July 27, 2006

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR AMENDMENT 26 TO THE GULF OF MEXICO REEF FISH FISHERY MANAGEMENT PLAN TO ESTABLISH A RED SNAPPER INDIVIDUAL FISHING QUOTA PROGRAM

(Including a Revised Initial Regulatory Flexibility Analysis and Regulatory Impact Review)

JULY 2006

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

This is a Publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA03NMF4410028

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Abbreviations Used in this Document

AHRSAP	Ad Hoc Red Snapper Advisory Panel
AP	Advisory Panel
Council	Gulf of Mexico Fishery Management Council
CPUE	Catch Per Unit Effort
DSEIS	Draft Supplemental Environmental Impact Statement
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
FMP	Fishery Management Plan
FSEIS	Final Supplemental Environmental Impact Statement
GCEL	General Counsel for Enforcement and Litigation
GOM	Gulf of Mexico
HAPC	Habitat Area of Particular Concern
IFQ	Individual Fishing Quota
IRFA	Initial Regulatory Flexibility Analysis
LASAF	Limited Access System Administrative Fund
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
mp	Million Pounds
MSY	Maximum Sustainable Yield
NMFS	NOAA's National Marine Fisheries Service
OY	Optimum Yield
RA	Regional Administrator
RFA	Regulatory Flexibility Act of 1980
RFFMP	Reef Fish Fishery Management Plan
RIR	Regulatory Impact Review
SEIS	Supplemental Environmental Impact Statement
SEP	Socioeconomic Panel
SFA	Sustainable Fisheries Act
SMZ	Special Management Zone
SPR	Spawning Potential Ratio
USCG	United States Coast Guard
VMS	Vessel Monitoring System

Final Supplemental Environmental Impact Statement (FSEIS) Cover Sheet

Responsible Agencies and Contact Persons

Dr. Roy Crabtree, Regional Administrator
National Marine Fisheries Service (NMFS)
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
Telephone: 727-824-5301
Fax: 727-824-5320
Email: Roy.Crabtree@noaa.gov
Web: http://sero.nmfs.noaa.gov

Name of Action

Amendment 26 to the Gulf of Mexico Reef Fish Fishery Management Plan (FMP) to Establish a Red Snapper Individual Fishing Quota (IFQ) Program.

Type of Action

(X) Administrative ( ) Legislative
() Draft (X) Final

Summary

The red snapper individual transferable quota (ITQ) program proposed in Amendment 8 to the Gulf of Mexico Fishery Management Council's (Council) Reef Fish Fishery Management Plan (FMP) and approved by NMFS in 1995 (60 FR 61200) was never implemented because of Congressional action taken through the 1996 Sustainable Fisheries Act to place a moratorium on the development or implementation of new ITQ programs until October 1, 2000. The Council and fishing industry remained interested in an ITQ-type program for the commercial red snapper fishery, and prepared another proposal after the Congressional moratorium expired. The individual fishing quota (IFQ) program proposed in Reef Fish FMP Amendment 26 (Amendment 26) is designed to reduce overcapacity in the commercial fishery and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving optimum yield.

This FSEIS is being filed with the EPA in association with Amendment 26. It includes discussion and analyses NMFS added to the SEIS contained in the amendment the Council approved and submitted for Secretarial review. This new text clarifies the distinction between IFQ shareholders and IFQ allocation holders, and more clearly distinguishes the roles and responsibilities of these two IFQ participant types. NMFS will solicit comments on this distinction and on other agency determinations needed to administer the program in the proposed rule for Amendment 26.

Filing Dates with Environmental Protection Agency (EPA)
Notice of intent to prepare DSEIS published on August 10, 2004(69 FR 48460)
DSEIS filed with EPA on: January 20, 2006 (71 FR 3291)
DSEIS comment period ended on March 6, 2006

FSEIS filed with EPA on XXX
FSEIS comment period ended on XXX

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Fishery Impact Statement - Social Impact Assessment Summary

This integrated document contains all elements of the Plan Amendment, an FSEIS, and a revised IRFA, RIR, Fishery Impact Statement (FIS), and Social Impact Assessment (SIA). The Table of Contents for the FIS/SIA is provided separately to aid reviewers in referencing corresponding sections of the amendment.

INTRODUCTION

Mandates to conduct a 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 NEPA, 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, FMPs must "...achieve and maintain, on a continuing basis, the OY from each fishery" (Magnuson-Stevens Act § 2(b)(4)). When considering "a system for limiting access to the fishery in order to achieve OY" the Secretary of Commerce (Secretary) and Regional Fishery Management Councils are to consider both the social and economic impacts of the system (Magnuson-Stevens Act § 303(b)(6)). Recent amendments to the Magnuson-Stevens Act require 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 FIS (Magnuson-Stevens Act § 303(a)(9)). With the addition of National Standard 8, FMPs must now consider the impacts upon fishing communities to assure their sustained participation and to the extent practicable minimize adverse economic impacts upon those communities (Magnuson-Stevens Act § 301(a)(8)). Consideration of social impacts is a growing concern as fisheries experience increased participation and/or declines in stocks. With an increasing need for management action, the consequences of such changes need to be examined to minimize the negative impacts experienced by the populations concerned to the extent practicable.

DATA LIMITATIONS 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). In addition, included under this interpretation are cultural impacts that may involve changes in values and beliefs, which affect the way people identify themselves within their occupation, communities and society in general. SIAs help determine the consequences of policy action in advance by comparing the status quo with the projected impacts. Therefore, it is important to gather as much information as possible concerning a fishery and its participants for an assessment.

It is also important to identify any foreseeable adverse effects on the human environment. With quantitative data often lacking, qualitative data can be used to provide a rough estimate of some of the impacts based on the best available science. In addition, when there is a body of empirical findings available from the social science literature, it needs to be summarized and referenced in the analyses.

In attempting to assess the social impacts of the proposed actions it must be noted little data are available for these analyses to provide a comprehensive overview of the fishery; therefore, analyses cannot predict all social impacts. In 1993, focus group interviews and telephone surveys were conducted with commercial fishermen in the Gulf of Mexico (GOM) who participate in the red snapper fishery (Thomas et al., 1993). These interviews identified some of the major problems and concerns for the red snapper fishery, but did not highlight specific fishing communities primarily dependent on the red snapper fishery. Due to the dynamic nature of change in coastal communities throughout the southeast, and the changes in fishery management since then, the fishery has changed. At that time, there were opportunities for fishermen to move to other fisheries or change their fishing behavior. Thomas et al (1993) reported "…many (fishermen) will adapt to stressed conditions by increasing effort in fishing for other species…" As noted by Thomas et al (1993), many of the red snapper fishermen already fished for other species but would consider expanding their participation in other fisheries as needed. Today, more fisheries are managed by quotas and have restrictions on the number of participants. This limits other opportunities red snapper fishermen may have had in the past and may make it impossible to rely on other fisheries in order to supplement their income derived from participation in the red snapper fishery.

The information available pertains primarily to the commercial harvesting sector for the red snapper fishery. These data include records of red snapper landings based on dealer reports in the GOM region, and permits data that can be used as a starting point for analyses of possible impacts of proposed actions. There are not enough data on communities that may be dependent on the red snapper fishery to fully describe the impacts of any change in fishing regulations on any one community. However, demographic information based on census data of the communities with the highest number of pounds landed attributed to the dealers in the given community is included to give some insight into the structure of those communities that land red snapper (see Section 6.0). The social impacts on non-commercial harvesters, the processing sector, the consumer, fishing communities, and society as a whole are not as

thoroughly addressed as would be if more information were available. The FIS consists of the description of the commercial fishery and the social impacts associated with the proposed actions. Data to define or determine impacts upon fishing communities are still very limited. However, these impacts have been analyzed and are based on the best available science.

Complete profiles of fishing communities in the southeast region are needed in order to gain a better understanding of the red snapper fishery and those dependent on it. At this time, NMFS is conducting preliminary research in all five states that border the GOM focusing on fishing-dependent communities. This research will aid in the identification of communities that should be classified as "fishing communities" as stipulated in the Magnuson-Stevens Act. The final reports for Louisiana and Florida should be complete by early 2006 with the reports for Texas, Mississippi, and Alabama to follow. Complete community profiles will then be developed in selected communities in the GOM region as time and funding allows. Due to the limited amount of funds to hire contract researchers and the limited time and funding available for research to be done by the region's anthropologists, the in-depth community profiling will take several years to complete.

SUMMARY OF SIA/FIS

Action 1: Establishment of the IFQ Program

The existing license limitation program (**Alternative 1**) in the GOM red snapper fishery does not address overcapitalization and the derby fishing conditions existing in the fishery. The proposed IFQ program (**Preferred Alternative 2**) represents the Council's attempt to address the existing and emerging problems resulting from an overcapitalized fishery.

Although an IFQ program is expected to reduce overcapacity in the fishery, there are factors that can limit the speed of this transformation, 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. By reducing fishing capacity, IFQ programs can limit employment opportunities in the fishery, and this can have trickle down effects on small fishing communities where job opportunities are scarce or skills of displaced fishermen are low.

Many people are concerned about the fairness of initial allocations that would result in windfall profits to a select few, the reduction of employment opportunities for vessel crew, the effects of the IFQ program on processors, the costs new fishermen would have to pay to gain entry, and the potential for IFQ shares to be consolidated in the hands of a select few. However, most concerns related to consolidation of IFQ shares can be addressed through individual program design as discussed below.

Action 2: Duration of the IFQ Program

The duration of the IFQ program affects the program's effectiveness in addressing derby effects and overcapitalization. A permanent or long-term duration, as in **Alternative 1** and **Preferred Alternative 2**, would encourage long-term planning and investment, allowing the fishing capital to adjust to socially optimal levels. Long-term privileges would also reduce uncertainty caused by changes in the "rules of the game" and provide

incentives to invest in the resource. A sunset provision for an IFQ program, as in **Alternative 3**, would introduce uncertainty and reduce the overall efficiency of the harvesting sector. While long-term privileges may provide the greatest potential for fleet adjustment and efficiency gains, there may be some benefits to creating short-term privileges, at least initially. Short-term privileges may be helpful in reaching compromises on the initial allocation of IFQ shares, maintaining the existing fleet configuration for distributional issues, and providing the industry with the opportunity to examine the program before committing to it permanently.

Action 3: Ownership Caps and Restrictions on IFQ Share Certificates

The absence of any ownership cap, as in **Alternative 1**, provides fertile ground for consolidation of operations. Consolidation is a necessary step toward achievement of efficiency in the fishery, as owners strive to maximize profit by taking advantage of the opportunity to reduce cost and improve productivity. The ownership caps proposed in **Alternative 2** and **Preferred Alternative 3**, would limit consolidation and potentially the achievement of the most efficient operations to harvest the commercial red snapper quota. While consolidation might be favored on economic efficiency grounds, concentration of IFQ shares in the hands of a relatively few individuals or entities could result in excessive market power. The concentration of market power could affect working conditions, prices, and wages paid to crew, and could harm some fishery participants. Consolidation also has the potential to eliminate small-scale operations in the red snapper fishery.

Action 4: Eligibility for Initial IFQ Allocation

Initial recipients of IFQ shares would benefit from any windfall profits associated with the IFQ program. These profits are not available to subsequent owners of IFQ shares because they would be required to purchase those shares. **Alternative 1** would allow anyone to be eligible to receive IFQ shares, regardless of whether or not they fish for red snapper now or have targeted that species in the past. There is a chance IFQ shares allocated to non-user groups would not be used, which could compromise the fishery's ability to produce optimal yield. **Alternative 2** would allocate IFQ shares only to Class 1 license holders while **Preferred Alternative 3** would identify both Class 1 and Class 2 license holders as initial recipients. From a purely economic standpoint, the initial distribution of IFQ shares is not as much of an overriding concern as the provisions on IFQ share ownership and transfer. But for an orderly implementation of the IFQ program, any alternative that provides guidance for initial distribution of IFQ shares is preferable to any other alternative that does not. The smaller the universe of initial recipients, the faster the development of an efficient fishery.

Action 5: Initial Apportionment of IFQ Shares

It is important to specify the method of apportioning the IFQ shares among initial recipients. For this reason, **Alternative 1** is not a viable alternative. **Preferred Alternatives 2** and **4** would base the initial allocation of IFQ shares on relative historic catch levels of the permit holders, while **Alternative 3** would allocate initial IFQ shares equally among all persons eligible for an initial allocation. **Preferred Alternatives 2** and **4** would benefit those harvesters that have the largest historic catch. If these harvesters were the most efficient operations, which might be assumed based on their ability to harvest the largest percentage of the catch historically, this method would increase

producer surplus and net benefits to the Nation. Allocating IFQ shares equally among eligible participants (**Alternative 3**) would benefit harvesters with smaller than average amounts of historic catch at the expense of harvesters with larger than average catch histories. This method would spread out the windfall profits realized by the initial recipients. However, Class 1 license holders would probably need to purchase quota from the Class 2 license holders to maintain their fishing operation. Until the quota were redistributed to the more efficient operations, this allocation method would likely result in lower producer surplus and net benefits to the Nation**. Preferred Alternative 4** specifically addresses the situation with Class 1 historical permit holders. These permits took effect in1998; therefore, a maximum of seven years of data are available for these permits. One major implication of this alternative is Class 1 historical captain permit holders would receive relatively larger allocations than if they were combined with all other Class 1 license holders. Considering the fact all Class 1 historical captain licenses have been sold for as much as $50,000, it is reasonable to assume new owners have the incentives to make their operations as efficient as possible. Hence, allowing these participants to receive higher allocations has the potential to speed up the process of making the fishery more efficient.

Action 6: Establishment and Structure of an Appeals Process

Considering the many points of contention regarding a license holder's landings records over a number of years, there exists the need for an appeals process. **Alternative 1** would not establish an appeals process under the IFQ program. Under **Preferred Alternative 2**, the appeals board would be solely composed of the Regional Administrator (RA). Under **Alternative 3**, state directors would compose the appeals board, with the RA still making the final decision. Under **Alternative 4**, IFQ shareholders would compose the appeals board, again with the RA making the final decision. None of the alternatives would provide for hardship arguments in the appeals process. Fishermen may consider **Alternative 4** to be the most equitable because the advisory panel would be composed of IFQ shareholders, but confidentiality of data would be a major concern. Neither the appeals process nor its design is expected to noticeably affect the benefits associated with the implementation of the IFQ program because an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. However, the appeals process would have the added benefit of helping to ensure any mistakes made in the initial allocation would be identified and corrected after the appeals process was finalized. **Preferred Alternative 5** would streamline implementation of the IFQ program by ensuring any changes to IFQ share allocations due to appeals would not significantly affect those persons initially allocated IFQ shares. At the same time, it also would ensure the annual commercial red snapper quota would not be exceeded in the event many appeals are settled in favor of fishermen toward the end of the fishing year.

Action 7: Transfer Eligibility Requirements

Transferability of IFQ shares is a crucial aspect of any IFQ program in achieving its economic objectives. The less restriction placed on the transfer of IFQ shares, the more effective an IFQ program becomes in realizing its objectives. However, transfer restrictions are usually developed to address concerns that implementing the IFQ program will change the status quo too rapidly or too dramatically. **Alternative 1** would not place any constraint on the transfer of IFQ shares, which may help those without history in the fishery to enter the fishery. With more buyers involved, sellers would

likely derive relatively good prices for their IFQ shares. **Alternative 2** would reward fishermen with commercial reef fish permits because they would be the only ones allowed to buy IFQ shares as they become available. **Alternative 3** would reward those initially eligible to participate in the IFQ program because they would be the only ones allowed to buy additional IFQ shares as they become available. **Alternative 4** is similar to **Alternative 1**, except non-permanent resident aliens or persons without U.S. citizenship would not be allowed to participate in the transfer of IFQ shares. **Alternative 5** would have similar effects as **Alternative 3** in the first five years of the program and then have similar effects as **Alternative 2** thereafter. **Preferred Alternative 6** would have similar effects as **Alternative 2** in the first five years of the program and then have similar effects as **Alternative 4** thereafter.

Action 8: Use it or Lose it: IFQ Shares or Allocations

A use it or lose it provision in the IFQ program is generally designed to prevent persons from acquiring IFQ shares for the sole purpose of not fishing them. It must be noted, however, it would be irrational for a commercial fisherman to forgo potential income from IFQ shares they own by simply holding them, especially with liberal transfer provisions provided for in the program. **Preferred Alternative 1** would allow people to hold IFQ shares but not use them. This would afford fishermen flexibility in adjusting their operations according to stock or market fluctuations. **Alternatives 2** and **3** would implement a use it or lose it provision. If either alternative were selected and actually prevented people from buying IFQ shares to prevent them from being fished, it would increase producer surplus and net National benefits. However, the increase is expected to be small for two reasons. Most people are expected to buy IFQ shares to fish them, so the action would probably not have a great impact on people's actions. Second, the alternatives would only require 30 or 50 percent of a person's IFQ shares be fished on average over the most recent three-or five-year period. People trying to limit red snapper harvests would still be able to prevent harvests for one or two of every three years or three or four out of every five years. The disadvantages of the use requirement (**Alternatives 2** and **3**) are the instability it would bring to the harvest sector and the indirect negative effects on the physical, biological, and ecological environment by forcing IFQ shareholders to harvest red snapper they might not have otherwise harvested in order to maintain eligibility. If some IFQ shares were not fished (e.g. held by lending institutions), the red snapper stock would rebuild more rapidly.

