells to owners in other areas. Finally, employment of the harvesting crew could be impacted if fleet contracts too much. At any rate, employment would likely be affected by any of the alternatives under consideration.

Alternative 2 would set either one cap on the total percentage of grouper and tilefish owned by any one person or individual caps for each share type within the grouper/tilefish IFQ program plus a cap on the total percentage of grouper and tilefish share owned by any one person. Under either option, the ownership cap would be set at 5 percent, 10 percent, or 15 percent. Several factors could be used to assess whether caps are needed and if the cap serves the objectives of this amendment. The number of participants that would remain in the sector if all participants buy IFQ shares up to the cap would illustrate the potential limit on concentration of shares. The number of participants historically in the fishery also provides some insight into whether the cap is consistent with past participation levels. Also, since allocation of IFQ shares might be a reflection of historic participation, the number of persons that would receive IFQ shares at or above the cap might also provide some insight into whether the cap is consistent with historic participation, if participation is stable over time. Lastly, there may exist one or a range of numbers that would define the most efficient number of participants in the fishery.

If some IFQ holding entities buy up to the limit, the number of remaining entities would be 20 at the 5 percent cap, 10 at the 10 percent cap, and 7 at the 15 percent cap. With about 1,028 permits/vessels in the fishery, any of the three cap options would substantially reduce the number of entities in the fishery. It should be noted, though, that many of these permits/vessels are not actively engaged in the grouper/tilefish fishery either because of operational problems/issues or because they are solely engaged in other reef fisheries. Table 2.B1.1, for example, presented in Action A2 of this document shows that 184 vessels did not have historical landing of grouper/tilefish for 1999-2004, the current preferred qualifying years for purposes of IFQ share allocation.

Table 2.2.7.1 presented in Section 2 of this document showed the number of entities that would exceed the various cap options. Some general conclusions can be drawn from the tabulated information. Under a single overall cap, no entity would exceed any of the percent caps. Under a species/species group specific cap, the tilefish and deepwater grouper caps would be limiting to

some entities: 2 deepwater entities and 7 tilefish entities with the 5 percent cap, 1 deepwater entities and 1 tilefish entity with the 10 percent cap, and no tilefish or deepwater entity with the 15 percent cap. If these entities exceeding the cap are not grandfathered in the IFQ system, they will have to divest part of their holdings. It should be noted, however, that the information presented in the table are only estimates as corporate shareholder data are not available at this time.

Alternative 3 would set the cap at the highest share distributed to an entity at the start of the IFQ program. Under this alternative, none of the initial recipients of the IFQ share would be compelled to divest any portion of their initial share allocations. A cap would be established for either the total percentage of grouper and tilefish shares owned by any one entity or for each share type identified in Action B4, plus a cap on the total percentage of grouper and tilefish shares owned by any one entity. A cap on the total percentage of grouper and tilefish shares owned by any one person would be right around the two percent level (Option a)

While the 2 percent cap may not be initially limiting, a major issue in the selection of share cap when considered in conjunction with the opportunities afforded by an IFQ program is the ability of any entity to achieve its most efficient level of operation. Given the current regulatory regime in the grouper/tilefish fishery, it is very likely that none of the entities has yet achieved its most efficient level of operation. For this reason, a cap slightly higher than 2 percent for a cap on the total percentage of grouper and tilefish quotas owned by any one person, or slightly higher than the limiting cap for species/species groups would offer some opportunities for certain entities to buy up shares to achieve their most efficient level of operation. A low cap, although non-limiting to initial share distributions would tend to distort the allocation of shares and/or distribution of shares after transfers. As a result of this distortion of share distribution, the overall net benefits to the Nation would be reduced in the long run. Net benefit reductions are a result of the most efficient operations being limited in the amount of IFQ shares they can hold**.**

Alternative 1 is probably the best alternative in terms of affording the IFQ participants to achieve their most efficient operation, but it is generally perceived as providing the highest likelihood for some entities to possess excessive IFQ shares. It should be recognized, though, that presence at this time of several entities that would likely remain in the fishery under the IFQ program could potentially exert the necessary effort to prevent shares from being acquired by a few entities. Although **Alternative 3** would allow every qualified IFQ shareholder to possess whatever shares they have at the start of the IFQ program. **Alternative 2** wound tend to penalize the "highliners" who more likely to be the most efficient harvesters. They would be forced to stay right where they were at the start of the IFQ program, and simply watch as others become more efficient and acquire more IFQ shares. **Alternative 2** contains certain features that may address the excessive share issue and at the same time allow participants to achieve their most efficient level of fishing operation. These features take the form of relatively higher caps either under a single overall cap or species-specific caps.

<u>Summary</u>

Alternative 1, which does not place a cap on IFQ share ownership, provides the potentially best economic environment for the IFQ system to result in a highly efficient harvesting sector. But

this may be perceived by some as contrary to the provisions of the Magnuson Act, since the potential for acquiring excessive shares may arise. **Alternative 3** would not result in any IFQ participants being compelled to divest some of their holdings, but it would also tend to disadvantage the "highliners" who may be the most efficient fishery participants. **Alternative 2**, particularly with higher percent caps under a single overall cap, appears to offer a balance between the concern with excessive share holdings and disadvantaging the more efficient fishing operations.

5.2.7.3 Direct and Indirect Effects on the Social Environment

In **Alternative 1** the number or amount of shares that can be owned by a participant in the grouper and tilefish IFQ program would not be constrained. Not having a cap on the number of shares would allow fishermen to buy up enough shares to make the fishery more profitable for them. This could help to reduce the number of fishermen and boats in the fishery making the fishery more efficient. If the number of shares is not capped there may be more of a market for the shares, increasing the price for fishermen who want to sell the shares. It could also have a negative impact on fishing communities and fishing dependent businesses that traditionally depended on the grouper and tilefish fisheries if fishermen in some communities did not receive a share and no longer were able to harvest grouper and tilefish. This may make it more difficult for new people to enter the fishery due to the cost of buying shares. The Magnuson-Stevens Act also requires that programs not allow any one entity to own an excessive share of fishing privileges.

Alternative 2 stipulates that no person shall own IFQ shares, which comprise more than the percent of the quota allocated to the IFQ program. However, persons entitled to more than the specified ownership cap during initial apportionment will be grandfathered in at their entitled holdings. The share cap(s) shall be calculated as follows: **Option a)** a cap on the total percentage of grouper and tilefish quotas owned by any one person for the entire program, or **Option b)** separate caps for each type of share as defined in Action B4, plus a cap on the total percentage of grouper and tilefish quotas owned by any one person.

Each type of share (total or separate) may have the same or different percent caps chosen from sub-options including: **Sub-option a)** 5 percent, **Sub-option b)** 10 percent, or **Sub-option c)** 15 percent. Under **Alternative 2** various options and suboptions exist for the total shares a person can own. By capping the total percentage of grouper and tilefish quotas owned by any one person, more people can participate in these fisheries which will benefit the people who have historically been active in these fisheries and meet all of the qualifications and will be awarded an IFQ share based on past participation in the grouper and tilefish fisheries. It will also benefit the communities and businesses that depend on these fisheries if a cap on percentages of shares is in place so that more people can be involved in these fisheries.

With **Preferred Alternative 3,** no person shall own more IFQ shares than the maximum percentage issued to the recipient of the largest shares at the time of the initial apportionment of IFQ shares. The share cap(s) shall be calculated as: **Option a)** a cap on the total percentage of grouper and tilefish quotas owned by any one person or **Preferred Option b)** separate caps for each type of share as defined in Action B4, plus a cap on the total percentage of grouper and

tilefish quotas owned by any one person. By capping the total percentage of shares a person can own, more people can participate in the grouper and tilefish fisheries which will benefit the people who have historically been active in these fisheries and who meet all of the qualifications and will be awarded an IFQ share based on past participation in the grouper and tilefish fisheries.

5.2.7.4 Direct and Indirect Effects on the Administrative Environment

Greater consolidation would result in fewer individuals and a lower administrative burden as described in Action B1. **Alternative 1** would allow the greatest amount of consolidation. **Option a** for **Alternatives 2 and 3** would create only a cap on the total percentage of grouper and tilefish quotas owned by any one person, which would be easier to track than the multiple caps possible under **Option b**. Determination of the cap(s) could be complicated by individuals who own multiple permits and are part of multiple corporations that hold IFQ shares. The red snapper IFQ program relies on self-reporting to determine members of each corporation. Tracking share transfers and enforcing the cap(s) will require a system to prevent transfers that would exceed the cap(s).

5.2.8 ACTION B8: Caps on IFQ Allocation Ownership

The alternatives for this action set caps on the amount of allocation any one participant can own. **Alternative 1** does not set an allocation cap. **Preferred Alternative 2** sets an allocation cap equal to the share cap and **Alternative 3** sets an allocation cap equal to the share cap plus an additional percentage of the total allocation.

5.2.8.1 Direct and Indirect Effects on Physical, Biological, and Ecological Environments

This action would not directly affect the physical, biological, or ecological environments; however, alternatives for this action could have indirect effects.

A higher allocation cap would allow greater flexibility in the fishery. If a fisherman is below the allocation cap and exceeds his allocation on a fishing trip, he can buy allocation from another participant before landing his catch, rather than discarding the excess fish (see Action B6). A less restrictive cap would be more likely to reduce the level of discards by increasing the likelihood allocation could be transferred.

Some fishermen may not fish their allocation in a particular year for social, economic, or legal reasons. If the allocation cap is low, the pool of potential buyers will be low. This may have a positive impact on the environment if allocation cannot be sold because directed catch, bycatch, and interactions between the gear and bottom habitat could be reduced.

5.2.8.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 would not place any cap on ownership of allocation. **Alternative 2** would set an allocation cap equal to the share cap. **Alternative 3** would add additional percent allocation above the share cap of up to 1 percent, 2 percent, or 3 percent.

The lifespan of an allocation is one year and any remainder would not be carried over the next fishing year. In a sense, buying and selling an allocation has the general purpose of allowing short-term adjustments in fishing operations. Any management system that allows short-term adjustments to address operational issues that, say, may result in discards, or to take advantage of fish stock, market, or weather fluctuations may be deemed better than a system that does otherwise. There naturally are bounds to such adjustments, and in the case of an IFQ system one such bound would be to prevent the emergence of a condition that would restrict most harvesting operations from making short-term adjustments.

Among the alternatives, **Alternative 1** would afford the best scenario for allowing short-term adjustments in fishing operations, followed by **Alternative 3**, and lastly by **Alternative 2**.

It is possible that some entities would enter into long-term arrangements with other entities to buy up their allocations each year, and this would somehow circumvent the share cap provision. If such arrangements result in highly restricted flow of shares for efficiency purposes, then some form of cap may be necessitated from an economic efficiency standpoint. However, it would seem that the cap imposed under **Alternative 2 or 3** would be too limiting for some entities to make within season adjustments of their fishing operations. A mitigating factor with respect to **Alternative 2** is the provision for higher percent caps. But unless a relatively high cap is chosen for IFQ share ownership, **Alternative 2** would be just as restrictive as **Alternative 3** with respect to allowing short-term adjustments in fishing operations.

Summary

Buying and selling an allocation has the general purpose of allowing short-term adjustments in fishing operations. **Alternative 1** would afford the best scenario for such short-term adjustment, followed by **Alternative 3**, and lastly by **Alternative 2**. Due to the possibility that some entities would enter into long-term arrangements with other entities to buy up their allocations each year and thereby circumvent the share cap provision, **Alternative 1** may pose some policy and efficiency issues. In such a situation, some form of cap may be necessary, but it appears that the cap imposed under **Alternative 2 or 3** would be too limiting for some entities to make within season adjustments of their fishing operations, unless relatively higher percent caps are chosen for IFQ share ownership.

5.2.8.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not constrain the amount of allocation that can be owned by a participant in the grouper and tilefish IFQ program each year. This would allow people to have as much allocation as they could get which may concentrate the allocations to just a few people within a given year. This would have a negative impact on others who meet the qualifications to own shares but could not buy up any allocation from others.

Preferred Alternative 2 would set the allocation cap equal to the total share cap as defined in Action B7. This alternative would allow fishermen to trade or buy shares from others which would help them land more fish if needed within the limitations of the share cap. This alternative would cap how much allocation a fishermen could buy from others and reduce the problem of a

few entities controlling the majority of the harvest. This alternative would prevent the need for discarding fish if shares can be bought or traded and would allow fishermen to land what they catch, as long as it is under the cap.

Alternative 3 would also allow fishermen to buy and trade shares if needed. This alternative allows allocations up to the share amount plus different options for one to five percent more. The higher the percentage, the more a fisherman can adjust his catch, which would be beneficial so they don't have to discard fish if they exceed their quota but can buy allocations.

5.2.8.4 Direct and Indirect Effects on the Administrative Environment

Capping the amount of allocation would increase the administrative burden of implementing the program. Tracking allocation transfers and enforcing the cap will require a system to prevent transfers that would exceed the cap. The determination of holdings could be complicated if individuals own multiple permits or are part of multiple corporations that participate in the IFQ program. **Preferred Alternative 2** would have less impact on the administrative environment than **Alternative 3** because the allocation cap would be the same as the share cap and would not need to be calculated separately. However, a less restrictive cap could result in more transactions to be tracked by NMFS.

5.2.9 ACTION B9: Adjustments in Annual Allocations of Commercial TACs

5.2.9.1. Direct and Indirect Effects on the Physical and Biological/Ecological Environments

Establishing a plan for how quota adjustments would be allocated is largely a socioeconomic and administrative action, which would not directly affect the physical or biological/ecological environments. However, such a plan could indirectly affect the grouper and tilefish and their habitat by influencing the rate and degree of consolidation that occurs under the IFQ program and, therefore, the program's ability to provide the benefits described in Sections 5.1.1.1 and 5.1.1.2.

Alternative 1 would not specify a predefined strategy for distributing commercial quota adjustments among IFQ shareholders. Consequently, the effects of this alternative would need to be evaluated on a case-specific basis when the Council proposed a distribution strategy related to a specific adjustment. The strategy proposed in **Preferred Alternative 2** would benefit the physical and biological/ecological environments because it would not affect the relative contribution of fishery participants in harvesting the commercial quota, and the contribution of more efficient operations is expected to be greater under an IFQ program. Efficient fishermen generally spend less time pursuing the same amount of fish compared to less efficient fishermen. This would likely minimize fishing interactions with bottom habitat and the occurrence of regulatory discards and bycatch.

Alternative 3 would require NMFS to auction allocation under cases where TAC is increased or decreased. If this allocation is purchased by the more efficient fishermen, then the effects of this

alternative would be similar to **Preferred Alternative 2**. However, if allocation is purchased by less efficient fishermen, then the effects would be greater than Preferred **Alternative 2**.

5.2.9.2 Direct and Indirect Effects on the Economic Environment

Quota adjustments need to be allocated among eligible participants. In the present case, current IFQ shareholders at the time quota adjustments are made may be considered to comprise the universe of eligible participants. At least three issues need to be recognized in devising an allocation system when quotas are adjusted. There is, first, the issue of the system's effect on the functioning of the IFQ program. Second is the issue of efficiency or inefficiency introduced by the allocation system. Third is the issue of equity whether quotas are adjusted up or down. These issues would serve as the bases for the discussions below.

Quota adjustments can potentially create uncertainties into the planning process of a fishing operation. While this is more likely with downward quota adjustments, there are situations where upward adjustments could introduce uncertainties into the business planning process. For example, some fishing operations may have already entered into some legally/socially binding arrangements with IFQ holders to use up all of the latter's allocations. An increase in allocations could then potentially place them well over their harvesting capacity. They may then have to sell some of their IFQ allocation holdings at lower prices they bought the allocations for. At any rate, any potential complications brought about by quota adjustments need not be magnified by the allocation system adopted. Thus, an allocation system may be deemed better than any other system if it can minimize or at least does not magnify any complications brought about by quota adjustments.

The efficiency aspect of an allocation system can be viewed from the standpoint of the process structure and the distributional outcome. An efficient process structure may be generally described as one that allows distribution of allocation at the least possible overall cost, with the system being unaffected by the timing and direction of quota adjustments. That is, the process achieves the least possible overall cost whether one or multiple adjustments are made and whether the quota adjustment is upward or downward. On the outcome side, an allocation system may be considered efficient if it promotes an efficient fishery even a relatively limited sense. And this can happen if the system allows a more than proportionate flow of quota to the more efficient or potentially more efficient operations. Identification of the potentially more efficient operation is definitely more involved and can possibly render the process structure inefficient. To avoid certain complexities in identifying efficient operators, the more logical approach in attempting to achieve an efficient outcome is to let the participants in the open market make the decision.

Any system for quota allocation, be it with respect to the base quota or just the adjustments, is usually judged against the norm of equity. Although in itself equity is not an economic issue, it may be viewed as a constraint to some form of economic decisions particularly those involving the promotion of efficiency in the fishery. This constraint is somehow an outcome of the general institution governing the overall management of fishery resources.

Alternative 1 would not provide an allocation method for distributing quota adjustments. In effect, this alternative would require the Council/NMFS to make allocation decisions whenever the commercial quota is changed up or down. Unless the Council/NMFS decision is done well ahead of the start of the fishing year, this alternative would tend to be disruptive to the functioning of the IFQ system. In addition, this alternative would establish an allocation process that would incur cost over and above the administration of the IFQ system. An allocation method of this sort may or may not infuse efficiency into the IFQ system, since in general decisions made at the Council/NMFS level would have to accommodate a host of objectives, some of which would come from the participants as well as non-participants in the fishery. Along this line, this alternative offers a very good opportunity for addressing an equitable distribution of quota adjustments, since in a sense the general public is provided the opportunity to air their respective sides of the allocation process.

Preferred Alternative 2 would allocate any quota adjustments based on share ownership at the time the adjustment is made. This method would allow even last minute sort of quota adjustments without necessarily introducing complications into the IFQ system. Under this approach, the additional cost from allocating quota adjustments would likely be minimal. If the share distribution at the time of quota adjustment reflects proportionate level of efficiency in fishing operations, this alternative would tend to re-enforce the developing efficient industry. If such share distribution were otherwise, the general outcome of the allocation process would only impede the speed of development of an efficient fishing industry. The allocation method under this alternative appears to be unassailable on equity grounds, but there is always the issue of providing more allocations to those who already have more than others. This issue would gain momentum if in the first place every participant in the fishery equally bore the cost of managing the underlying fish stock considered to be overfished or undergoing overfishing. The strength of this type of criticism on the equity of the allocation method under **Alternative 2** cannot be ascertained.

Alternative 3 would distribute quota adjustments via an auction. This alternative could potentially introduce complications into the IFQ system, although if the auction is done well ahead of the start of the fishing year or is combined with a fixed method of quota allocation the attendant complication would not necessarily be disruptive to the operation of the IFQ system. The illustrative example presented in Section 2 of this document would combine the auction method with some fixed form of allocating quotas. That is, if a 10 percent reduction in quota were adopted, only 80 percent of the quota would be distributed according to the percentage share of each IFQ share holder and the remaining 10 percent would be offered through an auction. To some extent, this could mitigate the complications that may be introduced by the auction method into the IFQ system. The cost of implementing an auction depends partly on the structure of auctioning allocations and partly on the features included in the auction process. For example, if there is a need to infuse some form of equity into the auction system, partitioning of the various participant into several classes with each class provided a share of the quota adjustments for auctioning may be adopted. This would increase the cost of the auction process both on the part of fishery managers and fishery participants. In terms of the resulting allocation of quota adjustments, an auction system has the highest likelihood of shaping an efficient fishing industry. The more efficient operations or at least the most potentially efficient operations would have the necessary incentive to bid high for the allocation. They would likely get more positive

allocations in times of upward quota adjustments or less negative allocations in times of downward quota adjustments. Equity consideration is perhaps the biggest negative issue with an auction process. It is highly possible that the highest bidders would be the larger shareholders, and they therefore would receive more than proportionate share of the quota adjustments. It is also possible that the highest bidders would be new entrants into the fishery who did not incur the past cost of managing the fishery. As described in an example above, some form of equity consideration may be infused into the auction system, but this may increase the cost of the system and at the same time lessen the system's effectiveness in allocating more shares to the more efficient operations.

Summary

Among the alternatives, **Alternative 1** is disruptive to the operation of the IFQ system and also involves higher costs without necessarily resulting in re-enforcing whatever efficiency has developed in the fishery. **Alternative 2** is the least disruptive to the operation of the IFQ system potentially involves the lowest cost of allocating quota adjustments, and offers the highest opportunity for equity considerations. It, nevertheless, is unlikely to promote efficiency in the fishery. **Alternative 3** offers some potential in efficiently allocating quota adjustments, but it could complicate and thus increase the cost of allocating quota adjustments. It also is highly vulnerable to criticisms based on equity grounds, especially if the highest bidders are new entrants who did not share the past cost of managing the fishery.

5.2.9.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not specify provisions for annual adjustments in the commercial allocations among IFQ shareholders. This could have a negative impact on the fishermen involved with these fisheries because they would not know from year to year how the allocations would change if the quota is changed.

Preferred Alternative 2 would allocate adjustments in the commercial quota proportionately among eligible IFQ shareholders based on the percentage of the commercial quota each holds at the time of the adjustment. With this alternative fishermen would know from year to year that their allocation as a percentage of the total would stay the same and would distribute the increases or decreases in the harvest equally between all of those that had an IFQ share.

Alternative 3 would **a**llocate adjustments in the commercial quota through an auction system. All IFQ shareholders are allowed to place bids. This could cause problems in assigning total allocations to fishermen as the TAC is adjusted from year to year. If allocations can be auctioned off, the price may be prohibitive for some fishermen and would keep them from being able to buy allocations from other fishermen later in the season if needed. This alternative could lead to concentration of allocations by just a few entities.

5.2.9.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would require fishery administrators propose and evaluate TAC adjustment allocation strategies on a case-specific basis and would require additional rulemaking. The

administrative effects of **Preferred Alternative 2** are not substantially different from **Alternative 1**. Each would provide fishery managers the information they need to allocate TAC increases and decreases among IFQ shareholders. The administrative effort required to calculate allocation adjustments would be similar for both alternatives. **Alternative 3** would require administrators to develop an auction program, distribute IFQ allocations according to allocation purchased, and administer funds received from the auction.

5.2.10 ACTION B10: Establishment and Structure of an Appeals Process

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

Establishing an appeals process for an IFQ program is an administrative action. Therefore, it is not anticipated to directly or indirectly affect the physical, biological or ecological environments in a positive or negative way.

5.2.10.2 Direct and Indirect Effects on the Economic Environment

The adoption of **Alternative 1**, the no action alternative, would not include the establishment of an appeals process in the IFQ program. **Alternatives 2** and **3** consider the establishment of an appeals process. These alternatives, which specify the time frame within which appeals can be filed, only differ in the structure and composition of an appeals process.

Preferred Alternative 4 serves to smooth the implementation of the IFQ program by reducing any adverse effects of the appeals process on existing IFQ shareholders. At the same time, it also helps to ensure the commercial grouper and tilefish quotas would not be exceeded the first year of the program in the event many appeals are settled in favor of fishermen. Setting aside a relatively small portion of IFQ shares for appeals purposes limits the likelihood of major share adjustments. Small reductions would be more acceptable than large reductions in share allocations during the first fishing season.

The establishment of an appeals process and the design of its structure have mainly equity effects. While equity considerations are important, they have less significance in the shaping the economic implications of an IFQ system. Thus, neither the appeals process nor its structure is expected to have a noticeable effect on the benefits associated with the implementation of the IFQ program. This is particularly true when an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. Economic changes would only be evident if the number of successful appeals were large compared to the number of qualifying persons or vessels. While the red snapper IFQ is a single species IFQ, experience with the appeals for this IFQ system revealed that the successful appeals did not materially alter the IFQ share distribution.

An appeals process provides the potential participants an avenue to set the record straight with respect to transfers of licenses and the associated landings history for each license. Considering the very likely point of contention in the appeals boils down to the last pound associated with a license, it is expected the number of appeals would be large. Since most of the landings histories

are currently on record through logbook submissions, the aggregate amount of contentious landings involved in the appeals is expected to be relatively low. The administrative and public cost of an appeals process for the proposed IFQ cannot be estimated but may be expected to rise with the number of appeals.

Summary

The establishment of an appeals process and the design of its structure have mainly equity effects. Neither one is expected to have a noticeable effect on the benefits associated with the implementation of the IFQ program. One major reason for this is an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. Economic changes would only be evident if the number of successful appeals were large compared to the number of qualifying persons or vessels.

5.2.10.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not allow fishermen to appeal any dispute they had over the IFQ process. Although this alternative would be easier for the Council and the regional office, in that there would be no appeal process, it would not be beneficial to any of the fishermen who may have a dispute they feel needs to be resolved through an appeals process.

With **Preferred Alternative 2,** the RA will review, evaluate, and render final decisions on appeals. Filing of an appeal must be completed within 90 days of the effective date of the final regulations implementing the IFQ program. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS' logbooks. If NMFS' logbooks are not available; the RA may use state landings records. Appellants should submit NMFS' logbooks to support their appeal.

Preferred Alternative 2, would require much time of the RA and his/her staff to resolve any potential disputes. However, it would allow fishermen who may have a dispute an avenue for an appeal. This alternative does not allow for any hardship arguments, which could be detrimental to fishermen who wanted to file an appeal based on hardship.

With **Alternative 3**, a special board composed of state directors/designees will review, evaluate, and make individual recommendations to RA on appeals. This alternative will allow fishermen to appeal a decision and some fishermen may prefer that a group of people are making the decision on their appeal rather than just one person. This alternative does not allow for any hardship arguments, which could be detrimental to fishermen who wanted to file an appeal based on hardship.

Preferred Alternative 4 would reserve a total of three percent of the current commercial quota to be initially set-aside to resolve appeals. Any amount remaining in the three-percent set-aside after the appeals process has been terminated will be proportionately distributed back to IFQ share holders. This will protect fishermen who are going through the appeals process so that if they win their appeal, then their share of the harvest will be restored. Also, **Alternative 4** would protect other fishermen with an IFQ share in that if a person wins their appeal, shares would not

need to be taken from the rest of the IFQ holders in order to restore fishing rights to the person or entity who made the appeal.

5.2.10.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 could cause administrative difficulties by failing to provide a formal process to use in resolving the complaints of those who challenge eligibility or initial allocation decisions. The appeals processes proposed in **Preferred Alternative 2**, and in **Alternative 3**, would be somewhat burdensome to administer; however, the burden would be reduced under **Preferred Alternative 2**, followed by **Alternative 3**. **Alternative 3** would require a special panel be appointed, which would require additional administrative time, costs, and effort. The set-aside proposed in **Preferred Alternative 4** would allow needed IFQ share adjustments resulting from the appeals process to occur more expeditiously.

5.2.11 ACTION B11: Use it or Lose it Policy for IFQ Shares

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

A detailed description of the direct and indirect effects of an IFQ program for grouper and tilefish is provided in Section 5.1.1, and is incorporated here by reference. An IFQ program would directly benefit the physical environment by reducing capacity and consolidating overcapacity. Less effort would result in less habitat-gear interactions, unless there is a shift in usage/effort to gears that may have greater negative impacts on the physical environment (see Section 5.1.1). **Preferred Alternative 1** would provide the greatest benefit to the physical environment, because IFQ participants would not be required to fish or lease their IFQ shares in order to retain them. If fishermen choose not to fish, then habitat-gear interactions would be reduced. **Alternative 3** would result in the least benefits to the physical environment of any of the Action B10 alternatives, because it would require IFQ participants to harvest on average 50 percent or more of their allotted IFQ shares over a three year period in order to retain them. The effects of **Alternative 2** would be intermediate to those of **Alternative 1** and **3**. The less fishermen are required to fish in order to retain shares, the greater the benefit to the marine environment.

5.2.11.2 Direct and Indirect Effects on the Economic Environment

Concerns associated with persons buying IFQ shares for the sole purpose of not using them are often cited as a reason to consider the "use it or lose it" provision. Economically, it would not make sense for fishermen to hold IFQ shares and not use them. At a minimum they would forgo the revenue associated with selling the IFQ shares. If they were efficient harvesters, the value of the IFQ shares they would forgo would be even greater. Because traditional harvesters of these fish would be inclined to harvest their shares, the discussions associated with this provision usually focus on non-consumptive users buying IFQ shares.

Allowing persons to hold IFQ shares and not fish them would reduce net benefits to the Nation in the short run, but may benefit the grouper/tilefish stocks by reducing total removals. Short-

term net benefits to the Nation would be reduced because the total amount of grouper/tilefish being produced would decrease, but the decrease in supply is not expected to have a significant impact on price. Prices are not expected to change substantially because of the number of domestic and imported substitute products for grouper/tilefish in the market.

The price flexibility associated with the amount of grouper/tilefish without a use it or lose it provision cannot be estimated with certainty. Price flexibility is estimated for a specific point on a demand curve. Determining the price flexibility associated with the use it or lose it provision would require estimating a demand curve for grouper/tilefish and making assumptions about the amount of quota that would not be fished. Both of those tasks are beyond the scope of this analysis.

Allowing people to buy IFQ shares and hold them would likely increase IFQ share prices. Fishermen would need to bid against persons who are not buying IFQ shares to make a profit, but are basing their IFQ share value on keeping the fish in the ocean. If the value they place on the IFQ share were more than the value fishermen can derive from holding the quota, then the price of shares would be higher. The person selling the IFQ share would benefit from the higher price. Fishermen wishing to buy IFQ shares could be priced out of the market, if there is sufficient demand from other buyers. This is not a likely scenario, especially if constraints are placed on who may purchase IFQ shares.

Preferred Alternative 1 would allow people to hold IFQ shares but not use them. The amount of IFQ shares that would go unused is expected to be small, unless the cost of harvesting is greater than the revenue received from the catch. Fishermen can either fish the IFQ shares themselves or transfer IFQ shares to another fisherman to generate revenue. Even when an IFQ shareholder is facing some type of physical or mechanical hardship, they would still be allowed to transfer IFQ shares to generate revenue. These provisions make it likely that the vast majority of the quota would be harvested if economic incentives exist to do so. However, we assume fisherman would operate to maximize profits. If the grouper/tilefish stock decreases to a level that makes harvesting the fish too costly, fishermen would be expected to leave IFQ shares unused. Regulations that would require harvesters to catch their allocation would result in a long-term disruption in the efficient functioning of the market as stocks recover or demand increases. This would result in decreases in producer surplus.

It is not possible to predict if people would purchase IFQ shares for some other non-consumptive use. However, if the amount of IFQ shares that are purchased and not used is beyond what the Council feels is acceptable, they have the authority to revise the program at a later date to implement a use it or lose it provision.

Alternative 2 could result in more of the grouper/tilefish quota being harvested on an annual basis, when compared to **Preferred Alternative 1**. IFQ shareholders would be required to harvest at least 30 percent of their annual allocation over a three-year period, with exceptions to the rule in cases of death or disability, or have their quota ownership privileges revoked. Based on the definition of "inactive shares", it is assumed all of a person's IFQ shares would be revoked if they did not fish at a level considered as "active". It would not apply to just the portion of a person's IFQ shares that were not fished. It is also assumed IFQ shares would be revoked the year it is calculated the owner could not reach the level of being considered active.

So, if a person does not fish the first two years and harvest less than 90 percent of his allocation the third year, he would not be issued IFQ share certificates the fourth year. Those IFQ shares would be redistributed among the remaining participants to be fished the third year.

Implementing this rule would require buyers of IFQ shares to make certain the shares they are buying would not be subject to being revoked after they are purchased. It is possible a person could buy IFQ shares and lose them the next year because of this rule. This possibility makes it imperative buyers know the status of IFQ share certificates. Tracking the status of IFQ share certificates would be done by NMFS. They would then provide buyers with the status of IFQ share certificate before share certificates were transferred. Tracking this additional information would be expected to increase the monitoring cost of the program.

This alternative would not prevent individuals from buying IFQ shares for the purpose of not harvesting the shares. It would only force the IFQ shareowners to fish their IFQ shares one out of every three years under **Alternative 2**. IFQ shareholders could meet these harvest requirements by transferring their IFQ shares to another fisherman and never actually have to fish themselves. Therefore, the provision may not be totally effective in limiting IFQ shareholders to persons wanting to harvest the available resource.

Redistributing inactive IFQ shares could benefit members of the fleet that remain active. However, a minimal number of IFQ shares are expected to be redistributed among the fleet because of this option. Fishermen that hold IFQ share certificates would be expected to sell them before they would allow them to be revoked. Economically, it would not make sense to allow IFQ shares to be revoked when they can be sold for approximately the discounted value of future net revenues. Even persons that may buy IFQ shares for the purpose of keeping them from being fished would understand the rules for retaining the IFQ share certificates. If they did purchase the IFQ shares, they would likely devise a strategy that would allow them to be retained. Therefore, it is anticipated few IFQ share certificates would be redistributed among the fleet and the economic impacts of the action are expected be minimal

Alternative 3 would have similar impacts to **Alternative 2**. The only difference between the two alternatives is the required percent of IFQ share usage which is 50 percent under **Alternative 3**. Thus Alternative 3 would be more restrictive than Alternative 2. For example, **Alternative 2** would allow the IFQ shareholder to fish at least 1 out of 3 years, with one year's harvest being no less than 90 percent of his IFQ share, while **Alternative 3** would require the IFQ holder to fish at least 2 out of 3 years.

<u>Summary</u>

Economically, it would not make sense for fishermen to hold IFQ shares and not use them, because of the opportunity of cost of not using them by either fishing or selling them. This cost would generally be higher for more efficient operations. In this sense, all alternatives would have the same economic implications. There are, however, situations when IFQ allocations are not used, but in all likelihood non-use of IFQ shares would be due to hardship conditions or to output (e.g., low product price) and input (e.g., fuel cost) market conditions, making the trip unprofitable. In these situations, **Alternatives 2** and more so **Alternative 3** would only penalize

IFQ holders for making an economically sound decision. On top of it all, **Alternatives 2** and **3** would prevent IFQ holders from making fish conservation efforts based on economic decisions.

5.2.11.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not specify a minimum landings requirement for retaining IFQ shares. **Preferred Alternative 1** would protect shareholders who did not harvest with in any given time frame in that they could choose to harvest or not harvest their IFQ share each year. This would protect shareholders if they had problems with equipment, labor, their health, or for other reasons did not harvest their quota over a certain time frame, but still wanted to retain their shares. It would be a benefit to the stock recovery if some shares were not fully harvested each year.

With **Alternative 2,** IFQ share certificates that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 30 percent of the annual average utilization of allotted IFQ shares over a three-year moving average period, except in case of death or disability. (AP Preferred)

Alternative 2 would be a benefit to the shareholders who are active in the fishery and would receive additional shares. This would be a detriment to fishermen who had been inactive due to problems with equipment, labor, their health, or for other reasons. This would require monitoring on the part of the Council in order to determine who has been inactive or not active at the designated level for three years.

Alternative 3 would stipulate that IFQ share certificates that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 50 percent of the annual average utilization of allotted IFQ shares over a three-year moving average period, except in case of death or disability.

Alternative 3 would be a benefit to the shareholders who are active in the fishery and would receive additional shares. This would be a detriment to fishermen who had not harvested at least 50 percent of their IFQ share due to problems with equipment, labor, their health (with the exception of disability), or for other reasons. This would require monitoring on the part of NMFS in order to determine who has been inactive or not active at the designated level for three years.

5.2.11.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not directly affect the administrative environment. IFQ shares could remain unused and managers would not have to track share usage. The administrative environment could be indirectly affected by a loss in cost recovery fees resulting from unused shares. **Alternatives 2** and **3** would require administrative tracking of the "expiration date" of unused quota shares, and the average percentage of quota caught for each shareholder. This requirement could directly affect the administrative environment by requiring significant administrative monitoring effort. The differences in the administrative burden between **Alternatives 2** and **3** are small. Since monitoring of landings would be based on a moving

average for both alternatives, administrators will carry out the same tasks for each alternative. The only difference between the two alternatives is that managers may have to revoke shares from more IFQ participants under **Alternative 3** than **Alternative 2**, because **Alternative 3** has a higher use requirement (50 vs. 30 percent). Both alternatives would require administrative action to revoke unused quota shares in the first three years of the program. Losses in cost recovery fees would potentially be greater under **Alternative 2** than **Alternative 3**, because IFQ participants would be able to harvest less fish to retain their allotted shares. However, the likelihood shares would remain unused is low given their economic value, and given that expired quota shares would be allocated to someone else, negating any conservation value from "retired" shares. For example, in 2007 only 4.8 percent of the red snapper quota allocation was not harvested.

5.2.12 ACTION B12: Cost Recovery Plan

5.2.12.1 Direct and Indirect Effects on the Physical, Biological/Ecological Environments

Establishing a cost recovery program for an IFQ program is an administrative action, which is not expected to affect the program's potential to provide the environmental benefits. None of the cost recovery alternatives are expected to directly or indirectly affect the physical, biological, or ecological environments.

5.2.12.2 Direct and Indirect Effects on the Economic Environment

Alternative 1 is inconsistent with direction provided through the SFA. The SFA directs Council's to recover actual costs directly related to the enforcement and management of new IFQ programs, through a cost recovery fee of up to three percent of the ex-vessel value of fish harvested under the IFQ program. If this option were implemented it would not change the producer surplus or net benefits to the Nation.

While **Alternative 1** is inconsistent with the SFA, it is theoretically preferable to the other alternatives if the objective of the program is to achieve maximum economic yield and a socially optimum stock size. Imposing a fee would distort the net benefits and economic impacts of the program and could impact stock size in the long run.

Preferred Alternative 2 would implement a cost recovery plan, with the cost recovery fee being the responsibility of the IFQ shareholder. This cost recovery plan also specifies the calculation of the ex-vessel value as basis for the fee (either as actual or standard ex-vessel value), the fee collection and submission responsibility (either by the IFQ shareholder or the dealer), and the timing of fee submission to NMFS (either quarterly or monthly).

Cost recovery fees would be based on either the actual ex-vessel price paid to the harvester or a "standard" ex-vessel price calculated by NMFS. Standard prices would be set by specific geographic area based on what NMFS determines to be appropriate. These prices would be set to reflect changes in prices received in various ports. If prices are not adjusted by area, and there is variation in the ex-vessel price by port, some harvesters would underpay their actual fee while others would overpay.

If prices are based on the actual ex-vessel payment from the process, NMFS would need to verify prices that seem too low relative to what other harvesters are paid in the area. Reporting lower prices than were actually received would reduce the cost recovery fee that is paid. Those reports should help verify the actual prices paid to fishermen, and reduce concerns over using accurate prices for determining the fee. Although not necessarily a problem in the short term, the issue of transfer pricing within a vertically integrated firm could eventually arise and could create problems in determining actual ex-vessel value for calculating the fees. Transfer pricing is a common technique used by vertically integrated firms, whereby cost is assigned to the least profitable operation in order to minimize the payment of fees or taxes. Regardless of the method of calculating ex-vessel values, the resulting fee, being the responsibility of the IFQ shareholder, would reduce the shareholder's producer surplus.

Whether the fee collection and submission to NMFS is the responsibility of the IFQ shareholder or the dealer and whether the frequency of fee collection and submission is quarterly or monthly, such activity would result in additional bookkeeping and reporting costs. A monthly submission may be expected to result in higher bookkeeping and reporting costs. The amount of those costs would reduce producer surplus for the entities that incur them.

Whether the IFQ buyers/processors or the harvesters are required to send the check, the money is expected to come from the harvesters. Processors would likely hold back the required fee from the payment they make to the harvesters. That money would then be placed in an account and earmarked to pay the fee. Alternatively, NMFS could bill the harvester directly. Either way the cost recovery fee is actually paid by the harvester and would reduce their producer surplus.

Since dealers/processors incur monetary and non-monetary costs in the cost recovery program, they have the incentive to pass on the cost forward to the next market level (retailers/consumers, for example) or backward to the harvesters. If passed onto the harvesters, dealers may quote lower prices for harvesters or may charge additional "service" fees. Lower prices may in turn result in lower recovery fees. Certainly, there are dealers who have more leverage than others in passing the cost back to harvesters.

Summary

Under the mandate to recover the cost of an IFQ system, **Alternative 1** becomes a non-viable alternative. It, however, would allow the fishery to collect the full benefits of the IFQ system while shifting the cost to the general public. **Preferred Alternative 2** would impose a system to recover cost based on actual or standard ex-vessel price. Determination of actual ex-vessel price appears to be more efficient of the two, since it would not involve people far removed from where actual transactions occurred to make decisions on appropriate price level. On the other hand, leaving the determination of ex-vessel price to fishermen and dealers leaves plenty of room for these individuals to devise ways to minimize payment of cost recovery fees.

5.2.12.3 Direct and Indirect Effects on the Social Environment

With **Alternative 1** no IFQ cost recovery plan will be implemented. This alternative would benefit the IFQ shareholders in that they would not be required to pay for and maintain the

paperwork for any type of cost recovery plan. The implementation and maintenance of this program will be expensive and it is important for NMFS to recover some of the costs, so this would not be a good alternative for NMFS.

Preferred Alternative 2 would implement an IFQ cost recovery plan. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. There are various options for how the fees will be recovered. Any of the chosen formulas for cost recovery could be burdensome for the IFQ shareholders and/or the dealers and processors due to the time and cost involved in complying with the regulation.

For **Option b, ii,** the shareholders would be required to turn over their share of the cost recovery to NMFS at a stated time interval. This may be a problem for some fishermen who have poor accounting skills and cash flow problems.

Options that require that the dealers or processors collect the fees will be time consuming for the dealers and processors. On the other hand, the implementation and maintenance of this program will be expensive and it is important for NMFS to recover some of the costs. It may be easier for NMFS to track and collect funds from the dealers and processors because most of them would be in a fixed location, whereas the fishermen move around and are out to sea at certain times.

5.2.12.4 Direct and Indirect Effects on the Administrative Environment

The administrative effects of implementing a cost recovery plan are expected to be minimal, in part, because the plan would at least partially pay for itself. **Alternative 1** would require NMFS assume all costs of administering the proposed IFQ program. **Preferred Alternative 2** would require NMFS account for cost recovery fee transactions. **Option a (ii)**, which requires NMFS calculate the standard ex-vessel price of grouper/tilefish each year, would be more burdensome than **Preferred Option a (i)**, which would base fees on the actual ex-vessel value of grouper/tilefish landings. Because the standard ex-vessel price is based on an average ex-vessel value from the previous year, it is impossible to predict whether the cost recovery fee would be higher or lower if based on the standard ex-vessel price versus the actual ex-vessel value. Regardless, NMFS may adjust the fee percentage in the event that recovered fees exceed the management and enforcement costs in the fishery. The administrative costs associated with each of the alternatives under **Option b** are not expected to differ to large extent. **Preferred Option c (i)**, which requires payments be processed four times per year, would require more administrative effort and would not integrate as well with current federal budget processes as would **Option c (ii),** which allows payments be processed just once annually.

5.2.13 ACTION B13: Guaranteed Loan Program

5.2.13.1 Direct and Indirect Effects on the Physical, Biological/Ecological Environments

Establishing a guaranteed loan program would not have any direct effects on the physical, biological, and ecological environments. However, should the loan program be approved, this could indirectly affect the physical, biological, and ecological environment. Less experienced

fishermen who otherwise could not afford to buy IFQ shares would be able to enter the fishery, providing for more potential interaction of gear with the bottom. Less efficient fishermen would also have higher levels of regulatory discards and bycatch, which could negatively impact reef fish stocks. Conversely, fishermen who are more efficient would spend less time fishing, which decreases gear interaction with the benthic habitat and reduces the level of regulatory discards and bycatch. A loan program could also increase the number of participants in the fishery, further increasing interactions and regulatory discards. This would have a negative impact on the physical, biological and ecological environment.

5.2.13.2 Direct and Indirect Effects on the Economic Environment

Preferred Alternative 1, no action, would not use a portion of fees recovered to fund an IFQ loan program. Individuals who want to buy shares would need to come up with their own source of financing. Under **Preferred Alternative 1,** larger operations, which are assumed more likely to have access to financing resources, are expected to fare better than smaller ones in the acquisition of additional IFQ shares.

The reauthorized Magnuson-Stevens Act allows up to 25 percent of fees recovered to be used for the implementation of a loan program for first time participants in the IFQ program or for fishermen who fish from small vessels. **Alternative 2** would allocate 15 percent of fees recovered to a loan program. The grouper and tilefish IFQ program under consideration would manage quotas totaling 9.3 MP of fish (1.02 MP of DWG, 0.44 MP of tilefish, and, based on Reef Fish Amendment 30-B, 7.84 MP of SWG) which could be valued at $30 million, approximately. Given the three percent cap set by the Magnuson-Stevens Act, fees recovered could, at most, total $900,000. Therefore, **Alternative 2** could use $135,000 to provide loans to first time participants and small fishing operations. In the red snapper IFQ program, IFQ shares are generally sold between $12 and $15 per pound. Using red snapper share prices as a proxy for future grouper and tilefish shares implies that under **Alternative 2** would finance the acquisition of a little over 11,000 pounds of grouper and tilefish. While this may be significant for a particular fisherman, the overall amount would be negligible in terms of its impact on the fishery as a whole. **Alternative 2** would also deprive NMFS from funds that could be used to administer the program. The establishment of a loan program would require a prior determination of vessels that would qualify as "small vessels."

Alternative 3 would set aside 25 percent of fees recovered to establish a loan program. Under assumptions discussed in **Alternative 2**, this would approximately represent $225,000 of funding for the loan program, which would correspond to about 19,000 pounds of grouper and tilefish. As discussed above, while this may positively impact the bottom line of the few loan beneficiaries, the amount available under **Alternative 3** would also barely make a dent in the distribution of IFQ share holders and could jeopardize NMFS' ability to properly administer the program due to the accompanying decrease in their funding. In the absence of a significant initial funding source to kick start the program, potential benefits to be derived from a guaranteed loan program seem to be limited. Furthermore, funds withdrawn from fees recovered could jeopardize NMFS' ability to properly administer the grouper and tilefish IFQ program.

Summary

Preferred Alternative 1 would not establish an IFQ loan program. Fishermen and entities who want to buy shares would have to use private financing sources. Under **Preferred Alternative 1,** larger operations, which are generally more likely to have access to funding, are anticipated to fare better than smaller ones in the acquisition of additional IFQ shares. **Alternative 2** could allocate about $135,000 or 15 percent of fees recovered to grant loans to first time participants and small fishing operations. **Alternative 3** would set aside 25 percent of fees recovered or approximately $225,000 to assist first time participants and small fishing operations in the acquisition of IFQ shares. In light of the limited funding available for the establishment of an IFQ loan program, neither **Alternative 2** nor **Alternative 3** are expected to significantly affect share distribution within the fishery. However, the diversion of up to 25 percent of fees recovered could jeopardize NMFS' effectiveness in administering the grouper and tilefish IFQ program.

5.2.13.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not establish an IFQ loan program to help small operations buy IFQ shares. It may be difficult for some fishermen to buy shares if they can not get a loan from the program, and therefore they would not be able to participate.

Alternative 2 would **s**et aside 15 percent of cost recovery fees to establish a guaranteed loan program. This alternative would benefit fishermen who need to borrow money to buy IFQ shares. Without this loan, some fishermen who want to enter the fisheries may not be able to buy IFQ shares as it is becoming more difficult for fishermen to borrow money from the banks to support their fishing businesses.

Alternative 3 would **s**et aside 25 percent of cost recovery fees to establish a guaranteed loan program. This alternative would benefit fishermen who need to borrow money to buy IFQ shares. Without this loan, some fishermen who want to enter the fisheries may not be able to buy IFQ shares as it is becoming more difficult for fishermen to borrow money from the banks to support their fishing businesses.

5.2.13.4 Direct and Indirect Effects on the Administrative Environment

Preferred Alternative 1 proposes no action and therefore would require no additional staff time or other effects on the administrative environment. The number of IFQ participants may increase with **Alternatives 2** and **3** therefore a similar amount of staff time would be required for these alternatives. If chosen, these alternatives would require a significant amount of staff time to design, complete and implement the loan application and approval process. These alternatives therefore, would have greater administrative requirements than **Preferred Alternative 1**.

5.2.14 ACTION B14: Approved Landing Sites

5.2.14.1 Direct and Indirect Effects on the Physical, Biological/Ecological Environments

Establishing approved landing sites is an administrative action. Therefore, is not expected to directly or indirectly affect the physical, biological or ecological environments in a positive or negative way.

5.2.14.2 Direct and Indirect Effects on the Economic

Alternative 1 would not require certification of landing sites, and thus this alternative would not result in any additional cost. Were it to become the case that many landing sites are either not readily identified or inaccessible to law enforcement officers, the likelihood of not properly monitoring the IFQ system would increase. And this could eventually be disruptive to the proper functioning of the IFQ system, which in turn could reduce the economic benefits from the IFQ program.

Preferred Alternative 2 would establish landing sites for all IFQ programs in the commercial reef fish fishery. The cost for certifying a landing site is reportedly minimal for both the fishing participants and fishery managers, including enforcement personnel. If such were the case, whatever benefits gained from properly enforcing landing/offloading rules would enhance the benefits from the IFQ system. One possible negative feature of this option is that fishermen may have to incur more travel and other costs if they are compelled to land their fish in other places far removed from their usual landing sites. Naturally, this would happen only if their usual landing sites could not be approved.

Alternative 3 would establish landing sites mainly for purposes of using the VMS units to report landing notifications. This alternative would generate relatively lower benefits than **Alternative 2** but also at relatively lower cost, since fishermen could continue using their usual landing sites.

<u>Summary</u>

All alternatives to the status quo would mainly affect the monitoring and enforcement of IFQ landings. If these alternatives enhance monitoring and enforcement of the IFQ program, the likelihood of realizing the expected economic benefits from the IFQ program would increase or at least be preserved. The cost to the IFQ participants would likely be minimal, so that whatever benefits arise from an enhanced monitoring and enforcement activities would directly translate to increases in economic benefits to the entire IFQ participants.

5.2.14.3 Direct and Indirect Effects on the Social Environment

Alternative 1 would not establish approved landing sites for IFQ programs in the commercial reef fish fisheries. This alternative would not impact the fishermen or fishing communities because fishermen could continue to land grouper and tile fish where they wanted as they do now.

With **Preferred Alternative 2,** fishermen in the IFQ program would be required to land their catch at established approved landing sites. All IFQ participants must land at one of these sites to

participate in the IFQ program. This would restrict fishermen to locations with approved landings. Sometimes due to changes in weather, fishing opportunities, or other reasons, fishermen change locations where they land their catches. By requiring that any fish caught under the IFQ program be landed at an approved location, fishermen may have to travel to approved areas in unsafe weather or use more fuel to get to that location. Also, if a landing site experiences difficulties and closes, then fishermen may have to travel further than they had been to reach a new location that is approved to land their catch. If locations in communities that traditionally landed grouper and tilefish are not listed as an approved landing place, then there may be a loss of jobs in the processing sector for that community.

Preferred Option a would allow the fishermen to choose the landing sites, but the sites must be approved by NMFS Office of Law Enforcement. This option does give the fishermen choice over where to land their catch, but due to the requirement that it be approved beforehand by NMFS, it does not give them options for choosing another place that may not be approved if needed due to changes in weather, equipment problems, location of where they harvested, etc. If a landing site experiences difficulties and closes, then fishermen may have to travel further than they had been to reach a new location that is approved to land their catch.

With **Option b,** the approved landing sites will be selected by the Council and NMFS, based on industry recommendations and resource availability. This will not give fishermen as much control over where they land their catch as they would have if they could choose the site to land their catch. This alternative does not give them options for choosing another place that may not be approved if needed due to changes in weather, equipment problems, location of where they harvested, etc. If locations in communities that traditionally landed grouper and tilefish are not listed as a approved landing place, then there may be a loss of jobs in the processing sector.

Alternative 3 would require that landing sites be approved by OLE in order for IFQ fishermen to use the VMS units as an option to report landing notifications. Landing locations do not need to be approved if they are reported through telephone or an IFQ online accounting system. With this alternative, fishermen would need to own and pay for a VMS system that would add to their operating expense. Also, they would still need to land their catch at an approved site which may cause a hardship because it does not give them options for choosing another place that may not be approved if needed due to changes in weather, equipment problems, location of where they harvested, etc. If locations in communities that traditionally landed grouper and tilefish are not listed as a approved landing place, then there may be a loss of jobs in the processing sector.

5.2.14.4 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would be the least burdensome on the administrative environment because approved landing sites would not be established. Establishing approved landings is expected to be more burdensome on the administrative environment than status quo because NMFS' Office of Law Enforcement has to approve sites, which includes visiting sites to ensure addresses are valid. Additionally, approved landings sites will have to be tracked and updated as needed and VMS landing notification forms would need to be updated if approved sites change. **Alternative 3** may require less administrative time than **Preferred Alternative 2** if participants choose not to

certify their landing sites because they prefer to report their landing notifications through the phone or on-line system.

5.3 SECTION C- ENDORSEMENTS

5.3.1 ACTION C1: Minimum Harvest Threshold for Endorsements

5.3.1.1 Direct and Indirect Effects on Physical and Biological/Ecological Environments

Effects on the physical and biological/ecological environments from reef fish fishing are described in detail in 5.A1.1. This action is primarily administrative and so would not have any direct effects on the physical and biological/ecological environments. **Preferred Alternative 1**, no action, would not affect the fishery as it is currently prosecuted; therefore, this alternative should have no additional effect on the physical and biological/ecological environments. **Alternatives 2** and **3** could reduce the total number of vessels participating in the grouper fishery. However, it is likely any effort from vessels lost from the fishery would be made up by vessels with an endorsement. The limitations to this fishing effort in this fishery are quotas. **Alternatives 2** and **3** could increase grouper bycatch and associated discard mortality from vessels not able to obtain a grouper endorsement unless incidental bycatch allowance provisions are adopted in Action C3. A bycatch allowance would allow incidental catches to be counted toward the quota ran discarded with some mortality.

5.3.1.2 Direct and Indirect Effects on the Economic Environment

There are several general issues worth noting about an endorsement system. First, an endorsement system has the potential to eliminate latent effort in the fishery. If the criteria for inclusion were relatively strict, the endorsement system could also reduce effort in the fishery in the short run. Second, an endorsement system, even with relatively strict inclusion criteria, would become less effective over time in constraining effort in the fishery. The remaining vessels would eventually adjust their operations to take advantage of favorable competition in the harvesting sector. It would be less of a surprise that the problem of excess capacity in the fishery would re-appear in one form or another, and adoption of trip limits and other input controls would become a necessity. Section 3.3.1 of this amendment described several ways effort in the fishery can be represented in general. In addition to the number of boats, effort can change on the basis of the number of trips and days fishing. As shown in that section, the number of boats in the grouper and tilefish fishery decreased over time, but the decrease in the number of trips was not as dramatic as that for boats. In addition, boats even if taking fewer trips could increase their fishing time. The open access nature of the fishery would re-appear even with fewer boats. Third, a multi-tier endorsement system would not mean anything if there are no corresponding advantage granted to the remaining vessels in various categories. Assume, for example, that there are longline and handline endorsements. If both types of vessels are subject to the same regulation, such as the same trip limit, the separate endorsement system would practically be equivalent to a one system. It is true that under this situation the resulting effect of an endorsement would be to reduce the number of participants of each gear type. But it is still

likely that over time displaced effort would be recouped by increased participation in terms of trips or fishing days of the remaining vessels.

Preferred Alternative 1 would not provide for any harvest requirement for securing an endorsement. In effect this would allow all permit holders to qualify for an endorsement. Although this alternative would have no short-run economic impacts on the commercial fishery participants, it would not address any excess effort in the fishery (including the presence of latent permits) and thus would preserve whatever problems are attendant to the presence of excess capacity.

Alternative 2 would provide for harvest levels of at least 1 pound (**Option i**), 1,000 pounds (**Option ii**), or 4,000 pounds (**Option iii**) to qualify for an endorsement. As shown earlier in Table 2.3.1, which is based on 1999-2004 logbook records, 75 permit holders recorded zero landings of any grouper or tilefish. Even at a very liberal landing requirement of 1 pound, about 7.3 percent of current permit holders would be excluded from the fishery with the adoption of an endorsement system. While these permit holders would not experience short-run disruptions in their fishing business, they would be precluded from entering or re-entering the grouper/tilefish fishery except through the purchase of endorsements from other fishermen, assuming transferability of endorsements. There's also a good possibility that many of these 75 permit holders were harvesting other reef fish such as snapper and amberjack and so would not at all be affected by the endorsement system. If that were the case, then the 1 pound requirement is practically similar to having no endorsement at all. At higher landing requirements, more permit holders would be adversely affected by the endorsement system-- about 374 under **Option ii** and 601 under **Option iii**. These other options would have a better chance of addressing excess capacity in the grouper/tilefish fishery, but the resulting short-run adverse economic impacts would likely be substantial.

Alternative 3 would establish a separate longline and other gear endorsement with each endorsement subject to landing requirements. A 1 pound landing requirement (**Options a i** and **b i**) for longline and other gear type endorsement would practically include all vessels that had been active in the 1999-2004 period, and thus would not address the excess capacity issue in the grouper/tilefish fishery. Higher landing requirements for the longline endorsement would eliminate about 53 percent (**Option a ii**) and 85 percent (**Option a iii**) of longline vessels. Higher landing requirement for the other gear endorsement would eliminate about 60 percent (**Option b ii**) and 69 percent of non-longline vessels. These higher landing requirements would address the excess capacity problem in the fishery but at the expense of relatively substantial adverse economic impacts. One issue worth recognizing in this dual endorsement system is that vessels, with the exception of those with zero landings which would not qualify for the longline endorsement, would likely qualify for the other gear endorsement even if a higher landing requirement were adopted. This may partly alleviate the resulting adverse economic impacts of an endorsement system, but the relatively few longline vessels would likely not compensate for the many non-longline vessels that would be driven out of the fishery when higher landing requirement were adopted.

Summary

An endorsement system has the potential to reduce the number of boats in the fishery and could potentially reduce effort in the short run. In addition, it has the potential to minimize latent effort in the fishery. **Preferred Alternative 1** is equivalent to having no endorsement at all and so would not change the economic status of the fishery. **Alternative 2** could eliminate boats in the fishery, with the number of excluded boats increasing with more restrictive landing threshold, and thus offers the potential to address overcapacity in the fishery. **Alternative 3** would have similar economic effects as **Alternative 2**, but this time the effects would be distributed by gear types. This alternative contains features that can infuse some level of equity into the inclusion/exclusion of boats if the threshold were made to vary across gear types. An important issue worth recognizing with any type of endorsement system is the short-run nature of its effects. Over time the remaining vessels could adjust their operations to a point that overcapacity would re-appear.

5.3.1.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not specify minimum harvest thresholds for grouper and tilefish endorsements and would grant an endorsement for grouper and tilefish to all permit holders. This would allow everyone with a permit to continue to fish for grouper and tilefish. This alternative would be of most benefit to fishermen with the lowest harvest levels who may otherwise not receive an endorsement. It is becoming more difficult for fishermen to diversify and target other species if they are prevented from harvesting species they had harvested in the past due to new regulations that limits participation in a specific fishery. Even though an individual fisherman may have minimal participation in a specific fishery, that fishery along with other fisheries the fisherman may be involved in, makes it possible for them to make a living from fishing. If new regulations prevent some fishermen who now have a permit from participating in the grouper and tilefish fisheries, they may not be able to make up for the loss in income by targeting other species.

With **Alternative 2** the minimum harvest threshold for a grouper and tilefish endorsement to the Reef Fish Permit will be based on average annual landings history during the qualifying years for all groupers and tilefish. **Alternative 2** would allow anyone who had a reef fish permit and had caught an average of at least one pound (**Option i**), one thousand pounds (**Option ii**), or four thousand pounds (**Option iii**) during the qualifying years to receive an endorsement. All of these options would exclude fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. Fishermen who have not caught any grouper or tilefish during the qualifying years due to extenuating circumstances such as health issues or problems with their boats, and would be impacted the most because they would not receive an endorsement. **Option i** would benefit the most fishermen because anyone who landed an average of at least one fish during the qualifying years would be included. **Options ii and iii** would exclude more fishermen than **Option i** from obtaining an endorsement due to the higher average landings requirement. Reducing the number of potential endorsements will help to reduce the overcapacity and will benefit the fishermen who do receive and endorsement because there would be less competition in the fisheries.