Action 9: Adjustments in Commercial Quota

Because red snapper is overfished, the annual total allowable catch (TAC) is likely to change over time as the stock rebuilds. The Council is developing an amendment, which will determine the annual TACs necessary for continued rebuilding of the red snapper stock. **Alternative 1** would not provide NMFS any direction on how to allocate adjustments in the TAC among IFQ participants. **Preferred Alternative 2** would specify a straightforward method for calculating how each IFQ shareholder will be affected by TAC adjustments. Under this method, participants with relatively large IFQ shares would experience relatively larger increases in IFQ shares when TAC increases, and relatively greater decreases in IFQ shares when TAC decreases. Alternatives that would divide TAC adjustments equally among the IFQ shareholders (50 percent of TAC changes under **Alternative 3** or 100 percent of TAC changes under **Alternative 4**) would benefit those individuals with smaller than average amounts of IFQ shares. **Preferred Alternative 5** would affect the timing of allocating the commercial quota for the 2007

fishing season. Although it would restrict the planning activities of fishermen, it would ensure fishermen would not have to forfeit red snapper allocation when the 2007 commercial quota is approved and implemented.

Action 10: Vessel Monitoring System (VMS)

A VMS requirement would enhance enforcement of the red snapper IFQ program, but costs are an important consideration. **Alternative 1** would benefit IFQ persons engaged in harvesting red snapper under the IFQ program by not requiring a VMS, thus alleviating concerns regarding cost, maintenance and perceived intrusive monitoring. **Preferred Alternative 2** would require all fishing vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS. Implementing a VMS program (**Preferred Alternative 2**) would increase the costs of operating the vessels in the commercial red snapper fishery. Those costs would either be borne by the IFQ shareholder (**Preferred suboption 2a**), by NMFS (**suboption 2b**) or by both groups (**suboption 2c, d**). If some (**suboption 2c**) or all (**suboption 2a**), of the costs of installing and maintaining the VMS system were the responsibility of the shareholders, it may create a financial hardship for some of the fishermen, especially the Class 2 license holders who would be making less income from participating in the red snapper IFQ program.

Action 11: Cost Recovery Plan

The Magnuson-Stevens Act requires NMFS collect fees to recover the costs of administering and enforcing IFQ programs. The costs of the red snapper IFQ program proposed in this amendment are generally expected to be higher than those associated with the current red snapper license limitation system. **Alternative 1** would not provide for a cost recovery program while **Alternative 2** and **Preferred Alternative 3** would provide for such a program. **Alternative 2** and **Preferred Alternative 3** are similar in all respects, except with respect to the responsibility for fee collection and submission. This responsibility would reside with the IFQ share/allocation holder under **Alternative 2** and with the IFQ dealer/processor under **Preferred Alternative 3**. At the proposed level of three percent and an ex-vessel price of $2.83 per pound, the total fee expected to be collected in the first years of the program would be $394,785. Producer surplus would be reduced by the amount of the fee plus any other costs associated with paying the fee. Those costs would include time and materials required for completing the paperwork and paying the fee. Under **Preferred Alternative 3,** dealers would incur some costs they may pass forward to the next market level (e.g., retailers and consumers) 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.

Based on an analysis of landings and permit data, there are no communities in the GOM region completely dependent on the red snapper fishery. Once community profiles are developed for some communities, it will be possible to more fully describe the impacts new rules and regulations will have upon fishing communities. For each community chosen for profiling, it will be important to understand the historical background of the community and its involvement with fishing through time. Furthermore, the fishing communities' dependence upon fishing and fishery resources needs to be established.

The purpose of implementing an IFQ program is to reduce overcapitalization and derby fishing, extend the fishing season for red snapper, and stabilize the market for red snapper. Some red snapper fishermen would prefer to work in an IFQ program so they have more choice of when to fish. This is beneficial in the case of bad weather, problems with boats or equipment, health problems, etc. Other red snapper fishermen have expressed their preference to be able to fish as much as they can until the commercial quota is met, without an IFQ program. Overall, an IFQ program for red snapper would help to achieve the goal of reducing overcapitalization and derby fishing, stabilize the market for red snapper, and allow fishermen to fish all year long or until they have harvested their individual allocation.

1.0 Executive Summary

This amendment includes a FSEIS, which examines the impact of amending the GOM Reef Fish FMP to implement an IFQ program designed to address overcapacity in the red snapper fishery. The Gulf of Mexico Fishery Management Council (Council) most recently addressed the problem of overcapacity in Amendment 8 to the GOM Reef Fish FMP, which was developed in 1995. In Amendment 8, the Council examined several management alternatives including license limitation, IFQ programs, and more traditional management measures (i.e., open access), and determined an IFQ program had the most potential to address overcapitalization and achieve OY from the fishery.

The primary purpose of the IFQ program proposed in this amendment is to reduce overcapacity in the commercial red snapper fishery and to eliminate, to the extent possible, the problems associated with derby fishing, in order to achieve OY from the fishery. The harvest privileges provided by such a program are intended to eliminate the incentive to over invest in the fishery and race to fish, and to give fishermen a long-term interest in the health and productivity of the fishery and, thus, an incentive to conserve it for the future. IFQ programs are generally effective in controlling exploitation, reducing the incentive to fish during unsafe conditions, improving fishery profitability, and extending the availability of fresh fish products to consumers. In some cases, the increased flexibility afforded IFQ program participants has improved fishing and handling methods, thereby increasing product quality and reducing bycatch discard mortality.

IFQ programs may also reduce gear conflicts and provide additional conservation benefits. Extending the duration of the fishing season could increase catch efficiency. Subsequent changes in fishing practices could include fewer areas fished and reduced crowding of prime fishing areas. As a result, these areas could be fished continually, and less desirable fishing areas could be avoided. Unfished habitat would benefit from the concentration of harvesting efforts elsewhere. Conversely, concentrated and sustained harvesting in the same area could be detrimental to benthic habitat in that area. However, local depletion of red snapper is less likely to occur when crowding on the fishing grounds decreases and the harvest is spread out over time. Additional conservation benefits may include fewer hooks in the water and decreases in fuel (a non-renewable resource), bait consumption, and gear loss. A reduced number of hooks would equate to reduced number of snags on bottom structure and biota, particularly for fragile corals and sponges, which are easily broken off. Improving catch efficiency could also decrease regulatory discards of red snapper.

1.1 Description of Alternatives

The range of alternatives the Council considered in proposing and designing its preferred IFQ program is described in Section 4.0 and summarized in Table 1.3.1a-k. These alternatives are discussed under their respective actions:

1) IFQ Program (Section 4.1);
2) IFQ Program Duration (Section 4.2);
3) Ownership Caps and Restrictions on IFQ Share Certificates (Section 4.3);
4) Eligibility for Initial IFQ Allocation (Section 4.4);
5) Initial Apportionment of IFQ Shares (Section 4.5);
6) Establishment and Structure of an Appeals Process (Section 4.6);
7) Transfer Eligibility Requirements (Section 4.7);
8) Use it or Lose it: IFQ Shares or Allocations (Section 4.8);
9) Adjustments in Commercial Quota (Section 4.9);
10) Vessel Monitoring System (Section 4.10); and
11) Cost Recovery (Section 4.11)

Alternatives considered but eliminated from more detailed study, are presented in Appendix A of this amendment, along with the rationale for their elimination.

1.2 Summary of Affected Environment

1.2.1 Biological Environment

The actions in this amendment would apply to the commercial red snapper fishery. Based on the latest stock assessment, the red snapper stock is overfished and undergoing overfishing. It is currently under a rebuilding plan, which is designed to end overfishing between 2009 and 2010 and rebuild the stock by 2032. Fishery managers have relied primarily on the use of TACs to manage red snapper mortality in the directed fishery and have managed the TACs with a combination of trip limits, seasonal closures, bag limits and/or size limits. Additionally, fishery managers have required shrimp fishermen to install bycatch reduction devices (BRDs) in trawl gear to reduce incidental mortality on juvenile red snapper. The Council is currently developing two amendments affecting both the directed red snapper fishery and the GOM shrimp fishery, which will evaluate measures to further reduce red snapper mortality to rebuild the red snapper stock..

Although this amendment focuses on the commercial red snapper fishery, the Council's proposed actions are likely to indirectly affect many other species of reef fish, as well as sea turtles and the smalltooth sawfish. All of these species occur in the affected area and could be incidentally caught in the red snapper fishery. To the extent the Council's proposed IFQ program reduces bycatch, these species could be positively affected. To the extent the Council's proposed IFQ program results in effort shifting, these species could be negatively affected.

1.2.2 Social and Economic Environments

The reef fish fishery and its red snapper component are composed of commercial and recreational sectors. Within the commercial sector are fishing vessels, dealers, support industries, and fishing communities. Recreational anglers participate in the reef fish fishery through several fishing modes, such as shore, private/rental, charter boats, and headboats. Charter boats and headboats comprise the for-hire fishery. In addition, there

are also fishing communities that provided a place of residence, business, or employment associated with the recreational pursuit of reef fish.
As of June 30, 2005, 136 entities held Class 1 licenses, which allow a daily vessel trip limit of 2,000 pounds of red snapper, and 628 entities held Class 2 licenses, which allow a daily trip limit of 200 pounds of red snapper. All of these entities may potentially be affected by actions in this amendment, as would others who do not currently hold Class 1 or Class 2 licenses but would like to enter the commercial red snapper fishery.

1.2.3 Administrative Environment

The actions in this amendment would apply to the commercial red snapper fishery in federal waters of the GOM. 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 Magnuson-Stevens Act divides responsibility for managing this fishery between the Secretary and the Council. The Secretary has delegated this management authority to NMFS. NOAA's Office of Law Enforcement, the
U. S. Coast Guard, and various state agencies enforce fishery regulations.

1.3. Summary of Environmental Consequences

Detailed analyses of the environmental consequences of all alternatives considered in this amendment are presented in Section 6.0. The following tables (Tables 1.3.1(a)-1.3.1(k)) summarize this information. Whether an effect is positive or negative is indicated with a "+" or "-" sign in the columns labeled "+/-". Alternatives are ranked according to the relative desirability of each for a particular type of environmental effect. There is a column labeled "Rank" next to each "+/-" column for each type of effect. A ranking of "1" means the indicated alternative best minimizes the adverse impacts and maximizes the positive impacts. If there are four alternatives, a ranking of "4" means the indicated alternative is the worst in terms of minimizing adverse impacts and maximizing positive impacts.

Table 1.3.1(a): Summary comparison of environmental consequences associated with Action 1 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 1: IFQ Program Management	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: Maintain existing license limitation program.	Habitat interactions	-	2	Short- term employment opportunities	+	2	Monthly notices, differential trip limits, quota closures	-	1
	Bycatch	-		Capital investment	-				
	Quota overruns	-		Vessel production costs	-				
	Spawning season closure	+		Ex-vessel prices	-				
				Derby conditions	-				
				Safety at sea	-				
				Fishing season length	-				
				Operator costs	-				

Action 1: IFQ Program Management	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
				Market supply	-				
				Overcapitalization	-				
Alt. 2: Implement an IFQ program.	Habitat interactions	+	1	Overcapitalization	+	1	Efficiency of data collection	+	2
	Bycatch	+		Employment	-				
	Quota overruns	+							
	Conservation incentive	+		Ex-vessel prices, revenues, and processor costs	+		Monitoring and enforcement requirements	-	
	Compliance	+		Vessel production costs	+				
	High grading	-		Safety at sea	+				
	Spawning season closure	-		Windfall profits	+				
				Fishing season length	+				
				Market supply	+				
				Efficiency	+				

Table 1.3.1(b): Summary comparison of environmental consequences associated with Action 2 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 2: IFQ Program Duration	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: Indefinite duration.	Likeliness of providing expected biological benefits described in Table 1.3.1(a)	+	2	Fishery efficiency	+	2	Future costs (none)	+	1
				Net revenue stream	+				
				Uncertainty	+				
Alt. 2: Indefinite duration; required review every A) 5 years, or B) 10 years.	Likeliness of providing expected biological benefits described in Table 1.3.1(a)	+	1	Fishery efficiency	+	1	Future costs (periodic reviews)	-	2A: 3
				Net revenue stream	+				2B: 2
				Uncertainty	+				
Alt. 3: Sunset after A) 5 years, or B) 10 years.	Likeliness of providing expected biological benefits described in	-	3	Short-term distributional issues	+	3	Future costs (action required to extend program, if successful)	-	4
				Uncertainty	-				
				Compromise in initial allocation	+				

Action 2: IFQ Program Duration	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
	Table 1.3.1(a)			Fishery efficiency	-				
				Opportunity to test program before committing	+				
				Net revenue stream	-				
				Producer surplus	-				
				Market for IFQ shares	-				

Table 1.3.1(c): Summary comparison of environmental consequences associated with Action 3 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 3: Ownership caps	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No ownership cap.	Habitat interactions	+	1	Concentration of market power	-	5	Number of shareholders to track	+	1
	Bycatch	+		Working conditions	-				
				Fishery efficiency	+				
				Small-scale operations	-				
				Crew wages	-				
				Ex-vessel prices and revenues	-				
Alt. 2: Cap IFQ shares at: A. 2%; B. 5%; C. 10%; or D. 15%.	Habitat interactions	-/+	2A: 6 2B: 5 2C: 3 2D: 2	Concentration of market power	+/-	2A: 6 2B: 3 2C: 2 2D: 4	Number of shareholders to track	-	2A: 6 2B: 5 2C: 3 2D: 2
	Bycatch	-/+		Ex-vessel prices and revenues	+/-		Number of shareholders to track	-	
				Small-scale operations	+/-				
				Working conditions	+/-				
				Crew wages	+/-				
Alt. 3: Cap IFQ shares at ~8%.	Habitat interactions	-	4	Concentration of market power	+	1	Number of shareholders to track	-	4
	Bycatch	-		Working conditions	+				
				Small-scale operations	+				
				Crew wages	+				
				Ex-vessel prices and revenues	+				
				Recognize existing operations	+				

Table 1.3.1(d): Summary comparison of environmental consequences associated with Action 4 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 4: Initial eligibility	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No restrictions.	Habitat interactions	-	3	Fishery efficiency	-	3	Number of shareholders to track	-	3
	Bycatch	-		Current fishery participants	-				
				Outsiders	+				
Alt. 2: Only Class 1 license holders eligible.	Habitat interactions	+	2	Fishery efficiency	+	2	Number of shareholders to track	-	1
				Class 1 license holders	+				
	Bycatch	-		Class 2 license holders and outsiders	-				
				Outsiders	-				
Alt. 3: Only Class 1 and Class 2 license holders eligible.	Habitat interactions	+	1	Fishery efficiency	+	1	Number of shareholders to track	-	2
				Current fishery participants	+				
				Outsiders	-				
	Bycatch	+		Small-scale operations	+				
				Crew wages	+				
				Ex-vessel prices and revenues	+				

Table 1.3.1(e): Summary comparison of environmental consequences associated with Action 5 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 5: Initial apportionment	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No methodology specified.	Cannot be estimated until methodology specified.		N/A	User satisfaction with management	-	-	Staffing and time requirements	-	3
Alt. 2: Proportional allocation based on catch histories.	Habitat interactions	+	1	Fishery efficiency	+	1	Staffing and time requirements	+	2
	Bycatch	+		Producer surplus	+				
				Net national benefits	+				
A. Class 1 license holders select i) 5 years, **ii) 10**	Cannot be differentiated			Qualifying participants with sporadic catch histories	+: i		Cannot be differentiated		

Action 5: Initial apportionment	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
consecutive years, or iii) all years **of data from** iv) 90 to 99, v) 90 to 00, **vi) 90 to 04**, vii) 93 to 02, viii) 94 to 03, or ix) 95 to 04.				Qualifying participants with larger than average historical catch histories	+: iv-v				
				Qualifying participants with larger than average historical and recent catch histories	+: vi				
				Qualifying participants with larger than average recent catch histories	+: vii-ix				
B. Class 2 license holders select i) 5 years, or ii) all years **of data from** iii) 98 to 02, iv) 98 to 03, or v) **98 to 04**.	Cannot be differentiated			Qualifying participants with sporadic catch histories	+: iv, v		Cannot be differentiated		
Alt. 3: Equal allocation.	Habitat interactions	-	2	Distribution of windfall profits	+	2	Staffing and time requirements	+	1
	Bycatch	-		Fishery efficiency	-				
				Producer surplus	-				
				Net national benefits	-				
Alt. 4: Historical captain's license holders may select seven years of landings.	Habitat interactions	+	1	Historical captains	+	1	Staffing and time requirements	+	2
	Bycatch	+		Fishery efficiency	+				

Table 1.3.1(f): Summary comparison of environmental consequences associated with Action 6 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 6: Appeals process	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No appeals process.	No effect		N/A	Ability to resolve disputes	-	4	Ability to resolve disputes	-	4
Alt. 2: RA resolves appeals; 90-	No effect		N/A	Ability to resolve disputes	+	3	Cost of resolution process	+	1
				Credibility	+/-				

Action 6: Appeals process	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
day deadline for filing.				Filing deadline	-				
Alt. 3: State Board of Directors resolves appeals; 120 – day deadline for filing.	No effect		N/A	Ability to resolve disputes	+	2	Cost of resolution process	-	2
				Credibility	+/-				
				Filing deadline	+/-				
Alt. 4: Panel of IFQ shareholders resolves appeals; 180-day deadline for filing.	No effect		N/A	Ability to resolve disputes	+	1	Cost of resolution process	-	3
				Credibility	+		Confidentiality issues	-	
				Filing deadline	+				
Alt. 5: Set aside 3% of IFQ shares to use in resolving appeals.	No effect		N/A	Minimize disruption following appeals process	+	1	Staffing and time requirements	+	1