Alternative 3: The minimum harvest threshold for a grouper and tilefish endorsement for a reef fish permit by fishing gear will be based on average annual landings history during the qualifying years for all groupers and tilefish. **Alternative 3, Option a,** would allow longline fishermen a grouper and tilefish endorsement if they had a reef fish permit and had caught an average of at least one pound (**suboption i**), ten thousand pounds **(suboption ii**), or fifty thousand pounds (**suboption iii**). All of these options would exclude longline fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. Fishermen who have not caught any grouper or tilefish during the qualifying years due to extenuating circumstances, such as health issues or problems with their boats, would be impacted the most because they would not receive an endorsement. **Subption i** would benefit the most fishermen because anyone who landed an average of at least one fish during the qualifying years would be included. **Suboptions ii** and **iii** would exclude more fishermen than **suboption i** from obtaining an endorsement due to the higher average landings requirement. Reducing the number of potential endorsements will help to reduce the overcapacity and will benefit the fishermen who do receive and endorsement because there would be less competition in the fisheries.

Alternative 3, Option b would allow other gear fishermen to receive a grouper and tilefish endorsement if they had one pound (**suboption i**), five hundred pounds (**suboption ii**), or one thousand pounds (**suboption iii**). All of these options would exclude other gear fishermen who had a reef fish permit but had not landed any grouper or tilefish during the qualifying years from receiving an endorsement. Fishermen who have not caught any grouper or tilefish during the qualifying years due to extenuating circumstances, such as health issues or problems with their boats, would be impacted the most because they would not receive an endorsement. **Subption i** would benefit the most fishermen because anyone who landed an average of at least one fish during the qualifying years would be included. **Suboptions ii** and **iii** would exclude more fishermen than **suboption i** from obtaining an endorsement due to the higher average landings requirement. Reducing the number of potential endorsements will help to reduce the overcapacity and will benefit the fishermen who do receive and endorsement because there would be less competition in the fisheries.

5.3.1.4 Direct and Indirect Effects on the Administrative Environment

This action is primarily administrative in nature. **Preferred Alternative 1**, no action, would not increase or decrease the administrative burden managing the commercial reef fish fishery. **Alternatives 2** and **3** would initially adversely effect the administrative environment because permit histories would need evaluated and some type of appeals process would need to be developed for those fishermen who question the accuracy of their average landings. However, this should provide a long-term benefit to the administrative environment by identifying those fishermen who participate in the grouper fishery should future actions to limit commercial grouper fishing become necessary. With respect to the suboptions for average landings to qualify for an endorsement, the greater the value, the greater the likelihood a fisherman will challenge landings. Further, as mentioned above, **Alternative 3** does not specify how vessels fishing multiple gear types should be addressed and adds complexity to the administrative environment.

5.3.2 ACTION C2: Qualifying Years for Endorsements

5.3.2.1 Direct and Indirect Effects on Physical and Biological/Ecological Environments

Effects on the physical and biological/ecological environments from reef fish fishing are described in detail in Sections 5.1.1.1. and 5.1.1.2. This action is primarily administrative and so would not have any direct effects on the physical and biological/ecological environments. **Preferred Alternative 1**, no action, would not affect the fishery as it is currently prosecuted because selection of this alternative would negate an endorsement system. **Alternative 2** would be more restrictive than **Alternative 3** by allowing fewer vessels participating in the grouper fishery to receive an endorsement. However, the selection of **Preferred Alternative 1** would have a much greater effect on endorsements than either **Alternative 2** or **3**. Further, it is likely any effort from vessels lost from the fishery would be made up by vessels with an endorsement. The limitations to this fishing effort in this fishery are quotas. **Alternatives 2** and **3** could increase grouper bycatch and associated discard mortality from vessels not able to obtain a grouper endorsement unless incidental catch allowance provisions are adopted in Action C3.

5.3.2.2 Direct and Indirect Effects on the Economic Environment

Alternative 1, which does not specify the qualifying years of landing for the endorsement, would virtually render the endorsement system unworkable. Both **Alternatives 2** and **3** consider the period 1999-2004 as the qualifying years for calculating vessel landings, with **Alternative 3** allowing permit holders to drop one year for purposes of calculating average landings. This period was the one used in conjunction with earlier discussions on the number of vessels eliminated from the fishery under the various alternatives/options for landing requirement. The major difference between **Alternatives 2** and **3** is that more vessels would qualify for the higher landing requirement under **Alternative 3**. This latter alternative would thus tend to slightly reduce the adverse economic impacts resulting from adoption of higher landing requirements.

In general, choice of the qualifying years for the endorsement system would grow in importance with higher landing requirements. That is, the higher the landing requirement, the more likely would vessels qualify with longer qualifying period, particularly if some down years could be excluded from the calculation of average landings. The current choice of the period 1999-2004 would tend to eliminate the advantage of vessels that operated in the fishery since prior to 1999 and would practically eliminate vessels that entered the fishery after 2004. The greater adverse economic impacts, however, would fall on later entrants to the fishery, since they would either not have the necessary landing history or only have minimal qualifying landings. To remain in the fishery, these late entrants would be faced with higher fixed costs through the purchase of endorsements.

To provide some insights on the effect of other qualifying years, it is instructive compare the distribution of boats by landing category for the period 1993-2006 with that for the period 1999-2004. For better comparison, Tables 3.3.1.7 for one overall endorsement system and Table 3.3.1.8 for a gear-based endorsement system may be used. These tables were presented in an earlier section of this document. From Table 3.3.1.7, it can be observed that the period 1993-2006 would allow more boats under any landing threshold than the shorter 1999-2004 period. If

this were true by using all years for calculating average landings, then it would even be truer if some years of landings were allowed to be dropped. Practically the same scenario is depicted by Table 3.3.1.8. That is, more boats of any gear type could qualify under any landing threshold by selecting 1993-2006 as the qualifying years. Hence, lower negative economic impacts may be forthcoming from using 1993-2006 as the qualifying years than from adopting the 1999-2004 period. On the other hand, the shorter period would have a better chance of addressing the overcapacity problem in the fishery.

Summary

Preferred Alternative 1 does not specify the qualifying years of landing for the endorsement, and thus would virtually render the endorsement system unworkable. Both **Alternatives 2 and 3** consider the period 1999-2004 as the qualifying years for calculating vessel landings, with **Alternative 3** allowing permit holders to drop one year for purposes of calculating average landings. The major difference between **Alternatives 2 and 3** is that more vessels would qualify for the higher landing requirement under **Alternative 3**. This latter alternative would thus tend to slightly reduce the adverse economic impacts resulting from adoption of higher landing requirements but it would offer lower potential for addressing overcapacity in the fishery. A comparison between 1993-2006 and 1999-2004 as the qualifying years indicated that more boats would qualify in the endorsement under the longer period. Again, this comparison presents the issue of lower adverse economic impacts with the longer period against the potential for the shorter period to address overcapacity in the fishery.

5.3.2.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not specify qualifying years for endorsement eligibility. **Preferred Alternative 1** would not allow the Council a way to establish who would be eligible for an endorsement, so it would not have short term impacts, positive or negative, on the fishermen, fishing-dependent businesses, or fishing communities that are involved with the commercial grouper and tilefish fisheries because it would not change the current way of doing business.

Alternative 2 would require that the qualifying years for obtaining one or more endorsements for a reef fish permit will be from 1999 through 2004. **Alternative 2** would use the years 1999 through 2004 to qualify fishermen to receive and endorsement. Unlike **Alternative 3**, fishermen could not drop one year from the years used to determine an average. This would have a positive impact on the commercial fishermen who actively harvesting grouper and tilefish for all of these years. It would have a negative impact on the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels would bring down their total average.

Like **Alternative 2**, **Alternative 3** would use the years 1999 through 2004 to qualify fishermen to receive and endorsement but one year of the years could be dropped. This alternative would benefit the fishermen who had reduced landings for grouper or tilefish for a particular year for reasons such as family health issues, equipment problems, etc. because a year with lower harvest levels, because an off year would not bring down their total average.

5.3.2.4 Direct and Indirect Effects on Administrative Environment

This action is primarily administrative in nature. **Preferred Alternative 1**, no action, would not increase or decrease the administrative burden managing the commercial reef fish fishery. Selection on this alternative would negate the ability to have an endorsement. **Alternatives 2** and **3** would initially adversely effect the administrative environment because permit histories would need to be evaluated and some type of appeals process would need to be developed for those fishermen who question the accuracy of their average landings for the selected years. Because **Alternative 3** allows fishermen to drop their lowest year, this might reduce the number of fishermen questioning their landings. An endorsement program provides a long-term benefit to the administrative environment by identifying those fishermen who participate in the grouper fishery should future actions to limit commercial grouper fishing become necessary.

5.3.3 ACTION C3: Incidental Catch Provisions

5.3.3.1 Direct and Indirect Effects on Physical and Biological/Ecological Environments

Effects on the physical and biological/ecological environments from reef fish fishing are described in detail in 5.1.1.1 and 5.1.1.2. This action would allow vessels without grouper endorsements to land incidentally caught grouper within certain limits. **Preferred Alternative 1**, no action, would not allow vessels without endorsements from landing grouper. This could have a positive effect on the physical environment on areas where grouper are found in high numbers because operators of non-endorsement vessels may fish elsewhere to increase their efficiency to capture non-grouper species. **Alternatives 2** and **3** would allow reef fish fishermen who do not have grouper endorsements to land some grouper. This would reduce the impetus on operators of non-endorsement vessels from avoiding areas with higher densities of grouper.

While a grouper endorsement to the reef fish permit is administrative, precluding fishermen without the endorsement from landing grouper could result in incidental bycatch of grouper and its associated discard mortality. **Preferred Alternative 1**, no action, would not allow for a bycatch allowance of grouper, therefore, this alternative could negatively affect grouper by increasing the potential mortality associated with bycatch. In the commercial fishery, gag discard mortality rates were estimated at 67 percent (SEDAR 10 2006), and red grouper discard mortality rates were estimated at 10 percent for handlines and 45 percent for longlines (SEDAR 12 2007). **Alternatives 2** and **3** could reduce grouper bycatch and associated discard mortality by allowing legal sized fish to be landed under a trip limit for non-endorsement vessels. While the landed fish would contribute to the overall fishing mortality on grouper, they would be counted against the quota. Once the quota is met, then the fishery would be closed.

5.3.3.2 Direct and Indirect Effects on the Economic Environment

Preferred Alternative 1 does not provide for any bycatch of grouper/tilefish for vessels without the endorsement. This alternative would tend to preserve the advantage gained by those with endorsements but would also result in discard mortality that would not be counted against the

commercial quota. A situation like this would result in higher overall fish mortality that could eventually have an effect on the overall status of the stock and thus on the long-term economic benefits derivable from the grouper/tilefish fishery.

Alternative 2 would allow a 200-pound bycatch and **Alternative 3**, a 500-pound bycatch. These two alternatives would address the bycatch mortality issue attendant to **Alternative 1** but it would also give rise to certain economic problems. One such problem is the bycatch provision's tendency to negate the ability of an endorsement system to address excess capacity problem. This is especially true for **Alternative 3** if right at the very start the endorsement system eliminated vessels with qualifying landings of 500 pounds or less. With the experience of being eliminated from the endorsement system, these vessels would have all the reasons to harvest 500 pounds in as many trips as they can to hedge against any eventuality of later adopting another system that would make use of landing levels as qualifying criteria.

If these three alternatives were maintained in the process of implementing an endorsement system, **Alternative 2** would have the best chance of addressing the biological/economic problem posed by **Alternative 1** and the economic problems posed by **Alternative 3**.

Summary

A bycatch allowance can partly address the discard mortality issue under an endorsement system, but a relatively high bycatch allowance could potentially reduce the economic advantage of boats included in the endorsement. Given this scenario, **Alternative 2** appear to strike a balance between discard mortality and the economic problem posed by a higher bycatch allowance.

5.3.3.3 Direct and Indirect Effects on the Social Environment

Preferred Alternative 1 would not establish incidental bycatch provisions for grouper or tilefish landings for commercial reef fish permits that did not qualify for an endorsement and would not allow fishermen without an endorsement to keep any grouper or tilefish that they caught as bycatch. This may be advantageous to the fishermen that have an endorsement because they would be the only ones who could keep and sell grouper and tilefish. This would be a disadvantage to for the fishermen who do not have an endorsement and would have to throw back any grouper or tilefish that they catch. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

Alternative 2 would **e**stablish an incidental bycatch allowance of 200 pounds of grouper and tilefish per trip for commercial reef fish permit holders who did not qualify for an endorsement. This would put fishermen without an endorsement in competition with fishermen who have an endorsement, which those who qualified for an endorsement may think is unfair. On the other hand, it would allow those without an endorsement to keep 200 pounds of grouper and tilefish caught as bycatch that will supplement their income when sold at the docks. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the

resource and loss of income from fish that could have been harvested under a different management scenario.

Alternative 3 would establish an incidental bycatch allowance of 500 pounds of grouper and tilefish per trip for commercial reef fish permit holders who did not qualify for an endorsement. As in **Alternative 2, Alternative 3** would allow fishermen without a bycatch allowance to keep some of the grouper and tilefish they catch per trip. This would put fishermen without an endorsement in competition with fishermen who have an endorsement. Those who qualified for an endorsement may think is unfair. On the other hand, it would allow those without an endorsement to keep 500 pounds of grouper and tilefish caught as bycatch that will supplement their income when sold at the docks. Most fishermen are concerned with returning fish to the water that may or may not live, and consider it a waste of the resource and loss of income from fish that could have been harvested under a different management scenario.

5.3.3.4 Direct and Indirect Effects on Administrative Environment

This action is primarily an administrative in nature. **Preferred Alternative 1**, no action, would not increase or decrease the administrative burden managing the commercial reef fish fishery. However, it would require both dockside and at-sea enforcement of the grouper endorsement. Any non-endorsement vessel having grouper onboard would be in violation of the permit endorsement. **Alternatives 2** and **3** would make enforcement more difficult to assess if a fisherman is in violation of the endorsement program. In essence, enforcement would need to occur dockside to see if the incidental bycatch allowance level had been exceeded.

5.4 Cumulative Effects Analysis (CEA)

As directed by NEPA, federal agencies are mandated to assess not only the indirect and direct impacts, but cumulative impacts of actions as well. The 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.

This section uses an approach for assessing cumulative effects that was initially used in Amendment 26 to the Reef Fish FMP and is based upon guidance offered in CEQ (1997). The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

Cumulative effects on the biophysical environment, socio-economic environment, and administrative environments are analyzed below.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.

The CEQ cumulative effects guidance states this step is accomplished through three activities as follows:

I. The direct and indirect effects of the proposed actions (Section 5.1-5.3);
II. Which resources, ecosystems, and human communities are affected (Sections 3 and 4); and
III. Which effects are important from a cumulative effects perspective (information revealed in this CEA)

2. Establish the geographic scope of the analysis.

The immediate areas affected by this action and analyzed in this CEA are the federal waters of the Gulf of Mexico. These are the waters extending from the seaward side of the state waters of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida state waters to 200 miles. Three species comprise the bulk of the grouper fishery and a brief description of their distribution and habitat requirements as provided below. These species are gag and red grouper in the SWG complex, and yellowedge grouper in the DWG complex. Tilefish are found in deeper waters and are an important component of the deepwater reef fish fishery.

Red grouper are found from Massachusetts to Brazil including the Gulf of Mexico (Briggs, 1958). They are most abundant on the Florida and Yucatan Shelves and are found in coastal waters and estuaries out to 300 feet (Bullock and Smith, 1991). Juveniles use estuarine seagrass beds and inshore reefs (patch and transitional reefs) as nursery areas (Sluka et al., 1994; Ross and Moser, 1995). Adults are generally found over low relief hard bottom. Smith et al. (1975) frequently observed red grouper in diver surveys of the Florida Middle Ground. Sullivan and Sluka (1996) reported that in the Florida Keys, red grouper inhabited reef-ridge, high relief spur and groove, and channel patch reefs. In the South Atlantic Bight, Huntsman (1976) found that most red grouper in headboat catches were caught at depths between 120 to 210 feet. Richardson and Gold (1997) examined genetic diversity in Gulf of Mexico red grouper populations. They determined that stocks from the west Florida shelf and Campeche Banks

could not be distinguished from each other and that red grouper in the Gulf should be considered a unit stock.

Gag are found from New York to Rio de Janeiro excluding the West Indies and they are abundant in the eastern Gulf of Mexico (Briggs, 1958). They are usually found in the Gulf of Mexico from coastal waters to 250 feet deep (Bullock and Smith, 1991). Adults are generally found over reef and shelf-break habitats with males occurring further offshore (Koenig et al., 1996). Smith et al. (1975) found gag to be common in diver transects of the Florida Middle Ground. Juveniles recruit to estuarine seagrass beds in the spring at an age of about 40 to 43 days (Keener et al., 1988; Ross and Moser, 1995; Coleman et al. 1996) and remain in the beds through the fall when they migrate to nearshore reefs. Bortone et al. (1994) reported juvenile and subadult gag on artificial reefs in nearshore waters of the Florida panhandle.

Yellowedge grouper are a deepwater species found in the Western Atlantic from North Carolina to southern Brazil, including Gulf of Mexico and the Caribbean. They are found throughout the Gulf continental shelf, with areas of high abundance off of Texas and west Florida. On the outer continental shelf, the species occupies high relief hard bottoms, rocky out-croppings and is often found co-occuring with snowy grouper and tilefish. Both adults and juveniles are also known to inhabit burrows. Major components of the diet comprise brachyuran crabs, fishes and other invertebrates. The species depth range is from 35 to 370 meters with adults most common in waters greater than 180 meters deep.

Tilefish occur in the Western Atlantic from Nova Scotia to southern Florida and the Gulf of Mexico in deeper waters. The species is demersal, occurring at depths from 80 to 450 meters, but is most commonly found between depths of 250 to 350 meters. Preferred habitat is rough bottom and steep slopes. Spawning occurs in the months of March to November throughout the species range. Eggs and larvae are pelagic; early juveniles are pelagic-to-benthic. Nursery areas are found throughout the species range (NOAA 1985). Late juveniles burrow and occupy shafts in the substrate. Adults also dig and occupy burrows along the outer continental shelf and on flanks of submarine canyons.

Reef fish vessels and dealers are primarily found in Gulf states. Based on either mailing addresses or home ports, 98 percent of historical charter captain reef fish, 96 percent of for-hire reef fish, and 98 percent of commercial reef fish permitted vessels are found in Gulf states. For permitted reef fish dealers, 95 percent are found in Gulf states. Therefore, the primary affects of the actions in this amendment and on the reef fish fishery in general would likely affect participants in the Gulf of Mexico region.

3. Establish the timeframe for the analysis

Grouper stocks in the Gulf of Mexico have been periodically assessed since 1991. Most assessments have focused on gag and red grouper, but yellowedge grouper (Cass-Calay and Bahnick, 2002), and goliath grouper (Porch et al., 2003; SEDAR 6, 2004b) have also been assessed. The 2006 SEDAR 10 gag stock assessment included data for analysis of stock status from 1963-2004 for commercial landings, and 1981-2004 for recreational landings. The catch data for both commercial and recreational fisheries included a conversion of a portion of black

grouper landings to gag to reflect mis-identification of gag as black grouper, particularly during the 1980s and in the northern Gulf. In addition, most commercial grouper landings were not identified to species prior to 1986. Unclassified grouper landings are available from 1963-1985.

The following is a list of reasonably foreseeable future management actions. These are described in more detail in Step 4.

- Next assessments for gag and red grouper through SEDAR are scheduled to occur in mid-2011. SEDAR assessments for yellowedge grouper and tilefish are scheduled for 2010.
- Amendment 28 to the Reef Fish FMP is scheduled to begin development in 2008. This amendment would examine fair and equitable ways to allocate all FMP resources between recreational and commercial fisheries.
- Reef Fish Amendment 30B has been submitted to NMFS and will be implemented in early 2009. This amendment addresses gag thresholds and benchmarks; establishing gag and red grouper TAC, interim allocations and AMs; ending overfishing of gag; managing gag and red grouper commercial and recreational harvests consistent with TAC; reducing grouper discard mortality; establishing marine reserves; and requiring compliance with Federal fishery management regulations by federally permitted reef fish vessels when fishing in state waters.
- An interim rule to implement gag regulations by January 1, 2009, has been requested by the Council. These regulations, if implemented, would end gag overfishing while the NMFS continues work on Amendment 30B.
- The Council will be developing either a Reef Fish amendment or a generic amendment to address ACLs and corresponding AMs. The reauthorized Magnuson-Stevens Act was enacted on January 12, 2007, and requires ACLs to be developed in 2010 for stocks subject to overfishing and 2011 for all other stocks.
- The Council is scheduled to complete a Generic Aquaculture Amendment in 2009. This amendment would provide a programmatic approach to evaluating the impacts of aquaculture proposals in the Gulf of Mexico and a comprehensive framework for regulating such activities.
- The Council is developing an amendment to the Reef Fish FMP to reduce sea turtle takes by the longline portion of the fishery. This amendment will undergo scoping in December 2008 and should be complete in mid-2009. Management measures under consideration include time/area closures, gear or bait modification, expansion of the observer program, and effort limitation.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.

a. Past actions affecting grouper fisheries are summarized in Section 1.3. The following list identifies more recent actions.

- Commercial grouper regulatory amendment established a 6,000-pound GW aggregate DWG and SWG trip limit for the commercial grouper fishery.
- Recreational grouper regulatory amendment established a recreational red grouper bag limit of one fish per person per day as part of the five grouper per person aggregate bag

limit, prohibited for-hire vessel captains and crews from retaining bag limits of any grouper while under charter and established a recreational closed season for red grouper, gag, and black grouper from February 15 to March 15 each year.

- Reef Fish Amendment 18A examined enforcement and monitoring issues including a VMS requirement, changes to the framework for setting TAC for reef fish, and gear requirements for permitted reef fish vessels to carry turtle release gear.
- Reef Fish Amendment 24 replaced the commercial reef fish permit moratorium with a permanent limited access system.
- Joint Reef Fish/Coastal Migratory Pelagics (CMP) Amendment 25/17 replaced the for-hire reef fish and CMP permit moratorium with a permanent limited access system.
- Reef Fish Amendment 26 established an IFQ program for the red snapper fishery in the Gulf of Mexico.
- The final rule for the Council's Amendment 27/14 published in January 2008. This rule revises the red snapper rebuilding plan, provides measures to constrain the recreational harvest to its quota, and provides measures to minimize bycatch in the reef fish and shrimp fisheries. Bycatch reduction measures include permitted reef fish vessels having specific bycatch reduction gear onboard.

b. The following are recent reef fish actions not summarized in Section 1.3 but are important to the reef fish fishery in general.

An Individual Fishing Quota program (Amendment 26) for the commercial red snapper fishery was implemented in January, 2007. Each fisherman received a percentage share of the available commercial quota (See Amendment 27/14 above) based on previous historical landings. Fisherman can now fish for red snapper as necessary to keep markets supplied year-around and expend some of their previous fishing effort toward other reef fish such as vermilion snapper or grouper. Alternate targeted species or bycatch may include gag, red grouper, or other grouper species.

The Council approved a regulatory amendment to rescind all management of the vermilion snapper management measures implemented by GMFMC (2004b). A new stock assessment indicated that those measures were not necessary and, in fact, the stock was being fished at a yield equivalent to that at F_{OY}. A rule to address actions in this amendment published on January 3, 2008.

NMFS is currently reviewing Amendment 30B whose goal is to end overfishing of gag, revise red grouper management measures, and develop measures to co-manage gag and red grouper by implementing concurrent management measures. This amendment evaluates actions to: set gag thresholds and benchmarks; establish gag and red grouper TAC, interim allocations and AMs; end overfishing of gag; manage gag and red grouper commercial and recreational harvests consistent with TAC; reduce grouper discard mortality; establish marine reserves; and require compliance with federal fishery management regulations by federally permitted reef fish vessels when fishing in state waters. Because regulations ending overfishing for gag will not likely be implemented by January 1, 2009, the Council has requested NMFS develop an interim rule to put in place such regulations for the 2009 fishing year.

Beginning in 2006, NMFS has required vessels participating in the Gulf reef fish fishery to carry observers if selected to participate in the observer program. Observer data is collected from reef fish vessels as well as shark bottom longline vessels that also participate in the reef fish fishery. From July 2006 through December 2007, observers documented 16 loggerhead turtles and 2 unidentified hardshell turtles captured by longlines targeting reef fish in the eastern Gulf. Based on these data and levels of effort from logbooks, NMFS estimated 902 hardshell turtle takes occurred during the 18-month study period in the eastern Gulf by reef fish bottom longline vessels. The Incidental Take Statement in the 2005 Biological Opinion for the Reef Fish Fishery anticipated takes of 85 loggerhead sea turtles over a three-year period for the bottom longline portion of the reef fish fishery and 203 loggerhead sea turtles for the entire fishery. At its October 2008 meeting, the Council decided to initiate regulatory action including measures to reduce the incidental take of sea turtles by the bottom longline component of the reef fish fishery. Those alternatives include, but are not limited to: a "no action" alternative; alternatives to develop time/area closures; alternatives for gear or bait modification; alternatives to expand the observer program; and alternatives for effort limitation.

At their November 2007 meeting, the Council recognized the difficulties involved in decisions allocating reef fish TACs between recreational and commercial fisheries. They established an Allocation Ad Hoc Committee to examine fair and equitable ways to allocate all FMP resources between recreational and commercial fisheries. Once completed, the principles for setting allocations should be more transparent and understandable to the various sectors in the fishery. Amendment 28 will likely be the amendment addressing allocation.

The reauthorization of the Magnuson-Stevens Act occurred on January 12, 2007. It added provisions strengthening the requirements to end and prevent overfishing and rebuild U.S. stocks. It requires ACLs and corresponding AMs to ensure that overfishing does not occur. It also requires conservation and management measures be prepared and implemented within two years of notification that a stock is "overfished" or "subject to overfishing" in order to end overfishing immediately and begin rebuilding stocks. NMFS understands an ACL to mean a specified amount of a fish stock (e.g., measure of weight or numbers of fish) for a fishing year that is a target amount of annual total catch that takes into account projected estimates for landings and discard mortality from all user groups and sectors. The reauthorized Magnuson-Stevens Act restricts ACLs to not exceed the recommendations of Council SSCs and plan amendments specify mechanisms for establishing ACLs. Measures are required by the Magnuson-Stevens Act to ensure accountability and ACLs will need to be developed in 2010 for stocks subject to overfishing and 2011 for all other stocks. Either a reef fish amendment or a generic amendment would be necessary to establish ACLs and AMs for reef fish stocks. Amendment 30B addresses catch limits and AMs for gag which is undergoing overfishing and other shallow water grouper. However, these measures may be revised in a future amendment as ACLs and AMs are developed for other reef fish stocks.

c. The following are non-FMP actions which can influence the reef fish fishery.

The demand for liquefied natural gas (LNG) is increasing. To meet this demand, 15 new LNG terminals are proposed for the Gulf of Mexico and one LNG currently exists in Lake Charles, Louisiana. Nine of the proposed facilities are closed loop systems that will not impact fishery

resources, but six proposed facilities would each circulate approximately 100-200 million gallons of water per day to heat the liquefied natural gas back to its gaseous phase. Each facility would impact billions of fish eggs, larvae, and plankton each year. All fish eggs and larvae are assumed to be killed after passing through these systems. NMFS and the Council are concerned about the potential impact of these facilities on fish populations in the Gulf of Mexico. One facility at Sabine Pass, Texas would filter 30 percent of the water in Sabine Lake each year. Because most reef fish have pelagic larvae (see Section 3.2.2), some species may be affected by these facilities. The EPA has required the power generating industry to use closed loop systems to mitigate impacts on aquatic biota.

The hurricane season is from June 1 to November 30, a time period accounting for 97 percent of all tropical activity affecting the Atlantic Basin (NOAA, 2007). These storms, although unpredictable in their annual occurrence, can devastate areas of the Gulf of Mexico when they occur. For example, the 2005 hurricane season was the busiest and costliest on record. There were 28 named storms, including 15 hurricanes, four of which reached category-5 strength. Along the Gulf coast from the Florida Panhandle to Texas, five named storms (Tropical Storm Arlene and Hurricanes Cindy, Dennis, Katrina, and Rita) made landfall. Hurricanes Katrina (landfall August 29, 2005) and Rita (landfall September 24, 2005) were the most devastating of these storms, impacting an area stretching from eastern Texas to western Alabama and resulting in significant physical and economic damage to coastal communities. These storms came on the heals of hurricanes in 2004, especially Hurricane Ivan which caused extensive damage in the Orange Beach, Alabama – Pensacola, Florida area. Direct losses to the fishing industry and businesses supporting fishing activities included: loss of vessels, loss of revenue due to cancelled fishing trips, and destruction of marinas and other fishery infrastructure (Walker et al. 2006). However, while these effects may be temporary, those fishing related businesses whose profitability is marginal may be put out of business should a hurricane strike.

Due to the continuing rise in the cost of fishing, including increases in the cost of fuel and insurance, along with other increases in operating costs, it is becoming more difficult for many fishermen to make a living fishing. For example, fuel prices have increased nearly 2.5 times since 2002 (GMFMC 2007). This could have negative impacts on communities that are dependent on jobs that support reef fish fisheries. Reductions in TAC could result in shorter seasons for various fisheries. This may also impact the businesses that are dependent on the commercial and recreational reef fish fisheries in that there will be fewer days to sell charter services, ice, fuel, tackle, hotel rooms, and other services to people participating in the fishery.

Eighty percent of seafood consumed in the United States is imported and the amount being imported has been steadily increasing (NMFS 2007). For reef fish, imports between 1993 and 2006 have increased from a low of 22 MP in 1994 to a high of 49.7 MP in 2005 (See Section 3.3.1 – Imports). This compares to average domestic Gulf grouper annual landings of 18.4 MP over this same time period. Domestic annual Gulf grouper landings have been declining since reaching a peak of 20.5 MP in 2002. The value of imports has increased from a low of $42.3 million in 1994 to $101.7 million in 2006 and is greater than domestic imports which peaked in value in 2001 at $50.1 million. It should be noted numbers presented above are not directly comparable because of differences in product such as fresh versus frozen, but the difference in magnitudes between the domestic fish and imports shows the large market share of imports in

the reef fish market. The effects of imports on domestic fisheries can cause fishermen to loose markets through fishery closures as dealers and processors use imports to meet demand, and limit the price fishermen can receive for their products through competitive pricing of imports.

It is unclear how global climate changes will affect Gulf of Mexico fisheries. Suggested impacts include temperature changes in coastal and marine ecosystems could influence organism metabolism and alter ecological processes such as productivity and species interactions; change precipitation patterns and cause a rise in sea level which could change the water balance of coastal ecosystems; alter patterns of wind and water circulation in the ocean environment; and influence the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (Kennedy et al. 2002). Modeling of climate change in relation to the northern Gulf of Mexico hypoxic zone may exacerbate attempts to reduce the area affected by these events (Justic et al. 2003).