Table 1.3.1(g): Summary comparison of environmental consequences associated with Action 7 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 7: Transferability	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: Unrestricted	Potential for conservation purchases	+	1	Marketability of IFQ shares/allocation	+	5	Staffing and time requirements	+	1
	Habitat interactions	+/-		Windfall profits/ IFQ share and allocation sale prices	+				
	Bycatch	+/-		Cost of entry	-				
				Rents	-				
				Commercial reef fish permit holders	-				
				Public	+				
				Recognition of capital investment	-				
Alt. 2: Commercial reef fish permit holders	Potential for conservation purchases	-	4	Marketability of IFQ shares/allocation	-	3	Staffing and time requirements	+	4
				Windfall profits/IFQ share and allocation sale prices	-				

Action 7: Transferability	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
	Habitat interactions	+		Cost of entry	+				
				Commercial reef fish permit holders	+				
	Bycatch	+		Recognition of capital investment	+				
				Public	-				
Alt. 3: IFQ shareholders.	Potential for conservation purchases	-	6	Marketability of IFQ shares/allocation	-	6	Staffing and time requirements	+	2
				Windfall profits/IFQ share and allocation sale prices	-				
	Habitat interactions	+		Cost of entry	+				
				Recognition of capital investment	+				
	Bycatch	+		Commercial reef fish permit holders	-				
				Public	-				
Alt. 4: U.S. citizens/ permanent resident aliens.	Potential for conservation purchases	+	2	Marketability of IFQ shares/allocation	+	2	Staffing and time requirements	-	6
	Habitat interactions	+/-		Windfall profits/IFQ share and allocation sale prices	+				
	Bycatch	+/-		Cost of entry	-				
				Recognition of capital investment	-				
				Commercial reef fish permit holders	-				
				Public	+				
				Equitability	+				
Alt. 5: IFQ shareholders 1st 5 years; commercial reef fish permit holders, thereafter.	Potential for conservation purchases	-	5	Marketability of IFQ shares/allocation	-	4	Staffing and time requirements	+	3
				Windfall profits/IFQ share and allocation sale prices	-				
	Habitat interactions	+		Cost of entry	+				
				Recognition of capital investment	+				

Action 7: Transferability	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
	Bycatch	+		Commercial reef fish permit holders	-/+				
				Public	-				
Alt. 6: Commercial reef fish permit holders 1st 5 years; U.S. citizens/ permanent resident aliens, thereafter.	Potential for conservation purchases	-/+	3	Marketability of IFQ shares/allocation	-/+	1	Staffing and time requirements	+/-	5
				Windfall profits/IFQ share and allocation sale prices	-/+				
	Habitat interactions	+/-		Cost of entry	+/-				
				Recognition of capital investment	+/-				
	Bycatch	+/-		Commercial reef fish permit holders	+/-				
				Public	+				
				Equitability	+				

Table 1.3.1(h): Summary comparison of environmental consequences associated with Action 8 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 8: Use it or lose it	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No use requirement.	Habitat interactions	+	1	Hardship provisions	+	1	Staffing and time requirements	+	1
	Bycatch	+		Public/non-use groups	+				
	Red snapper stock	+		Fishery efficiency	+				
				Producer surplus	-				
				Net national benefits	-				
Alt. 2: Revoke if inactive for 3 years. Inactive defined as less than A) 30%, or B) 50% annual average harvest of allotted shares over a 3-year moving average period.	Habitat interactions	-	2A: 4 2B: 5	Hardship provisions	-	2A: 4 2B: 5	Staffing and time requirements	-	3
				Fishery efficiency	-				
	Bycatch	-		Producer surplus	+				
	Red snapper stock	-/+		Net national benefits	+				
Alt. 3: Revoke if inactive for 5 years. Inactive	Habitat interactions	-	3A: 2 3B: 3	Hardship provisions	-/+	3A: 2 3B: 3	Staffing and time requirements	-	2
				Fishery efficiency	-/+				

Action 8: Use it or lose it	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
defined as less than A) 30%, or B) 50% annual average harvest of allotted shares over a 5-year moving average period.	Bycatch	-		Producer surplus	+				
	Red snapper stock	-/+		Net national benefits	+				

Table 1.3.1(i): Summary comparison of environmental consequences associated with Action 9 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 9: Quota adjustment strategy	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No predefined strategy.	Cannot be estimated until methodology specified.		N/A	Cannot be estimated until methodology specified.		N/A	Staffing and time requirements	-	2
Alt. 2: Proportional among all shareholders.	Habitat interactions	+	1	Producer surplus	+	1	Staffing and time requirements	+	1
	Bycatch	+		Consolidation	+				
				Fishery efficiency	+				
				Equitability	+				
Alt. 3: 50% proportional; 50% equal among all shareholders.	Habitat interactions	+/-	2	Producer surplus	+/-	2	Staffing and time requirements	+	1
	Bycatch	+/-		Consolidation	+/-				
				Fishery efficiency	+/-				
				Equitability	+/-				
Alt. 4: Increases equal among all shareholders; decreases equal among largest shareholders.	Habitat interactions	-	3	Producer surplus	-	3	Staffing and time requirements	+	1
	Bycatch	-		Consolidation	-				
				Fishery efficiency	-				
				Equitability	-				
Alt. 5: Issue initial allocations based on a proxy commercial quota if quota not defined when 2007 allocations must be issued.	Red snapper stock	+	1	Minimize disruption associated with 2007 quota adjustment	+	1	Staffing and time requirements	+	1

Table 1.3.1(j): Summary comparison of environmental consequences associated with Action 10 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 10: Vessel Monitoring Systems	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: Do not require VMS.	Effectiveness of conservation measures	-	5	User satisfaction with management	-/+	1	Enforcement	-	5
	High grading	-							
	Habitat interactions	-							
	Bycatch	-							
Alt. 2: Require VMS. A. IFQ shareholder pays. B. NMFS pays. C. NMFS and IFQ shareholder share costs. D. NMFS pays all but communication costs; IFQ shareholder pays remaining costs.	Effectiveness of conservation measures	+	2A: 1 2B: 4 2C: 2 2D: 3	Operating costs	-/+	2A: 5 2B: 2 2C: 4 2D: 3	Enforcement	+	2A: 1 2B: 4 2C: 2 2D: 3
	High grading	+		User satisfaction with management	-/+		Monitoring requirements	-	
	Habitat interactions	-/+		Fishery efficiency	+/-		Management costs	+/-	
	Bycatch	-/+							

Table 1.3.1(k): Summary comparison of environmental consequences associated with Action 11 alternatives. Preferred alternatives are highlighted in bold. Positive and negative effects are described with + and – signs, respectively. Rank 1 = best net benefits.

Action 11: Cost recovery plan	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No cost recovery.	No effect		N/A	Participant costs	+	1	Management costs	-	3
Alt. 2: IFQ shareholder pays fees, maintains	No effect		N/A	IFQ shareholder/ allocation holder costs	-	2	Management costs	+	2

Action 11: Cost recovery plan	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
records, and submits payments. A. Payments submitted: (i) quarterly; or **(ii) by (enter date).** B. Based on: **(i) actual ex-vessel value; or** (ii) standard ex-vessel price. **C. Annual reports: (i) required; or** (ii) not required.					-		NMFS must track individual reports	-	
Alt. 3: IFQ shareholder pays fees. Dealers maintain records and submits payments. A. Payments submitted: (i) quarterly; or **(ii) by (enter date). B. Based on:** (i) actual ex-vessel value**; or** (ii) standard ex-vessel price. C. Annual reports: (i) required**; or** (ii) not required.	No effect		N/A	IFQ shareholder/ allocation holder costs	-	3	Management costs	+	1
				Dealer costs	-		NMFS must track consolidated dealer reports		

1.4 Major Conclusions

While there are likely to be negative social, economic, and/or administrative impacts associated with some of the proposed actions, the negative social, economic, and biological consequences of not taking action to address overcapitalization and associated derby fishing are expected to be more severe in the long-term. The preferred alternatives evaluated in this amendment are expected to result in long-term benefits to red snapper fishermen, fishing communities, the GOM states, and the Nation by reducing overcapacity in the commercial fishery and eliminating, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving OY in the GOM red snapper fishery.

1.5 Areas of Controversy

1.5.1 Privatizing a Public Resource

All limited entry systems, by definition, restrict the number of participants in the fishery. IFQ programs are a form of limited entry. As such, they are sometimes perceived (both by participants in fisheries and other members of the public) as an attempt to privatize a public resource and are at odds with the idea the public has an inalienable right to free access of public resources.

In some cases, limiting access to this public resource results in large profits for a few fortunate fishery participants. For example, if the proposed IFQ program were adopted for the commercial red snapper fishery, IFQ shares would be given, without charge, to those who can demonstrate the required level of historical participation in the fishery. These initial IFQ shareholders could then profit from selling their shares, which they acquired for free. Some members of the public may consider receipt of these "windfall profits" by a select few as unfair to the vast majority of the public, who do not benefit financially from sale of the privilege to harvest a public resource. The Council believes giving the privilege to catch shares of red snapper, while reducing overcapitalization and eliminating the effects of a derby fishery, would foster stewardship of the resource among IFQ shareholders who could be assured they would be able to catch their allocation. The current license limitation system does not foster such a stewardship incentive but, rather, encourages participants to compete to harvest the available quota before it is reached and the fishery closed.

1.5.2 IFQ Eligibility and its Effects

Overcapitalization in the GOM red snapper fishery has resulted in fishing capacity exceeding that required to efficiently harvest the available TAC. Fishing capacity is the ability of a vessel or fleet of vessels to catch fish, and is generally defined by the number of vessels in the fleet, the size of each vessel, the technical efficiency of each vessel, and the time each vessel spends fishing. If overcapacity were reduced by reducing the number of participants in the fishery through an IFQ program, then some current (or potential future) red snapper participants would be excluded from the initial allocation of IFQ shares and would be required to pay to enter the fishery. These participants, who did not meet the qualifying criteria, would be required to leave the fishery or buy IFQ shares or allocation from others to remain in the fishery. In contrast, those who qualified for the IFQ program would be assured of privileges to land a certain percentage of the commercial quota and windfall profits if they later sell their IFQ shares. This disparity is a controversial aspect of IFQ programs. The Council has mitigated this disparity by choosing, as its preferred alternative, to restrict eligibility for the initial allocation of IFQ shares to persons who currently own a Class 1 or Class 2 license; this includes permanent resident aliens who currently own a Class 1 or Class 2 license subject to any other qualifications included in this proposed IFQ program. Ownership is defined as the person who actually controls transfer of the Class 1 or Class 2 license, and such person would be listed as the "qualifier" on the face of the leased/placed permit. Although those not currently involved in the fishery would have to pay to enter the fishery, they would have already had to pay to enter the current limited access fishery.

1.5.3 Consolidation

While consolidation is a primary goal of IFQ programs, excessive consolidation can have negative socioeconomic consequences. Section 303(d)(5)(c) of the Magnuson-Stevens Act "provides for a fair and equitable initial allocation of individual fishing quotas, prevents any person from acquiring an excessive share of the individual fishing quotas issued…". Consolidation occurs when IFQ shares become concentrated in the hands of fewer and fewer participants. Consolidation could be a positive economic development, and would be a logical outcome when a resource can be sold. However, it might result in only a few participants enjoying the benefits of this public resource, as the price of IFQ shares increases and smaller operators cannot afford to become shareholders. In some cases, these smaller operators might purchase allocation and become economically dependent on absentee IFQ shareholders. The Council is considering imposing caps on the number of IFQ shares each entity may hold in the proposed IFQ program to prevent excessive consolidation in the fishery.

1.5.4 Years Chosen For Landings History

The Council's proposed IFQ program would base the initial distribution of IFQ shares on the average annual landings associated with a current Class 1, Class 2, or historical Class 1 license. The number and choice of years to be selected are addressed in the suboptions for Action 5 in Section 4 of this document. The Council's preferred alternative would allow Class 1 license holders to select ten consecutive years of data during the period 1990 through 2004 (Class 1 historical captains will select seven years; Class 2 license holders will select five years of data). However, the landings data for 1990-1992 are incomplete for some permits. The Council prefers to include the 1990-1992 data where available because they reflect years of high landings for many permit holders. However, those permit holders for whom data would not be available could argue they had years of high landings, but cannot benefit from them because the data are missing. This would cause controversy, however, the Council believes the majority of permit holders would benefit from a decision to include all available data.

The concept of basing the initial allocation of IFQ shares on more than the last few years of landings could be objectionable to some. Those who purchased permits from others could object if the landings of the original owner were lower than their own. This is because the earlier years of low landings would bring down the average landings on which the current owner's IFQ shares are based, possibly causing the amount he/she could land in the future to be less than current levels. However, this approach also could result in a current permit holder receiving more IFQ shares than his/her current landings seem to merit. The Council does not believe it fair to deprive others not in this situation of the chance to use their landings history. Although controversial, the Council believes the preferred alternative meets the best interests of most participants.

1.5.5 Incomplete or Unavailable Information

The SIA in this document states, since quantitative data on the fishing communities affected by this amendment are incomplete, analyses cannot predict all social impacts of the proposed actions. These analyses have been completed based on the best available science. However, because they are based on a less than ideal amount of information, the utility of the predicted social effects may be viewed as controversial.

The incomplete natures of landings data, and its implications for allocation issues, are discussed in Section 1.5.4.

1.5.6 How these concerns will be addressed

The Council, in drafting this amendment, evaluated a range of alternative IFQ program elements. If the Council ultimately chooses to implement an IFQ program for the commercial red snapper fishery, it will identify as preferred alternatives those program elements it believes will result in the most appropriate, equitable, and effective program design. The Council believes the IFQ program described by the preferred alternatives in this amendment would be the best means to reduce overcapacity in the red snapper fishery, while achieving the best socioeconomic outcome for current red snapper commercial fishermen and the best biological outcome for red snapper and other affected species.

Many current participants in the GOM red snapper commercial fishery have a unique, Congressionally granted opportunity to vote on whether the Council should submit the IFQ program proposed in this amendment for Secretarial review, approval, and implementation. No participants in other federal fisheries currently have this opportunity. In the SFA of 1996, Congress mandated the Secretary to conduct referendums on any red snapper IFQ program (Magnuson-Steven s Act § 407(c)(2)). In the first referendum, conducted on February 27, 2004, a majority of voters supported the Council's development of a red snapper IFQ program. In the second referendum, conducted on January 17, 2006, a majority of voters supported the Council submitting the IFQ amendment to the Secretary for review. If a majority of eligible voters opposed the program, this amendment cannot be submitted to the Secretary. Therefore, if the Council does submit this amendment to the Secretary, all involved would be certain it reflects the wishes of the majority of red snapper commercial fishermen eligible to vote in the second referendum.

2.0 INTRODUCTION AND MANAGEMENT HISTORY

2.1 Introduction

This amendment proposes to implement an IFQ program in the GOM commercial red snapper fishery. A referendum required by § 407(c) of the Magnuson-Stevens Act and conducted by NMFS in February 2004 supports consideration of such a program. Persons eligible to vote in the referendum included red snapper Class 1 license holders, and both vessel captains harvesting red snapper in 1993-1996 and certain lessees of Class 1 licenses. These second two groups were issued ballots that prorated their landings of red snapper with the Class 1 license holder for the same vessel. NMFS issued 157 referendum ballots, 145 of which were filed with the agency. The weighted vote demonstrated 81 percent of respondents favored the Council consider an IFQ program. The Magnuson-Stevens Act requires the Council obtain the approval of a majority of eligible voters through a second referendum prior to submitting a proposed IFQ program for review by the Secretary. On January 17, 2006, NMFS issued 167 second referendum ballots, 140 of which were filed with the agency. The weighted vote demonstrated 87 percent of respondents favored the Council submitting the IFQ amendment to the Secretary for review. The agency presented the results of the second referendum to the Council in March 2006, and, at that time, the Council elected to submit the plan amendment to the Secretary. Secretarial approval of an IFQ program will be contingent

on the consistency of the proposed program with the provisions of the Magnuson-Stevens Act and other applicable laws.

2.2 History of Management

The management history of reef fish in the GOM demonstrates considerable efforts by the Council to balance the impacts on red snapper by the shrimp industry and the commercial and recreational sectors, and the difficulties in regulating these fisheries to achieve OY. A decline in some reef fish stocks has occurred in areas under the jurisdiction of the Council. Known factors contributing to this decline include overfishing by directed recreational and commercial users, reduction of habitat, and bycatch in other fisheries.

FMPs and regulatory amendments impacting the red snapper fishery are summarized below. A complete history of reef fish management in the GOM can be obtained from the Council at (http://www.gulfcouncil.org/).

2.2.1 Fishery Management Plans and Regulatory Amendments

Reef Fish FMP

The GOM Reef Fish FMP (with its associated environmental impact statement [EIS]) was implemented on November 8, 1984, and defined the reef fish Fishery Management Unit (FMU) to include red snapper and other important reef fish. Section 5.2.1 describes the FMU defined by the Reef Fish FMP. The FMP's implementing regulations were designed to rebuild declining reef fish stocks and included: 1) Prohibitions on the use of fish traps, roller trawls, and power head-equipped spear guns within an inshore stressed area; 2) a minimum size limit of 13 inches total length (TL) for red snapper, with exceptions that for-hire boats were exempted until May 8, 1987, and each angler could keep five undersize fish; and 3) the specification of OY for snapper and grouper [49 FR 39548].

Amendment 1 to the Reef Fish FMP (with its associated EA, RIR, and IRFA) was implemented on February 21, 1990. The primary objective of the amendment was to stabilize long-term population levels of all reef fish species by January 1, 2000, at a level that equaled at least 20 percent of the spawning stock biomass per recruit (SSBR) that would occur with no fishing. The amendment established a seven-red snapper recreational bag limit and a 3.1-million pound (mp) commercial quota for red snapper, which were to reduce fishing mortality by 20 percent. Additionally, the amendment specified a framework procedure for specifying TAC to allow for annual management changes, and established a longline and buoy gear boundary 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., shark) was limited to the recreational bag limit.

A **regulatory amendment** implemented on March 11, 1991, set the red snapper TAC at 4.0 mp, to be allocated with a commercial quota of 2.04 mp and a seven-red snapper recreational daily bag limit (1.96 mp allocation) beginning in 1991. This amendment also contained a proposal by the Council to effect a 50-perccent reduction of red snapper bycatch in 1994 by the shrimp trawl fleet operating in the exclusive economic zone (EEZ), to occur through the mandatory use of finfish excluder devices on shrimp trawls,

reduction in fishing effort, area or seasonal closures of the shrimp fishery, or a combination of these actions. This combination of measures was projected to achieve a 20 percent spawning potential ratio (SPR) by the year 2007. The 2.04 mp quota was reached on August 24, 1991, and the red snapper fishery was closed to further commercial harvest in the EEZ for the remainder of the year.

The Reef Fish Stock Assessment Panel (RFSAP) was convened in March 1990 at the Council's request to review the 1990 red snapper stock assessment produced by NMFS. The RFSAP recommended the Council close the directed fishery because the shrimp trawl fishery was harvesting the allowable biological catch (ABC). Without further reducing shrimp trawl bycatch, only a fishery closure would allow the Council to achieve the 20-percent SSBR goal by the year 2000. As a result, **Amendment 3** (with its associated EA, RIR, and IRFA), implemented on July 29, 1991, added flexibility to the annual framework procedure for specifying TAC by allowing rebuilding timeframes to be adjusted in response to changing scientific advice, with the exception that the maximum time to rebuild could not exceed 1.5 times the generation time of the species under consideration [56 FR 30513]. Additionally, the amendment revised OY and overfishing definitions, replaced the 20 percent SSBR target with a target of 20 percent SPR, and specified 2007 as the target year to rebuild the stock to 20 percent SPR.

The commercial red snapper fishery harvested its 2.04-mp annual quota in just 53 days in 1992, causing the fishery to close on February 22, 1992 [56 FR 33883]. NMFS implemented an **emergency rule** [56 FR 30513] at the Council's request, which reopened the fishery from April 3, 1992, through May 14, 1992, with a 1,000-pound trip limit. This rule was intended to alleviate the adverse economic and social effects of the extended fishery closure. NMFS determined the one-time quota overage approximating 600,000 pounds would not compromise red snapper rebuilding.

Amendment 4 (with its associated EA and RIR), implemented on May 8, 1992, established a moratorium on the issuance of new reef fish permits for a maximum period of three years. The moratorium was intended to moderate short-term future increases in fishing effort and to help stabilize fishing mortality while the Council considered a more comprehensive effort limitation program. It allowed permits to be transferred between vessels owned by the permittee or between individuals when the permitted vessel was transferred. Amendment 4 also changed the month in which red snapper TAC is specified from April to August, and added species to the reef fish FMU [57 FR 11914].

An **emergency rule**, effective December 30, 1992, created a red snapper endorsement to the reef fish permit. The endorsement was issued to owners or operators of federally permitted reef fish vessels who had annual landings of at least 5,000 pounds of red snapper in two of the three years from 1990 through 1992. The emergency rule provided permitted vessels with red snapper endorsements a 2,000-pound possession limit of red snapper during the open season, and permitted vessels without the endorsement a 200-pound possession limit during the open season. The rule was initially effective for 90 days and later extended for an additional 90 days. A related **emergency rule** delayed the opening of the 1993 commercial red snapper season until February 16 to allow NMFS time to process and issue the endorsements [59 FR 966].

A **regulatory amendment** implemented on March 23, 1993, increased the red snapper TAC to 6.0 mp, and allocated 3.06 mp and 2.94 mp to the commercial and recreational sectors, respectively. The amendment established a seven-red snapper recreational daily

bag limit, and adjusted the rebuilding target year to 2009, which was the maximum allowable rebuilding timeframe based on an estimated red snapper generation time of 13 years (Goodyear 1992) [58 FR 16371].

A **regulatory amendment**, implemented on January 1, 1994, delayed the start of the 1994 commercial red snapper fishery until February 10, 1994, to minimize fishing during hazardous winter weather and to ensure the commercial red snapper fishery was open during Lent, when there is increased demand for seafood. Additionally, the amendment restricted commercial vessels to landing no more than one trip limit per day [58 FR 68325].

Amendment 5 (with its associated EIS, RIR, and IRFA), implemented on February 7, 1994, restricted the use of fish traps within the Gulf EEZ, and implemented a three-year moratorium on participation in the fish trap fishery by creating a fish trap endorsement and limiting qualifiers to those trap fishermen who had recorded reef fish landings between January 1, 1991, and November 19, 1992. Additionally, Amendment 5 created a special management zone (SMZ) with gear restrictions off the Alabama coast, created a framework procedure for establishing future SMZs, required all finfish (except oceanic migratory species) be landed with head and fins attached, established a schedule to gradually raise the minimum size limit for red snapper to 16 inches (TL) over a period of five years, and closed the Riley's Hump area (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations.
Amendment 6 (with its associated EA, RIR, and IRFA), implemented on June 29, 1993, extended the provisions of the red snapper endorsement emergency rule for the remainder of 1993 and 1994, unless replaced sooner by a comprehensive effort limitation program. In addition, the amendment added trip limit adjustments to the list of management actions covered under the framework procedure for specifying TAC [58 FR 33025].

Amendment 7 (with its associated EA, RIR, and IRFA), implemented on February 7, 1994, established reef fish dealer permitting and record keeping requirements, allowed fish trap permits and endorsements to be transferred between immediate family members during the fish trap permit moratorium, and allowed other reef fish permits or endorsements to be transferred if the permit holder died or became disabled. The Secretary disapproved one provision of the amendment, which would have limited the sale of reef fish to permitted dealers [59 FR 6588].

A **regulatory amendment** implemented on January 1, 1995, established February 24, 1995, as the opening date of the 1995 commercial red snapper fishery. Additionally, the amendment reduced the recreational daily bag limit to five fish, and increased the recreational minimum size limit to 15 inches TL (one year ahead of the scheduled increase), in response to continued overages by the recreational sector [59 FR 67646].

A red snapper ITQ program, proposed in **Amendment 8** (with its associated EA, RIR, and IRFA) and approved by NMFS in 1995 [60 FR 61200], was never implemented because of Congressional action taken through the 1996 SFA to place a moratorium on the development or implementation of new ITQ programs until October 1, 2000. The ITQ program proposed in Amendment 8 would have: allocated the commercial red snapper quota based on historical participation in the fishery during the years 1990-1992; specified a four-year period for harvest under the ITQ program, during which time the Council and NMFS would evaluate the program and determine whether it should be eliminated, extended as is, or adjusted; and established a Council-created board to

consider appeals. An interim rule published in February 1996 (61 FR 7751) suspended implementation of the red snapper ITQ previously scheduled to begin April 1, 1996, to make sure the entire 1996 commercial quota for red snapper available to the fishery which opened February 1, 1996, and to extend for the emergency period the red snapper trip limit and permit endorsement system.

Amendment 9 (with its associated EA and RIR), implemented on July 27, 1994, provided for collection of commercial red snapper landings and eligibility data for the years 1990 through 1992 to assist in identifying potential qualifiers for and analyzing the effects of limiting access to the fishery. This amendment also extended the reef fish permit moratorium and red snapper endorsement system through December 31, 1995, to prevent participation in the fishery from increasing while the Council considered longer-term measures. The Council received the results of the data collection effort in November 1994, at which time consideration of Amendment 8 resumed [59 FR 39301].

A **regulatory amendment**, implemented October 16, 1996, increased the red snapper TAC to 9.12 mp, and allocated 4.65 mp and 4.47 mp to the commercial and recreational sectors, respectively. The amendment extended the target recovery date to 2019, based on new information the life span and generation time of red snapper was longer than previously believed. A March 1996 addendum to the regulatory amendment split the 1996 and 1997 commercial red snapper quotas into two seasons each: a spring opening on February 1 with a 3.06 mp quota, and a fall opening on September 15, after which the remainder of the quota could be taken [61 FR 48641].

Amendment 11 (with its associated EA and RIR) was partially approved by NMFS and implemented January 1, 1996. Provisions approved in the amendment included: limited sale of GOM reef fish by permitted vessels to permitted reef fish dealers; required permitted reef fish dealers to purchase reef fish caught in GOM federal waters only from permitted vessels; allowed reef fish permits and fish trap endorsements to be transferred in the event of death or disability; implemented a new reef fish permit moratorium for no more than five years or until December 31, 2000, while the Council considered limited access for the reef fish fishery; allowed permit transfers to other persons with vessels by vessel owners (not operators) who qualified for their reef fish permit; allowed 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; and established a charter vessel/headboat permit program [60 FR 64356].

The agency 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, NMFS also disapproved a revised proposal to define OY as 30 percent SPR. Following the Congressional repeal of the red snapper ITQ program proposed in Amendment 8, an **emergency rule** was published in the *Federal Register* on January 2, 1996, to extend the red snapper endorsement system for 90 days. That emergency rule was superseded by another **emergency rule**, published in the *Federal Register* on February 29, 1996, which extended the red snapper endorsement system through May 29, 1996, and subsequently, for an additional 90 days until August 27, 1996.

Amendment 12 (with its associated EA and RIR) was implemented on January 15, 1997. NMFS disapproved proposed provisions that would have exempted the commercial sector from the automatic red snapper size limit increase to 15 inches TL in 1996 and to 16 inches TL in 1998 [61 FR 65983].

Amendment 13 (with its associated EA and RIR), implemented on September 15, 1996, further extended the red snapper endorsement system through the remainder of 1996 and, if necessary, through 1997, in order to give the Council time to develop a permanent limited access system that was in compliance with the new provisions of the Magnuson-Stevens Act [61 FR 48413].

A **regulatory amendment**, implemented on March 17, 1997, changed the opening date of the fall 1997 commercial red snapper season from September 15 to September 2 at noon, and closed the season on September 15 at noon. Thereafter, the commercial season was opened from noon of the first day to noon of the fifteenth day of each month until the 1997 commercial quota was reached. The amendment also addressed the new Magnuson-Stevens Act requirement that recreational red snapper be managed under a quota system by authorizing the RA to close the recreational fishery in the EEZ at such time as projected to be necessary to prevent the recreational sector from exceeding its allocation. The recreational red snapper fishery was closed on November 27, 1997, after filling its 1997 quota of 4.47 mp [61 FR 46677 and 61 FR 48641].

A **regulatory amendment**, implemented on January 1, 1998, exempted the recreational sector from the pre-approved plan (see Amendment 5) to increase the red snapper minimum size limit to 16 inches TL [63 FR 443].

Amendment 14 (with its associated EA, RIR, and IRFA), implemented on March 25 and April 24, 1997, implemented a ten-year phase out of the reef fish trap fishery, and allowed fish trap endorsements to be transferred for two years, after which time such transfers would be limited to death or disability situations, to other vessels 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. Additionally, Amendment 14 prohibited the use of fish traps west of Cape San Blas, Florida, provided the RA authority to reopen a fishery prematurely closed before the allocation was reached, and modified the provisions for transferring commercial reef fish vessel permits [62 FR 13983].

Amendment 15 (with its associated EA, RIR, and IRFA), implemented on January 29, 1998, replaced the temporary red snapper endorsement system with a permanent two-tier red snapper license limitation system. The new system provided Class 1 license holders with a 2,000-pound trip limit, and Class 2 license holders with a 200-pound trip limit. Vessels without a Class 1 or Class 2 red snapper license were prohibited from commercial harvest of red snapper. Licenses were fully transferable. The amendment divided the commercial red snapper season into two parts: two-thirds of the quota was allocated to a February 1 opening; and the remaining quota was allocated to a September 1 opening. The commercial fishery was allowed to operate from noon of the first day to noon of the fifteenth day of each month during each opening until the respective quotas were reached [62 FR 67714].

A subsequent **regulatory amendment** proposed maintaining the 9.12 mp TAC, but reducing to zero the bag limit for the captain and crew of for-hire recreational vessels in order to extend the recreational red snapper season. NMFS provisionally approved the

Council's proposal to maintain the TAC. However, the agency released only 6.0 mp of the TAC, indicating the remaining 3.12 mp would be released only if shrimp bycatch reduction devices (BRDs) achieved better than a 50-percent reduction in juvenile red snapper shrimp trawl mortality. The agency did not approve the proposed reduction in bag limit for captain and crew of for-hire recreational vessels. The 3.12 mp TAC held in reserve was released on September 1, 1998, following the completion of a shrimp trawl observer program conducted during the summer of 1998, which indicated BRDs would be able to achieve the bycatch reduction needed for the red snapper recovery program to succeed. In lieu of implementing the regulatory amendment, NMFS implemented an **interim rule** effective April 14, 1998 [63 FR 18144], which initially allocated only two-thirds of the 9.12 mp TAC, and reduced the recreational red snapper daily bag limit to four fish from January 1 to August 30, 1998. A subsequent **interim rule** allocated the remainder of the TAC effective September 1, 1998.

An **interim rule**, implemented in January 1999, extended the four-fish recreational daily bag limit rule, and provided for the recreational fishery to reopen in January 1999 [64 FR 47711]. A **regulatory amendmen**t implemented on October 1, 1999, reduced the recreational red snapper daily bag limit to four fish for recreational fishermen and to zero fish for captain and crew of for-hire vessels. The amendment specified March 1 as the opening date of the recreational red snapper fishing season, reduced the commercial and recreational red snapper minimum size limit to 14 inches TL, and reduced the duration of the commercial red snapper fishery from 15 days to 10 days each month beginning September 1, until the seasonal sub-allocation was met or the fishing year ended. The zero-fish bag limit provision for captain and crew was rescinded by a December 1999 interim rule before it became effective.

Amendment 17 (with its associated EA and RIR), implemented on August 2, 2000, extended the reef fish permit moratorium to December 31, 2005, unless replaced sooner by a comprehensive controlled access system [65 FR 41016].

A **regulatory amendment**, implemented on September 18, 2000, increased the red snapper recreational minimum size limit from 15 inches to 16 inches TL, established a four fish recreational daily bag limit, and reinstated the red snapper bag limit for captain and crew of for-hire vessels. The amendment specified a recreational red snapper season of April 15 through October 31, subject to revision by the RA to accommodate reinstating the bag limit for captain and crew. Additionally, it provided for a commercial red snapper spring and fall season to open at noon on February 1 and on October 1, respectively. The amendment provided for a ten-day fishery each month of each season until the seasonal sub-allocations were reached [65 FR 50158]. These measures were implemented through an **interim rule** on January 19, 2000 [64 FR 71056], and extended through a second **interim rule** on June 19, 2000 [65 FR 36643].

Amendment 19 (with its associated EIS, RIR, and IRFA), implemented on August 19, 2002, amended all Gulf FMPs. This amendment established two marine reserves off the Dry Tortugas, within which fishing and anchoring by fishing vessels were prohibited [67 FR 47467].

Amendment 20 (with its associated EA and RIR), implemented on June 16, 2003, amended the Reef Fish and Coastal Pelagic FMPs. This amendment established a three-year moratorium on the issuance of new charter and headboat vessel permits in GOM reef fish and coastal migratory pelagic fisheries to limit further expansion in the for-hire

fisheries while the Council considered the need for more comprehensive effort management systems. The control date notice announcing the consideration of a limited access system was dated November 18, 1998. However, the Council established a qualifying cut-off date of March 29, 2001, to include all those for-hire vessels who were permitted or who had applied for a permit at that time. Persons with a recreational for-hire vessel under construction prior to March 29, 2001, and who could demonstrate expenditures of at least $5000.00 also qualified for a moratorium permit, as did persons who qualified as historical captains [68 FR 26230].

Amendment 21 (with its EA, RIR, and IRFA), approved in March 2004, extended the Madison-Swanson and Steamboat Lumps marine reserve closures for six years and modified fishing restrictions within the reserves.

Amendment 22 (with its FSEIS, RIR, and IRFA), implemented on July 5, 2005, set post-SFA biological reference points and status determination criteria for red snapper, established a rebuilding plan for the red snapper stock, and specified a reporting program to improve bycatch monitoring in the reef fish fishery.

Amendment 23 (with FEIS, RIR, and IRFA) implemented on July 8, 2005, contained measures for vermilion snapper designed to end overfishing and initiate implementation of the rebuilding plan in a manner that allocates the necessary restrictions fairly and equitably between the recreational and commercial sectors of the fishery, as required by the Magnuson-Stevens Act.