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.

This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components. According to the CEQ guidance describing stress factors, there are two types of information needed. The first are the socioeconomic driving variables identifying the types, distribution, and intensity of key social and economic activities within the region. The second are the indicators of stress on specific resources, ecosystems, and communities.

<u>Reef Fish Fisheries</u>

Data used to monitor commercial reef fish effort includes the number of vessels with landings, the number of trips taken, and trip duration. Declines in effort may be a signal of stress within the fishery. These trends are described in Sections 3.3, 6.0, 7.0, and briefly summarized here. While landings in the reef fish fishery have shown patterns of increases and decreases, the number of boats actively participating in the reef fish fishery (except for gag) show a pattern of decline over time. For SWG, the average number of 2005-06 boats with landings for the years 1993-98 fell from 1,059 to 791 and red grouper, from 797 to 666. For DWG and tilefish, landings fell from 399 to 330, and 231 to 215, respectively. This same trend is reflected by the reef fish fishery as a whole. The number of permitted vessels, which has remained relatively constant, is greater than the number of vessels having landings. This suggests there are permits not actively employed in the fishery, but could be used in the event noticeable improvements in the fishery arise. This reduction in the numbers of vessels participating in the fishery also reflects a decline in the number trips taken and days away from port by the fishery as a whole.

There are several potential reasons for the decline in effort for reef fish, SWG, and DWG. These may include an increase in fishing costs, increases in harvesting efficiency, more restrictive regulations (particularly for the grouper fishery), and even improvements in the stock status of certain species (effort shifting). However, data currently is inadequate to determine which factors contribute the most to declines in fishing effort for reef fish and grouper, and what might be the causes for the apparent increase in fishing effort for gag.

Social and economic characteristics of recreational anglers are collected periodically as an add-on survey to the MRFSS. Data used to monitor recreational reef fish effort in the fishery primarily comes from MRFSS and includes the number of trips and number of catch trips. Declines in effort may be a signal of stress within the fishery. These trends are described in Section 3.3.2. The level and pattern of change in recreational effort has remained about flat from 1993 through 1996, fluctuated between 1997 and 1999, and then increased relatively fast since 2000. Private and charter fishing modes accounted for most of target trips, with the charter mode the most common mode for red grouper and private the most common for gag. For both species, Florida accounts for most landings; however, landings in Alabama have been increasing in recent years.

Summary characteristics of the for-hire fleet were analyzed as part of the analyses for the development of the current limited access system (GMFMC 2005b). These analyses indicated for-hire operations were generally profitable. Costs associated with these businesses include bookkeeping services, advertising and promotion, fuel and oil, bait expenses, docking fees, food/drink for customers and crew, ice expenses, insurance expenses, maintenance expenses, permits and licenses, and wage/salary expense. Most vessels carry per trip about half of the maximum passenger capacity. Therefore, substantial excess capacity exists in the sector. As with the commercial fishery, increases in fishing costs, increases in harvesting efficiency, more restrictive regulations (particularly for the grouper fishery), and changes in the stock status of certain species may affect effort in this sector.

Grouper and Tilefish

Major stresses to grouper stocks have primarily come from overfishing which has either occurred for red and goliath grouper, or is currently occurring for gag. Trends in landings and the status grouper stocks are summarized in Section 3.2 and are based on NMFS stock assessments and SEDAR 6 (goliath grouper), 10 (gag), and 12 (red grouper). The following summarizes these stocks.

Goliath grouper in the Gulf of Mexico was assessed in 2004 populations in Florida was conducted in 2004 as part of SEDAR 6. The assessment agreed with anecdotal information indicating a rapid stock decline in the 1980s. In 1990, a moratorium on Goliath grouper harvest was implemented for both the commercial and recreational fisheries (See Section 1.3 History of Management). Since this harvest moratorium, the Goliath grouper stock has shown indications of recovery; however the extent of the recovery is uncertain. Porch et al. (2006) extended the SEDAR assessment by estimating the level of F under the moratorium based on recommendations from the SEDAR 6 review panel (SEDAR 6, 2004a). The base model suggested that the post-moratorium level of F was similar to the estimate for the MFMT level specified in the Generic SFA Amendment at about $F_{50\%SPR}$. Based on Porch et al. (2006), the model suggests that there is less than a 40 percent chance the stock will recover to the levels stipulated by the generic SFA within the next 10 years. Therefore, any additional harvest would make a recovery even less likely. However, there is controversy on what the overfishing and overfished thresholds should be for this species. The FWC is currently developing a research program to obtain further information on the stock to better determine its condition.

Briefly, estimated catches of gag (landings and dead discards) from 1998 to 2004 have exceeded catches in earlier years. The 2004 catch was about 85 percent higher than the highest estimated catches from before 1998 and about 75 percent higher than the more recent catches (1999) used in the last assessment. Commercial landings since the late 1990's have increased about 60 percent compared to the 1980's and estimated recreational landings have almost doubled from the 1980's. As would be expected, estimated annual Fs have also generally from about 0.2 in the mid-1970s to about 0.5 in 2004.

The estimated gag spawning stock biomass declined during the late 1960's and the 1970's, remained at about 20 MP during the 1980's and early 1990's. The spawning stock biomass then increased from 1997 to 2001, perhaps as a result of the higher recruitment. In recent years, estimated total biomass peaked at about 56 mp in 2002 and then declined to an estimated 51 MP in 2004.

With regard to the status of the stock, gag are considered to be undergoing overfishing. The most recent four-year average F (0.40) from the most recent stock assessment was above the MFMT value of 0.27. Amendment 30B will define the overfished threshold (MSST) for gag. Whichever definition is chosen, the stock would not be considered in an overfished condition. Regardless of stock status, fishing mortality does need to be reduced to end overfishing and ensure the stock status does not worsen in the future.

For red grouper, total landings are variable with an overall declining trend from 1986 to 1998 (9 to 4.6 MP). Total landings then increased to nearly 8 MP in 1999 where they have stabilized through 2005 averaging 7.5 MP. Within sectors, commercial longline landings gradually increase during between 1986 and 2005. Commercial handline landings declined considerably over the same time period from 3.74 MP in 1990 to less than 1 MP in 1998, but have increased to 1.5 MP in recent years. Recreational landings have been less than total commercial landings. With the exception of the 1995-1997 period when landings were much lower than average, recreational landings have fluctuated between 1 and 3 MP. From 1986, F increased steadily, peaking in 1993. After 1993, F declined through 1998. Fishing mortality increased slightly in 1999, but has been on another downward trend through 2005.

Red grouper stock abundance has averaged approximately 27.6 million fish and varies with little trend between 1986 and 1999. However, abundance jumped sharply in 2000 to 40.5 million fish when a strong 1999 year class entered the fishery. Spawning stock is measured as total female gonad weight. The estimated spawning stock has gradually improved since 1986 from just below 500 metric tons (mt) of eggs in late 1980's to over 700 mt in the last few years including the observed high of 752 mt of eggs in 2005.

A stock assessment conducted in 1999 indicated red grouper stock status was one of overfished and overfishing in the 1997, the last year of data used in the assessment. A subsequent 2007 assessment using data through 2004, indicated the stock was no longer overfished or undergoing overfishing. This was in part due to a strong recruitment year in 2000.

The status of the yellowedge grouper stock remains essentially undetermined. An age-structured stock assessment model for yellowedge grouper in the U.S. Gulf of Mexico was conducted in

2002 (RFSAP 2002). The model was very sensitive to input parameters, and small changes in highly uncertain parameters resulted large changes in the estimated status of the stock. Therefore, the RFSAP concluded that the analysis of the stock was insufficient to determine the status of the stock relative to the definitions of overfished and overfishing (RFSAP, 2002). However, because of the longevity of yellowedge grouper, they may be particularly susceptible to even relatively low fishing mortality rates. The RFSAP recommended that the commercial yield should not greatly exceed the historical average of 0.84 MP.

No assessment has been conducted on Gulf of Mexico tilefish. Landings increased from the 1960's and peaked in 1988 at over 1 MP. From 1997 to 2006, annual landings have fluctuated between 431,000 and 734,000 lbs.

Ecosystem

With respect to stresses to the ecosystem from actions in this amendment, changes in the gag and red grouper fisheries are not likely to create additional stress. Vertical gear and longlines can damage habitat through snagging or entanglement, however, as described in Section 5.1.1, these impacts are minimal. Changes in the population size structure as a result of shifting grouper fishing selectivity and increases in stock abundance could lead to changes in the abundance of other reef fish species that compete with grouper for shelter and food. Predators of grouper species could increase if grouper abundance is increased, while species competing for similar resources as groupers could potentially decrease in abundance if less food and/or shelter are less available. Efforts to model these interactions are still in their development stages, and so predicting possible stresses on the ecosystem in a meaningful way is not possible at this time.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

This section examines whether resources, ecosystems, and human communities are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold (CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed action to other cumulative activities affecting resources.

Reef Fish Fisheries

As indicated above, both commercial and for-hire fisheries are subject to stress as a result of increases in fishing costs, increases in harvesting efficiency, more restrictive regulations (particularly for the grouper fishery), and changes in the stock status of certain species (effort shifting). Reductions in dollars generated by these entities would likely be felt in the fishery infrastructure. For the reef fish fishery, an indicator of stress would be a decline in the number of permitted vessels. For the commercial fishery, the number of vessels landing either shallow water grouper or red grouper has been decreasing (see Section 3.1). However, the number of permitted vessels has remained the same at about 1,000 vessels over the past few years. This indicates some fishermen are not participating in the fishery. Whether they are holding their

permits as speculation for selling their permit, or waiting until reef fish prices improve to a point where returning to the fishery becomes more profitable is unknown.

For the for-hire fishery, analyses conducted on the effects of a limited access program for for-hire vessels indicated operations were generally profitable (GMFMC 2005b). However, testimony from for-hire operators in light of recent red snapper regulations have suggested some for-hire operators may go out of business, particularly in the northeastern Gulf (GMFMC 2007). Best available survey and modeling results indicate that relatively few trip cancellations were expected to occur as a result of this action. Most survey respondents indicated that when faced with a reduced or zero red snapper bag limit, they would either continue fishing for red snapper or fish for another species. Fishing for other species may generate distributional effects (i.e., the trips may occur from different ports, modes, or seasons, resulting in one port/entity/season losing business while another gains). These distributional effects, however, cannot be predicted with current data. Further, for at least red snapper trips, preliminary data through August 2007 do not support claims of widespread reductions in charter business as a result of more restrictive red snapper measures. Thus, based on inference from the red snapper for-hire fishery, while it is possible some for-hire fishermen may go out of business as a result of actions in Amendment 30B or other reef fish amendments, the fishery as a whole is not undergoing widespread harm.

Grouper and Tilefish

No thresholds or benchmarks have been set specifically for most grouper or tilefish species. Amendment 1 to the Reef Fish FMP, implemented in 1990 before the Sustainable Fisheries Act (SFA) was passed, established the minimum spawning stock biomass at 20 percent SPR for all reef fish species. The Generic SFA Amendment proposed SFA definitions for OY, MSST and MFMT for three reef fish species and generic definitions for all other reef fish. The definition of MFMT for other reef fish which includes grouper species, $F_{30\%SPR}$, was approved and implemented. Definitions for OY and MSST were disapproved because they were not biomass-based.

A recent assessment was conducted for gag in 2006 under the SEDAR stock assessment process. SEDAR 10 methods and results are summarized in Section 3.2. Based on the parameter estimates for 2004, the stock was found to be undergoing overfishing. A brief description of the stock and its status can be found in step 5 of this CEA. Measures in Amendment 30B are designed to immediately relieve stress on the gag stock and over the next six years relieve stress on the ecosystem. Landings will initially be reduced by approximately 29 to 45 percent depending on the value selected for MFMT.

For red grouper, SFA compliant thresholds and targets were defined in Secretarial Amendment 1. MFMT is defined as the fishing mortality rate at MSY. MSST is defined as $(1\text{-}M)*B_{MSY}$ with natural mortality (M) equal to 0.14. MSY is the yield associated with F_{MSY} when the stock is at equilibrium and OY is the yield associated with fishing at 75 percent of F_{MSY} when the stock is at equilibrium.

A new stock assessment for red grouper was completed in 2007 using an age-structured production model (SEDAR 12 2007). The assessment and its results are summarized in Section 1.2.2. Based on landings data from 1986 to 2005, this assessment indicated the stock had

recovered from an overfished state in 1999 and so is no longer considered overfished. The assessment also indicted the stock was no longer undergoing overfishing. Therefore, harvest constraints currently placed on the stock as it recovered could be relaxed so the stock can be harvested at OY. Measures addressing the revised status of this stock are in Amendment 30B.

Stock assessments have been conducted for yellowedge grouper (Cass-Calay and Bahnick, 2002) and goliath grouper (Porch et al., 2003; SEDAR 6, 2004b). However, the stock status of these species is uncertain. The assessment for yellowedge grouper concluded the stock condition was unknown and the assessment for Goliath grouper indicated the stock was still overfished. A review of the Nassau grouper's stock status was conducted by Eklund (1994), and updated estimates of generation times were developed by Legault and Eklund (1998).

7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects.

The first stock assessment of gag was conducted in 1994 and then again in 1997, 2001, and 2006. The most recent assessment was completed in 2006 through the SEDAR process. The assessment shows trends in biomass, fishing mortality, fish weight, and fish length dating to the earliest periods of data collection. For this assessment, reliable commercial landings data were estimated back to 1963; however, grouper were not identified by species until 1986. Recreational data were available since 1981. Within this timeframe, gag have not been considered overfished, but some previous assessments indicated gag may have been undergoing overfishing.

The first stock assessment of red grouper was conducted in 1991 and then again in 1993, 1999, 2002, and 2007. The most recent assessment was completed in 2007 through the SEDAR process. The assessment shows trends in biomass, fishing mortality, fish weight, and fish length dating to the earliest periods of data collection. For this assessment, reliable commercial and recreational landings data were estimated back to 1981. Within this timeframe, red grouper the 1999 assessment, a 2000 re-evaluation of the 1999 assessment, and the 2002 assessment have indicated this stock has been undergoing overfishing and was overfished, but has now recovered to B_{MSY}.

No stock assessment has been conducted for tilefish. Commercial landings from the Gulf have been reported since 1958, and recreational landings are available back to 1986. A stock assessment for yellowedge grouper was completed in 2002; however, the status of the yellowedge grouper stock remains essentially undetermined. Commercial and recreational data specific to yellowedge grouper are available from 1986 and 1981, respectively.

Information is lacking on the social environment of these fisheries, although some economic data are available. Fishery-wide ex-vessel revenues are available dating to the early 1960s, and individual vessel ex-vessel revenues are available from 1993 when the logbook program was implemented for all commercial vessels.

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities. Cause-and–effect relationships are presented in Tables 5. 4.1.

Table 5.4.1. The cause and effect relationship of fishing and regulatory actions for grouper within the time period of the CEA.

Time periods	Cause	Observed and/or expected effects
1986 -1989	Growth and recruitment overfishing	Declines in mean size and weight
1990	Minimum size limits gag red, Nassau, yellowfin, and black grouper; Goliath grouper harvest moratorium; 5-aggregate grouper bag limit; 9.2 mp shallow water grouper quota; 1.8 mp deepwater grouper quota	Slight increase in commercial landings; decline in recreational landings
1999	Increase gag size limits; 1-fish per vessel Warsaw grouper and speckled hind; 1 month commercial seasonal closure	Slight increase in both commercial and recreational landings
2004-2005	Commercial trip limit; decrease in recreational aggregate bag limit; 1-fish red grouper bag limit; 0.44 mp tilefish quota	Slight decrease in commercial landings as quota filled and shallow water grouper fishery closed; significant declines in recreational landings; overfishing occurring

9. Determine the magnitude and significance of cumulative effects.

The objectives of this amendment and associated EIS are to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain OY in this multi-species fishery. Actions A1-3 look at different management approaches to achieve these objectives. Actions B1-15 evaluate actions needed to implement an IFQ program for the grouper and tilefish fisheries. Actions C1-3 evaluate a grouper endorsement as a way to reduce overcapacity in the fishery by limiting those who can land grouper. The short- and long-term direct and indirect effects of each these actions are provided in Sections 5.1 through 5.3.

To examine the magnitude and significance of the cumulative effects, important valued environmental components (VECs) were identified for the overall action to be taken with this amendment. VECs are "any part of the environment that is considered important by the proponent, public, scientists and government involved in the assessment process. Importance may be determined on the basis of cultural values or scientific concern" (EIP 1998). For purposes of this analysis, an initial 23 VECs were identified, and the consequences of each alternative proposed in this amendment on each VEC were evaluated. Some of these VECs were combined into a revised VEC because many of the past, current, and reasonably foreseeable future actions (RFFA) were similar. Based on this analysis, seven VECs were determined to be the most important for further consideration. These are shown in Table 5.4.2.

VECs not included for further analysis included sharks, consumers, and protected resources. Sharks were not considered as an important VEC because, as shark stocks have declined, the shark fishery has become more and more regulated, limiting the effects of this fishery and the stock on reef fish stocks. There may be some effort shifting from the shark fishery to the reef fish fishery due to increased restrictions, however, this effect will likely be minor because only a minority of vessels have dual permits. Consumers were eliminated from further analysis because of the high level of imported reef fish. Possible effects from reductions in domestic production would likely be offset by increased imports. Protected resources were also eliminated from further analyses in this section because the impact of the reef fish fishery is not likely to jeopardize these populations. The reef fish fishery is prosecuted primarily with longline and hook-and-line gear. These gear were classified in the 2007 List of Fisheries (72 FR 14466, March 28, 2007) as Category III fisheries. This means this fishery has minimal impacts on marine mammals. Further explanation of these findings can be found in Section 5.9.

Table 5.4.2. Evaluated VECs considered for further analysis, consolidated VECs, and VECs not considered for further analysis. VECs consolidated with other VECs are identified with the VEC number in the first column.

VECs considered for further evaluation	VECs either consolidated for further evaluation
Habitat - Hard bottom - EFH	
Managed resources - Shallow water grouper - Deepwater grouper - Tilefish - Other reef fish species	Gag Red grouper Other shallow water grouper Deepwater grouper and tilefish Other reef fish Protected species Sharks
Commercial Harvester - Owner - Operator - Crew	
Dealers	Consumers
Recreational fishery	Anglers For-hire captain and crew
Fishing Communities - Infrastructure - Crew	
Administration	Federal rulemaking Federal enforcement Federal education State rulemaking/framework State education

The following discussion refers to the effects of past, present, and RFFAs on the various VECs. These effects are summarized in Table 5.4.3.

Habitat

EFH, as defined in the GMFMC (2004a), for the Reef Fish FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 100 fathoms. In general, reef fish are widely distributed in the Gulf of Mexico, occupying both pelagic and benthic habitats during their life cycle. A planktonic larval stage lives in the water column and feeds on zooplankton and phytoplankton (GMFMC 2004a). Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf (<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 snapper (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and grouper (e.g. Goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems.

Sections 3.1 and 3.2 as well as GMFMC (2004a) describe the physical environment inhabited by groupers and tilefish. Groupers and tilefish are carnivorous bottom dwellers, generally associated (as adults) with hard-bottomed substrates, and rocky reefs. Eggs and larvae for all species are pelagic. Depending on the species, juveniles either share the same habitat as adults, or are found in different habitats and undergo an ontogenetic shift as they mature. For example, red grouper juveniles are found in nearshore waters until they reach approximately 16 inches and move offshore (GMFMC 2004a). Adults are associated with rocky outcrops, wrecks, reefs, ledges, crevices, caverns, as well as “live bottom” areas, in depths of 3 to 190 meters. Juvenile gag are estuarine dependent and are found in seagrass beds (GMFMC 2004a). Adult gag are associated with hard bottom substrates, including offshore reefs and wrecks, coral and live bottoms, and depressions and ledges. Spawning adults form aggregations in depths of 50 to 120 meters, with the densest aggregations occurring around the Big Bend area of Florida. Females undergo a migration from shallower waters to the deeper waters where spawning occurs, while males generally stay at the same depths where spawning occurs (Koenig 1999).

From fishing, the most sensitive gear/habitat combinations include EFH for reef fish species. These include fish otter trawls, shrimp otter trawls, roller frame trawls, and pair trawls over coral reefs; crab scrapes over coral reefs; oyster dredges over submerged aquatic vegetation (SAV), oyster reefs, or coral reefs; rakes over coral reefs; and patent tongs over SAV, oyster reefs, or coral reefs (GMFMC 2004a). Some of these gear/habitat interactions are unlikely to occur in actual practice (e.g., shrimp trawls towed through hard bottom areas can destroy shrimp nets and so are avoided). In general, gears that are actively fished by towing have the highest potential to alter habitats. However, some habitats, such as coral reefs and hard bottoms are sensitive to interactions with passive gears (e.g. traps) as well. Most directed fishing activities, as described in Section 5.1.1, use longlines, vertical lines, fish traps, and spearfishing gear. These have low levels of impacts compared to other gears.

In the past, some fishing practices have had detrimental effects on the physical environment. Gears such as roller trawls and fish traps damaged habitats while harvesting fish species. As a result of these effects, the Council developed stressed areas prohibiting some gears to reduce these impacts. Further protections have been developed, primarily by either prohibiting fishing or limiting fishing activities that can occur within certain areas. These are summarized in Section 3.1 and displayed in Figure 3.1. More recently, generic EFH Amendment 3 was implemented in 2006. The rule associated with this amendment prohibited bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots to protect coral reefs in several HAPCs, and required a weak link in the tickler chain of bottom trawls on all habitats throughout the Gulf of Mexico EEZ to minimize damage done to habitats should the chain get hung up on natural bottom structures.

Current management measures of the reef fish fishery likely have minimal impacts on hard bottom areas. Vertical gear and longlines used in the reef fish fishery can damage habitat through snagging or entanglement. Longlines can also damage hard bottom structures during retrieval as the line sweeps across the seafloor. Additionally, anchoring over hard-bottom areas can also affect benthic habitat by breaking or destroying hard bottom structures. However, these 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. Fish traps have been used to harvest reef fish and this gear can cause significant damage to corals and other epibenthic organisms. However, this gear was retired from use in the fishery in February 2007.

Damage caused from reef fish fishing, while minor is associated with the level of fishing effort (see Section 5.1.1). Therefore, actions reducing levels of effort would result in greater benefits to the physical environment because fishing related interactions with habitat would be reduced. Thus, actions described in steps 3 and 4 of this CEA such as Amendments 22, 27/14 (red snapper), 23 (vermilion snapper), Secretarial Amendment 1 (red grouper) and Secretarial Amendment 2 (greater amberjack), which have reduced fishing effort for some species, and possibly the fishery on the whole, have had a positive effect on hard bottom habitats. RFFAs, such as Amendment 30A, Amendment 30B, and the development of ACLs and AMs should also benefit these habitats as they would also reduce or limit fishing effort. Actions in this amendment (development of a grouper and tilefish IFQ or endorsement) would have positive affects as they would increase the efficiency of the fishery and decrease effort through consolidation.

Reef fish EFH, particularly coral reefs and SAVs, are particularly susceptible to non-fishing activities (GMFMC 2004a). The greatest threat comes from dredge and fill activities (ship channels, waterways, canals, and coastal development). Oil and gas activities as well as changes in freshwater inflows can also adversely affect these habitats. EFH and HAPC designations described in Section 3.1 are intended to promote careful review of proposed activities that may affect these important habitats to assure that the minimum practicable adverse impacts occur on EFH. However, NMFS has no direct control over final decisions on such projects. The cumulative effects of these alternatives depend on decisions made by agencies other than NMFS, as NMFS and the Council have only a consultative role in non-fishing activities. Decisions made by other agencies that permit destruction of EFH in a manner that does not allow recovery, such as bulkheads on former mangrove or marine vegetated habitats, would constitute irreversible

commitments. However, irreversible commitments should occur less frequently as a result of EFH and HAPC designations. Accidental or inadvertent activities such as ship groundings on coral reefs or propeller scars on seagrass could also cause irreversible loss.

Managed Resources

There are 42 species of reef fish managed in the Gulf of Mexico EEZ, and of the species where the stock status is known, four of seven are undergoing overfishing (red snapper, gag, gray triggerfish and greater amberjack) and two of four species are considered overfished (greater amberjack and red snapper; see Section 3.2. Recent assessments for gray triggerfish and gag (SEDAR 9, 2006b and SEDAR 10, 2006, respectively) suggest these two species are experiencing overfishing, and stock recovery for greater amberjack is occurring slower than anticipated.

In the past, the lack of management of reef fish has allowed many stocks to undergo both growth and recruitment overfishing. This has allowed some stocks to decline as indicated in numerous stock assessments (Section 3.2). For grouper, management measures including minimum size limits, commercial quotas, and an aggregate bag limit were put in place in 1990 (Section 1.3). None of these measures halted increases in landings. An increase in the size limit and one month commercial closure put in place in 1999 also did not end the increase in grouper landings. During this time period, red grouper became overfished and gag came close to being overfished.

Present management measures put in place primarily for red grouper through Secretarial Amendment 1, 2005 emergency and interim rules, and 2005 regulatory amendments have allowed red grouper to rebuild and no longer be considered overfished, which they were designed to do. However, these measures did not limit the gag harvest enough to prevent overfishing from occurring. In fact, these measures, along with actions from Amendments 22, 27/14 (red snapper), 23 (vermilion snapper)[3], Secretarial Amendment 1 (red grouper, deepwater grouper, and tilefish) and Secretarial Amendment 2 (greater amberjack), may have redirected effort towards other reef fish species such as gag. Gag currently has no harvest limit other than being a part of the shallow water grouper quota redefined in Secretarial Amendment 2.

Fishery management RFFAs are expected to benefit managed species. The purpose of this amendment is to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain OY in this multi-species fishery. This amendment could develop a grouper and tilefish IFQ program for the commercial fishery. IFQ programs have been shown to reduce bycatch and discard mortality in fisheries because fishermen have options in terms of when and where to fish. Additionally, commercial quotas are better regulated under these programs. Other actions are expected to be taken by the Council that would likely be beneficial to the stock and are described in steps 3 and 4 of this CEA. As a result of the Magnuson-Stevens Act, ACLs and AMs are to be applied to managed stocks. These are intended to develop triggers for action to be taken immediately should a stock appear to be approaching an overfishing condition. These triggers for action were addressed for greater amberjack, gray triggerfish, red grouper, and gag in Amendments 30A and 30B. Amendment

[3] Note a 2007 regulatory amendment rescinded management measures in Amendment 23, reducing the effect of this amendment on other reef fish stocks.

30A was designed to reduce F in the greater amberjack and gray triggerfish fisheries. Reef Fish Amendment 30B was designed to end overfishing of gag, manage shallow water grouper commercial and recreational harvests consistent with TAC, and require compliance with federal fishery management regulations by federally permitted reef fish vessels when fishing in state waters.

Non-fishing activities are likely to adversely affect reef fish stocks. LNG facilities are being proposed in the western and northern Gulf. As described in Step 4c, these facilities can have a negative effect on species with pelagic larvae, like most reef fish species. To mitigate the affects of these facilities closed rather than open loop systems are being called for. At this time, the affect of LNG facilities is unknown and is likely to less for reef fish species than other more coastal species such as red drum. Global warming is another factor which could have a detrimental effect on reef fish species. However, what these effects might be cannot be quantified at this time.

Commercial Harvesters (Vessel owner, Captain, and Crew)

Adverse or beneficial effects of actions to vessel owners, captains, and crew are tied to the ability for a vessel to make money. In commercial fisheries, these benefits are usually derived in terms of shares awarded after fishing expenses are accounted for. The greater the difference between expenses and payment for caught fish, the more revenue is generated by the fishing vessel. For the for-hire sector, revenues are generated by the number of trips sold for charter businesses, and by the number of paying passengers for headboat businesses.

Relative to this amendment, the commercial fishery has benefited from past actions in the reef fish fishery. By being able to harvest these species unhindered by regulations prior to 1990, many vessels have been able to enter the fishery. For red grouper, the primary grouper species landed by the fishery, landings averaged at 6.2 MP from 1986-1989, 4.8 MP from 1990-1998, and 5.7 MP from 1999-2005. Gag, the second most commercially harvested species, landings have averaged at about 1.5 MP from 1963 to 1997, and have increased in recent years (1998-2004) to an annual average of 2.7 MP. DWG and tilefish landings have remained fairly constant and averaged 1.17 MP and 0.52 MP over the 1993-2006 time period. To constrain harvest so as not to overexploit reef fish in general and grouper specifically, the Council had implemented size limits, quotas, seasonal closures, and a permit moratorium to constrain the commercial harvest prior to 2000. These measures have met with limited success. The Council implemented a tilefish quota in 2004 via Secretarial 1.

Current management measures have had a negative, short-term impact on the commercial fishery. Landing restrictions were needed to keep the commercial red grouper harvest within its quota. This forced closures in the commercial SWG fishery in 2004 and 2005 to prevent the fishery from exceeding the red grouper quota. This kept many commercial vessels from taking more fishing trips during these years. As a result, a trip limit was instituted in 2005 in an attempt to lengthen the commercial season. For 2006 and 2007, the fishery did not exceed its quota. For the DWG and tilefish fisheries, their respective quotas have been reached generally during the summer months since 2004 and 2005, respectively.

Further compounding the negative effects on the fishery are imports. Imports on domestic fisheries can cause fishermen to lose markets through fishery closures as dealers and processors use imports to meet demand, and limit the price fishermen can receive for their products through competitive pricing of imports. Other factors which have had an adverse effect on the commercial fishery include increases in fishing costs such as fuel and hurricanes which may have pushed marginal fishing operations out of business (see step 4c).

Many RFFAs are likely to have a short-term negative impact on the commercial fishery. Red snapper (Amendment 27/14), gray triggerfish, and greater amberjack (Amendment 30A) have been experiencing overfishing. Measures required to end this condition and rebuild stocks have constrained the harvest for these species and are likely to increase competition within the fishery to harvest other stocks. Some short-term beneficial actions include an increase in TAC and relaxation of management measures for red grouper (Amendment 30B) and vermilion snapper (regulatory amendment) because these stocks have been rebuilt.

Because many management RFFAs are designed to manage stocks at OY (e.g., Amendment 27/14, 30A, 30B), these actions should have long-term benefits for the commercial fishery. Stocks would be harvested at a sustainable level, and at higher levels for those stocks being rebuilt. The grouper and tilefish IFQ being evaluated in this amendment would allow individual fishermen to fish their shares when and where they want. As a result, prices for landed fish are expected to increase as observed in other IFQ programs (GMFMC 2006). Some RFFAs may have negative consequences. An amendment to develop ACLs and AMs for reef fish stocks would likely require the Council adopt more conservative harvest levels than currently in place, reducing the amount of biomass available for the fishery to harvest. Other measures being developed, but whose effects are unclear at this time, include addressing allocation between the commercial and recreational reef fish fisheries, and an amendment allowing offshore aquaculture in the Gulf of Mexico. Dependent on allocations selected, the share of some stocks to the commercial fishery may increase or decrease. Non-management related RFFAs which could affect the commercial fishery include hurricanes and increases in fishing costs. Hurricanes are unpredictable and localized in their effects. Increases in fishing costs, unless accompanied by a similar increase in price per pound of fish, are likely to decrease the profitability of fishing operations.

Because many management RFFAs are designed to manage stocks at OY (e.g., Amendment 27/14, 30A, 30B), these actions should be beneficial to the for-hire fishery. As mentioned for the commercial fishery, stocks would be harvested at a sustainable level, and at higher levels for those stocks being rebuilt. However, some RFFAs like for the commercial fishery may have negative consequences. An amendment to develop ACLs and AMs for reef fish stocks is likely to require the Council adopt more conservative harvest levels than currently in place, reducing the amount of biomass available for the fishery to harvest. If these actions reduce the participation of the public in the recreational fishery, the for-hire sector will be adversely affected. Other measures being developed, but whose effects are unclear at this time, include addressing allocation between the commercial and recreational reef fish fisheries, and an amendment allowing offshore aquaculture in the Gulf of Mexico. Dependent on allocations selected, the share of some stocks to the recreational (including for-hire) fishery may increase or decrease. Non-management related RFFAs which could affect the commercial fishery include

hurricanes and increases in fishing costs. Hurricanes are unpredictable and localized in their effects. Increases in fishing costs, unless accompanied by a similar increase in the price charged per trip, are likely to decrease the profitability of fishing operations.

Dealers

Reef fish vessels and dealers are primarily found in Gulf states (step 2). Approximately 159 dealers possess permits to buy and sell reef fish species. More than half of all reef fish dealers are involved in buying and selling grouper. These dealers may hold multiple types of permits. Average employment information per reef fish dealer is not known. 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. It is assumed that all processors must be dealers, yet a dealer need not be a processor. Further, processing is a much more labor-intensive exercise than dealing. The profit profile for dealers or processors is not known.

Relative to past actions, dealers have benefitted from actions that have allowed the commercial fishery to expand as described above. However, the affect of measures constraining commercial landings both in the past, present, and RFFA may not have negative affects on dealers. As described in step 4c, the amount of reef fish imports has doubled between 1994 and 2005. In terms of pounds, 2005 imports (49.7 MP) were more than twice domestic annual Gulf grouper landings (average 18.4 MP). This means dealers have the ability to substitute domestic product with imports. In addition, dealers also have the ability to substitute other domestic seafood products for grouper in order to satisfy public demand for seafood. Therefore, the negative effects from management actions for the fishery may not necessarily translate into negative effects for dealers. As domestic fish stocks are rebuilt and management programs such as IFQs are instituted, a more stable supply of domestic reef fish will be available to dealers. This should improve their ability to market these products and improve profits they receive from handling these fish, but this could have a negative affect on consumers as the cost of seafood would be expected to increase.

Recreational fishery

It is estimated that 2.7 million private anglers fish in the Gulf. These anglers target red drum about 35 percent of the time and spotted sea trout 33 percent of the time. Red snapper is the most common reef fish targeted by 4.5 percent of private anglers that were intercepted (GMFMC 2004a). As summarized in Holiman (2000), the typical angler in the Gulf is 44 years old, male (80 percent), white (90 percent), and employed full-time (92 percent). They have a mean income of $42,700, and have fished in the state for an average of 16 years. The average number of trips taken in the 12 months preceding the interview was about 38 and these were mostly (75 percent) one-day trips with average expenditure of less than $50. Seventy-five percent reported that they held salt-water licenses, and 59 percent of them owned boats used for recreational saltwater fishing.

The effects of various past, present, and RFFA management measures on anglers are measured through levels of participation in the fishery. Measures that reduce participation are negative and

measures that increase participation are positive. However, it is difficult to assess what affects past and present management measures have had on anglers because the amount of effort by the private sector where data was available has continually increased. This increase has been from just over 6 million trips in 1981 to over 14 million trips in 2004 (SEDAR 12 2007). Therefore, it is difficult to link changes in participation to specific management action. Likely the effects of how various management measures have affected participation by anglers is similar to the effects on the for-hire industry discussed next.

Relative to this amendment, the for-hire fishery has benefited from past actions in the reef fish fishery. By being able to harvest these species unhindered by regulations prior to 1990, many vessels have been able to enter the fishery. This increase has been fueled by increased interest by the public to go fishing (i.e., more trips sold) as evidenced by an almost three-fold increase in recreational fishing effort since 1986 (SEDAR 12 2007). For gag, the most important recreationally harvested species, landings have averaged at about 0.5 million fish from 1963 to 1997. However, from 1990 onward, the number of discarded fish has increased from about 0.5 million to over 3.5 million fish. This is likely due to size and bag limits first introduced in 1990. Red grouper are the second most common grouper species landed by the fishery. Landings averaged approximately 2 MP from 1986-1995, 1.0 mp from 1996-1998, and 1.7 MP from 1999-2005. To constrain harvest so as not to overexploit reef fish in general and grouper specifically, the Council had prior to 2000 implemented size and bag limits. The Council additionally implemented a permit moratorium to constrain the recreational effort from the for-hire industry in 2003. These measures have met with limited success toward ending overfishing.

Current management measures may have had a negative, short-term impact on the for-hire fishery. Landing restrictions were needed to keep the recreational red grouper harvest within its allocation of TAC. These included a reduced bag limit and seasonal closure. If these measures reduced interest by the public to take for-hire fishing trips, then the number of trips would likely go down. Other factors which have had an adverse effect on the for-hire fishery include increases in fishing costs such as fuel and hurricanes which may have pushed marginal fishing operations out of business (see step 4c). However, these factors may be less important than may seem apparent. For the red snapper for-hire fishery, reductions in charter fishing from more restrictive regulations, increased costs, and effects from hurricanes were claimed by the fishery (GMFMC 2007). Preliminary red snapper data for 2007 found only lingering effects of the 2005 hurricanes; annual average effort for 2004 through 2005 were only slightly greater than in 2007. While the available data cannot address claims of severe economic losses by individual entities, data did not support contentions of widespread industry harm. Consistent with the projections, widespread loss of effort from these factors was not apparent. However, for red snapper, effort may have shifted to other species or other charter businesses.

Many RFFAs are likely to have a short-term negative impact on the for-hire fishery. Red snapper (Amendment 27/14), gray triggerfish, greater amberjack (Amendment 30A), and gag (Amendment 30B) have been experiencing overfishing. Measures required to end this condition and rebuild stocks have constrained the harvest for these species. If these measures result in less interest by the fishing public to take fishing trips on for-hire vessels, then this will have an adverse affect on this sector. However, as mentioned above, this effect was not apparent for red snapper because the for-hire fishery has the ability to shift to other species. Some short-term

beneficial actions include an increase in TAC and relaxation of management measures for red grouper (Amendment 30B) and vermilion snapper (regulatory amendment) because these stocks have been rebuilt.

Fishing Communities

Fishing communities include the infrastructure, which refers to fishing-related businesses and includes marinas, rentals, snorkel and dive shops, boat dockage and repair facilities, tackle and bait shops, fish houses, and lodgings related to recreational fisheries industry. This infrastructure is tied to the commercial and recreational fisheries and can be affected by adverse and beneficial economic conditions in those fisheries. Therefore, the effects of past, present, and RFFAs should reflect responses by the fisheries to these actions. Past actions allowing the recreational and commercial fisheries to expand have had a beneficial effect providing business opportunities to service the need of these industries. Present actions which have constrained the commercial fisheries likely have had a negative effect since lower revenues generated from the fishery would be available to support the infrastructure. However, as conditions improve for the fishery as described above through RFFAs, similar benefits should be accrued by the infrastructure. For the recreational fishery, as stated above, it is difficult to assess the impact of present and RFFAs since angler participation has been increasing. Actions enhancing this participation should also be beneficial to the infrastructure.

Administration

Administration of fisheries is conducted through Federal (including the Council) and state agencies which develop and enforce regulations, collect data on various fishing entities, and assess the health of various stocks. As more regulations are required to constrain stock exploitation to sustainable levels, greater administration of the resource is needed. NMFS law enforcement, in cooperation with state agencies, would continue to monitor regulatory compliance with existing regulations and NMFS would continue to monitor both recreational and commercial landings to determine if landings are meeting or exceeding specified quota levels. Further, stock status needs to be periodically assessed to ensure stocks are being maintained at proper levels. Some present actions have assisted the administration of fisheries in the Gulf. In 2007, an IFQ program was implemented for the commercial red snapper fishery, requiring NMFS to monitor the sale of red snapper IFQ shares. Recordkeeping requirements for IFQ shares would also improve commercial quota monitoring and prevent or limit overages from occurring. This should improve red snapper quota monitoring. VMS has also been implemented for all commercial reef fish vessels in 2007 and is helping enforcement identify vessels violating various fishing closures. RFFAs are designed to improve stock status. These will require increases in the administrative burden to ensure harvest is constrained at a level maintaining stock sustainability. Although the administrative framework for an IFQ or permit endorsement system are in place, administrative resources would need to be expanded to identify eligible participants, distribute IFQ shares (if the IFQ program is implemented), and monitor landings.

VECs	Past Actions	Present Actions	Reasonably Foreseeable Future Actions	Combined Effects of Past, Present, and Future Actions
Habitat - hard bottom - EFH	**Negative** - combined effects of disturbance by fishing gear and non-fishing actions reduce habitat quality.	**Somewhat less negative** - combined effects of disturbance by fishing gear reduced, but still occurring so habitat quality still reduced.	**Positive, but minor** - some reduction in effort should lead to reduced disturbance from fishing actions.	**Positive** - Stabilizing effort should lead to reduced disturbance from fishing actions.
Managed resources - Shallow water grouper - Deepwater grouper - Tilefish - Other reef fish species	**Negative** - for some stocks, allowed to become overfished; bycatch mortality from directed fishing for other species.	**Positive** - overfished stocks under rebuilding plans, F reduced on stocks undergoing overfishing (e.g., red grouper). **Negative** - overfishing is occurring on some stocks (e.g., gag); bycatch mortality from directed fishing for other species.	**Negative, short term** - if effort reduction for grouper, possible shifting toward other reef fish species. **Positive, long term** - As grouper stocks improve, less effort shifting toward other managed reef fish species.	**Negative, short term** - Potential increased harvesting due to effort shifting, possible bycatch mortality. **Positive long term** - as stocks increase, effort redirected back towards those stocks, less bycatch.
Vessel owner, captain and crew - Commercial	**Positive** - Fishery has supported profitable vessels.	**Negative** - lower catch per unit effort/effort results in increased fishing cost and reduces profits.	**Negative, short term** - reducing harvests reduces profits. **Positive, long term** - as harvests allowed to approach OY, profits increase, fishery consolidation.	**Negative, short term** - reducing harvests reduces profits. **Positive, long term** - as harvests allowed to approach OY, profits increase, fishery consolidation.
Dealers	**Positive** - Fishery has supported profitable landings.	**Uncertain or zero effect** – replace domestic harvest with imports or substitutes.	**Zero, short term** - replace domestic harvest with imports or substitutes. **Positive, long term** - as harvests managed at OY, stable market.	**Zero, short term** - replace domestic harvest with imports or substitutes. **Positive, long term** - as harvests managed at OY, stable market.
Recreational - Anglers - For-hire	**Positive** - fewer restrictions allowing greater catches, increase recreational participation; support profitable for-hire vessels.	**Negative** - lower catch per unit effort/effort results in reduced recreational participation; decrease recreational participation.	**Negative, short term** - lower catch per unit effort/effort results in reduced recreational participation. **Positive, long term** - as harvests allowed to approach OY, increase recreational participation.	**Negative, short term** - lower catch per unit effort/effort results in reduced recreational participation. **Positive, long term** - as harvests allowed to approach OY, for for-hire vesselsprofits increase; increased recreational participation.

VECs	Past Actions	Present Actions	Reasonably Foreseeable Future Actions	Combined Effects of Past, Present, and Future Actions
Infrastructure	**Positive** - Fishery has supported profitable fishing operations which have supported an increase in infrastructure. Recreational fishery participation expands.	**Negative** – Contraction of fishing operations resulting in fewer dollars available to support infrastructure. Recreational fishery participation declines.	**Negative, short term** - Contraction of fishing operations resulting in fewer dollars available to support infrastructure. Recreational fishery participation declines. **Positive, long term** - as harvests allowed to approach OY, fishery expands allowing more money to support infrastructure. Recreational fishery participation expands.	**Negative, short term** - Contraction of fishing operations resulting in fewer dollars available to support infrastructure. Recreational fishery participation declines. **Positive, long term** - as harvests allowed to approach OY, fishery expands allowing more money to support infrastructure. Recreational fishery participation expands.
Administration	**Positive** - Fewer regulations minimized administrative and enforcement requirements.	**Negative** - overfishing of stocks requires increased regulations and enforcement costs.	**Negative, short term** – Establish bureaucracy to identify and manage fishery participants, monitor landings. **Positive, long term** – Commercial fishery driven management enhance monitoring and enforcement.	**Negative, short term** - overfishing of stocks requires increased regulations and enforcement costs. **Positive, long term** – Commercial fishery driven management enhance monitoring and enforcement.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects of rationalizing effort and reducing overcapacity in the commercial grouper and tilefish fisheries on the biological/ecological, physical and social and economic environments are positive since they will ultimately restore/maintain the stocks at a level that will allow the maximum benefits in yield and commercial fishing opportunities to be achieved. However, short-term negative impacts on the social and economic environment may occur to the fisheries due to the need to limit directed harvest and reduce bycatch mortality. These negative impacts can be minimized for the commercial fishery by using combinations of size limits or season closures with a grouper IFQ that would provide the least disruption to the fishery while maintaining TAC.

11. Monitor the cumulative effects of the selected alternative and modify management as necessary.

The effects of the proposed actions are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. Landings data for the recreational sector in the Gulf of Mexico is collected through MRFSS, NMFS' Headboat Survey, and the Texas Marine Recreational Fishing Survey. Commercial data is collected through trip ticket programs, port samplers, and logbook programs. Currently, SEDAR assessments of Gulf of Mexico yellowedge grouper and tilefish are scheduled for 2010, and SEDAR assessments for gag and red grouper are scheduled for 2011.

5.5 Unavoidable Adverse Effects

Commercial effort limitation and IFQ programs are generally effective in limiting total fishing mortality, the type of fish targeted, the number of targeted fishing trips, and/or the time spent pursuing a species. However, these management tools have the unavoidable adverse effect of creating regulatory discards. Discard mortality must be accounted for in a stock assessment as part of the allowable biological catch, and thus restricts TACs. Gag discard mortality rates were estimated in SEDAR 10 (2006) at 67 percent for the commercial fishery, and, dependent on the geographic region and depth zone fished, 11-42 percent (average 20 percent) for the recreational fishery. While the release mortality rate is higher in the commercial fishery than in the recreational fishery, the number of discards is significantly lower in the commercial fishery than the recreational fishery. A review of the discard mortality data conducted in SEDAR 12 (2007) indicated appropriate discard mortality levels for red grouper were 10 percent for the recreational, handline, and trap fisheries and 45 percent for the longline fishery. Information of gag and red grouper discard mortality rates are described in more detail in Section 4. For DWG and tilefish, discard mortality is addressed by not having size limits. Mortality is nearly 100 percent for fish brought up from the depths, thus all fish are counted toward the DWG quotas.

Many of the current participants in the reef fish fishery may never recuperate losses incurred from the more restrictive management actions imposed in the short-term to end overfishing of gag. Because grouper are but one group of the reef fish species managed in the Reef Fish FMP, short-term losses are not expected to be significant, and other species may be substituted to make up for losses to the fishery due to proposed reductions in TAC (e.g., gag). With recovery of the stock in the future, future participants in the reef fish fishery will benefit. Overall, short-term

impacts of actions such as reductions in total allowable harvest for the directed fishery would be offset with much higher allowable catch levels as the stock recovers and is rebuilt. Further, IFQ programs often result better prices for fishermen because they can target the market better.

Actions considered in this amendment should not have adverse effects on public health or safety since these measures should not alter actual fishing practices, just how or when activities can occur. Unique characteristics of the geographic area are highlighted in Section 3. Adverse effects of fishing activities on the physical environment are described in detail in Sections 5.1-5.4. These sections conclude little impact on the physical environment should occur from actions proposed in this document. Uncertainty and risk associated with the measures are described in detail in the same Sections as well as assumptions underlying the analyses.

5.6 Relationship Between Short-term Uses and Long-term Productivity

The objectives of this amendment and associated EIS are to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain OY in this multi-species fishery. The relationship between short-term economic uses and long-term economic productivity are discussed in the preceding section. However, because IFQ shares will be distributed based on landings history, it is likely there would be winners and losers in the initial IFQ share distribution. However, because shares are transferable, there is no reason a "loser" could not increase their shares through the purchase of shares from other participants.

5.7 Mitigation, Monitoring, and Enforcement Measures

The process of managing grouper and tilefish stocks is expected to have a negative short-term effect on the social and economic environment, and will create a burden on the administrative environment. This is particularly true for stocks that are undergoing overfishing or are overfished. No alternatives are being considered that would avoid these negative effects because they are a necessary cost associated with rebuilding these stocks in the reef fish fishery. The range of alternatives has varying degrees of economic costs and administrative burdens. Some alternatives have relatively small short-term economic costs and administrative burdens, but would also provide smaller and more delayed long-term benefits. Other alternatives have greater short-term costs, but provide larger and more immediate long-term benefits. Therefore, it is difficult to mitigate these measures and managers must balance the costs and benefits when choosing management alternatives for the reef fish fishery. Available data does not allow the determination of whether the characteristics of affected fishery participants trigger environmental justice considerations and the need for special mitigation measures to respond to environmental justice concerns. Nevertheless, the proposed actions would apply equally to all fishery participants regardless of minority or income status and no information has been identified that would indicate differential costs on or benefits to minority or low income persons distinct from those expected to accrue to other constituencies involved in the fishery. Therefore, no environmental justice issues have been identified and no mitigation measures in response to environmental justice issues have been considered.

To ensure grouper and tilefish stocks are managed for OY, periodic reviews of stock status are needed. These reviews are designed to incorporate new information and to address unanticipated developments in the respective fisheries and would be used to make appropriate adjustments in the reef fish regulations should harvest not achieve OY objectives. These assessments would be requested as needed by the SEDAR Steering Committee. It should be noted that these periodic

stock assessments are not meant to replace the scheduled review by the Secretary of Commerce of rebuilding plans/regulations of overfished fisheries required under §304(e)(7) of the Magnuson-Stevens Act that is to occur at least every two years to ensure adequate progress toward stock rebuilding and ending overfishing. Additionally, NMFS annually reports on the status of stocks in its Report to Congress.

Reviews will be based on periodic stock assessments. The next assessment is scheduled for gag and red grouper is scheduled to occur in 2011. These assessments should benefit from updated landings information through state and federal fishery monitoring programs. Additionally, NMFS and other government agencies support research on these species by federal, state, academic, and private research entities.

Based on annual updates on the harvest or on projected stock status from the periodic stock assessments, NMFS may file a notification a fishery needs to be closed should harvest exceed gag and red grouper TACs (i.e., Accountability Measures). Depending on the outcome of the assessments, the Council may determine further management action should be taken. Actions that the Council could employ to further restrict harvest include, but would not be limited to changes in size limits, bag limits, seasonal closures or area closures. The Council has four options for implementing these measures. The first is to amend the Reef Fish FMP to include new information and management actions. Recent plan amendments put forth by the Council have taken between two and three years from conception to implementation. The second method is a regulatory amendment based on the framework established in Amendments 1 and 4 of the Reef Fish FMP to set TAC. Appropriate regulatory changes that may be implemented through framework include: 1) setting the TACs for each stock or stock complex to achieve a specific level of ABC; and 2) bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, and quotas designed to achieve the TAC level (GMFMC 1989; 1991). However, TAC and catch limits may be adjusted only after a new stock assessment has been completed. Recent regulatory amendments have taken between nine months and two years from conception to implementation.

The NMFS may take other management actions through emergency or an interim measures. Emergency actions and interim measures only remain in effect for 180 days after the date of publication of the rule and may be extended by publication in the *Federal Register* for one additional period of not more than 186 days provided the public has had an opportunity to comment on the emergency actions and interim measures. The Magnuson-Stevens Act further states that when a Council requests that an emergency action and interim measure be taken, the Council should also be actively preparing plan amendments or regulations that address the emergency on a permanent basis.

What type of rule making vehicle the NMFS or the Council determine is needed is difficult to predict. Actions would be dictated by the severity of overages in harvest and by the time frame needed to implement a regulatory change. If the overage in harvest is small, but would still allow the stock to recover within the maximum time frame required by NMFS guidance, NMFS could apply the accountability measures. Should the overage be severe, the Council could ask for an emergency action or interim rule that would severely restrict or halt the harvest of gag or red grouper while the Council explores management measures that would bring the harvest to levels consistent with those defined by the rebuilding plan.

Current reef fish regulations are labor intensive for law enforcement officials. NMFS law enforcement officials work cooperatively with other federal and state agencies to keep illegal activity to a minimum. Violators are penalized, and for reef fish commercial and reef fish for-hire operators, permits required to operate in their respective fisheries can be sanctioned.

Reef fish management measures include a number of area-specific regulations where reef fish fishing is restricted or prohibited in order to protect habitat or spawning aggregations of fish, or to reduce fishing pressure in areas that are heavily fished. Additionally, this amendment includes alternative to expand existing or create new marine reserves. To improve enforceability of these areas, the Council has established a VMS program for the commercial reef fish fishery to improve enforcement. VMS allows NMFS enforcement personnel to monitor compliance with these area-specific regulations, and track and prosecute violations.

5.8 Irreversible and Irretrievable Commitments of Resources

There are no irreversible or irretrievable commitments of agency resources proposed herein. The actions to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries are readily changeable by the Council in the future. There may be some loss of immediate income (irretrievable in the context of an individual not being able to benefit from compounded value over time) to some sectors from the restricted fishing seasons caused by quota closures.

5.9 Any Other Disclosures

CEQ guidance on environmental consequences (40 CFR §1502.16) indicates the following elements should be considered for the scientific and analytic basis for comparisons of alternatives. These are:

a) Direct effects and their significance.
b) Indirect effects and their significance.
c) Possible conflicts between the proposed action and the objectives of federal, regional, state, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned.
d) The environmental effects of alternatives including the proposed action.
e) Energy requirements and conservation potential of various alternatives and mitigation measures.
f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
h) Means to mitigate adverse environmental impacts.

Items a, b, d, e, f, and h are addressed in Sections 2, 3, 4, and 5.1-5.3. Items a, b, and d are directly discussed in Sections 2 and 5. Item e is discussed in economic analyses in Sections 2, 3, and 5-7. Alternatives that encourage fewer fishing trips would result in energy conservation. Item f is discussed throughout the document as fish stocks are a natural and depletable resource. A goal of this amendment is to make these stocks sustainable resources for the nation.

Mitigations measures are discussed in Section 5.6. Item h is discussed in Sections 3 and 5, with particular mention in Section 5.7.

The other elements are not applicable to the actions taken in this document. Because this amendment concerns the management of marine fish stocks, it is not in conflict with the objectives of Federal, regional, state, or local land use plans, policies, and controls (Item c). However, it should be noted the goals of this amendment are to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain OY in this multi-species fishery. These are goals the federal government shares with regional and state management agencies (see Section 4.2 – Administrative environment). Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures (Item g) is not a factor in this amendment. The actions taken in this amendment will affect a marine stock and its fishery, and should not affect land-based, urban environments.

With respect to the Endangered Species Act (ESA), fishing activities pursuant the reef fish fishery should not affect endangered and threatened species or critical habitat in any manner not considered in prior consultations on this fishery. The most recent Biological Opinion (BiOp) on the Gulf of Mexico reef fish fishery was completed on February 15, 2005. The BiOp concluded authorization of this fishery is not likely to jeopardize the continued existence of endangered green, leatherback, hawksbill, and Kemp's ridley sea turtles, and threatened loggerhead sea turtles. All other ESA-listed species at that time were all found not likely to be adversely affected or not affected. On July 17, 2006, an informal section 7 consultation determined threatened elkhorn coral and staghorn coral, listed subsequent to the 2005 BiOp, are also not likely to be adversely affected by this fishery. With respect to the Marine Mammal Protection Act, fishing activities conducted under the Reef Fish FMP should have no adverse impact on marine mammals. The reef fish fishery is prosecuted primarily with longline and hook-and-line gear, and is classified in the 2007 List of Fisheries (72 FR 14466, March 28, 2007) as Category III fishery. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to one 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 proposed actions are not expected to alter existing fishing practices in such a way as to alter the interactions with marine mammals.

Because the proposed actions are directed towards the management of naturally occurring species in the Gulf of Mexico, the introduction or spread of nonindigenous species should not occur.

6.0 REGULATORY IMPACT REVIEW

6.1 Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and, (3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. The RIR also serves as the basis for determining whether the proposed regulations are a "significant regulatory action" under the criteria provided in Executive Order (E.O.) 12866 and provides some information that may be used in conducting an analysis of impacts on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the probable impacts that could be associated with management alternatives in this amendment to the Reef Fish FMP.

6.2 Problems and Issues in the Fisheries

Problems addressed by the proposed amendment to the Reef Fish FMP are discussed in Section 1.2 of this document and are included herein by reference.

6.3 Objectives

Management measures under consideration in this amendment aim to rationalize effort and reduce overcapacity in the commercial grouper and tilefish fisheries in order to achieve and maintain optimum yield (OY) in these multi-species fisheries. Rationalizing effort should mitigate some of the problems resulting from derby fishing conditions or at least prevent the condition from becoming more severe. Reducing overcapitalization should improve profitability of commercial grouper fishermen. Collectively, working conditions including safety at sea should improve and bycatch in the tilefish and grouper fisheries should be reduced, and a flexible and effective integrated management approach for tilefish and the grouper complex and tilefish should follow.

6.4 Description of the Fisheries

Descriptions of the grouper and tilefish fisheries are provided in Sections 3.1 and 3.2 of this document and are included here by reference.

6.5 Impacts of Management Alternatives

Section 6.5 contains summaries of the expected economic impacts associated with the management measures considered in this amendment. Detailed analyses and discussion for all management measures are contained in Section 5.0 and are incorporated herein by reference.

6.5.1 Action A1: Effort Management Approach

A detailed analysis of the expected impacts of this action is contained in Section 5.1.1 and is incorporated herein by reference. In a recently completed study, Weninger indicates that the implementation of an IFQ in the grouper and tilefish fisheries would result in efficiency gains,

fleet consolidation, and that remaining vessels would benefit from economies of scale (Weninger 2008). Weninger estimates variable cost savings attributable to the implementation of an IFQ in the grouper and tilefish fisheries between $2.23 and $3.24 million per year. In addition, fixed costs savings, which are difficult to measure, are also anticipated to result from the implementation of the IFQ program. Positive impacts on grouper and tilefish prices due to improved product quality constitute another expected source of economic benefits resulting from the establishment of an IFQ program.

6.5.2 Action A2: Permit Stacking

A detailed analysis of the expected impacts of this action is contained in Section 5.1.2 and is incorporated herein by reference. **Alternative 1,** the no action alternative, would not affect the ongoing reduction in the number of commercial reef fish permits. The implementation of **Preferred Alternative 2** would allow owners of multiple permits to consolidate them into one with a catch history equal to the sum of the corresponding individual permits. **Preferred Alternative 2** is expected to accelerate the reduction in the number of permits. Economic benefits due to savings realized by permit owners and anticipated reductions in administrative costs are anticipated from the implementation of **Preferred Alternative 2**.

6.5.3 Action A3: Speckled Hind and Warsaw Grouper Classification

A detailed analysis of the expected impacts of this action is contained in Section 5.1.3 and is incorporated herein by reference. The no action alternative (**Alternative 1)**, which would maintain the composition of the shallow water (SWG) and deep water grouper (DWG) management units, would neither contribute to reducing speckled hind or warsaw grouper discards nor grant additional flexibility to IFQ participants. Dual classifications as SWG and DWG for speckled hind (**Alternative 2**) or warsaw grouper (**Alternative 3**) or both (**Preferred Alternative 4**) are expected to result in direct economic benefits due to anticipated reductions in discards and the added flexibility afforded to IFQ participants. Economic benefits that could be derived from the joint implementation of **Alternatives 2** and **3**, i.e., **Preferred Alternative 4**, could be as much as $450,000. Additional benefits are also expected from positive impacts on other shallow water grouper stocks that would have been harvested otherwise.

6.5.4 Action B1: Substantial Participants

A detailed analysis of the expected impacts of this action is contained in Section 5.3.1 and is incorporated herein by reference. Determining which group(s) of individuals would be considered as substantial participants in the commercial grouper and tilefish fisheries is not expected to result in direct or indirect economic effects. This action merely defines the minimum number of individuals that would be eligible to trade in or receive transferred IFQ shares or allocation. In defining the universe of individuals eligible to participate in the transfer of IFQ shares or allocation, in accordance with the Magnuson-Stevens Act, the Council has the latitude to add other individuals or groups to that minimum number. If the Council elected to limit eligibility for IFQ share or allocation transfers to substantial participants only, this action would determine the overall number of potential participants in the program. Under such an assumption this action could have indirect economic effects due to the potential impacts that the number of participants could have on the functioning of the market for IFQ shares and on the consolidation expected in the industry.