Amendment 24 (with its EA, RIR, and IRFA), approved in June 2005, established an indefinite limited access system for the commercial reef fish fishery in the Gulf EEZ.

Relevant Amendments to the Shrimp FMP

The GOM Shrimp FMP (with its associated EIS, RIR, and IRFA), implemented on May 15, 1981, was intended to enhance yield in volume and value by deferring harvest of small shrimp to allow for growth. Principle actions in the amendment established: 1) A Tortugas Shrimp Sanctuary in which the state of Florida participated in closing a shrimp trawling area where small pink shrimp comprise the majority of the population; 2) a 45-day seasonal closure in which the state of Texas participated in protecting small brown shrimp emigrating from bay nursery areas; and 3) seasonal zoning off Florida Bay to avoid gear conflicts in the shrimp and stone crab fisheries [46 CFR 27489].

Amendment 9 to the Shrimp FMP (with its associated SEIS, RIR, and IRFA), approved in May 1998, required shrimp trawls operating in federal waters from Cape San Blas, Florida, to the Texas/Mexico border, to use a NMFS-certified BRD, and provided for the certification of the Fisheye BRD in the 30-mesh position. The purpose of this action was to reduce the bycatch mortality of juvenile red snapper by 44 percent from the average mortality for the years 1984 through 1989. Amendment 9 exempted royal red shrimp trawling occurring outside of 100 fathoms, as well as groundfish and butterfish trawls. It also excluded small try nets and no more than two rigid, roller frame trawls not exceeding 16 feet in length. Amendment 9 also provided mechanisms to change the bycatch reduction criterion and to certify additional BRDs [63 FR 18139].

Amendment 10 to the Shrimp FMP (with its associated EA, RIR, and IRFA), approved in March 2004, required vessels trawling for shrimp in the EEZ east of Cape San Blas,

Florida, to install NMFS-certified BRDs that reduce finfish bycatch by at least 30 percent by weight in each net used aboard. The amendment exempted vessels trawling for groundfish or butterfish, single try nets with headrope lengths of 16 feet or less per vessel, and no more than two rigid, roller frame trawls not exceeding 16 feet in length [69 FR 1538].

Amendment 13 to the Shrimp FMP (with its associated EA, RIR, and IRFA), submitted by the Council for Secretarial review in May 2005, proposes to: Establish a separate vessel permit for the royal red shrimp fishery or an endorsement to the existing federal shrimp vessel permit; define maximum sustainable yield (MSY), OY, the overfishing threshold, and the overfished condition for royal red and penaeid shrimp stocks in the Gulf; establish bycatch reporting methodologies and improve collection of shrimping effort data in the Gulf EEZ; require completion of a Gulf Shrimp Vessel and Gear Characterization Form; establish a moratorium on the issuance of commercial shrimp vessel permits; and require reporting and certification of landings during a moratorium.

2.2.2 Control Date Notices

Control date notices are used to inform the public the Council is considering limiting access to a fishery. If a limited access program is established, anyone not participating in the fishery by the published control date may not be eligible to receive a limited access permit. However, those denied initial access to the fishery could enter the fishery at a later date if limited access permits are transferable. Publishing a control date does not obligate the Council to use that date in determining initial eligibility criteria for a limited access program. Control date notices are primarily intended to discourage new entry into a fishery based on economic speculation while the Council is considering limited access programs. Control date notices published for the Reef Fish FMP are summarized below.

November 1, 1989 - Anyone entering the commercial GOM and South Atlantic reef fish fisheries after November 1, 1989, is not 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 limit entry in the recreational for-hire (i.e., charter vessel and headboat) reef fish and coastal migratory pelagic fisheries in the Gulf EEZ and, if so, what type of management measures should be imposed. Possible measures included a limited entry program to control participation or effort in the recreational for-hire reef fish and coastal migratory pelagic fisheries [63 FR 64031]. The Council adopted a qualifying date of March 29, 2001, in Amendment 20.

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 Gulf EEZ and, if so, what type of management measures should be imposed. Possible measures included modifying the existing limited entry program to control fishery participation or effort based on gear type; for example, gear endorsements on commercial reef fish vessel permits. Gear types addressed include longlines, buoy gear, handlines, rod-and-reel, bandit gear, spearfishing gear, and powerheads used with spears [65 FR 42978].

March 29, 2001 - The Council is considering whether there is a need to limit participation in the reef fish and coastal migratory pelagic charter and headboat fisheries.

This notice advises the public that people entering the fisheries after this date may not be assured of future access if an effort limitation management regime is developed and implemented that limits the number of vessels or participants in the fishery, and if the control date notice issued as criterion for eligibility [67 FR 32312].

2.2.3 History of the National Research Council (NRC) Study

IFQ programs have been used to manage fisheries worldwide since the 1970s (NRC, 1999). Four IFQs were implemented in the U.S. before Congress placed a moratorium on new programs in 1996 through the SFA. This moratorium was enacted in response to concerns about the social and economic effects of IFQs. Congress asked the NRC to conduct a national level review of IFQs and provide recommendations as to their future use.

The NRC established a committee of experts in anthropology, economics, law, political science, business, fisheries biology and management to respond to the Congressional request. This committee conducted five hearings nationwide with stakeholders, government employees, environmental organizations, and other interested parties. Their report, Sharing the Fish (NRC, 1999), resulted from committee deliberations on the testimony received at these hearings. This report gave specific recommendations regarding IFQs on a national level.

The NRC study concluded IFQs are a useful management tool to address management of fishery resources, and no other management approach can achieve all the specific objectives as well as IFQ. Therefore, the NRC study recommended the moratorium on IFQ programs be terminated (and Congress later did so). The NRC study also recommended IFQs be allowed as an option in fisheries management if a regional council finds them to be warranted by conditions within a particular fishery and appropriate measures are imposed to avoid potential adverse effects. Furthermore, the issues of initial allocation, transferability, and accumulation of shares should be given careful consideration when IFQ programs are considered and developed by regional councils and reviewed by the Secretary (NRC, 1999).

The NRC study also recommended Congress amend the Magnuson-Stevens Act to define the nature of the IFQ privilege. The study surmised this privilege could give the quota holder the right to civil litigation against the illegal actions of others that could adversely affect the resource of the environment, but it did not advocate legal action against government agencies for “decisions designed to protect marine resources and the environment” using actions that could affect the amount of fish available for capture (NRC, 1999).

3.0 PURPOSE OF AND NEED FOR ACTION

The GOM commercial red snapper 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 (Leal et al., 2005; Weninger and Waters, 2003). This overcapacity has caused commercial red snapper regulations to become increasingly restrictive over time, resulting in derby-type conditions, where participants compete with each other to harvest as many fish as possible before the quota is taken and the fishery is closed for the remainder of the fishing year (Weniger and Waters, 2003).

Derby fisheries create negative social and economic conditions by: reducing or eliminating considerations about weather conditions in deciding when to fish, which adversely affects safety at sea; interrupting normal fishing patterns; flooding the market with fish, which depresses ex-vessel prices and reduces producer surplus; making it difficult to comply with and enforce fishery regulations, which frustrates fishery participants and reduces regulatory effectiveness; and increasing competition and differential regulations, which exacerbates user conflicts (Waters 1991, 2001). Further, derby fisheries can unnecessarily adversely affect target and non-target stocks by providing participants less flexibility in deciding when, where, and how to fish.

Dr. Michael Orbach documented these derby-related problems in a 1993 report on the GOM commercial red snapper fishery, following three workshop series he conducted in the early 1990s. These workshops were designed to identify ongoing problems in the fishery, educate stakeholders about various types of tools available to fishery managers, and solicit stakeholder feedback on the desirability of alternative tools in relation to biological, economic, social, and administrative objectives. IFQ and license limitation programs surfaced as the two tools with the most potential for effectively addressing problems in the commercial red snapper fishery.

The Council evaluated the benefits and drawbacks of IFQ and license limitation programs in Amendment 8 to the Reef Fish FMP. Specific problems identified in Amendment 8 include:

1. The harvest capability of the red snapper fleet is larger than needed to harvest the commercial quota in an economically efficient manner;

2. The derby fishery compromises vessel safety by encouraging fishermen to begin or continue trips under adverse weather conditions;

3. The total revenue derived from current landings is not reaching the highest level possible because the quota system creates a derby, which tends to depress the average price paid to the fishermen. Lower prices may benefit consumers;

4. A derby fishery tends to reduce producer surplus that would otherwise be available from the fishery and has an unknown but limited effect on consumer surplus derived from the fishery;
5. The current management system contains a number of regulations, which in aggregate lead to high administration costs, difficulties in enforcement and compliance, inefficient production of available quota, frustration on the part of fishery participants, and difficulties in collecting timely data needed to track and manage the fishery;

6. The red snapper stock rebuilding program could be impacted by possible quota overruns associated with the derby fishery, and discard mortality during extended closed periods;

7. User conflicts are being exacerbated by differential trip limits under the endorsement system and by the short red snapper quota seasons, which favor those fishermen who are closer to the resource, or have vessels that can operate in inclement weather;

8. Net economic benefits are being eroded due to the market glut from the derby fishery and the inability of the industry to provide red snapper product year round;

9. Increased red snapper discard mortality associated with recovery of the stock;

10. Regulatory discards during those time periods when the red snapper fishery is closed to commercial harvests; and

11. The creation of additional bycatch when the size limit was increased to extend the season.

Despite the fact Amendment 8 to the Reef Fish FMP was submitted more than ten years ago (June 1995), many of the problems noted in the document have yet to be resolved. For example, there is little doubt the harvest capability of the red snapper fleet continues to be well in excess of that needed to harvest the commercial quota in an economically efficient manner. Nor is there doubt a derby situation continues to exist in the fishery. This derby situation continues to compromise vessel safety and, as quantified by Waters (2001), has resulted in a long-term reduction in the dockside price received for the harvested red snapper product. Waters (2001) estimated, in total, a fishermen might have earned an additional $5.3 million per year had a derby fishery not developed or more than $35 million over the 1992-99 period. On a percentage basis, this reflects about a 50-percent reduction in revenues received by fishermen at the dock.

The loss in revenues has resulted in a concomitant reduction in profits (producer surplus) being derived by the individual fishermen targeting the red snapper resource. Hence, it appears almost certain the fifth problem identified in Amendment 8 has yet to be adequately addressed.

Finally, as reported by Thomas et al. (1993), the derby situation has encouraged some fishermen to pursue red snapper in weather conditions they would have otherwise avoided had it not been for the derby situation. Though the study was conducted over a decade ago, the continuing short fishing seasons would lead one to surmise fishing practices have not changed significantly since the time of the study.[1] All of these factors lead to the conclusion net economic benefits (i.e., producer and consumer surplus) are, in fact, being eroded as a result of the market glut from the derby fishery.

As previously discussed, a derby situation in the commercial red snapper fishery had developed by 1992. Despite several regulations that have subsequently been implemented to ameliorate the derby situation (discussed in the following paragraphs), evidence suggests these additional regulations have been, at most, only marginally successful at achieving their intended goal of reducing overcapacity in the fishery.

The first comprehensive attempt to curtail the expansion of effort in the reef fish fishery of the GOM was enacted under Amendment 4 to the Reef Fish FMP. This amendment, implemented in May 1992 (57 FR 11914), established a maximum three-year moratorium

[1]Since the Thomas et al. (1993) study, the number of vessels engaged in the derby situation has probably been significantly reduced as a result of the two-tier system which places a greater emphasis on Class 1 license fishing intensely during the “mini seasons.”

on the issuance of new reef fish permits.[2] As identified in the amendment "[t] he open access nature of the fishery has resulted in additional fishing effort or changes in the timing of existing effort in response to quotas and in response to actual or anticipated increases in stock levels. The additional effort and timing of the use of current effort both tend to dissipate the potential benefits, which were originally forecast to result from the earlier management actions." The moratorium, which permitted the transfer of permits between vessels owned by an individual who is an income qualifier or between individuals when the vessel is transferred, was instituted "to moderate short term future increases in fishing effort and to attempt to stabilize fishing mortality while the Council considers a more comprehensive effort limitation program." Amendment 4 was general in nature and did nothing to reduce the level of effort being directed at the red snapper fishery at the time of its enactment nor did it restrict movement of fishing effort from vessels fishing reef fish into the red snapper fishery.

The Council recognized the limitations of the reef fish fishery moratorium and in September 1992 requested NMFS implement a series of measures to extend the commercial red snapper season by emergency action. The major provision of the emergency action (59 FR 966, January 7, 1994) was to establish a red snapper endorsement for qualified reef fish permittees. To qualify for an endorsement, persons were required to demonstrate they had landed 5,000 pounds of red snapper annually in two of the three years during 1990-92. Permitted vessels with this endorsement were allowed a 2,000-pound possession limit of red snapper per trip. During the emergency rule, transfer of red snapper endorsements to another vessel owned by an income qualifier was allowed but not transfer to another individual.

The purpose of the trip limit was to forestall the recurrence of the 1992 derby fishery situation. The red snapper TAC for 1993, established under a regulatory amendment, was set at 6.0 mp with 3.06 mp of the total allocated to the commercial sector, under quota. The opening of the 1993 commercial season was delayed to February 16 to allow NMFS sufficient time to process and issue the endorsements. The emergency action, initially effective for 90 days, was extended for an additional 90 days with the concurrence of the Council and NMFS. Despite the reef fish moratorium and the red snapper endorsement system, the 1993 quota of 3.06 mp was met in less than 95 days.

To provide the Council the time needed to develop a comprehensive effort management program, Amendment 6, which was implemented in June 1993, extended the provisions of the emergency rule through 1994 (58 FR 33025). The commercial red snapper season, which opened on February 10, lasted 78 days when closed on April 27, and total catch was 3.25 mp. A comprehensive effort management plan, as originally proposed, was to be implemented in the GOM commercial red snapper fishery by early 1995. Due to Council delays in selecting and implementing such a program, however, the endorsement system was extended through the 1995 season (59 FR 67646). The season, which opened on February 24, lasted 51 days and when closed on April 14, the commercial catch had reached about 3 mp.

[2]While the moratorium could have been made retroactive to November 7,1989, based on the November 1989 announcement by NMFS, the Council chose not to do so. The moratorium has subsequently been extended several times.

The 1996 commercial red snapper season, managed under a continuation of the endorsement system, was to open in February under an interim 1.0 mp quota until March 31. An ITQ system was to become operational on April 1,1996 (60 FR 61200). Shortly thereafter, Congress, in the re-authorization of the Magnuson-Stevens Act, placed a moratorium on all new IFQ programs and retroactive dates on the moratorium that would exclude the Council from implementing a red snapper ITQ program. Implementation of the final rule to implement the ITQ system was suspended by emergency interim rule on February 29, 1996 (61 FR 7751), because the 1996 SFA included a moratorium on the implementation of new IFQ programs that expired on October 1, 2000.

Because of the pending moratorium on ITQs, the Council, in 1995, developed and submitted to NMFS Amendment 13, which, among other things, extended the red snapper endorsement system through 1997 (61 FR 48413). Amendment 15, implemented in 1998, formalized the two-tier trip limit system in conjunction with a license-limitation system (62 FR 67714). Additionally, the Council divided the commercial fishery into two seasons and limited fishing to the first ten days of each month until seasonal sub-allocations have been reached. This regulatory regime has been effective in extending the duration of the commercial red snapper fishery throughout the calendar year. However, it has not sufficiently addressed the ongoing, underlying problems resulting from overcapitalization and derby conditions. The commercial fishery landed their 3.06 mp annual quota in 71.5 days, on average, from 1992 through 1995, and their 4.65 mp annual quota in 77.2 days, on average, from 1996 through 2003. The current commercial red snapper management regime continues to constrain the Council's ability to effectively achieve the goals and objectives specified in the Reef Fish FMP and in the Magnuson-Stevens Act's ten National Standards.

As this discussion indicates, the two-tier trip limit system in conjunction with a license-limitation system (Amendment 15) was not the Council=s preferred effort limitation management system. Instead, it evolved as a result of factors (i.e., Congressional actions) outside the Council=s control. Although originally identifying a license limitation program as the preferred management approach, the Council ultimately voted in favor of an IFQ program. This decision was informed by public comments, and was based on the determination an IFQ program would better resolve or reduce chronic problems related to overcapacity and derby conditions.

Despite the increasing regulations, initiated in an attempt to ameliorate the adverse effects of derby fishing, including the implementation of a two-tier system with differential trip limits and numerous seasonal closures, the fishery still harvests its quota in a relatively short time period. It is the result of the reduced season length, and the adverse effects associated with it, that the Council and some industry members wish to consider a change in the management system to an IFQ program.

Following the expiration of the Congressional IFQ moratorium, NMFS conducted a referendum required by § 407(c) of the Magnuson-Stevens Act to determine whether commercial red snapper fishermen supported further consideration of an IFQ program. Persons eligible to vote in the referendum included Class 1 license holders, and both vessel captains harvesting red snapper in 1993-1996 and certain lessees of Class 1 licenses. The Council began developing this amendment following a majority vote on the referendum.