6.5.5 Action B2: Eligibility for Initial IFQ Shares

A detailed analysis of the expected impacts of this action is contained in Section 5.3.2 and is incorporated herein by reference. The no action alternative **(Alternative 1)** is too broad and does not provide sufficient guidance for the purpose of initially allocating IFQ shares. Under **Preferred Alternative 2** only commercial reef fish permit holders would be eligible to receive initial IFQ shares and thus enjoy potential windfall profits. **Alternatives 3, 4**, and **5** would broaden the universe of potential recipients of initial IFQ shares by considering reef fish captains and crew members, federally permitted reef fish dealers, or reef fish captains and crew and federally permitted reef fish dealers, respectively. While net economic effects expected to result from alternative eligibility criteria cannot be calculated because the number of potential applicants is not known, it is anticipated that **Preferred Alternative 2**, which restricts initial eligibility to commercial reef fish permit holders, would maximize the likelihood of maintaining viable fishing operations.

6.5.6 Action B3: Initial Apportionment of IFQ Shares

A detailed analysis of the expected impacts of this action is contained in Section 5.3.3 and is incorporated herein by reference. The specification of an initial apportionment method is indispensable to the establishment of an IFQ program. Thus, **Alternative 1,** the no action alternative, does not constitute a viable option under an IFQ program. **Alternatives 2** and **3** would apportion initial IFQ shares proportionately among eligible participants shares based on average annual tilefish and grouper landings during specified qualifying years. A six-year period from 1999 to 2004 serves as the qualifying period under **Alternative 2.** The initial IFQ share distribution under **Alternative 3** also uses the same time interval, but allows participants to drop one year. **Alternatives 2** and **3** may be more reflective of harvest patterns and would benefit those fishermen with greater catch histories over the qualifying years. **Alternative 4**, which would apportionment initial IFQ shares via an auction system, would theoretically be associated with the highest level of net benefits to the Nation. However, its implementation is highly unlikely due to the foreseeable reluctance of fishermen to bid for a resource that is currently available to them free of charge.

6.5.7 Action B4: IFQ Share Definitions

A detailed analysis of the expected impacts of this action is contained in Section 5.3.4 and is incorporated herein by reference. Upon implementation of Reef Fish Amendment 30B, SWG are expected to be subdivided into three separate quotas including, separate species-specific quotas for red and gag grouper and a quota for all remaining SWG species. The share types under consideration in **Preferred Alternative 4** would establish IFQ shares for each quota. This IFQ share structure does not adversely impact the ability to protect grouper species of concern, i.e., red and gag grouper. If warranted, regulators could adjust red or gag grouper quotas. However, the establishment of three share types to prosecute SWG could potentially result in more discards than **Alternatives 2** or **3** and is expected to increase the amount of work needed from IFQ participants to match their catch to their quota holdings. The consideration of **Preferred Alternative 4** heightens the need for IFQ share trading with minimum transaction costs and the implementation of appropriate flexibility measures to assist IFQ participants in balancing their catch and quota holdings. Compared to **Alternatives 2** and **3**, **Preferred Alternative 4** is expected to generate the greatest economic value because it would correspond to the most

detailed set of IFQ shares (Costello and Deacon, 2007) and thus to the most specific fishing rights.

6.5.8 Action B5: Multiuse Allocation and Trip Allowance

A detailed analysis of the expected impacts of this action is contained in Section 5.3.5 and is incorporated herein by reference. **Alternative 1,** which would not establish catch quota balancing measures, may reduce the ability of IFQ participants to limit the amount of red and gag discards generated while harvesting their IFQ allocation. Under **Alternative 1**, the ability of IFQ participants to reduce red and gag grouper discards generated while harvesting their allocation is limited to opportunities to trade for IFQ allocation or shares. **Preferred Alternative 2** would allow IFQ participants to use between 1 and 4 percent of their red grouper allocation to land gag grouper. It is expected that the establishment of multi-use red grouper shares that could be used to land gag grouper would result in substantial economic benefits stemming from reductions in gag grouper discards and from long term positive impacts on red grouper stocks. **Preferred Alternative 3** would establish multi-use gag grouper shares that could be either used to land gag grouper or harvest red grouper once the participant exhausts his red grouper allocation for that year. Positive economic benefits are expected from the implementation of **Preferred Alternative 3** due to anticipated reductions in red grouper discards and positive impacts on gag grouper stocks. **Alternative 4** would, on a per trip basis, allow IFQ participants to land red grouper (gag grouper) for which the participant has no allocation with gag grouper (red grouper) allocation. **Alternative 4** could grant IFQ participants needed flexibility, without the additional burden associated with the establishment of different multi-use shares. Reductions in red and gag grouper discards are expected to result in substantial economic benefits for IFQ participants as well as in positive impacts on red and gag grouper stocks.

6.5.9 Action B6: Transfer Eligibility Requirements

A detailed analysis of the expected impacts of this action is contained in Section 5.2.6 and is incorporated herein by reference. **Alternative 1**, no action, would not place restrictions on eligibility for shares or allocation transfers. All US citizens and permanent resident aliens could engage in share or allocation trading. The absence of limitations on the transferability of IFQ shares or allocation is expected to correspond to the greatest level of economic benefits because it would allow unrestricted trading and hence afford sellers the opportunity to sell to those who would put the resource to its highest valued use and hence pay the highest price. The implementation of **Alternative 2** would correspond to the smallest universe of potential participants in the grouper and tilefish IFQ program. Due adverse effects on market conditions expected to be associated with thin markets, i.e., markets with limited number of participants and/or transactions, **Alternative 2** is anticipated to correspond to the lowest level of economic benefits. With a, five-year delay, **Preferred Alternative 3** would implement **Alternatives 1** and **2**. **Preferred Alternative 3** limits participation in IFQ share or allocation trading to commercial reef fish permit holders for the first five years of the program and allows all US citizens and permanent resident aliens to participate thereafter. Therefore, **Alternative 2** and **1** are expected to constitute upper and lower bounds for economic benefits associated with **Preferred Alternative 3**, respectively.

6.5.10 Action B7: Caps on IFQ Share Ownership

A detailed analysis of the expected impacts of this action is contained in Section 5.3.7 and is incorporated herein by reference. **Alternative 1**, which does not place a cap on IFQ share ownership, provides the potentially best economic environment for the IFQ system to result in a highly efficient harvesting sector. But this may be perceived by some as contrary to the provisions of the Magnuson-Stevens Act, since the potential for acquiring excessive shares may arise. **Alternative 3** would not result in any IFQ participants being compelled to divest some of their holdings, but it would also tend to disadvantage the "highliners" who may be the most efficient fishery participants. **Alternative 2**, particularly with higher percent caps under a single overall cap, appears to offer a balance between the concern with excessive share holdings and disadvantaging the more efficient fishing operations.

6.5.11 Action B8: Caps on IFQ Allocation Ownership

A detailed analysis of the expected impacts of this action is contained in Section 5.3.8 and is incorporated herein by reference. Buying and selling an allocation has the general purpose of allowing short-term adjustments in fishing operations. **Alternative 1** would afford the best scenario for such short-term adjustment, followed by **Alternative 3**, and lastly by **Alternative 2**. Due to the possibility that some entities would enter into long-term arrangements with other entities to buy up their allocations each year and thereby circumvent the share cap provision, **Alternative 1** may pose some policy and efficiency issues. In such a situation, some form of cap may be necessary, but it appears that the cap imposed under **Alternative 2** or **3** would be too limiting for some entities to make within season adjustments of their fishing operations, unless relatively higher percent caps are chosen for IFQ share ownership.

6.5.12 Action B9: Adjustments in Annual Allocations of Commercial TACs

A detailed analysis of the expected impacts of this action is contained in Section 5.3.9 and is incorporated herein by reference. Among the alternatives, **Alternative 1** is disruptive to the operation of the IFQ system and also involves higher costs without necessarily resulting in re-enforcing whatever efficiency has developed in the fishery. **Alternative 2** is the least disruptive to the operation of the IFQ system potentially involves the lowest cost of allocating quota adjustments, and offers the highest opportunity for equity considerations. It, nevertheless, is unlikely to promote efficiency in the fishery. **Alternative 3** offers some potential in efficiently allocating quota adjustments, but it could complicate and thus increase the cost of allocating quota adjustments. It also is highly vulnerable to criticisms based on equity grounds, especially if the highest bidders are new entrants who did not share the past cost of managing the fishery.

6.5.13 Action B10: Establishment and Structure of an Appeals Process

A detailed analysis of the expected impacts of this action is contained in Section 5.3.10 and is incorporated herein by reference. The establishment of an appeals process and the design of its structure have mainly equity effects. Neither one is expected to have a noticeable effect on the benefits associated with the implementation of the IFQ program. One major reason for this is an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. Economic changes would only be evident if the number of successful appeals were large compared to the number of qualifying persons or vessels.

6.5.14 Action B11: Use it or Lose it Policy for IFQ Shares

A detailed analysis of the expected impacts of this action is contained in Section 5.3.11 and is incorporated herein by reference. Economically, it would not make sense for fishermen to hold IFQ shares and not use them, because of the opportunity of cost of not using them by either fishing or selling them. This cost would generally be higher for more efficient operations. In this sense, all alternatives would have the same economic implications. There are, however, situations when IFQ allocations are not used, but in all likelihood non-use of IFQ shares would be due to hardship conditions or to output (e.g., low product price) and input (e.g., fuel cost) market conditions, making the trip unprofitable. In these situations, **Alternatives 2** and more so **Alternative 3** would only penalize IFQ holders for making an economically sound decision. On top of it all, **Alternatives 2** and **3** would prevent IFQ holders from making fish conservation efforts based on economic decisions.

6.5.15 Action B12: Cost Recovery Plan

A detailed analysis of the expected impacts of this action is contained in Section 5.3.12 and is incorporated herein by reference. Under the mandate to recover the cost of an IFQ system, **Alternative 1** becomes a non-viable alternative. It, however, would allow the fishery to collect the full benefits of the IFQ system while shifting the cost to the general public. **Alternative 2** would impose a system to recover cost based on actual or standard ex-vessel price. Determination of actual ex-vessel price appears to be more efficient of the two, since it would not involve people far removed from where actual transactions occurred to make decisions on appropriate price level. On the other hand, leaving the determination of ex-vessel price to fishermen and dealers leaves plenty of room for these individuals to devise ways to minimize payment of cost recovery fees. **Alternative 3** may generally be seen as imposing an additional cost on IFQ buyers.

6.5.16 Action B13: Guaranteed Loan Program

A detailed analysis of the expected impacts of this action is contained in Section 5.3.13 and is incorporated herein by reference. **Alternative 1** would not establish an IFQ loan program. Fishermen and entities who want to buy shares would have to use private financing sources. Under **Alternative 1,** larger operations, which are generally more likely to have access to funding, are anticipated to fare better than smaller ones in the acquisition of additional IFQ shares. **Alternative 2** could allocate about $135,000 or 15 percent of fees recovered to grant loans to first time participants and small fishing operations. **Alternative 3** would set aside 25 percent of fees recovered or approximately $225,000 to assist first time participants and small fishing operations in the acquisition of IFQ shares. In light of the limited funding available for the establishment of an IFQ loan program, neither **Alternative 2** nor **Alternative 3** are expected to significantly affect share distribution within the fishery. However, the diversion of up to 25 percent of fees recovered could jeopardize NMFS' effectiveness in administering the grouper and tilefish IFQ program.

6.5.17 Action B14: Approved Landing Sites

A detailed analysis of the expected impacts of this action is contained in Section 5.3.14 and is incorporated herein by reference. All alternatives to the status quo would mainly affect the monitoring and enforcement of IFQ landings. If these alternatives enhance monitoring and

enforcement of the IFQ program, the likelihood of realizing the expected economic benefits from the IFQ program would increase or at least be preserved. The cost to the IFQ participants would likely be minimal, so that whatever benefits arise from an enhanced monitoring and enforcement activities would directly translate to increases in economic benefits to the entire IFQ participants.

6.5.18 Action C1: Minimum Harvest Threshold for Endorsements

A detailed analysis of the expected impacts of this action is contained in Section 5.2.1 and is incorporated herein by reference. An endorsement system has the potential to reduce the number of boats in the fishery and could potentially reduce effort in the short run. In addition, it has the potential to minimize latent effort in the fishery. **Alternative 1** is equivalent to having no endorsement at all and so would not change the economic status of the fishery. **Alternative 2** could eliminate boats in the fishery, with the number of excluded boats increasing with more restrictive landing threshold, and thus offers the potential to address overcapacity in the fishery. **Alternative 3** would have similar economic effects as **Alternative 2**, but this time the effects would be distributed by gear types. This alternative contains features that can infuse some level of equity into the inclusion/exclusion of boats if the threshold were made to vary across gear types. An important issue worth recognizing with any type of endorsement system is the short-run nature of its effects. Over time the remaining vessels could adjust their operations to a point that overcapacity would re-appear.

6.5.19 Action C2: Endorsement Qualifying Years

A detailed analysis of the expected impacts of this action is contained in Section 5.2.2 and is incorporated herein by reference. **Alternative 1** does not specify the qualifying years of landing for the endorsement, and thus would virtually render the endorsement system unworkable. Both **Alternatives 2** and **3** consider the period 1999-2004 as the qualifying years for calculating vessel landings, with **Alternative 3** allowing permit holders to drop one year for purposes of calculating average landings. The major difference between **Alternatives 2** and **3** is that more vessels would qualify for the higher landing requirement under **Alternative 3**. This latter alternative would thus tend to slightly reduce the adverse economic impacts resulting from adoption of higher landing requirements but it would offer lower potential for addressing overcapacity in the fishery. A comparison between 1993-2006 and 1999-2004 as the qualifying years indicated that more boats would qualify in the endorsement under the longer period. Again, this comparison presents the issue of lower adverse economic impacts with the longer period against the potential for the shorter period to address overcapacity in the fishery.

6.5.20 Action C3: Incidental Bycatch Provisions

A detailed analysis of the expected impacts of this action is contained in Section 5.2.3 and is incorporated herein by reference. A bycatch allowance can partly address the discard mortality issue under an endorsement system, but a relatively high bycatch allowance could potentially reduce the economic advantage of boats included in the endorsement. Given this scenario, **Alternative 2** appear to strike a balance between discard mortality and the economic problem posed by a higher bycatch allowance.

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 that can be expressed as costs associated with the regulations. Due to its administrative nature, direct costs are not associated with this action. Costs associated with this specific action will include:

Council costs of document preparation, meetings, and information dissemination	$320,000
NMFS administrative costs of document preparation, Meetings and review	$155,000
Law enforcement costs	$0
TOTAL	$475,000

The Council and Federal costs of document preparation are based on staff time, travel, printing, and any other relevant items where funds were expended directly for this specific action. There are no permit requirements proposed in this amendment. To the extent that there are no quota closures proposed in this amendment or other regulatory measures, no additional enforcement activity is anticipated. In addition, under a fixed budget, any additional enforcement activity due to the adoption of this amendment would mean a redirection of resources to enforce the new measures.

6.7 Determination of Significant Regulatory Action

A determination of the significance of the regulatory action proposed in this amendment will be made by the Office of Management and Budget.

7.0 REGULATORY FLEXIBILITY ACT ANALYSIS

7.1 Introduction

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

With certain exceptions, the RFA requires agencies to conduct an IRFA for each proposed rule. The IRFA is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. An IRFA is conducted to primarily determine whether the proposed action would have a "significant economic impact on a substantial number of small entities." In addition to analyses conducted for the RIR, the IRFA provides: 1) A description of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for, the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; and, 5) an identification, to the extent practicable, of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed rule.

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

The need and purpose of the actions are set forth in Section 1.2 of this document and are incorporated herein by reference.

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

The primary objectives of this action are set forth in Section 1 of this document and are incorporated herein by reference. In essence, this amendment is intended to rationalize effort and reduce overcapacity in the Gulf commercial grouper and tilefish fisheries in order to achieve and maintain optimum yield (OY) in these multi-species fisheries.

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 if it is independently owned and operated and not dominant in its field of operation, and if it has annual receipts not in excess of $4.0 million in the case of commercial harvesting entities or $7.0 million in the case of for-

hire entities, or if it has fewer than 500 employees in the case of fish processors, or fewer than 100 employees in the case of fish dealers. Although this amendment affects mainly the commercial sector, the following description also touches upon certain characteristics of the for-hire fishery. It may only be noted that some for-hire vessels also possess commercial reef fish permits and to some extent may be affected by this amendment with respect to their commercial fishing operations.

In 1992, when the moratorium on the issuance of new reef fish commercial permits first began, approximately 2,200 permits were issued to qualifying individuals and attached to vessels. These permits are subject to certain conditions for renewal, and some permits did expire without being renewed. An examination of permits data revealed that on July 1, 2005 there were 1,118 active commercial reef fish permits and 91 others that were currently expired but may be renewed within a year. Thus, a total of 1,209 vessels may be considered to comprise the universe of commercial harvest operations in the GOM reef fish fishery. It may be noted that as of September 11, 2008 there are 887 active commercial reef fish permits attached to the same number of vessels. Whereas there is a one to one correspondence between permits and vessels, the total number of vessels actually harvesting reef fish may be lower or higher than the number of permits. Some vessels may remain inactive in the reef fish fishery during the entire year, so there would be fewer vessels than permits. Because a permit can be transferred from one vessel to another during the year, the number of vessels harvesting any of the species in this amendment during the year may exceed the number of permits. This distinction is important when using logbook information to count vessels.

For the period 1993-2006, an average of 1,123 vessels harvested at least one pound of reef fish, 993 vessels harvested any grouper or tilefish, 765 vessels harvested red grouper, 591 vessels harvested gag, 977 vessels harvested shallow water grouper (SWG), 376 vessels harvested deepwater grouper (DWG), and 212 vessels harvested tilefish. For the period 1999-2004, an average of 1,075 vessels harvested at least one pound of reef fish, 968 vessels harvested any grouper or tilefish, 767 vessels harvested red grouper, 655 vessels harvested gag, 958 vessels harvested SWG, 368 vessels harvested DWG, and 193 vessels harvested tilefish. Table 3.3.1.7 of Section 3 and reproduced below shows the distribution of vessels by landing category for the various species/species group. The choice of the years 1993-2006 reflects the entire history of vessel harvests since the full logbook coverage of the commercial reef fish fisheries in 1993 to the latest available information (2006) when consideration of this amendment went into full swing. The choice of the years 1991-2004 reflects the Council's likely choice of qualifying years for purposes of initial apportionment of IFQ shares. It may be noted here that preliminary analysis of permits data in conjunction with logbook data, 1,028 permits would be affected by this amendment.

Vessels harvesting reef fish in general and grouper/tilefish in particular use a variety of gear. Some vessels use only one gear type while others use multiple gear types; thus, classification of vessels by gear type is not straightforward for some vessels. At any rate, logbook records contain information on the gear type used by vessels in harvesting reef fish, and such information may be used for classifying vessels, or at least vessel trips, by gear type. For the period 1993-2006, an average of 805 vessels harvested grouper/tilefish using vertical lines, 171 vessels harvested grouper/tilefish using longlines, and 162 vessels harvested grouper/tilefish using other gear types (diving, trap, unclassified). Table 3.3.1.8 of Section 3 and reproduced below shows the distribution of vessels using various gear types by landing category.

Table 3.3.1.7. Number of boats by average landing category for trips landing at least one pound of selected species, 1993-2006 and 1999-2004.

Class	Red Grouper	Gag	SWG	DWG	Tilefish	Grouper/Tilefish
1993-2006						
1 - 499 lbs	976	739	956	665	447	927
500-999 lbs	194	184	261	113	62	263
1000-3999 lbs	401	350	510	170	99	519
4000-9,999 lbs	230	233	303	102	55	307
10,000-49,999 lbs	302	293	489	160	85	481
≥50,000 lbs	306	102	404	77	29	472
1999-2004						
1 - 499 lbs	498	418	434	364	222	415
500-999 lbs	144	107	137	58	35	141
1000-3999 lbs	250	267	297	103	65	285
4000-9,999 lbs	147	197	246	76	33	237
10,000-49,999 lbs	210	212	326	111	46	342
≥ 50,000 lbs	191	52	261	41	15	298

Table 3.3.1.8. Number of boats by average landing category, by gear type, for trips landing at least one pound of grouper or tilefish, 1993-2006 and 1999-2004.

Category	Diving	Handlines	Longlines	Other Gear	Traps	Troll
1993-2006						
1-499 lbs	126	963	39	103	62	191
500-999 lbs	29	247	23	15	22	31
1000-3999 lbs	52	535	48	27	33	35
4000-9999 lbs	18	318	33	14	27	3
10000-49000 lbs	14	459	83	4	43	0
≥ 50000 lbs	2	202	208	0	60	0
1999-2004						
1-499 lbs	74	437	17	26	13	115
500-999 lbs	9	131	11	3	4	14
1000-3999 lbs	30	308	26	11	9	17
4000-9999 lbs	12	236	20	6	6	2
10000-49000 lbs	7	310	51	2	25	0
≥ 50000 lbs	0	112	146	0	36	0

Collection of vessel operating costs was only initiated in mid-2005 and is anticipated to provide trip cost and return information once these data are processed and analyzed. It should be noted that information from this survey was used in estimating overall economic effects on the commercial sector of an IFQ system in the fishery. This was possible as the evaluation was conducted on a trip basis. However, vessel-level gross and net revenues could not be readily derived using the same trip-based information. For our current purpose, we use cost and return information derived from an earlier survey of commercial reef fish fishermen in the Gulf of Mexico (Waters, 1996). Annual gross receipts and net income per vessel in 2005 dollars are provided below.

	Gross Income	Net Income
High-volume vessels, vertical lines:		
Northern GOM:	$110,070	$28,466
Eastern GOM:	$ 67,979	$23,822
Low-volume vessels, vertical lines:		
Northern GOM:	$ 24,095	$ 6,801
Eastern GOM:	$ 24,588	$ 4,479
High-volume vessels, bottom longlines:		
Both areas:	$116,989	$25,452
Low-volume vessels, bottom longlines:		
Both areas:	$ 87,635	$14,978
High-volume vessels, fish traps:	$ 93,426	$19,409
Low-volume vessels, fish traps:	$ 86,039	$21,025

A definitive calculation of which commercial entities would be considered large entities and small entities cannot be made using average income information. However, based on those data and the permit data showing the number of permits each person/entity owns, it appears that all of the commercial reef fish fleet would be considered small entities. The maximum number of permits reported to be owned by the same person/entity was six, additional permits (and revenues associated with those permits) may be linked through affiliation rules. Affiliation links cannot be made using permit data. If one entity held six permits and was a high-volume bottom longline gear vessel, they would be estimated to generate about $700,000 in annual revenue. That estimate is well below the $4 million threshold set by the SBA for defining a large entity.

In 2003, when the for-hire permit moratorium was first instituted, NMFS issued a total of 1,857 for-hire vessel permits in the coastal migratory and reef fisheries. At that time 510 to 899 for-hire vessels were excluded but some were subsequently granted permits through an emergency action. As of August 2007, NMFS issued 1,692 reef fish for-hire permits. This number may be considered to comprise the universe of for-hire reef fish vessel operations in the GOM reef fish fishery. It is worth noting that as of February 2008, there were 1,301 active for-hire permits attached to the same number of vessels. It is not precisely known how many of these for-hire vessels are charterboats and how many are headboats, but in general charterboats outnumber headboats.

For the purpose of presenting vessel-level information, data from two previous studies (Holland et al., 1999; Sutton et al., 1999) were pooled to generate some information regarding the financial performance of for-hire vessels. On average, a charterboat generates $76,960 in annual revenues and $36,758 in annual operating profits. An average headboat, on the other hand, generates $404,172 in annual revenues and $338,209 in annual operating profits. The maximum number of permits reported to be owned by one entity/individual was 12, additional permits (and revenues associated with those permits) may be linked through affiliation rules. Affiliation links cannot be made using permit data. At any rate, if one entity possessed 12 permits, its average annual revenues would range from $923,520 to $4,850,064. The upper limit of the estimated range falls below the $7.0 million threshold set by the SBA for defining a large for-hire entity. Thus, it appears that all of the for-hire reef fish operations affected by this action would be considered small entities.

Also affected by the measures in this amendment are fish dealers, particularly those that receive gag and red grouper from harvesting vessels. Currently, a federal permit is required for a fish dealer to receive reef fish from commercial vessels. As of November 2008, there were 159

active permits for dealers buying and selling reef fish species; but since the reef fish dealer permitting system in the Gulf is an open access program, the number of dealers can vary from year to year. As part of the commercial reef fish logbook program, reporting vessels identify the dealers who receive their landed fish. Commercial reef fish vessels with federal permits are required to sell their harvest only to permitted dealers. For the period 2004-2007, these dealers handled an average of 10.8 million pounds of grouper and tilefish valued at $25.4 million. These dealer transactions were distributed as follows: Florida, with 10 MP worth $23.5 million; Alabama and Mississippi, with 102,000 pounds worth $222 thousand; Louisiana, with 270,000 pounds worth $592 thousand: and, Texas, with 434,000 pounds worth $1.03 million. The rest of transactions were handled by dealers outside of the Gulf.

Average employment information per reef fish dealer is unknown. Although dealers and processors are not synonymous entities, Keithly and Martin (1997), however, reported total employment for reef fish processors in the Southeast at approximately 700 individuals, both part and full time. It is assumed all processors must be dealers, yet 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, it is assumed that the average dealer's number of employees would not surpass the SBA employment benchmark.

Based on the gross revenue and employment profiles presented above, all permitted commercial reef fish vessels, reef fish permitted for-hire vessels and fish dealers affected by the proposed regulations may be classified as 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.

This amendment would introduce new or additional reporting, record-keeping and other compliance requirements. Similar compliance requirements now currently in place for the red snapper IFQ would likely be adopted for the grouper/tilefish IFQ. Details of these requirements will be spelled out before implementation of the program. In the meantime, it is instructive to outline the general requirements of the grouper/tilefish IFQ program based on the red snapper IFQ program.

The IFQ program would likely introduce compliance requirements related to the tracking of IFQ shares and associated activities (e.g., IFQ share/allocation transfers, landings and ex-vessel values). Related to these requirements are those governing the assessment of cost recovery fees.

An IFQ dealer endorsement would be required of any dealer purchasing grouper/tilefish. The IFQ dealer endorsement would be issued at no cost to those individuals who possess a valid reef fish dealer permit and request the endorsement. Although the current reef fish dealer permit must be renewed annually at a cost of $100 for the initial permit ($20 for each additional permit), the IFQ dealer endorsement would remain valid as long as the individual possesses a valid Gulf reef fish dealer permit and abides by all reporting and cost recovery requirements of the IFQ program. This requirement would affect all 159 existing dealers of grouper/tilefish.

An electronic reporting system would serve as the main vehicle for tracking IFQ activities. The electronic nature of the reporting system would render the reporting of most IFQ activities

practically on a real time basis. For example, to affect a sale of grouper/tilefish landings, the purchasing dealer has to log into the electronic reporting system and enter all the required information about the grouper/tilefish sale. The required information includes, among others, the name of the dealer and that of the fisherman, identification number of the harvesting vessel, and the pounds and ex-vessel values of grouper/tilefish. Electronic validation of the dealer-supplied information by the selling fisherman is necessary to complete the sale. Also, transfer of IFQ allocations and shares would have to be affected and recorded through the electronic reporting system. Holders of IFQ allocations can also access the system to check on the outstanding IFQ allocations remaining in their account/possession.

By the very nature of the reporting system, IFQ dealers would be required to have access to computers and the Internet. If a dealer does not have current access to computers and the Internet, he/she may have to expend approximately $1,500 for computer equipment (one-time cost) and $300 annual cost for Internet access. Dealers would need some basic computer and Internet skills to input information for all grouper/tilefish purchases into the IFQ electronic reporting system.

Dealers also have to remit to NMFS on a quarterly (or other) basis, the cost recovery fees equivalent to three percent of the ex-vessel value of grouper/tilefish purchased from IFQ share/allocation holders. Although IFQ share/allocation holders would pay this fee, it would generally be the responsibility of dealers to collect and remit these fees to NMFS. In addition to this quarterly remittance, dealers would be required to submit to NMFS a year-end report summarizing all transactions involving the purchase of red snapper. Dealers would be required to remit fees electronically by automatic clearing house (ACH), debit card or credit card. There is currently no available information to determine how many of the 159 grouper/tilefish dealers have the necessary electronic capability to participate in the IFQ program. However, demonstration of this capability would be necessary for IFQ program participation. Those currently participate in the red snapper IFQ program would generally meet most, if not all, of the requirements under the electronic reporting system.

Holders of IFQ shares and allocations would need to have access to computers and the internet to affect allocation transfers through the electronic reporting system. These persons would then be subject to same cost and skill consideration as dealers. It is very likely though that most individuals have access to computers and the internet. It should also be pointed out that in the case of reporting a sale of grouper/tilefish to a dealer, all the fisherman has to do is to validate the sale using the dealer's computer. This requirement would affect all those who would initially qualify for, or those who would decide to participate in, the grouper/tilefish IFQ program.

One other requirement under the IFQ system would involve landing and offloading notification vessels have to make before landing/offloading grouper/tilefish. In the red snapper case, IFQ fishermen: 1) can land their vessels anytime during the day and night, provided that a landing notification has been given between 3 to 12 hours prior to landing, 2) can only offload red snapper from 6 a.m. and 6 p.m., and 3) do not need to give a law enforcement an offloading notification for red snapper. Similar requirements would likely be made for the grouper/tilefish IFQ. This would then require fishermen to have on board the necessary communication equipment.

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

The discussion in Section 8, and incorporated here by reference, has identified no duplicative, overlapping, or conflicting federal rules.

7.7 Significance of economic impacts on small entities

Substantial number criterion

The measures in this amendment are expected to affect 1,209 commercial vessel operations, inclusive of for-hire vessels with commercial reef fish permits. On the basis, however, of permits and logbook records, about 1,028 permits attached to the same number of vessels have participated in the grouper/tilefish fishery. Thus, directly affected by measures in this amendment would be 1,028 permits/vessels. These vessels are estimated to earn revenues and profits, as described in Subsection 7.4, which are well below the $4 million threshold for commercial fishing vessels. Hence, all affected vessel operations, specifically directly affected vessel operations, fall within the definition of small entities, and thus it may be concluded that the substantial number criterion would be met.

Significant economic impacts

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

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

All commercial vessel, for-hire vessel and dealer operations affected by measures in this amendment are considered small entities, so the issue of disproportionality does not arise in the present case. It may only be noted some vessel operations are larger than others, but they nevertheless fall within the definition of small entities.

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

The measures in this amendment have varying effects on small entities. The more detailed analysis of the various measures provided in Section 5 is highly qualitative although some quantifications have been done where information were available. The ensuing discussion focuses on the effects of the Council's preferred alternatives. It may be noted, though, that alternatives under Actions C1, C2, and C3 pertain to the endorsement system as an effort management approach.