The purpose of the IFQ program proposed in this amendment is to reduce overcapacity in the commercial fishery and to eliminate, to the extent possible, the problems associated with derby fishing, in order to assist the Council in achieving OY. In a 1999 review of the effectiveness of IFQ programs worldwide, the National Research Council concluded such programs are valuable in addressing these two long-standing fishery problems (NRC, 1999). Case studies describing the effects of existing IFQ programs are provided in Appendix G of that publication. The harvest privileges provided by IFQ programs are intended to give fishermen a long-term interest in the health and productivity of the fishery and, thus, an incentive to conserve it for the future. By eliminating the incentive to over invest in the fishery, these privileges eliminate the incentive to race for fish. IFQ programs are generally effective in controlling exploitation, reducing the incentive to fish during unsafe conditions, improving fishery profitability, and extending the availability of fresh fish products to consumers. In some cases, these programs also have been shown to increase product quality by improving fishing and handling methods by allowing fishermen greater flexibility in operations. The proposed IFQ program may decrease regulatory discards of red snapper and other reef fish species by providing fishermen the choice of when and where to fish. Additionally, the slower paced fishery anticipated under the IFQ program is expected to support fewer fishermen operating over a longer season.

This amendment evaluates the pros and cons of an IFQ program relative to the current two-tiered license limitation system, and a wide range of alternative IFQ program components related to: program duration; ownership caps and restrictions; initial eligibility requirements; initial allocation of quota shares; appeals; transfer eligibility requirements; adjustments in commercial quota; enforcement; and administrative fees. The Council's intent is to design an IFQ program that best balances social, economic, and biological tradeoffs, and improves the fishery's ability to achieve fishery goals and objectives, including OY.

4.0 MANAGEMENT ALTERNATIVES

4.1 Action 1: IFQ Program

Alternative 1: No action (status quo). Maintain the existing license limitation program.

Preferred Alternative 2: Implement an Individual Fishing Quota (IFQ) program in the commercial GOM red snapper fishery.

Discussion and Rationale:

The Council evaluated the benefits and drawbacks of IFQ and license limitation programs in Amendment 8 to the Reef Fish FMP. Specific problems identified in Amendment 8 are discussed in Section 3. Although originally identifying a license limitation program as the preferred management approach, the Council ultimately voted in favor of an IFQ program. This decision was informed by public comments, and was based on the determination an IFQ program would better resolve or reduce chronic problems related to overcapacity and derby conditions. The IFQ program proposed in Amendment 8 was implemented by final rule on November 29, 1995 (60 CFR 61200), with most of the rule scheduled to be effective April 1, 1996. However, implementation of the final rule was suspended by emergency interim rule on February 29, 1996 (61 CFR 7751), because the

1996 SFA included a moratorium on the implementation of new IFQ programs, which expired on October 1, 2000.

The Council extended indefinitely the limited access endorsement system established in 1993 and the subsequent two-tier license system (Class 1 and Class 2) to limit further increases in fishing capacity. Additionally, the Council divided the commercial fishery into two seasons and limited fishing to the first ten days of each month until seasonal sub-allocations have been reached. This regulatory regime has been effective in extending the duration of the commercial red snapper fishery throughout the calendar year. However, it has not sufficiently addressed the ongoing, underlying problems resulting from overcapacity and derby conditions. The commercial fishery landed their 3.06 mp annual quota in 71.5 days, on average, from 1992 through 1995, and their 4.65 mp annual quota in 77.2 days, on average, from 1996 through 2003. The current commercial red snapper management regime continues to constrain the Council's ability to effectively achieve the goals and objectives specified in the Reef Fish FMP and in the Magnuson-Stevens Act's ten National Standards.

Following the expiration of the IFQ moratorium, NMFS conducted a referendum required by Section 407(c) of the Magnuson-Stevens Act to determine whether commercial red snapper fishermen supported further consideration of an IFQ program. Persons eligible to vote in the referendum included Class 1 license holders, and both vessel captains harvesting red snapper in 1993-1996 and certain lessees of Class 1 licenses. The Council began developing this amendment following a majority vote on the referendum. The Magnuson-Stevens Act also requires NMFS conduct a second referendum following plan preparation and prior to Secretarial review. The weighted vote on this second referendum, conducted in January 2006, demonstrated 87 percent of respondents favor the Council submitting this IFQ proposal to the Secretary for review. Secretarial approval of the program will be contingent on its consistency with provisions of the Magnuson-Stevens Act and other applicable laws.

Alternative 1 would maintain the existing red snapper license limitation program, which defines two classes of license holders. Class 1 license holders are provided a 2,000-pound trip limit. Class 2 license holders are provided a 200-pound trip limit. Vessels without a Class 1 or Class 2 red snapper license are prohibited from participating in the commercial red snapper fishery. However, licenses are fully transferable. In addition, **Alternative 1** would maintain the current commercial red snapper season closures restricting fishing to the first ten days of each month starting in February until the spring quota is filled, and for the first ten days of each month starting in October until the fall quota is filled.

The existing license limitation program in the GOM red snapper fishery does not address overcapacity and derby conditions in the fishery. This program controls fishing mortality but raises fleet harvesting costs. Throughout the 1990s, conditions of excess harvesting capacity and shortened seasons in the red snapper fishery persisted. The rapid growth and overcapitalization of the red snapper fishery have intensified the race for fish. The harvesting and processing capacity in the red snapper fishery exceeds the amount necessary to efficiently prosecute the fishery. The race for fish and shortened seasons have resulted in other resource conservation and management issues, including regulatory discards of red snapper and other reef fish species, high discard mortality, harvest of juvenile red snapper (ages 2-4), quota overruns, increased impacts to benthic habitats, and insufficient attention to safety. Excess capacity and the race for fish have resulted in

economic instability and reduced earnings of red snapper harvesters and processors. These problems have threatened the Council's ability to achieve OY in the red snapper fishery from economic, biological, and social perspectives.

Preferred Alternative 2 would implement an IFQ program in the GOM red snapper fishery. The Magnuson-Stevens Act defines an IFQ at Section 3(21) as: "a Federal permit under a limited access system to harvest a quantity of fish, expressed by a unit or units representing a percentage of the TAC of a fishery that may be received or held for exclusive use by a person." Under an IFQ program, fishermen would be allocated percentages of the red snapper commercial quota in the form of IFQ shares. IFQ shareholders would possess some of the privileges of property rights, but not others. For example, they could decide when and how to take their share of the quota, but they could not control the amount of total quota allocated. There are different methods of allocating IFQ shares. However, allocations based on past catch history are most commonly used.

Once allocated, IFQ shares would be valued for the privilege they provide to catch fish. An IFQ program that allowed IFQ shares and allocations to be transferred would enable the market to reduce fishing capacity, as IFQ shares and allocations could be consolidated among fewer vessels, which would then have an incentive to fish efficiently to maximize their profits. Fishermen who desired more IFQ shares or allocations than they initially receive could purchase additional shares or allocations. Conversely, those fishermen who were allocated too little IFQ shares or allocations to make fishing worthwhile, and have no money to purchase additional shares or allocation, could sell their IFQ shares and allocations and invest their money elsewhere.

In this way, the proposed IFQ program would allow a market to develop where IFQ shares and allocation are bought and sold. These types of programs allow IFQ shares and allocation to move to the most efficient fishermen because they value them most highly and are willing to pay the highest price for them. They provide fishermen the opportunity to sell out and leave the fishery when productivity is low - a major change from the present system, which encourages fishermen to stay in the business even when profits are very low because they have no other options. Additionally, because the current commercial season closure would be rescinded with implementation of the IFQ program, fishermen could target their effort to take advantage of seasonally changing market prices, or avoid fishing during periods of inclement weather. In this way, the IFQ program is expected to improve market conditions by supporting a steadier supply of fresh red snapper and increasing ex-vessel prices. Additionally, the program is expected to reduce the adverse impacts of the commercial red snapper fishery on the red snapper stock, non-target species, and habitat.

Under the proposed IFQ program, IFQ shares would be defined as the percentage of the commercial quota of red snapper allocated to each person holding an IFQ share certificate under the IFQ program. IFQ allocations would be defined as an annual allocation in pounds granted to each IFQ shareholder at the beginning of each fishing year. The allocation granted each IFQ shareholder would be based on the annual commercial quota and the amount of their IFQ share.

Red snapper IFQ allocations and landings would be measured in terms of gutted weight. This is the standard metric for red snapper caught commercially and sold to dealer/processors in the GOM. All IFQ share/allocation holders would be required to possess a valid GOM reef fish permit and a red snapper IFQ endorsement to harvest red

snapper under the IFQ program. All dealers and processors who purchase red snapper from an IFQ share/allocation holder would be required to possess a valid federal dealer permit for GOM reef fish and a red snapper IFQ dealer/processor endorsement without which possessing, transporting, selling, purchasing, or processing red snapper would be prohibited. The red snapper IFQ endorsement and red snapper IFQ dealer/processor endorsement would be available for download from the IFQ website at no cost to those individuals who possess a valid GOM reef fish permit or a valid GOM reef fish dealer permit and request the endorsements. Although GOM reef fish permits and reef fish dealer permits must be renewed annually at a cost in accordance with established permit fees, the red snapper IFQ or dealer/processor endorsement would remain valid as long as the individual possesses a valid GOM reef fish permit or 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 red snapper 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 has sufficient allocation in his/her account to conduct the sales transaction. Recipients of IFQ dealer/processor permits, including all IFQ share/allocation holders who sell red snapper 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 be prohibited during the month of December to allow NMFS the time necessary for end-of-year program management.

IFQ share and allocation debits and transfers would be tracked using an electronic accounting/reconciliation process developed by NMFS, in which the IFQ share/allocation holder, dealer, NMFS, and NMFS General Counsel for Enforcement and Litigation (GCEL) would participate. The IFQ share/allocation holder and dealer accounts would record IFQ share/allocation transactions. The NMFS accounts would monitor IFQ share/allocation transactions, as well as IFQ shares suspended prior to issuance and other legal actions taken against IFQ share/allocation holders in which IFQ shares are garnished by GCEL. Only pursuant to sanctions or rule violations would IFQ shares 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:

- When an IFQ share/allocation holder has sold red snapper, and the IFQ share/allocation holder's vessel ID number.
- The sale price of red snapper.
- The weight of the catch sold.
- To whom the catch was sold and their dealer/permit number.
- Whether the seller has sufficient allocation to complete the sales transaction.

- Reconciliations of IFQ share/allocation holder and IFQ dealer transactions, which would be confirmed and authorized using NMFS approval codes.

IFQ share/allocation holders could electronically purchase additional IFQ allocations (not IFQ shares) from other IFQ share/allocation holders (i.e. via satellite phone, cell phone or ship to shore marine operator) to allow them to land an amount of fish in excess of their remaining allocation. However, IFQ share (not allocation) transfers would require written approval by NMFS. IFQ shareholders harvesting the last load of red snapper permitted by their annual allocation would be permitted to land up to ten percent more than the allocated quantity of the last load without purchasing additional allocation. However, any such overages would be deducted from the next year's allocation associated with their IFQ share. IFQ shareholders would need to purchase additional shares to exceed their last load allocation by more than ten percent. This carryover provision would not apply to non-IFQ shareholders who only possess IFQ allocation. Non-IFQ shareholders would not be permitted to land any red snapper in excess of their current allocation.

For enforcement purposes, fishermen participating in the IFQ program would be required to offload their red snapper landings at permitted IFQ dealers between 6:00 a.m. and 6:00 p.m. daily. All persons landing IFQ catch would be required to notify NMFS enforcement agents at least three hours in advance of the time of landing and of the dealer where landing would occur. At sea or at dockage transfers of fish on board IFQ vessels also would be prohibited to facilitate law enforcement activities.

Section 304(d)(2)(A) of the Magnuson-Stevens Act provides the Secretary the authority to 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 shall be in addition to any other fees charged under the Magnuson-Stevens Act and shall be deposited in the Limited Access System Administration Fund (LASAF) established under section 305(h)(5)(B) of the Magnuson-Stevens Act, except that the portion of any such fees reserved under section 304(d)(4)(A) of the Magnuson-Stevens Act shall be deposited in the Treasury and available, subject to annual appropriations, to cover the costs of new direct loan obligations and new loan guarantee commitments as required by section 504(b)(1) of the Federal Credit Reform Act (2 U.S.C. 661c(b)(1).

The implementation date of the IFQ cost recovery program would coincide with the implementation date of the proposed red snapper IFQ program. For the purposes of establishing the fee percentage and separate accounts in the LASAF, the proposed program would define the commercial red snapper fishery in the U.S. GOM as the red snapper IFQ fishery. The fee percentage would initially be specified as three percent, and would be reviewed annually to determine if changes were warranted. Revisions would be published in the *Federal Register* and would be determined based on the following information:

- The catch subject to the IFQ cost recovery fee.
- The projected ex-vessel value of the catch.
- The costs directly related to managing and enforcing the IFQ program.

- The projected IFQ program balance in the LASAF.
- Expected non-payment of fee liabilities.

The fee percentage may be set equal to the calculated fee percentage using the following equation or three percent: Calculated fee percentage = (100 x (DPC – AB) / V] / (1-NPR); where DPC is the direct program cost for the IFQ fishery for the previous fiscal year, AB is the projected end of year LASAF account balance for the IFQ program, V is the projected ex-vessel value of the catch subject to the IFQ fee for the current year, and NPR is the fraction of fee liabilities that is estimated to result in non-payment.

The actual ex-vessel value (i.e., the total monetary sale amount fishermen receive for IFQ landings from registered IFQ dealer/processors operating as shore-side processors) would be used for all landed IFQ pounds that result in such actual ex-vessel transaction. This is the standard metric for pricing red snapper in the GOM.

Recoverable costs would include only federal management and enforcement costs, and would exclude those costs that are not exclusive to an IFQ program (e.g., federal overhead). NMFS projections of recoverable costs and of the other variables used in determining the annual fee percentage would be available for review and comment from the Council, participants in the IFQ fishery, and other interested parties prior to being used to establish or change the IFQ fee percentage. Further, the actual recovery costs of the IFQ Program for each year would be included in an annual report produced by NMFS.

Separate accounts would be created within the common LASAF to ensure the funds from the IFQ fishery are used only to pay for the direct management and enforcement costs of the IFQ program, and the funds from permit registration and transfer activities (if any) are used only to pay for the cost of administering the central registry system.

Section 304(d)(4)(A) of the Magnuson-Stevens Act states, " 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 1104A(a)(7) of the Merchant Marine Act, 1936(46 USC. App. 127(a)(7)), to issue obligations that aid in financing the--

(i) purchase of individual fishing quotas in that fishery by fishermen who fish from small vessels; and

(ii) first-time purchase of individual fishing quotas in that fishery by entry-level fishermen.

(B) A Council making a submission under subparagraph (A) shall recommend criteria, consistent with the provisions of this Act, that a fisherman must qualify to meet for guarantees under clauses (i) and (ii) of subparagraph (A) and the portion of the funds to be allocated for guarantees under each clause.

The Secretary would determine, annually, the percentage of the IFQ fees, up to the 25 percent limit, to be deposited in the Treasury for the IFQ loan obligations and loan guarantee program. This determination would be based on the amount of IFQ fees actually collected and on an estimate of the funds required for the loan program that year, and would be expected by December of each year. After that determination, NMFS would issue an annual report, which would provide information concerning the amount of the fees received by NMFS, the disposition of those fees, the status of the IFQ account in the LASAF, and the IFQ program costs for the previous calendar year. The annual report

could be included with other reports on the performance of the IFQ program. The proposed IFQ program would require an adequate payment and complete reporting record as a part of the eligibility criteria to possess a valid red snapper IFQ dealer/processor endorsement or a valid IFQ red snapper endorsement for IFQ share/allocation holders, or to transfer IFQ shares or allocations. The purpose of these requirements is to motivate compliance among registered IFQ share/allocation holders and registered IFQ dealer/processors in fulfilling the requirements associated with submitting fees (and forms) and IFQ Buyer Reports.

Other more policy-oriented design elements of the proposed IFQ program related to program duration, ownership caps and restrictions, initial eligibility requirements, initial allocation of quota shares, appeals, transfer eligibility requirements, enforcement, and administrative fees, would be defined by the preferred alternatives under Actions 2-11.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Alternative 1 would continue the current management program in the GOM commercial red snapper fishery, which has not been effective in addressing overcapitalization and derby conditions. **Preferred Alternative 2** would replace the current two-tiered license limitation system, and associated trip limits and seasonal closures, with an IFQ program. IFQ programs are recognized as highly effective in reducing overcapitalization. Eliminating the need to race for fish reduces the incentive to purchase larger vessels and more equipment to fish in unsafe conditions. IFQ programs provide participants the opportunity to better utilize fishing and handling methods, which can help reduce discard mortality rates. Gear conflicts may also be reduced under IFQ programs. Additional conservation benefits may also be realized. Extending the duration of the fishing season would likely increased catch efficiency. Subsequent changes in fishing practices could include fewer areas fished and reduced crowding of prime fishing areas. As a result, these areas could be fished continually, and less desirable fishing areas avoided. Local depletion of red snapper is less likely to occur when fishing grounds become less crowded and fishing effort is spread out over time. Additional conservation benefits may include fewer hooks in the water and decreases in fuel (a non-renewable resource), bait consumption, and gear loss. Reducing the number of hooks is likely to reduce the number of snags on bottom structure and biota, like fragile corals and sponges, which are easily broken off. IFQ programs also may decrease regulatory discards of red snapper and other reef fish species by allowing fishermen more flexibility in deciding when and where to fish.

Negative environmental effects could also occur under an IFQ program. High grading (discarding low value fish in favor of high value fish) may be more likely to occur under an IFQ program because such programs provide fishermen both the time and incentive to land the most profitable fish. Furthermore, fishermen would have more time to engage in high grading because temporal limits would not exist under the IFQ program. However, the Council is currently considering in Amendment 27 to the Reef Fish FMP alternatives that would minimize or mitigate the adverse effects of any high grading activity by reducing or eliminating the commercial red snapper minimum size limit. The overall net biological and ecological impacts of the proposed IFQ program are expected to be positive compared to the status quo because the program is expected to result in more sustainable fishing methods, increase the data and information available to fishery scientists and managers, and improve enforcement.

Summary Comparison of Socioeconomic and Administrative Consequences:

Continuing the current management program in the commercial red snapper fishery would maintain incentives for overcapacity and derby fishery conditions. Consequently, **Alternative 1** would likely lead to continued overcapitalization, excessive operating costs, shortened seasons, safety issues, wide fluctuations in red snapper supply, and depressed ex-vessel prices.

Preferred Alternative 2 would establish an IFQ program in the commercial red snapper fishery. Such a program is expected to decrease the overcapitalization observed in the fleet, lengthen the fishing season, lower operating costs by affording vessel owners more flexibility in their input choices and trip planning, improve market conditions by allowing for a steadier supply of fresh red snapper, and increase ex-vessel prices. The degree to which the proposed IFQ program would reduce capacity in the fishery will depend on a number of factors, including: the number of eligible participants; the malleability of capital; opportunities outside the fishery; vessel markets for those wishing to sell and exit the fishery; transferability rules; and the availability of credit.

Vessel owners who participate in IFQ fisheries and are not generating substantial earnings outside the fishery would be expected to use older vessels as long as they cover variable costs. Therefore, significant changes in fleet size and structure may take longer as vessels reach the end of their economic lives (Geen and Nayar, 1989). Conversely, IFQ programs would likely effect structural change more rapidly if there were significant earning possibilities in other fisheries (Grafton, 1996). Additionally, IFQ programs can result in employment losses, and increased management, monitoring, and enforcement costs. Employment losses would have adverse trickle down effects on small fishing communities where job opportunities are scarce or the skills of displaced fishermen are limited.

Reducing fishing capacity in the commercial red snapper fishery would directly, negatively affect some individuals. Allocating privileges to harvest red snapper would benefit some fishermen, but not others. Many people are concerned the windfall profits associated with initial IFQ share allocations will not be fairly distributed, vessel crew will experience reduced employment opportunities, processors will be adversely affected by the IFQ program, new fishermen will have to pay high costs to enter the fishery, and/or IFQ shares will be consolidated in the hands of a select few fishery participants. Most concerns related to the concentration of IFQ shares can be addressed through individual program design, for example, by capping the total amount of IFQ shares individuals and/or corporations can own. The alternatives examined under Actions 2-11 are intended to help the Council design an IFQ program that best balances these tradeoffs to ensure the proposed IFQ program results in the best net benefits to the fishery and the Nation.

4.2 Action 2: IFQ Program Duration

Alternative 1: No action. Do not limit the duration of the IFQ program.

Preferred Alternative 2: Do not limit the duration of the IFQ program. However, require a program evaluation every:[1,2]

1 Preferred Alternative of Council (11/04)
2 Preferred Alternative of AHRSAP (10/04)

Sub-option→ A). 5 years;[1, 2]
B). 10 years;
following implementation of the final rule.

Alternative 3: Limit the duration of the IFQ program to:
A). Five years;
B). Ten years;
following implementation of the final rule, unless otherwise extended.

Discussion and Rationale:

Existing U.S. IFQ programs define IFQs as "revocable privileges," not permanent enfranchisements. This means the privilege afforded IFQ shareholders to harvest a percentage of the commercial quota could be revoked for cause. According to the Magnuson-Stevens Act, IFQs are permits, which can be revoked or limited at any time in accordance with the Act's provisions and do not create a private property right to fish before the fish are harvested or confer the right of compensation to the holder if revoked or limited. The Magnuson-Stevens Act also requires fishery management councils ensure any new IFQ program establishes procedures and requirements for reviewing and revising program terms (including any revisions that may be necessary once a national policy with respect to IFQ programs is implemented), and, if appropriate, for renewing, reallocating, or re-issuing IFQ shares.

Alternative 1 would not limit the duration of the proposed IFQ program. Most proposed fishery management actions are not limited in duration, and all such actions can be modified or terminated by the Council at any time following their implementation. IFQ programs can effectively reduce the excess fishing capacity in a fishery provided the market incentive for trading or consolidating IFQ shares is not inhibited by overly restrictive regulations. This alternative would enhance the market for IFQ shares.

Preferred Alternative 2A would not limit the duration of the IFQ program, but would require the Council evaluate the program's effectiveness every five years relative to its ability to address the chronic, long-standing problems described in Section 3 (i.e., Purpose and Need statement). Establishing a program of indefinite duration has both management and economic implications. Harvest privileges under an IFQ program that is not limited in duration are more easily marketable at a higher premium than are privileges under a program that is limited in duration. Additionally, IFQ shareholders have a vested interest to conserve the stock over a longer time period under a non-limited IFQ program than under a program that terminates on a specified date. As a consequence, a non-limited program would be expected to result in a more stable fishery. IFQ programs with few restrictions on duration, ownership, and transferability should reduce the number of fishery participants and improve fishery efficiency, resulting in a fewer number of vessels landing the same amount of catch. This would decrease capital expenditures in the fishery, and benefit the red snapper stock and the affected environment.

The review provision in **Preferred Alternative 2** would require the Council periodically evaluate the effectiveness of the IFQ program, and discuss whether it should be modified, extended, or terminated. Ideally these periodic reviews should coincide with stock assessment updates to allow new information to be incorporated into the program in a timely manner and demonstrate to participants the program is adaptive. This is the

preferred alternative of both the Ad Hoc Red Snapper Advisory Panel (AHRSAP) and the Council because both groups feel the effectiveness of the proposed IFQ program should be assessed at periodic intervals. Additionally, Congress included language requiring such review in Magnuson-Stevens Act reauthorization bills introduced in the 2004 session. Both the AHRSAP and the Council prefer a five-year schedule (**Preferred Alternative 2A**) to a ten-year review schedule (**Alternative 2B**). The five-year schedule seems a more realistic timeframe within which to conduct a new red snapper stock assessment or assessment update, and years three and four are expected to provide a reasonable basis for a fifth year evaluation. However, a ten-year review schedule may be more practical in the long term from an administrative standpoint.

Alternative 3 would limit the duration of the proposed IFQ program to either five (**Alternative 3A**) or ten years (**Alternative 3B**), after which time the program would sunset unless extended by the Council through a subsequent plan amendment. This regulatory language, if adopted, would adversely affect the marketability of IFQ shares, and, thereby, minimize or negate the effectiveness of the IFQ program in reducing excess fishing capacity. No entity would likely venture capital for IFQ shares if the program were scheduled to sunset in five years. While there may be a limited market for a ten-year IFQ program, any IFQ program of limited duration would not likely be very effective in reducing excess fishing capacity, and providing associated physical, biological, ecological, social, and economic benefits.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Limiting the duration of the proposed IFQ program would not directly affect the physical, biological, or ecological environments. However, it would indirectly affect these environments by influencing the total amount of capacity reduction achieved by the IFQ program. By eliminating the need to race for fish, IFQ programs reduce the incentive to purchase larger vessels and more equipment. Additionally, such programs promote utilization of improved fishing and handling methods, and reduce bycatch of non-target species. **Alternative 1** and **Preferred Alternative 2A** would allow the proposed IFQ program to continue indefinitely unless revised, substituted, or terminated by the Council at some future date. **Alternative 3** would require the program be terminated either five (**Alternative 3A**) or ten (**Alternative 3B**) years after implementation, unless the Council decided to extend the program for another period of time. Net physical, biological, and ecological benefits are expected to be greatest under **Preferred Alternative 2A,** followed by **Alternative 1**, and then by **Alternative 3,** as the adaptive management strategy proposed in **Preferred Alternative 2A** is expected to maximize effectiveness of the proposed IFQ program.

Summary Comparison of Socioeconomic and Administrative Consequences:

The duration of an IFQ program would directly affect the socioeconomic environment by influencing the effectiveness of the proposed program in achieving its intended objectives of addressing negative derby conditions and overcapitalization. A permanent or long-term privilege, as proposed in **Alternative 1** and **Preferred Alternative 2**, would encourage long-term planning and investment, allowing fishing capital to adjust to socially optimal levels. Long-term privileges also would reduce the uncertainty caused by changing the "rules of the game," and provide eligible participants an incentive to invest in the resource. Although **Alternative 1** and **Preferred Alternative 2** are expected to result in similar socioeconomic impacts, the periodic review component of

Preferred Alternative 2 would increase management costs. The costs of **Preferred Alternative 2A** would be higher than those of **Alternative 2B** because the former would require more frequent reviews. However, such a review provision would benefit the socioeconomic environment by encouraging managers to adapt and respond to unintended consequences and/or changing fishery conditions.

The sunset provision proposed in **Alternative 3** would reduce the overall efficiency of the harvesting sector. The value of IFQ shares is determined based on the present value of the stream of net revenues derived from owning the shares. Limiting the duration of the proposed program would decrease the stream of net revenues. This alternative also would increase uncertainty about the value of IFQ shares, which would weaken the market for such shares. Buyers would not want to purchase IFQ shares if they could not recoup the cost of such shares before the program expires. IFQ shareholders would not want to sell IFQ shares at a cost below their true value. Consequently, it would be difficult for buyers and sellers to agree on a market price for IFQ shares. If this reduced the number of IFQ share transfers, then it also would reduce the rate at which the fishery becomes more efficient. That would reduce producer surplus and net National benefits, unless IFQ share transfers redistributed IFQ shares to the most efficient operations. The market for IFQ allocation transfers should still function under a program of limited duration. However, it is not likely allocation transfers would reduce fishing capacity as well as would IFQ share transfers.

While an IFQ program of indefinite duration may provide the greatest potential for fleet adjustment and efficiency gains, there could be some benefits to a program of limited duration, at least initially. Allocating IFQ shares, which are valid for a set time period, could be helpful in reaching compromises on initial allocation, maintaining the existing fleet configuration for distributional issues, and providing the industry with the opportunity to test the proposed IFQ program before committing to it permanently. The net effects of **Preferred Alternative 2** are expected to be better than those of **Alternative 1**, which are better than those of **Alternative 3,** as the IFQ program would be most effective and efficient under **Preferred Alternative 2** than under either of the other two alternatives.

4.3 Action 3: Ownership Caps and Restrictions on IFQ Share Certificates

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

Alternative 2: For any single fishing year, no person shall own IFQ shares, which comprise more than the following percent of the total quota allocated to the IFQ program:
A) Two percent;
B) Five percent;
C) Ten percent;
D) Fifteen percent.

Preferred Alternative 3: For any single fishing year, no person shall own IFQ shares that represent a percentage of the total, which exceeds the maximum

percentage, issued to a recipient at the time of the initial apportionment of IFQ shares (e.g., ~ 8 percent).[2]

Discussion and Rationale:

This action would restrict the cumulative amount of IFQ shares that may be owned by any single person or entity at any given time. Although the Magnuson-Stevens Act requires IFQ programs prevent participants from acquiring excessive shares of the available quota, the Act does not provide specific guidance concerning appropriate limits on consolidation. Ownership caps are generally favored as a means to prevent fishery participants from acquiring an excessive or disproportionate amount of IFQ shares. In fisheries with excessive capital, it is likely IFQ share transfers will result in some consolidation, as surplus capacity leaves the fishery. While consolidation encourages economic efficiency, the concentration of IFQ shares among a relatively few entities could provide them excessive market power. This, in turn, could affect working conditions, prices and wages, and harm smaller operations participating in the fishery. Capping the total amount of IFQ shares a single person or entity may possess is necessary to: prevent consolidation of market power that is used to influence ex-vessel price, crew wages, and working conditions; limit windfall profits to the initial recipients of IFQ shares; provide the opportunity for entry; and ensure the fishery supports a reasonable number of participants.

Alternative 1 would not cap the amount of IFQ shares a single person or entity may own. This alternative would enhance the market incentive for trading and consolidating IFQ shares. The Council did not propose an ownership cap in the red snapper IFQ program implemented by Reef Fish Amendment 8 ([60 FR 61200, April 1, 1996]; (See Section 2.2 Management History), because it felt such a restriction was not enforceable in that IFQ shares could be obtained by members of an extended family and controlled by a single member. Similarly, the Council acknowledged multiple corporations could be created and controlled by a single person. However, in the last session of Congress (2004), both Senate and House Committee Magnuson-Stevens Act reauthorization bills (i.e., S. 2066 and H.R. 4749) included provisions to prevent any person from acquiring an excessive amount of IFQ shares. Presumably, bills introduced in 2005 also will contain such a provision. The larger question is what percentage of the total should be considered excessive.

Alternative 2 proposes alternative caps on the total amount of IFQ shares that could be possessed by any single individual or entity. The two percent cap (**Alternative 2a**) is similar to that used in the Alaskan sablefish and halibut IFQ program. However, a management goal in that fishery is to retain the owner/operator component of the fishery, rather than consolidating IFQ shares among larger and fewer vessels and corporate fleets. Consequently, this lower percentage cap is intended to reduce the amount of consolidation that would normally occur under an IFQ program. The five percent cap (**Alternative 2B**) would allow most Class 1 license holders to increase their total red snapper landings under the IFQ program. The ten and fifteen percent caps (**Alternatives 2C and 2D**) would likely allow individually owned fleet operations to increase their relative contributions to the fishery.

[2]Preferred Alternative of AHRSAP (10/04)

Preferred Alternative 3 would restrict the cumulative amount of IFQ shares a single person or entity individually or collectively can own to the maximum percentage issued to a recipient at the time IFQ shares are initially distributed to program participants. This cap is estimated to be approximately eight percent. The Council and the AHRSAP prefer this alternative because it would cap ownership at the landings level of the largest existing fleet operation.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Placing ownership caps on IFQ shares would not directly affect the physical, biological, or ecological environments. However, it would indirectly affect these environments by influencing the amount of consolidation that occurs in the fishery. **Alternative 1** would indirectly benefit the biological and ecological environments by allowing the unrestricted consolidation of IFQ shares. This would be expected to increase fishery efficiency and improve fishing practices because more efficient fishermen are likely to lose less gear and take less bycatch. Additionally, fishery monitoring, data collection, and enforcement would likely become more sophisticated as the number of fishery participants decreases. **Alternatives 2A-D** and **Preferred Alternative 3** could have negative indirect effects because they would limit the degree to which IFQ shares could be consolidated, allowing more entities and/or corporations to participate in the commercial red snapper fishery. Those fishermen who are less efficient would spend more time fishing for the same amount of fish, which would likely increase the frequency of interactions between gear and benthic habitat, as well as the rate of regulatory discards and other bycatch. The net physical, biological, and ecological benefits of **Alternative 1** are expected to be greatest, followed by those of **Alternative 2D**, **Alternative 2C**, **Preferred Alternative 3**, **Alternative 2B**, then **Alternative 2A**.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would encourage consolidation in the fishery. Consolidation is a necessary step toward making the fishery more efficient, as owners strive to maximize profits by taking advantage of the opportunity to reduce costs and improve productivity. The ownership caps proposed in **Alternatives 2A-D** and **Preferred Alternative 3** would limit consolidation and, potentially, overall fishery efficiency. However, while consolidation might be favored on economic efficiency grounds (e.g., for exploiting economies of scale), concentration of IFQ shares among a relatively small number of individuals or entities could give those IFQ shareholders excessive market power. This in turn, could adversely affect working conditions, prices, and wages paid to crew, and could harm some fishery participants (red snapper prices may not be affected as much as the other factors mentioned because of the presence of multiple substitutes from domestic and foreign sources of reef fish). Consolidation also has the potential to eliminate small-scale operations in the red snapper fishery.

The current commercial red snapper fleet consists of 136 Class 1 license holders, and from 482 to 628 Class 2 license holders. The IFQ share ownership caps considered in **Alternative 2** and **Preferred Alternative 3** could result in 50 (2 percent cap; **Alternative 2A**), 20 (5 percent cap; **Alternative 2B**), about 15 (cap based on largest allocation; **Preferred Alternative 3**), 10 (10 percent cap; **Alternative 2C**), or 7 (15 percent cap; **Alternative 2D**) IFQ shareholders. About ten IFQ shareholders would receive IFQ shares exceeding two percent of the commercial quota, and only one or two IFQ shareholders would receive shares exceeding five percent of the commercial quota, if

IFQ shares were issued using the methodology proposed in the Council's preferred alternatives for determining initial IFQ share allocations. Capping IFQ share ownership at these levels would facilitate a substantial amount of consolidation in the fleet, and could provide the appropriate balance between efficiency and consolidation. It would not restrict the amount of IFQ allocation that could be owned by a single individual or entity in a given year.

The effects of **Alternative 1** are ranked first from an economic efficiency standpoint. However, from a market power standpoint, the effects of **Preferred Alternative 3** are ranked higher than those of **Alternative 1** and **Alternatives 2C** and **D**, but lower than those of **Alternatives 2A** and **B**. **Alternative 1** would not allow the most efficient operations with IFQ shares to expand to a level that best maximizes their profits. The presence of red snapper substitutes, in the form of other reef fish produced domestically and red snapper imports, would limit somewhat the possible development of monopolistic or oligopolistic tendencies in the red snapper market. These tendencies would reduce the consumer benefits provided by the fishery and should be avoided according to National Standard 4 of the Magnuson-Stevens Act. Overall, the effects of **Preferred Alternative 3** are expected to be similar to those of the five or ten percent caps proposed in **Alternatives 2B** and **C**, respectively. The two percent cap proposed in **Alternative 2A** is the most constraining and would likely require some owners to forfeit some of the IFQ shares they are initially allocated, or compel them to sell excess shares immediately after the proposed program is implemented. Any cap on IFQ share ownership would tend to limit the ability of operations to expand to the most profitable level.