Adoption of an IFQ program for the grouper/tilefish fishery has been estimated to result in variable cost savings to the fishing industry of $2.23 to $3.24 million per year. There would also be some unknown reductions in fixed costs. In addition, there would result possible increases in revenues as improved product quality would command higher prices.

Permit stacking would allow owners to consolidate their multiple permits into one with corresponding consolidation of landings history for all permits. This may be expected to accelerate the reduction in the number of permits, resulting in cost savings to permit owners and in administrative cost reductions.

Dual classification of both speckled hind and warsaw grouper into SWG and DWG would tend to reduce discards of both species and allow fishermen to keep more of these two species they catch. Also, this has been estimated to increase revenues of fishermen by $450,000.

Non-designation of entities that should comprise substantial participants in the fishery under the grouper/tilefish IFQ program would not result in economic effects on small entities.

Restricting the number of participants eligible to receive initial IFQ shares to commercial permit holders only would prevent over-extended distribution of IFQ shares while allowing active participants in the fishery to immediately benefit from the implementation of the grouper/tilefish IFQ program. This limitation would also tend to speed up the process of consolidation in the fishery, a result that would allow participants to reap the gains from an IFQ program over a relatively short time.

Initial apportionment of IFQ shares based on landings history for the years 1999-2004, with allowance to drop one year, would provide a higher likelihood that active participants in the fishery would be allotted IFQ shares in accordance with the extent of their participation in the fishery. This would tend to preserve the historical landings status of eligible participants, so the initial impacts on their profits would be at least not be diminished. As the IFQ program progresses, their profits may be expected to increase whether or not they choose to fish their IFQs or lease/sell them to others.

By defining IFQ shares on a species-specific basis, the eventual true value of each species may be generated. This option, however, could result in more discards of some species and complicate balancing of catch and quota as well as the monitoring of the IFQ program. It thus needs to be complemented by flexibility measures to assist IFQ participants in balancing their catch and quota holdings.

Other than no action, alternatives on multiuse allocations and trip allowance would address the need to provide flexibility measures that would enable IFQ participants to balance their catch and quota holdings.

The transferability aspect of IFQ shares/allocation provides the mechanism to allow the IFQ program to generate greater efficiency and higher profitability in the fishery. As such, the lesser the limitations on transferability the better the system would be. The current preferred alternative would limit transfers only to reef fish permit holders the first five years of the program and to a broader pool of participants thereafter. While the five-year limitation would unlikely bring about cost increases, it would not allow proper pricing of IFQ shares. This condition, however, has been deemed by the Council and industry as necessary to allow IFQ holders to get familiar with the IFQ program before they engage in transfers outside of the limited pool of eligible IFQ transfer recipients.

Establishing a cap on IFQ share holdings is more line with Magnuson-Stevens Act provision preventing the acquisition of excessive shares in the IFQ program. The current preferred alternative to set the share cap to the maximum assigned to a participant during initial apportionment would allow every participant to at least maintain their existing scale of operation. Costs of operation and possibly revenues may be expected to remain the same. Over time all participants, except the highest one, would be able to increase their scale of operation they think

would be most profitable to them. The highest holders, however, and presumably the more efficient producers would not have the same opportunity as the others.

A similar statement as the immediately preceding paragraph may be made of the current preferred alternative to establish a cap on IFQ allocation holdings. In addition, the established cap on IFQ allocations could possibly close the loophole allowing some participants to circumvent the establish cap on IFQ share holdings by entering into a long-term contract with other participants.

Quotas change periodically, so there is a need to address this in the IFQ program. The current preferred alternative would allocate quota adjustments, up or down, in proportion to a participant's IFQ share ownership at the time of quota adjustments. This may not allocate quota adjustments as efficiently as the auction alternative, but it appears to be the least costly and least disruptive option.

The establishment of an appeals process affords participants the opportunity to correct any mistakes in the initial allocation of IFQ shares. This could result in more costs to participants and the administering agency, but such costs are expected to be relatively small especially when seen against the potential benefits it would generate. The added provision to set aside three percent of the quota to settle appeals would prevent the possibility of taking back some allocations already distributed to participants.

The provision not to impose any "use it or lose it" condition would allow participants some flexibility in managing their operations. It could happen that fishing IFQs could be more costly than not using it, and allowing participants not to incur the cost would be a beneficial feature of the IFQ program.

The cost recovery fee feature of the IFQ program would undoubtedly impose additional cost on fishing participants both in terms of the reductions in revenue and increases in costs (particularly on dealers) to comply with the collection and remittance of the fees to NMFS. A three percent cost recovery fee based on total revenues could translate into larger reductions in profits, particularly for small fishing operations.

The preferred alternative not to establish a guaranteed loan program would not affect the costs and revenues of participating vessels.

Certified landing sites where fishermen are obligated to land their IFQ catches may increase the cost of fishing operations. This could happen if for some reasons, such as weather conditions and fishing opportunities, fishermen may have to travel far if the nearest landing site is not certified.

The remaining actions relative to an endorsement system, i.e., minimum harvest threshold for endorsement, qualifying years for endorsement, and incidental bycatch provision, with which the Council opted for no action would not affect the costs and revenues of fishing operations.

Although no specific quantifications are presented, except with respect to adopting an IFQ program or not and classification of speckled hind and warsaw grouper, it may be contended that all the measures in this amendment when combined together would result in significant changes to the profitability status of fishing operations in the grouper/tilefish fishery. This is especially

true over the long run when significant benefits, both in terms of revenue increases and cost decreases, may be expected to accrue.

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

In summary form, the Council's current set of preferred alternatives consists of the following:

Action A1: Implement an IFQ Program in the commercial grouper and tilefish fisheries.

Action A2: Allow a single owner of multiple commercial reef fish permits to consolidate his (hers) permits into one. The consolidated permit would have a catch history equal to the sum of the catch histories associated with the individual permits.

Action A3: Maintain the current composition of the multi-species DWG unit and revise the SWG unit to include speckled hind and warsaw grouper.

Action B1: No action - Do not define substantial participants.

Action B2: Restrict initial eligibility to valid commercial reef fish permit holders.

Action B3: Distribute initial IFQ shares proportionately among eligible participants based on the average annual landings from logbooks associated with their current permit(s) during the time period 1999 through 2004 with an allowance for dropping one year.

Action B4: Establish IFQ share types as follows: Red grouper, Gag, Other SWG, DWG; and Tilefish shares.

Action B5: Convert 4 percent of each IFQ participant's red grouper individual species share into multi-use red grouper allocation valid for harvesting red or gag grouper; and convert 8 percent of each IFQ participant's gag grouper individual species share into multi-use gag grouper allocation valid for harvesting gag or red grouper.

Action B6: IFQ shares or allocation can only be transferred to commercial reef fish permit holders during the first five years of the IFQ program and all U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.

Action B7: No person shall own more IFQ shares than the maximum percentage issued to the recipient of the largest shares at the time of the initial apportionment of IFQ shares. The share cap(s) shall be calculated as separate caps for each type of share as defined in Action B4, plus a cap on total shares owned by any one person for the entire program

Action B8: Set the allocation cap equal to the corresponding share cap as defined in Action B7. For any single fishing year, no person shall possess allocation in an amount that exceeds the allocation cap. However, persons grandfathered in for more than the total share cap during initial apportionment will also be grandfathered in for more than the allocation cap.

Action B9: Allocate adjustments in the commercial quota proportionately among eligible IFQ shareholders (e.g., those eligible at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment.

Action B10: The Regional Administrator (RA) will review, evaluate, and render final decision on appeals. Hardship arguments will not be considered. A total of three percent of the current commercial quota will be initially set-aside to resolve appeals. Any amount remaining in the three-percent set-aside after the appeals process has been terminated will be proportionately distributed back to initial IFQ share holders.

Action B11: No Action - Do not specify a minimum landings requirement for retaining IFQ shares.

Action B12: Implement an IFQ cost recovery plan. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. IFQ cost recovery fees will be calculated at the time of sale of fish to the registered IFQ dealer/processor based on the actual ex-vessel value of the grouper landings.

Action B13: No Action - Do not establish an IFQ loan program

Action B14: Establish certified landing sites for all IFQ programs in the commercial reef fish fisheries. All IFQ participants must land at one of these sites to participate in the IFQ program. Certified landing sites will be selected by fishermen but must be certified by NMFS Office of Law Enforcement.

Action C1: No Action - Do not specify minimum harvest thresholds for grouper and tilefish endorsements.

Action C2: No Action - Do not specify qualifying years for endorsement eligibility.

Action C3: No Action - Do not establish incidental catch provisions for grouper or tilefish landings for commercial reef fish permits that did not qualify for an endorsement.

For purposes of the succeeding discussions, each preferred alternative is considered the proposed action.

Three alternatives, including no action, were considered under Action A1. The first alternative (no action) to the proposed action would maintain the incentives to overcapitalize the fishery and to promote derby. Such conditions may be expected to increase operating costs, increased likelihood of shortened seasons, reduced at-sea safety, wide fluctuations in domestic grouper/tilefish supply, and depressed ex-vessel prices for grouper/tilefish. The other alternative to the proposed action, i.e., establishment of an endorsement system, would have short-term effectiveness in addressing overcapitalization and derby by reducing the number of participants. Over the long run, remaining participants may be expected to increase their effort either through vessel, crew, and equipment upgrades or via additional or longer fishing trips.

The only alternative to the proposed action under Action A2 is the no action alternative. This alternative would not accelerate the reduction in the number of permits, thus forgoing the

benefits from permit stacking due to cost savings by permit owners and reductions in administrative costs.

Four alternatives, including no action, were considered under Action A3. The first alternative (no action) to the proposed action would maintain the composition of the SWG and DWG management units. This alternative would neither reduce the discards of speckled hind or warsaw grouper nor grant flexibility to IFQ participants. The second alternative to the proposed action would classify speckled hind as both SWG and DWG while the third alternative to the proposed action would classify warsaw grouper as both SWG and DWG. These two alternatives would reduce discards and add flexibility to IFQ participants but only with respect to either speckled hind or warsaw grouper but not both as in the proposed action.

Seven alternatives, including no action as the preferred alternative, were considered under Action B1. The various alternatives to the proposed action would include varying entities as substantial participants in the fishery. The first alternative would include only commercial reef fish permit holders; the second would include commercial reef fish permit holders and reef fish captains and crew; the third would include commercial reef fish permit holders and permitted reef fish dealers; the fourth would include commercial reef fish permit holders, permitted reef fish dealers, and reef fish captains and crew; the fifth would include commercial reef fish permit holders who have substantially fished under Action B15; and, the sixth would include commercial reef fish permit holders, reef fish captains and crew, and others who provide services in the reef fish fishery, such as restaurant owners and fish house employees. All these alternatives to the proposed action would limit the number of entities eligible for the transfer of IFQ shares and annual allocation so as to eventually affect the appropriate pricing of shares and allocations.

Four alternatives, including no action, were considered under Action B2. The first alternative (no action) to the proposed action would not specify initial eligibility requirements for IFQ share allocation, and thus is deemed to provide insufficient guidance in initially allocating IFQ shares. The other alternatives to the proposed action would include more entities for initial distribution of IFQ shares: a) commercial reef fish permit holders and reef fish captains and crew, b) commercial reef fish permit holders and permitted dealers, and c) commercial reef fish permit holders, reef fish captains and crew, and permitted dealers. These other alternatives to the proposed action would complicate the determination of initial IFQ holders, slow down the eventual consolidation of fishing operations in the fishery, and lessen the likelihood of maintaining viable fishing operations.

Four alternatives, including no action, were considered under Action B2. The first alternative (no action) to the proposed action would not provide any guidance in initially apportioning IFQ shares. The second alternative to the proposed action would proportionately allocate IFQ shares based on average annual landings during 1999-2004. This alternative is less flexible than the proposed action where eligible participants could drop one year in calculating annual average landings. The third alternative to the proposed action would initially distribute IFQ shares through an auction. This alternative may be deemed best in generating the most appropriate value for IFQ shares at the start of the program. However, this alternative offers some possibility that some historical yet active participants in the fishery would not receive any IFQ share or receive only few shares that would not make their fishing operations viable.

Four alternatives, including no action, were considered under Action B4. The first alternative (no action) to the proposed action would not establish IFQ shares and is therefore not a viable alternative under an IFQ system. The second alternative to the proposed action would establish a single IFQ share for the combined grouper and tilefish. While this alternative would tend to minimize transaction costs and eliminate the need to trade shares to balance catch and quota holdings, it would limit the effectiveness of species-specific management measures and complicate the future establishment of annual catch limits required by the Magnuson-Stevens Act. The third alternative to the proposed action would establish separate IFQ shares for the deep water grouper complex, the shallow water grouper complex, and tilefish. As with the second alternative, this particular alternative would limit the effectiveness of species-specific management measures and complicate the future establishment of annual catch limits required by the Magnuson-Stevens Act.

Three alternatives, including no action, were considered under Action B5. The first alternative (no action) to the proposed action would not establish multiuse IFQ shares or trip allowances and thus, would not contribute to catch and quota balancing under the IFQ program. The second alternative to the proposed action would establish a trip allowance granting IFQ participants the flexibility to land red or gag grouper for which the IFQ participant has no allocation by using allocation from the other species (i.e. red or gag grouper). This alternative would not cap the amount of multiuse allocation and would be associated with a higher likelihood of exceeding allowable harvest levels.

Three alternatives, including no action, were considered under Action B6. The first alternative (no action) to the proposed action would make any U.S. citizen or permanent alien eligible for IFQ share or allocation transfer. Among the alternatives, this one would immediately allow the largest pool of IFQ share/allocation recipients, thereby providing the best mechanism for eliciting the highest value of an IFQ share or allocation. The difference between this alternative and the proposed action is the provision in the latter that transfers be allowed only among holders of commercial reef fish permits during the first five years of the IFQ program. Over the long-run then the two alternatives would have the same economic effects. The proposed action reflects the Council's intent to provide enough time for current fishery participants to be familiar with the nature of the IFQ system, particularly with respect to proper valuation of IFQ shares/allocations, before opening up the market to a broader pool of participants. The second alternative to the proposed action would limit transfer eligibility only to commercial reef fish permit holders. This alternative was not chosen, because it would constrain the process of valuing IFQ shares/allocations over a long time.

Three alternatives, including no action, were considered under Action B7. The first alternative (no action) to the proposed action would not impose any cap on IFQ share ownership. Although this alternative offers the best environment for individual fishing operations to determine their most profitable scale of operations, this was not chosen because it also offers the highest probability for an individual fishing operation or very few fishing operations to obtain "excessive share" which the Magnuson-Stevens Act disallows. The second alternative to the proposed action would impose an IFQ share cap of 5 percent, 10 percent, or 15 percent of either the total grouper/tilefish shares or each type of share defined in Action B4, i.e., species-specific shares. Part of this second alternative is the provision for grandfathering in those with initial percent shares higher than the chosen ownership cap. Although this alternative appears to balance the concern over excessive share and that of constraining the operations of the most efficient producers, this was not chosen because it would appear to impose arbitrary levels of maximum

share ownership. The issue of grandfathering in those with initial share above the maximum would also limit the ability of some producers to compete in the open market against those grandfathered in. Part of the rationale for the proposed action was to achieve consistency with similar provision in the red snapper IFQ program, and this would not be achieved under the two alternatives to the proposed action. A sub-option under the preferred alternative which would impose a cap on total grouper/tilefish IFQ shares but not on each type of IFQ share was not chosen, because it could result in some entities obtaining excessive shares of certain species.

Three alternatives, including no action, were considered under Action B8. The first alternative (no action) to the proposed action would not limit the amount of IFQ allocation to be owned by any entity each year. Although this alternative would provide the best economic environment relative to the holding of IFQ allocations, it would afford some entities the opportunity to circumvent the provision on IFQ share cap by entering into long-term arrangements with IFQ share/allocation holders. The second alternative to the proposed action would impose an allocation cap of an additional 1 percent, 2 percent, or 5 percent above the percent cap on IFQ share ownership. This alternative was not chosen because of the potential complication it would add to the monitoring and enforcement of share ownership cap.

Three alternatives, including no action, were considered under Action B9. The first alternative (no action) to the proposed action would not specify the allocation mechanism of any changes in commercial TAC. This alternative was not chosen because it would require the Council to address allocation issue every time the commercial quota is adjusted and thus would impose additional administrative costs. This could also delay the determination of each entity's allocation at the start of the fishing season which could be disruptive to the affected entity's fishing operations. The second alternative to the proposed action would allocate adjustments in the commercial quota via an auction system. This alternative was not chosen because it could complicate and thus increase the cost of allocating quota adjustments. Moreover, it could raise equity concerns if the winners were new entrants who did not share the cost of managing the fishery.

Four alternatives, including no action, were considered under Action B10. Two alternatives comprise the proposed action under Action B10. One pertains to the establishment and structure of an appeals process and the other to the provision of a commercial quota set-aside to resolve appeals. The first alternative (no action) to the proposed action on appeals process would not provide a formal, in-house means of addressing disputes particularly regarding initial IFQ share allocation and so was not chosen by the Council. The second alternative to the proposed action on appeals process would establish a special board composed of state directors/designees who will review, evaluate, and make individual recommendations to the NMFS RA on appeals. This alternative was not chosen because it would merely add layers to the appeals process that could only increase the administrative costs. Besides, this alternative would mainly provide board members advice to the RA on appeals matters.

Three alternatives (including no action as the proposed action) were considered under Action B11. The first alternative to the proposed action would provide for the revocation and subsequent redistribution among the remaining shareholders of IFQ share certificates that remain inactive for three years. Inactivity is taken to mean less than 30 percent utilization of allotted IFQ shares. The second alternative to the proposed action differs only from the first in that it defines inactivity to mean less than 50 percent utilization of allotted IFQ shares. Both alternatives were not chosen because they would tend to unduly penalize those experiencing

problems with their equipment, labor, health, and the like except permanent disability. In addition, these alternatives would mainly increase monitoring costs without necessarily providing any tangible economic or social benefits.

Three alternatives, including no action, were considered under Action B12. The first alternative (no action) to the proposed action would not impose a cost recovery fee. This would not be in line with provisions of the Magnuson-Stevens Act. The second alternative to the proposed action would require each IFQ registered buyer who purchased IFQ grouper/tilefish to submit an IFQ Buyer report either on a quarterly on annual basis. This alternative was deemed to mainly impose additional costs with relatively small economic or social benefits. Under the preferred alternative, several sub-options were also considered but rejected. The rationale for their rejection was that they would not be consistent with similar provisions in the red snapper IFQ.

Three alternatives, including no action as the proposed action, were considered under Action B13. The first and second alternatives to the proposed action would set aside 15 percent and 25 percent, respectively, of the cost recovery fees to establish a guaranteed loan program. These alternatives were not chosen because they would tend to jeopardize NMFS' effectiveness in administering the grouper/tilefish IFQ program.

Three alternatives, including no action, were considered under Action B14. The first alternative (no action) to the proposed action would not establish certified landing sites for IFQ programs in the commercial reef fish fisheries, thus providing no additional means to improve enforcement of the grouper/tilefish IFQ program. The second alternative to the proposed action would require that landing sites be certified by the Office of Law Enforcement in order for IFQ fishermen to use the VMS units as an option for reporting landing notifications. This was deemed unnecessary for monitoring and enforcing the grouper/tilefish IFQ program. Under the preferred alternative, a sub-option providing for the selection of certified landing sites by the Council and NMFS, based on industry recommendations and resource availability was not adopted. This sub-option was deemed more restrictive than the proposed action in identifying landing sites for certification purposes.

The succeeding actions and alternatives pertain to an endorsement system as an effort management approach.

Three alternatives, including no action as the proposed action, were considered under Action C1. The first alternative to the proposed action would set a minimum harvest threshold for the grouper and tilefish endorsement to the commercial reef fish permit of either 1 pound, 1,000 pounds, or 4,000 pounds. The second alternative to the proposed action would impose minimum harvest threshold of either 1 pound, 10,000 pounds, or 50,000 pounds for a longline endorsement and either 1 pound, 500 pounds, and 1,000 pounds for other (than longline) gear endorsement. By not choosing any of these alternatives in favor of the no action alternative, the Council would in effect reject the endorsement system as an effort management approach.

Three alternatives, including no action as the proposed action, were considered under Action C2. The first alternative to the proposed action would consider the years 1999-2004 as the qualifying years for one or more endorsements to the reef fish permit. The second alternative to the proposed action would consider the years 1999-2004 as the qualifying years for one or more endorsements to the reef fish permit with an allowance for dropping one year. By not choosing

any of these alternatives in favor of the no action alternative, the Council would in effect reject the endorsement system as an effort management approach.

Three alternatives, including no action as the proposed action, were considered under Action C3. The first alternative to the proposed action would allow a 200-pound trip limit of grouper and tilefish as incidental catch allowance for reef fish permit holders who did not qualify for an endorsement. The second alternative to the proposed action would allow a 500-pound trip limit of grouper and tilefish as incidental catch allowance for reef fish permit holders who did not qualify for an endorsement. By not choosing any of these alternatives in favor of the no action alternative, the Council would in effect reject the endorsement system as an effort management approach.

8.0 OTHER APPLICABLE LAW

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

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires federal agencies 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. 12630: Takings

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

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O.

12866, NMFS prepares a RIR for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the RFA. A regulation is significant if it a) has an annual effect on the economy of $100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency; c) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or d) raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order. NMFS has preliminarily determined that this action will not meet the economic significance threshold of any criteria.

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

This Executive Order requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Impacts of commercial and recreational fishing on subsistence fishing are a concern in fisheries management; however, there are no such implications from the action proposed in this amendment.

E.O. 12962: Recreational Fisheries

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

U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA. [Sentence removed]

E.O. 13089: Coral Reef Protection

The Executive Order on Coral Reef Protection requires federal agencies whose actions may affect U.S. coral reef ecosystems to identify those actions, utilize their programs and authorities to protect and enhance the conditions of such ecosystems, and, to the extent permitted by law, ensure actions that they authorize, fund, or carry out do not degrade the condition of that ecosystem. By definition, a U.S. coral reef ecosystem means those species, habitats, and other national resources associated with coral reefs in all maritime areas and zones subject to the jurisdiction or control of the United States (e.g., federal, state, territorial, or commonwealth waters).

Regulations are already in place to limit or reduce habitat impacts within the Flower Garden Banks National Marine Sanctuary. Additionally, NMFS approved and implemented Generic Amendment 3 for EFH, which established additional HAPCs and gear restrictions to protect corals throughout the Gulf. There are no implications to coral reefs by the actions proposed in this amendment. The alternatives in Action 11 (Creation of Marine Reserves) will reduce impacts in the areas of proposed marine reserves, but although those areas contain hard bottom habitat, they are not areas of living coral reefs.

E.O. 13132: Federalism

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

Action 13 (Federal Regulatory Compliance) would affect some reef fish vessels while fishing in state waters, but only those that have federal reef fish permits, as a condition of the permit. Vessels that choose not to fish in federal waters do not need federal permits and would not be subject to the provisions of this action.

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.

E.O. 13158: Marine Protected Areas

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

cultural resource within the protected area. There are several Marine Protected Areas, HAPCs, and gear-restricted areas in the eastern and northwestern Gulf. Actions 10 and 11 contain alternatives regarding the establishment of additional marine reserves and the duration of both new and existing reserves. The existing and proposed reserves in these actions are entirely within federal waters of the Gulf of Mexico. They do not affect any areas reserved by federal, state, territorial, tribal or local jurisdictions.

Essential Fish Habitat

The amended Magnuson-Stevens Act 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 2004a) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

9.0 LIST OF PREPARERS

Name	Expertise	Responsibility	Agency
Steven Atran	Population Dynamics/Statistician	Scoping/review	GMFMC
Sarah DeVido	Fishery Biologist	Summary/IFQ actions	NMFS, SERO
Assane Diagne	Economist	Economic analyses and write ups/purpose and need/RIR	GMFMC
Susan Gerhart	Fishery Biologist	IFQ actions	NMFS, SERO
Peter Hood	Fishery Biologist	Endorsement actions/cumulative effects analysis	NMFS, SERO
Palma Ingles	Anthropologist	Social analyses	NMFS, SERO
Frank Kennedy	Fishery Biologist	Scoping/IFQ actions	GMFMC
Tony Lamberte	Economist	Economic analyses and write ups/affected environment/IRFA	NMFS, SERO
Andy Strelcheck	Fishery Biologist	IFQ actions	NMFS, SERO
Britni Tokotch	Fishery Biologist	Introduction/history of management	NMFS, SERO
James Waters	Economist	Economic analyses	NMFS, SEFSC

10.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE AMENDMENT/ENVIRONMENTAL IMPACT STATEMENT ARE SENT

List of Agencies:

Federal 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
U.S. Coast Guard
Environmental Protection Agency
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

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

11.0 PUBLIC HEARING LOCATIONS AND DATES

Locations and dates for public hearings scheduled for Reef Fish Amendment 29 are listed below. There will be an informal open question and answers session beginning at 5:30 pm. Public hearings will begin at 6:00 pm and conclude at the end of public testimony or no later than 9 pm at each of the following locations:

Monday, July 21, 2008
Best Western, 5914 Seawall Blvd., Galveston, TX 77550, 409-740-1261;

Monday, July 21, 2008
Radisson Hotel, 3820 N. Roosevelt Blvd., Key West, FL 33040, 305-294-5511;

Tuesday, July 22, 2008
Hilton Airport, 901 Airline Drive, Kenner, LA 70062, 504-469-5000;

Tuesday, July 22, 2008
Banana Bay Resort, 4590 Overseas Highway, Marathon, FL 33050, 305-743-3500;

Wednesday, July 23, 2008
Doubletree, 2649 S. Bayshore Blvd., Miami, FL 33133, 305-858-2500;

Wednesday, July 23, 2008
Wingate Inn, 12009 Indian River Road, Biloxi, MS 39540, 228-396-0036;

Thursday, July 24, 2008
Clarion Hotel, 12635 S. Cleveland Ave., Ft. Myers, FL 33907, 239-936-4300;

Thursday, July 24, 2008
City of Orange Beach Parks & Rec., 27235 Canal Rd, Orange Beach, AL 36561, 251-981-6028;

Wednesday, July 30, 2008
Quorum Hotel, 700 N. Westshore Blvd., Tampa, FL 33609, 813-289-8200;

Thursday, July 31, 2008
NMFS Panama City Lab, 350 Dellwood Beach Dr., Panama City, FL 32408, 850-234-6541.

12.0 SCOPING HEARINGS SUMMARY

Scoping hearings for Reef Fish Amendment 29 were held throughout the Gulf of Mexico between September 10 and 18, 2007. Comments were not received in Biloxi, MS, Galveston, TX, Palacios, TX, New Orleans, LA, Gulf Shores, AL, and Marathon, FL. Public hearing comments received in the remaining locations are summarized below.

Panama City, FL - September 12, 2007

Council and Staff
Bob Gill, Chair
Stu Kennedy
Tina Trezza

22 Members of the public were present

The meeting was convened at 6 PM by Chairman Gill. the Scoping Hearing for Amendment 29, was opened. Stu Kennedy provided a summary of actions proposed for Amendment 29.

Five commercial fishermen spoke. All but one supported an IFQ program above any of the others. Several speakers singled out latent permits, buyback, permit endorsements, or days-at-seas as programs they would not support. One speaker, who was a part-time commercial fisherman, did not support any of the proposed actions and wanted the fishery to continue under natural supply and demand (existing regulatory methods). He and several fishermen who supported IFQs spoke in favor of reducing or eliminating size limits and extending the commercial closed season to protect more spawners.

Public Hearing for 29 adjourned at approximately 8:30 PM

Corpus Christi, Texas - September 13, 2007

Council/Staff:
Joe Hendrix
Assane Diagne
Karen Hoak

Attendance: 7
The public hearing meeting was convened at 6:00 p.m. on Wednesday, September 13, 2007 at the Holiday Inn Hotel in Corpus Christi, Texas. **Mr. Hendrix** opened the meeting with the Chair statement. **Dr. Diagne** gave a presentation on the Scoping document for Amendment 29 and the public was invited to comment.

Regarding buybacks, **Mr. Wilson** mentioned that the recreational sector might be interested in contributing to that program. Since inactive licenses could turn active at any time, **Mr. Hendrix** noted that even buying back inactive licenses was a viable option.

Mr. Nugent brought up shares for the open market. In Red Snapper, shares could not be placed on the open market for 5 years. He wanted anyone to have the option to buy or lease shares. He did not approve of the tendency to create monopolies that came from too many shares being accumulated internally within a closed industry. He wondered how many Class 1 license holders, if they had to do it over again, would do so. He strongly opposed any discussion of IFQ programs being proposed for the recreational sector.

Mr. Miglini concurred with the comments by Mr. Nugent. He expressed concern about enforcement, particularly the lack of OLE agents. He recommended more spending on enforcement so that law-abiding fishermen are protected.

Mr. Smarr (FRA) expressed adamant opposition to IFQs due to law enforcement issues. Outlaws abound, sharks and other species are being reduced, the charter industry is experiencing hard times, and they oppose the use of longlines due to the indiscriminate nature of that gear.

Mr. Hazzard detailed the law enforcement procedures required of commercial fishermen in landing catch. He emphasized that both sectors are struggling financially and both sectors would like more allocation. He saw no drawback to leaving latent permits alone. **Dr. Diagne** asked if he was in favor of an IFQ program for grouper. He said that he would make it work because his company had the resources, but that many of his friends who are small operators would be put out of business.

The meeting was adjourned at 7:45 p.m.

St. Petersburg, Florida - September 17, 2007

Council and Staff
Julie Morris, Chair
Stu Kennedy
Tina Trezza

32 Members of the Public were Present

The meeting was convened at 6 PM by Chairman Morris. Stu Kennedy provided a summary of actions proposed for Amendment 29.

Seven commercial fishermen spoke; written comments were provided by seven fishermen. All supported an IFQ program and were unsupportive of any others actions. Most indicated that the

fishery can't continue under the current management program, and that an IFQ would allow fishermen to be more professional and allow grouper fishermen to barter with red snapper IFQ holders for red snapper share which would reduce regulatory discards. Several speakers suggested that some of the actions such as the ITEQ and buyout should be moved to the "considered but rejected" section. Several speakers recommended that size limits should be reduced once the IFQ is implemented and others recommended that the IFQ program be implemented as soon as possible (by January 2009).

Three NGOs spoke in favor of IFQ if done properly, provided the requirements in the MSRA for LAPP programs are followed. One NGO recommended implementation as soon as possible (1/2009).

One recreational fisherman spoke in opposition to the IFQ program. He stated that it was wrong to allow the perception of ownership of a fishery resource.

Public Hearing for 29 adjourned at approximately 8:30 PM

Ft. Myers, Florida - September 18, 2007

Council and Staff:
Julie Morris
Assane Diagne
Trish Kennedy

11 members of the public were in attendance.

The hearing was called to order at 6:00 p.m. at the Clarion Hotel in Ft. Myers, Florida by Chairman **Julie Morris**. **Dr. Diagne** gave a presentation on Reef Fish Amendment 29 Scoping Document and the public was invited to comment.

Dennis O'Hern, St. Petersburg, Florida, Executive Director of Fishing Rights Alliance (FRA), stated they strongly opposed the individual transferable quota (ITQ) proposal for grouper. The FRA believed the IFQ system would privatize a public resource.

Vishwani Maharaj, speaking on behalf of Environmental Defense stated the EDF strong supported ITQ for both the commercial and recreational sectors. She added that ITQs were a sound business program.

There being no further comments, the meeting adjourned at 6:55 p.m.

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14.0 APPENDIX A – ALTERNATIVES CONSIDERED BUT REJECTED

This section describes alternatives the Council considered but eliminated from detailed study for the reasons described below.

GROUPER AND TILEFISH EFFORT MANAGEMENT

1. Individual Transferable Effort Quota (ITEQ) Program

Rationale: The Council was concerned that an ITEQ program would provide strong incentives to engage in capital stuffing by increasing the level of unregulated inputs and therefore, this type of program would not satisfy the objectives to reduce overcapacity and improve fishery efficiency and profitability.

2. Buyback or Buyout Program

Rationale: While a buyback program reduces effort in the short term, after a buyback program is completed, the remaining participants are expected to increase their effort through capital stuffing. Therefore, this type of program would not satisfy the objectives to reduce overcapacity and improve fishery efficiency and profitability.

3. Elimination of Latent Permits

Rationale: A latent permit revocation program does not provide incentives to reduce fishing effort. It maintains an incentive structure that can create derby conditions or intensify a pre-existing race for fish. Following the elimination of latent permits, remaining fishermen can simply upgrade their vessels and gear, increase crew size, and, adjust trip characteristics in order to increase effective fishing effort and harvest as much fish as possible before someone else does, i.e., race for the fish. Therefore, this type of program would not satisfy the objectives to reduce overcapacity and improve fishery efficiency and profitability.

CATCH-QUOTA BALANCING AND DISCARD REDUCTION

4. Banking and Borrowing

Rationale: The Council determined the multi-use allocation action would be sufficient for the catch-quota balancing method. Banking and borrowing would be overly complicated especially when considering the catch limits to be implemented in the near future.

IFQ MONITORING AND MANAGEMENT BOARD

6. IFQ Monitoring and Management Board

Rationale: The Council was concerned that an IFQ monitoring and management board would not be able to make adjustments without a regulatory action, unless the framework was set so that the Regional Administrator could make a decision. However, the IFQ monitoring and management board could not advise the Regional Administrator directly but would have to advise the Council who would then advise the Regional Administrator. There were concerns this

would be overly complicated and there could be funding issues to establish this type of board.

ADJUSTMENTS IN ANNUAL ALLOCATIONS OF COMMERCIAL TACS

6. **Divide quota increases equally among eligible IFQ shareholders (e.g., those eligible at the time of the adjustment). Divide quota reductions equally among eligible IFQ shareholders.**

Rationale: This alternative was moved to considered but rejected because this would be logistically difficult to implement. For example, if a reduction in quota is needed and the reduction is taken off equally, then there could be individuals with negative allocation balances.

TRANSFER ELIGIBILITY REQUIREMENTS

7. **IFQ shares or allocation can only be transferred to commercial reef fish permit holders and reef fish captains and crew members. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.**

8. **IFQ shares or allocation can only be transferred to commercial reef fish permit holders and federally permitted reef fish dealers. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.**

9. **IFQ shares or allocation can only be transferred to commercial reef fish permit holders, federally permitted reef fish dealers, reef fish captains and crew members. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.**

10. **IFQ shares or allocation can only be transferred to commercial reef fish permit holders who were defined to have substantially fished in the referendum criteria. Eligible individuals must be persons who are U.S. citizens or permanent resident aliens.**

Rationale: The Council voted to remove these alternatives so that the discussion on transferability could be better focused on those alternatives likely to be considered, which still included the option for the individuals identified in the alternatives listed above to be transferred shares (e.g. see Alternative 1 and Preferred Alternative 3 in Action B6).

CAPS ON IFQ SHARE OWNERSHIP

11. **No person shall own IFQ shares, which comprise more than the following percent of the quota allocated to the IFQ program. However, persons entitled to more than the specified ownership cap during initial apportionment will be grandfathered in at their entitled holdings. The share cap(s) shall be calculated as:**

    Option a) one cap on the total shares (all grouper plus tilefish) owned by any one person for the entire program;
    Option b) separate caps for each type of share as defined in Action B4, plus a cap on total shares owned by any one person for the entire program

Each type of share (total or separate) may have the same or different percent caps chosen from sub-options below:

Suboption a) 1 percent;
Suboption b) 2 percent;

Rationale: The Council indicated that maximum caps of 1% or 2% were too low, particularly after realizing that the highest participation in the deep water grouper fishery was 16.13%, and the cap in red snapper was 6.0203%.

COST RECOVERY FEE

12. A registered IFQ Dealer/Processor Ex-vessel Value report (IFQ Buyer report) will be required from each IFQ registered buyer who purchases IFQ grouper or tilefish:
(i) Quarterly.
(ii) Annually.

Rationale: An IFQ annual dealer report is required in the red snapper IFQ program. NMFS generates this report in each dealer's IFQ Inbox and if no comments are received, then the dealer's acceptance of this report is assumed. This report is most likely unnecessary since dealers review landing transactions and cost recovery fees at the end of each quarter prior to paying their cost recovery fees. For this reason, the Council voted to remove this alternative from the document.

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16.0 APPENDIX B - COMMENTS ON DEIS FROM EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

August 12, 2008

Dr. Roy E. Crabtree
Regional Administrator
Southeast Regional Office
National Oceanic and Atmospheric Administration
263 13th Avenue South
St. Petersburg, Florida 33701

Subject: EPA NEPA Comments on NOAA DEIS for "Amendment 29 to the Reef Fish Fishery Management Plan"; Commercial Grouper and Tilefish; Gulf of Mexico Fishery Management Council; Gulf of Mexico; CEQ No. 20080256; ERP No. NOA-E91024-00

Dear Dr. Crabtree:

Consistent with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the National Oceanic and Atmospheric Administration's (NOAA) Draft Environmental Impact Statement (DEIS) for Amendment 29 to the Reef Fish Fishery Management Plan (FMP). The DEIS was prepared for NOAA by the Gulf of Mexico Fishery Management Council (Council). This amendment concerns the overcapitalized commercial grouper complex (multi-species) fishery in the Gulf of Mexico (GOM), which has resulted in derby-style fishing to fill the quota. Amendment 29 provides numerous alternatives to manage the overcapacity of the fishery based on an Individual Fishing Quota (IFQ) program (preferred in the DEIS) or through permit endorsements.

Overall, EPA supports Amendment 29 to restore the grouper complex fishery. Our main focus for this and most fishery recovery programs is a rapid restoration of the resource. However, at the same time, we are also aware that fishers leaving the fishery under duress or having to reduce their fishing infrastructure (vessels, gear, etc.) can be expected to be a hardship on most commercial fishers (unless such investments can be re-targeted to other fisheries that support larger stocks and optimum yield harvests). This would particularly be true if hardship cases included Environmental Justice (EJ) commercial fishers (i.e., low-income and/or minority fishers) that may be substantively affected by the new fishery management regulations.

For the review of this DEIS, EPA has provided comments and suggestions on the proposed fishery management alternatives, EJ considerations, and the NEPA process. Our comments should be considered in the development of the Final EIS (FEIS).

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Management Alternatives

Numerous alternatives and options were presented for three actions (A,B,C) concerning 1) effort, permits and species management (Action A), 2) IFQ design (Action B) and 3) permit endorsements (Action C). It is clear from the DEIS that NOAA/NMFS, the Council and the Advisory Panel (AP) have expended a considerable amount of time and effort on developing these complex alternatives and the selection of a preferred alternative and option for most actions. Because of this complexity and expended effort, EPA will principally defer to NOAA/NMFS and the Council (as well as the AP) and offers only the following comments on management alternatives.

* **Action A1 (Effort Management Approach)** – Implementation of an IFQ program (Preferred Alternative 2) appears to be a reasonable management approach to reduce the size of the fishery to restore the stock. We will defer to NOAA/NMFS and the Council that using IFQ as the best management choice for this Amendment/EIS to recover the grouper complex. In addition, we note (pg. 31) that an IFQ program's elimination of derby-style fishing would likely improve safety (quotas are individual so that fishing is more at the fishers' convenience rather than competitive), reduce the loss of gear (and its associated ghost fishing), reduce the number of regulatory discards, and minimize physical gear-effects on fishing ground habitat. EPA supports such effects of an IFQ program.

* **Action A2 (Permit Stacking)** – We concur with the single-owner consolidation or "stacking" of multiple permits into one permit. We presume the intent of Action A2 is to reduce the number of vessels and fishers (overall fishing effort) even though the benefits from summing the catch histories of the multiple permits would be retained. However, we suggest that the DEIS clarify that such consolidation would indeed reduce the number of permitted vessels in the fishery (or would a single owner of a now single permit still be allowed to fish with the same number of vessels associated with the multiple permits?). That is, the FEIS should further discuss the expected positive consequences to this fishery management action through the implementation of Preferred Alternative 2.

* **Action A3 (Speckled Hind and Warsaw Grouper Classification)** – We can support Preferred Alternative 3 for both species of grouper since this action may reduce (pg. 38) the number of regulatory discards (which may ultimately result in mortalities) if the deep-water fishery closes before the shallow-water fishery, as has historically been the case.

* **Action B1 (Substantial Participants)** – We note that the no action is preferred in the DEIS (Preferred Alternative 1). This alternative would not define substantial participants, thus not placing restrictions on the number of individuals eligible for transfer of IFQ shares, or annual allocation. Since it is our understanding that the intent of Amendment 29 is to reduce capacity, selection of Alternative 1 would not seem to be appropriate. EPA would instead prefer some limitation of substantial participants, and will defer to the AP's preference for Alternative 2 as to the extent of those restrictions. Alternative 2 would seem to reasonably limit the substantial participants

to the current 1,080 valid or renewable permits owned by commercial reef fishers. However, once the fishery is restored, it could be reopened to all interested commercial fishers who would qualify for permits regardless of their history or current permit status within the fishery. If the Council's Preferred Alternative 1 is ultimately selected in the FEIS, differences between the Council and AP approaches should be further discussed.

Additionally, EPA does not prefer Alternative 7, which references restaurant owners and fish house employees as providing "necessary services". While they do provide important services, we do not believe them to be essential during times when the fishery is declining.

* **Action B2 (Eligibility for Initial IFQ Shares)** – Consistent with our preference for Alternative 2 for Action B1, we agree with the DEIS selection of Preferred Alternative 2 for Action B2. This alternative would limit eligibility to "at most the 1,080 valid or renewable permits on record as of April 9, 2008." (While we agree with this statement in principal, the FEIS should discuss why not all – as opposed to "at most" – of the 1,080 permit holders would be guaranteed eligible).

* **Action B3 (Initial Apportionment of IFQ Shares)** – We agree that an apportionment system should be in place and therefore do not prefer the no action. We concur with the DEIS selection of Preferred Alternative 3 since it will not only distribute shares proportionate to recent average annual landings, but also will allow the elimination of one year for contingencies (e.g., permit holder was not able to fish for various reasons). This alternative therefore appears to be the fairest. However, given the intent of Amendment 29 to reduce the overcapacity of the fishery, Alternative 2 (which does not allow for contingencies) would decrease the size of the fishery more rapidly than Preferred Alternative 3, and therefore might be further considered if societal issues are not deemed significant.

* **Action B4 (IFQ Share Definitions)** – Preferred Alternative 4 was characterized (pg. x) as "...the best alternative to prevent overfishing while achieving optimum yield." EPA therefore defers to the NOAA/NMFS and the Council regarding this alternative's identification as the preferred alternative for Action B4.

* **Action B5 (Catch-Quota Balancing: Multiuse Allocation and Trip Allowance)** – It is unclear how multiuse IFQ shares would benefit the fishery since allocations can be used for more than one species. To us, species-specific allocations based on current fishery data would seem to be more beneficial as a fishery management tool. As such, the no action (Alternative 1) might be considered in selecting a preferred alternative for Action B5. We will defer to NOAA/NMFS and the Council, but suggest that if a multiuse allocation is selected, its fishery value be further discussed in the FEIS.

* **Action B6 (Transfer Eligibility Requirements)** – Consistent with our preference for Alternative 2 for B1 and B2, we prefer Alternative 2 for B6. This alternative would restrict the transfer eligibility to commercial reef fishers holding a valid or renewable permit, which should limit the size of the fishery and thereby support the purpose of

Amendment 29. If Preferred Alternative 3 is continued to be identified in the FEIS as the preferred alternative, the rationale for rejecting Alternative 2 should be further discussed for Action B6 (as well as B1 and B2).

* **Action B7 (Caps on IFQ Share Ownership)** – We offer no substantive comments for B7 but believe the Council's and AP's preference for Alternative 3 is reasonable. This approach would set share caps equal to the largest shares at the time of the initial apportionment, would not require grandfathering anyone, and is consistent with the red snapper IFQ program (for clarity, the FEIS should discuss why the red snapper IFQ should be followed, i.e., how has the red snapper IFQ program been successful to date?).

* **Action B8 (Caps on IFQ Allocation Ownership)** – Consistent with Preferred Alternative 3 for B7, the Council's and AP's preference for Preferred Alternative 2 is reasonable. Although this approach accounts for any grandfathering in B7, we understand that Preferred Alternative 3 for B7 (above) would not require grandfathering. As such that we assume there should also be none for B8 if Preferred Alternative 3 is selected. We note that while grandfathering may be equitable, it often does not promote the desired improvements being considered (in this case, reducing the size of the fishery to restore it).

* **Action B9 (Adjustments in Annual Allocations of Commercial TACs)** – Preferred Alternative 2, which uses a proportional approach to allocation adjustments, appears equitable.

* **Action B10 (Establishment and Structure of an Appeals Process)** – EPA offers no comments on an appeals process from an administrative perspective; however, we do agree with withholding 3% of the total available IFQ shares as an allowance for appeals. As such, any successful appeals would not result in the exceedance of the initial IFQ shares (at least within the 3% margin retained), which could be counterproductive to the recovery of the resource.

We also note that "hardship arguments will not be considered" under Preferred Alternative 2 and Alternative 3 (pg. 89). While we concur from a strict resource recovery perspective, what offsets could be offered or suggested for fishers with legitimate hardship cases?

* **Action B11 (Use it or Lose it Policy for IFQ Shares)** – In order to reduce the size of the fishery, we suggest implementation of a reasonable threshold landings requirement (Alts. 2 or 3) in order to retain the IFQ shares. On the other hand, if there is no fishing associated with certain shares, there would be no landings or impact on the recovery of the fishery (nevertheless, Alternatives 2 or 3 would make no fishing for those shares permanent). As such, selection of the no action as the preferred alternative might be reconsidered in the FEIS.

* **Action B12 (Cost Recovery Plan)** – EPA considers cost recovery for monitoring, data collection, enforcement, etc. associated with the IFQ program an internal NOAA/NMFS

issue and has no substantive comments. However, considering the existing economic impacts on affected fishers associated with the IFQ program (required less landings and underutilization of infrastructure as management tools to recover the fishery), also requiring fees from fishers (e.g., deducted from ex-vessel values of landings) for the cost recovery program would appear to be another (and avoidable) hardship for the industry. Preferred Alternative 2 would require such fees while the no action would not.

* **Action B13 (Guaranteed Loan Program)** – Regarding the use of a guaranteed loan program to help eligible fishers to buy additional IFQ shares, we offer two scenarios. Inasmuch as loans may not help to reduce the size of the fishery (i.e., they would help small fishers buy shares), it would be counterproductive to the purpose of Amendment 29. Inasmuch as such loans may better utilize existing infrastructure (e.g., vessels) and eliminate others, it would be supportive to Amendment 29. We note that the no action (no guaranteed loans) was selected in the DEIS.

* **Action B14 (Approved Landing Sites)** – In order to participate in the IFQ program, we fully agree with only using landing sites that are selected by the fishers but that require approval by NOAA/NMFS (Preferred Alternative 2, Option a).

* **Action C1, C2, C3 (Permit Endorsements)** – We offer no comments on the endorsement program in lieu of the IFQ program since the IFQ appears to be a reasonable approach and is preferred by the Council (the no action was the identified preference for Actions C1, C2 and C3 in the DEIS). As indicated previously, we suggest that the success and any problems associated with existing IFQ programs (e.g., red snapper IFQ) be discussed in the FEIS, and also related to the proposed grouper complex IFQ program.

EJ Considerations

Implementation of fishery management measures – particularly more restrictive measures that emphasize resource recovery – can result in socio-economic impacts to fishers. In the case of Amendment 29, losing IFQ shares or having to leave the fishery under duress or having to reduce your fishing infrastructure (vessels and gear), can be expected to be a hardship to most commercial fishers. This should be analyzed under NEPA.

EPA much appreciates the EJ information provided in the DEIS in an effort to determine if any EJ fishers would be affected by Amendment 29. We realize that gathering and documenting information on all the fishing communities in the Gulf of Mexico (GOM) associated with the commercial fishing of grouper would be an overwhelming task. We agree with the approach taken in the DEIS to document representative communities. We further concur with the use of "secondary data" (landings, federal permits and U.S. Census data) as a "starting point" (pg. 131) since Census data are inconclusive in this case (not all people in a Census geographic group are fishers) and since more direct information would require considerable time and funding to develop. We therefore can appreciate the DEIS discussion on *Social Impact Assessment Data Needs* (pg. xiv) that identifies the need for more community data and references CEQ Guidance 1502.22, which addresses EIS preparation when certain data are lacking (pg. xv).

We believe that Section 1502.22 should rarely be invoked. While hard data may not be readily available, a reasonable "good faith" effort of "due diligence" is usually possible to obtain usable data that may or may not be refined later within the NEPA process for a given EIS. We are therefore pleased to note that the present DEIS does contain some EJ information for three surrogate GOM grouper fishery communities (Madeira Beach, FL; Panama City, FL; and Port Isabel, TX). However, the FEIS would be much improved if the following modifications were included:

* *Selection Rationale* – The rationale for selecting the three surrogate communities as "representative" should be disclosed. For example, even though Madeira Beach was characterized as the "Grouper Capital of the World" (pg. 133), this by itself may or may not imply that it is a representative community in terms of GOM commercial grouper fishing or the demographics of the typical grouper fishers. That is, representative numbers of EJ fishers in the grouper complex fishery may not live in Madeira Beach but could live in unsurveyed communities. In addition, the FEIS should estimate how many communities along the GOM coastline include a substantive number of commercial grouper fishers. That is, are these communities part of 10, 50, 100, or 1,000 GOM fishing communities involved in the grouper complex fishery?

* *Data Sources* – The source(s) of data compiled for the three communities (other than the cited U.S. Census data) should be disclosed for each community (e.g., table on page 135 for Madeira Beach). We assume the sources are the secondary data discussed above. It is unclear if outreach surveys were also included.

* *Surveys* – Given the uncertainty of secondary data and the great task of gathering data for a complete analysis, perhaps the best approach is to directly survey given communities that are representative of the fishery. Such outreach data would be meaningful if the survey was comprehensive and representative.

* *Regulatory Impact Review* – Based on secondary and/or survey data, this section of the DEIS (pg. 242) should be improved in the FEIS by incorporating any EJ effects on fishers of the grouper complex fishery as they relate to Amendment 29. The DEIS version does not appear to include such information.

* *Mitigation* – Similarly, DEIS Section 5.7 on *Mitigation, Monitoring, and Enforcement Measures* (pg. 238) does not incorporate EJ information. We acknowledge that once any EJ impacts are determined, their mitigation is equally difficult to assess in terms of possible offsets to affected communities. However, we request that the FEIS attempt to further address societal impacts and solutions. It is our understanding that both environmental and socio-economic impacts are to be considered under the Magnuson-Stevens Act (MSA). As such, what relief might MSA offer to commercial fishers that leave the fishery under duress or sell their oversized/underutilized vessels, gear or other infrastructure as the size of the fishery is reduced by the IFQ program. In particular, hardship cases for any affected EJ fishers should be discussed with suggestions for potential federal or non-federal solutions provided to help offset impacts. Potential offset options might include any provisions within MSA or NOAA/NMFS

policy as well as opportunities for re-targeting to new fisheries that are not overfished, success in selling infrastructure at a fair price, availability of other employment or re-training for new employment.

NEPA Process

We note that the "Dear Reviewer" letter accompanying our copies of the DEIS indicates that public comments are due August 11, 2008. However, based on the date of the EPA *Federal Register* notice announcing the availability of this EIS (which in turn is based on EPA's receipt of copies of the EIS for filing), public comments are actually not due until August 18, 2008. We therefore ask that all comments received by then (we recommend even those only postmarked by then) will be accepted as official comments by NOAA/NMFS.

Summary

Because of the complexity of the fishery management alternatives provided for Amendment 29 as well as the extensive planning efforts already expended by NOAA/NMFS and the Council (and the AP) to develop these alternatives, EPA will principally defer to their fishery expertise. In general, however, EPA supports Amendment 29 as a means to restore the grouper complex fishery. Instances where we did not favor the preferred alternative identified in the DEIS were based on our preference to promote a more rapid recovery of the resource. That is, when given a choice, management restrictions were preferred over the no action.

At the same time, however, we are aware that implementing a more restrictive management approach can result in greater socio-economic impacts to fishers. In this case, losing IFQ shares, leaving the fishery under duress, or having to reduce your fishing infrastructure (vessels and gear) can be expected to be a hardship to most commercial fishers. To supplement the socio-economic information provided in the DEIS, we request that the FEIS provide additional discussion on societal issues related to each alternative ultimately preferred in the FEIS, with special emphasis on any hardships to EJ fishers. Such information might include outreach surveys of representative GOM grouper fishing communities to supplement the secondary information used. Possible federal and non-federal mitigative offsets for any determined EJ impacts should also be suggested.

EPA DEIS Rating

We rate this DEIS as "LO" (Lack of Objections). Nevertheless, we request that NOAA and the Council directly respond to our comments and suggestions in a dedicated section of the FEIS to facilitate the public review of the FEIS.

We appreciate the opportunity to review the DEIS. Should you have questions regarding these comments, feel free to contact Chris Hoberg of my staff at 404/562-9619 or hoberg.chris@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc: Dr. Rodney F. Weiber
NEPA Coordinator
National Oceanic and Atmospheric Administration
NOAA Office of Program Planning and Integration (PPI)
SSMC3 / Room 15603
1315 East-West Highway
Silver Spring, MD 20910

17.0 APPENDIX C - RESPONSE TO COMMENTS ON DEIS

Including comments from the EPA, 13 comments were received from individuals and organizations during the 45-day comment period on the DEIS. The following is a response to these comments. The EPA classified the DEIS and proposed actions as "LO" (Lack of Objections) and will publish these findings in the *Federal Register*. The following are responses to the public comments received.

Comment: The FEIS should clarify that consolidation of permits (Action A2) will reduce the number of permitted vessels in the fishery.

Response: Section 2.1.2 was clarified to indicate that permit stacking would result in a reduction in the number of vessels with reef fish permits.

Comment: Selection of Preferred Alternative 1 in Action B1 (Substantial Participants) does not seem appropriate since the intent of the amendment is to reduce capacity.

Response: The Council's preferred alternative in Action B1 would not specify individuals that the Council would consider as substantial participants in the commercial grouper and tilefish fisheries. However, Actions B2 and B6 provide specific limitations on who is eligible for initial share distributions and transfers.

Comment: The preferred alternative in Action B2 (Eligibility for Initial IFQ Shares) limits eligibility to "at most the 1,080 valid or renewable permits on record as of April 9, 2008." The FEIS should clarify why not all permit holders, opposed to "at most," would be eligible.

Response: Section 2.2.2 was clarified as follows: "Because a moratorium on commercial reef fish permit is in effect in the Gulf of Mexico, the universe of initial participants in the grouper and tilefish fisheries is well defined and would include at most the 1,028 valid or renewable permits on record as of August 31, 2008. This is the maximum number because some permits that were valid or renewable in August 2008 may be terminated (e.g., due to failure to renew) before the IFQ program is implemented."

Comment: It is unclear how multiuse IFQ shares would benefit the fishery since allocation can be used for more than one species.

Response: Multiuse shares are intended to reduce regulatory discards by providing fishermen added flexibility to retain fish while fishing. Because gag and red grouper populations often fluctuate in abundance due to changes in recruitment, establishing multiuse shares will assist fishermen in balancing their catches with changes in stock abundance.

Comment: If Preferred Alternative 3 in Action B6 (continues to be identified in the FEIS as the preferred alternative, the rationale for rejecting Alternative 2 should be further discussed.

Response: The Council selected Preferred Alternative 3 because it restricts transfers to reef fish permit holders during the first five years of the program and allows transfers to all U.S. citizens and permanent resident aliens thereafter. This alternative allow new entrants into the fishery (although they could not harvest and land grouper or tilefish unless they also possess a reef fish permit) after five years and provides initial IFQ shareholders an opportunity to sell their shares to

a greater pool of people after the initial five year time period. The Council believed Alternative 2 was too restrictive and did not allow transfers to a sufficient number of people after five years.

Comment: The preferred appeals process in Action B10 does not allow hardship cases to be considered. What offsets could be offered or suggested for fishers with legitimate hardship cases.

Response: The Council chose to not consider hardship arguments during appeals. Only appeals pertaining to reported logbook landings will be considered. Fishermen receiving less shares at the onset of the program due to hardships will have the ability to buy shares/allocation from other fishermen to increase the amount of fish they can land.

Comment: The successes and problems associated with existing IFQ programs (e.g., Gulf red snapper IFQ) should be discussed in the amendment.

Response: Section 2.1.1 was revised to include discussion of successes and problems (e.g., consolidation, bycatch, prices, etc.) associated with the Gulf red snapper IFQ program. This section also includes information on other IFQ programs.

Comment: The rationale for selecting the three surrogate fishing communities should be disclosed.

Response: Fishing communities were ranked according to the dealer reported number of pounds and value for the grouper and tilefish fisheries, using data for 2004-2007 to get an idea of which communities are dependent on the commercial grouper and tilefish fisheries. Permits data were also taken into consideration. A substantial portion of grouper and tilefish is landed off of west Florida and south Texas. For this amendment, Madeira Beach and Panama City, Florida, along with Port Isabel, Texas, were profiled. These communities ranked in the top six by landings during 2004-2007. The rankings for communities based on secondary data can change from year to year. Therefore, the communities chosen are communities that may be affected by new regulations but would not necessarily be ranked the same year to year according to landings.

Comment: The FEIS should estimate how many communities along the GOM coastline include a substantive number of commercial grouper fishers.

Response: NOAA Fisheries Service does not have an estimate of how many communities are involved in the commercial grouper fisheries. For just shallow water grouper, collectively, from 2004-2007, 147 cities had dealer reported landings of Gulf grouper. Of these 147 cities, 44 cities had landings with a cumulative (4-year) value of $100,000 or more (1 each in Alabama, Louisiana, and Texas, and 41 in Florida). For landed value of $1,000,000 or more there were 16 cities (all in Florida).

Comment: The source of data compiled for each fishing community should be disclosed.

Response: The amendment was revised to note the data sources used for fishing communities.

Comment: The Regulatory Impact Review should be improved in the FEIS by incorporating any environmental justice effects on fishers.

Response: The Fishery Impact Statement indicates that NOAA Fisheries Service has no information on the race and ethnicity, gender, and income of fishermen or others involved in the fishing industry. For this reason, environmental justice effects on fishers can not be fully addressed within this amendment.

Comment: Section 5.7 of the DEIS does not incorporate environmental justice information. The FEIS should attempt to further address societal impacts and solutions.

Response: Available data does not allow the determination of whether the characteristics of affected fishery participants trigger environmental justice considerations and the need for special mitigation measures to respond to environmental justice concerns. Nevertheless, the proposed actions would apply equally to all fishery participants regardless of minority or income status and no information has been identified that would indicate differential costs on or benefits to minority or low income persons distinct from those expected to accrue to other constituencies involved in the fishery. Therefore, no environmental justice issues have been identified and no mitigation measures in response to environmental justice issues have been considered.

Comment: The IFQ program should include a small amount of bycatch [per trip] (75-100 pounds) for fishermen who don't receive many shares to stay in business.

Response: This comment is outside the scope of actions considered in this amendment. Fishermen receiving small amounts of shares at the onset of the IFQ program may purchase shares or allocation in order to land grouper and tilefish and reduce their bycatch.

Comment: It is not fair to require a permit holder to have high landings to qualify for the IFQ program. Small producers with landings during the qualifying years should benefit equally with the large producers.

Response: High grouper and tilefish landings do not constitute a requirement to participate in the IFQ program. The Council considered several alternatives in Action B3 for distributing initial IFQ shares. No alternatives were considered for equally distributing shares among all persons eligible for the IFQ program. Section 303A(c)(5)(A) of the Magnuson-Stevens Act requires that when developing a limited access privilege program to harvest fish, a Council or the Secretary shall establish procedures to ensure fair and equitable initial allocations, including consideration of current and historical harvests. The Councils preferred alternative for distributing initial shares is generally considered the most equitable way to recognize both present and historical participation in the fishery.

Comment: The Council should exclude anyone who has not landed an average of 4,000 pounds of grouper during the best five years from 1998-2008.

Response: Actions C1 and C2 consider qualifying years and minimum harvesting thresholds for endorsements. These actions and there corresponding alternatives are similar to the comment suggested above, although different time periods are considered for qualification. The Council selected no action for each of these actions, opting instead to establish a Grouper/Tilefish IFQ program.

Comment: Longliners should be moved out beyond 50 fathoms.

Response: This comment is outside the scope of actions considered in this amendment.