4.4 Action 4: Eligibility for Initial IFQ Allocation

Alternative 1: No action. Do not restrict initial eligibility in the IFQ program**.**

Alternative 2: Restrict initial eligibility to persons who own* a Class 1 license. Permanent resident aliens who currently own* a Class 1 license will be included in the initial allocation.

Preferred Alternative 3: Restrict initial eligibility to persons who own* a Class 1 or Class 2 license. Permanent resident aliens who currently own a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this IFQ program.[1,2]

***Note: Ownership is defined as the person who actually controls transfer of the Class 1 or Class 2 license, and such person would be listed as the "qualifier" on the face of the leased/placed permit.**

Deciding who should initially be eligible to receive IFQ shares (Action 4), and how those shares should be allocated to those shareholders (Action 5) are two of the most controversial aspects of designing and implementing an IFQ program. Ideally, IFQ shares should initially be widely distributed to avoid granting excessive windfall profits to a few fishery participants. Broader initial allocations distribute benefits more equitably and compensate more individuals as IFQ shares are consolidated through

1 Preferred Alternative of Council (11/04)
2 Preferred Alternative of AHRSAP (10/04)

transfers. However eligibility criteria also should consider time and capital invested in developing the fishery.

Section 303(b)(6) of the Magnuson-Stevens Act requires the Council and Secretary consider the following factors when establishing a limited access management system for the purpose of achieving OY: 1) Present participation in the fishery; 2) historical fishing practices in, and dependence on, the fishery; 3) the economics of the fishery; 4) the capability of fishing vessels used in the fishery to engage in other fisheries; 5) the cultural and social framework relevant to the fishery and any affected fishing communities; and 6) any other relevant considerations.

Currently, participants in the commercial red snapper fishery are required to possess a Class 1 or Class 2 red snapper license, as well as a GOM commercial reef fish permit. Applying these qualifying criteria to participation in the proposed IFQ program would ensure current fishery participants are recognized and would reduce the likelihood of increasing overcapacity by prohibiting new participants from entering the fishery at no cost.

Discussion and Rationale:

Alternative 1 would not restrict initial eligibility in the proposed IFQ program, allowing anyone interested to participate. **Alternative 2** would restrict the distribution of initial IFQ shares to only those who own a current Class 1 red snapper license. This would include about 136 Class 1 license holders who have historically landed about 93 percent of the total annual commercial red snapper quota. It would exclude about 482 Class 2 license holders who have historically landed 7 percent (or less) of the total annual commercial red snapper quota and 146 Class 2 license holders without landings history. **Preferred Alternative 3** would restrict the distribution of initial IFQ shares to those who own a current Class 1 or Class 2 red snapper license. This initial eligibility criterion would encompass all those who are currently able to legally harvest and land commercial quantities of red snapper. As noted above, this could include 764 Class 1 and Class 2 license holders.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Alternative 1 would allow initial IFQ shares to be distributed to anyone interested in participating in the proposed program. This would not likely be effective in reducing capacity in the fishery, which would negatively indirectly affect the physical, biological, and ecological environments. Allocating IFQ shares to persons with little experience in the fishery could reduce overall fishery efficiency if they decided to fish their shares, rather than transfer their shares or allocation to more experienced fishermen, or to hold their shares for conservation purposes. Inefficient fisheries generally result in increased interactions between gear and benthic habitat, as well as increased incidences of regulatory discards and other bycatch, which would adversely impact red snapper, other reef fish stocks, and the surrounding ecosystem.

Excluding Class 2 license holders from initial eligibility, as proposed in **Alternative 2**, also would result in negative environmental effects. The Class 2 license category was originally established to allow fishermen to retain red snapper incidentally caught during the red snapper season openings. If this "bycatch allowance" was not recognized in the initial allocation of IFQ shares, these Class 2 license holders would be forced to discard

any red snapper they caught. The commercial discard mortality rate described in the latest red snapper stock assessment (SEDAR 7, 2004a) ranges from 71 percent (eastern Gulf) to 82 percent (western Gulf).

Preferred Alternative 3 would allow current Class 2 license holders to continue retaining their red snapper bycatch, thereby avoiding an increased incidence of regulatory discards. Additionally, depending on the restrictions placed on IFQ share transferability, this alternative could provide current Class 2 license holders the option to further reduce the amount of their regulatory discard by purchasing additional IFQ shares. Therefore, the net effects of **Preferred Alternative 3** are expected to be better than those associated with **Alternative 2**, which are better than those associated with **Alternative 1**, as **Preferred Alternative 3** would restrict participation in the IFQ program to current fishery participants.

Summary Comparison of Socioeconomic and Administrative Consequences:

Initial recipients of IFQ shares would benefit from any windfall profits associated with the IFQ program. Windfall profits are those profits realized when a person or entity sells IFQ shares they were not required to purchase (NRC, 1999). The revenue generated from such a sale is the windfall profit. These profits are not available to subsequent owners of IFQ shares who are required to purchase those shares.

Alternative 1 would allow anyone to be eligible to receive an initial allocation, regardless of whether or not they fish for red snapper now or have targeted this species in the past. This alternative would allow non-user groups, or others wishing to conserve the species, to acquire IFQ shares and not use them, which would not optimize yield from the fishery. **Alternative 1** would introduce inefficiency into the fishery at the very start of the IFQ program by penalizing the more efficient operations. Additionally, it would slow down consolidation under the IFQ program.

Alternative 2 would allocate quota shares only to Class 1 license holders. **Preferred Alternative 3** would allocate IFQ shares to both Class 1 and Class 2 license holders. Depending on the initial allocation methodology selected, Class 2 license holders would probably receive about five to seven percent of initial IFQ shares under **Preferred Alternative 3**. If they were not included in the initial allocation of IFQ shares, as proposed in **Alternative 2**, that percentage of the commercial quota would be redistributed among eligible IFQ shareholders.

From a purely economic standpoint, the initial distribution of IFQ shares is less of a concern than are the IFQ share ownership and transfer provisions of an IFQ program. But any alternative that provides guidance on how to initially distribute IFQ shares is preferable from an administrative standpoint. As a result, the net benefits of **Alternative 1** are expected to be lower than those associated with **Alternatives 2** and **3**. **Alternative 2**, which would place the greatest restrictions on the universe of initial participants, could hasten the consolidation process under an IFQ program. However, this alternative would disallow some potentially efficient operations with Class 2 licenses to remain in the red snapper fishery. Thus, **Preferred Alternative 3** is expected to provide the greatest net benefits.

4.5 Action 5. Initial Apportionment of IFQ Shares

Alternative 1: No action. Do not specify a methodology for allocating initial IFQ shares.

Preferred Alternative 2: Allocate initial IFQ shares proportionately among eligible participants based on the average annual landings associated with their current license(s). These data are available for the years 1990 through 2004 for some Class 1 license holders, and for the years 1998 through 2004 for Class 2 license holders.

A. Allow Class 1 license holders (if eligible) to select:

i) Five years of data;

Sub-option→ ii) Ten consecutive years of data;[1,2]

iii) All years of data.

During the time period

iv) 1990 through 1999;[1,2] [NOTE: Incomplete data available 1990-92]

v) 1990 through 2000; [NOTE: Incomplete data available 1990-92.]

Sub-option→ vi) 1990 through 2004; [NOTE: Incomplete data available 1990-92.]

vii) 1993 through 2002;[2]

viii) 1994 through 2003;[1]

ix). 1995 through 2004.

B. Allow Class 2 license holders (if eligible) to select:

Sub-option→ i) Five years of data;

ii) All years of data.

During the time period

iii) 1998 through 2002;

iv) 1998 through 2003;

Sub-option→ v) 1998 through 2004.

Alternative 3: Allocate initial IFQ shares equally among all eligible participants.

Preferred Alternative 4: Current holders of Class 1 licenses issued on the basis of historical captain status may select seven years of data.

Discussion and Rationale:

Alternative 1 would require NMFS determine how to allocate initial IFQ shares among eligible program participants. Most fishery stakeholders would not likely perceive this alternative as fair. An important purpose of the regional fishery management council system established by the Magnuson-Stevens Act is to enable knowledgeable participants to advise federal fishery managers on matters like how to fairly and equitably allocate fishery resources among fishery stakeholders.

The landings-based criterion proposed in **Preferred Alternative 2** is generally considered the most equitable way to recognize both present and historical participation in the fishery, as required by Section 303(b)(6) of the Magnuson-Stevens Act. This allocation strategy would define the initial IFQ share of each eligible participant (Action 4) based on the average annual landings associated with their licenses during the

[1] Preferred Alternative of Council (11/04)

[2] Preferred Alternative of AHRSAP (10/04)

Council's preferred 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.

The Council and the AHRSAP had considerable difficulty identifying a preferred initial allocation strategy, as both wish to ensure the red snapper resource is allocated among eligible participants as fairly as possible (See Appendix A for other alternatives considered but rejected). Both identified **Alternative 2A(ii)** as the preferred strategy for allocating IFQ shares among Class 1 license holders. This alternative would allow ten consecutive years of historical landings data, including that of a person who held the license prior to the current license holder, to be credited to the current license holder to the extent those data can be determined and verified. **Alternative 2A(i)** would limit eligible Class 1 license holders to using only five years of landings data recorded during the Council's preferred time frame. This would simplify the analyses needed to compute the IFQ shares of Class 1 license holders, but is less likely to be considered fair by many affected interests. **Alternative 2A(iii)** would require NMFS consider all years of landings associated with Class 1 licenses during the Council's preferred time frame.

The Council originally identified **Alternatives 2A(iv)** (the individual chooses 1990 through 1999) and **2A(viii)** (the individual chooses 1994 through 2003) as preferred time frames to use in calculating the IFQ shares allocated to Class 1 license holders, whereas the AHRSAP identified **Alternative 2A(vii)** (the individual chooses 1993 through 2002) as the preferred alternative because it believes 2003 data are biased by illegal landings by the longline sector. The Council's current **Preferred Alternative 2A(vi)** would allow Class 1 license holders to use the years 1990 through 2004 as the baseline years for determining the amount of their initial IFQ share. The AHRSAP feels landing records from 1990 to 1993 benefit the highliners because catches were not limited during that period, whereas more recent data benefit newer fishery participants. For this reason, they believe **Preferred Alternative 2A(ii)** is fairer to Class 1 license holders, and best complies with the Magnuson-Stevens Act provisions that "current participation in the fishery be taken into account."

Preferred Alternative 2B(i) and **Alternative 2B(ii)** would limit eligible Class 2 license holders to using any five years or all years, respectively, of landings data recorded during the time frame the Council identifies as preferred for that user group. **Alternatives 2B(iii)**, and **2B(iv)**, and the **Preferred Alternative 2B(v)** would require Class 2 license holders to use the years 1998 through 2002, 1998 through 2003, or 1998 through 2004, respectively, as the baseline years for determining the amount of their initial IFQ share.

NMFS would provide participants a summary of their landings history in pounds and specify the percentage IFQ share each would receive based on various combinations of annual landings data. If individual fishermen selected different years of data to use in calculating the amount of their initial IFQ shares, the sum of all initial IFQ shares to be allocated could exceed 100 percent of the commercial quota. In this event, NMFS would use the following formula to reduce all IFQ shares proportionately to ensure the sum total of IFQ shares initially allocated to program participants is consistent with the annual commercial quota:

Quota Share/Quota Share Pool x commercial quota = IFQ share

The majority of current Class 1 license holders who own or operate most of the vessels in the commercial red snapper fishery would likely conclude the initial allocation strategy proposed in **Alternative 3** is grossly unfair because it would provide them an IFQ share equal to that received by Class 2 participants even though they ventured the capital to create the fishery harvesting capacity. **Preferred Alternative 4** would allow those who currently hold a Class 1 historical captain license to use seven, rather than ten, consecutive years of data during the Council's preferred timeframe. The Council included this alternative because, as Table 8.5.4 indicates, there are no landings data archived in the trip ticket files for seven Class 1 licenses from 1990 through 1997. These licenses belong to historical captains, and only have seven years of catch data associated with them.

Summary Comparison of Physical, Biological, and Ecological Consequences:

A primary purpose of allocating harvest privileges through an IFQ program is to end the race for fish, which results when access to limited resources is not sufficiently controlled. Determining how IFQ shares should be allocated among IFQ shareholders is largely a socioeconomic and administrative action, which would not directly affect the physical, biological, and ecological environments. However, it would indirectly affect the red snapper stock and surrounding ecosystem by influencing the efficiency with which the resource is harvested, at least in the initial years of the program. The environment would be expected to benefit from initial allocation decisions that favor the participation of more efficient fishermen. Efficient fishermen generally spend less time pursuing their catch, which reduces the amount of interaction between gear and benthic habitat, as well as the occurrence of regulatory discards and other bycatch.

The effects of **Alternative 1** cannot be estimated at this time because that alternative would require NMFS develop an initial allocation strategy if the proposed IFQ program were approved. The net effects of **Preferred Alternatives 2** and **4** are expected to benefit the environment more than those associated with **Alternative 3**, because **Preferred Alternatives 2** and **4** would allocate larger IFQ shares to those fishermen who have historically captured the most fish, whereas, **Alternative 3** would divide IFQ shares equally among all eligible participants. However, because catch histories are associated with licenses, rather than individual vessels, it is difficult to determine which of the alternative time periods proposed in **Alternative 2** would favor the most efficient fishermen.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 is not likely to be considered fair from a social or economic standpoint, as it would require NMFS determine outside the Council process how to allocate initial IFQ shares among eligible program participants. **Preferred Alternative 2** would base the initial IFQ share allocation on the catch histories associated with current red snapper licenses. The methodology proposed in this alternative would benefit those who hold licenses with the largest catch histories. If these individuals or corporations were the most efficient operations, which might be assumed if recent catch data also are used in calculating initial allocations, then this method would increase producer surplus and net benefits to the Nation. **Alternative 3** would benefit those who own licenses with larger than average catch histories. This strategy would more broadly distribute the windfall profits realized by initial IFQ program participants relative to that proposed in

Alternative 2. However, it would require many Class 1 license holders to purchase quota from Class 2 license holders to maintain their fishing operations at the existing level. Until IFQ quota shares were redistributed to the more efficient operations, this allocation strategy would likely result in lower producer surplus and net benefits to the Nation.

The multiple sub-options associated with **Preferred Alternative 2** propose alternative years of catch data to use in determining the initial allocations of IFQ shareholders. Allowing eligible participants to omit years of catch data would tend to benefit those with licenses that have sporadic or highly variable catch histories during the qualifying period. If the most efficient operations consistently harvest larger amounts of fish, then a decision to allow participants to omit some years of landings data when calculating their initial allocation would be expected to reduce producer surplus. Additionally, it would make it more difficult for fishermen to determine how they would be impacted by the Council's proposed IFQ program because they would require information on the total IFQ share pool before they could estimate their initial allocation. However, such an allocation strategy would likely diminish participants' desire to appeal initial allocation decisions based on hardship arguments.

Preferred Alternative 4 addresses data deficiencies related to Class 1 historical captain licenses. These licenses have only a 7-year catch history because they did not become effective until 1998. This alternative would result in Class 1 historical captain license holders receiving relatively larger IFQ shares than they would if their catches were considered in combination with those of all Class 1 license holders. Given Class 1 historical captain licenses have been sold for as much as $50,000, it is reasonable to assume new owners would be motivated to make their operations as efficient as possible. Consequently, allowing these participants to receive larger IFQ shares is expected to increase fishery efficiency more rapidly.

The net effects of **Alternative 1** cannot be estimated at this time because the initial allocation strategy associated with that alternative is not defined. **Alternative 3** would allocate IFQ shares equally among eligible participants, benefiting low producers at the expense of high producers. IFQ shares could still be consolidated in the hands of the most efficient operators under this alternative, but consolidation would occur much more slowly than it would under **Preferred Alternative 2**. In fact, this alternative would cause a few of the more efficient operations to be scaled back at the program's inception, introducing further inefficiencies in the red snapper fishery at the start of the IFQ program. **Preferred Alternatives 2** and **4** would allow more efficient operators to capitalize on their catch histories as they transition to an IFQ program. These alternatives would promote economic efficiency at the start of the IFQ program and, thus, are ranked first among the alternatives as providing the greatest benefits.

Preferred Alternative 2 sub-options would impact the initial recipients of IFQ shares to varying degrees. However, the general intent of these sub-options is to allow eligible participants to use the years of data during which the catches associated with their licenses were highest in calculating the amount of their initial IFQ shares. **Preferred Alternative 4** would benefit historical captain license owners because it would optimize landings in the limited number of years during which their licenses existed. **Preferred Alternative 2B(i)(v)** would be the most advantageous for Class 2 license holders.

Decisions about how to allocate initial IFQ shares are particularly difficult because management actions have to be perceived as fair and equitable by the industry. From an economic perspective, the manner in which IFQ shares are initially divided among eligible participants has little 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.

4.6 Action 6. Establishment and Structure of an Appeals Process

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

Preferred Alternative 2: The Regional Administrator (RA) will review, evaluate, and render final decision on appeals. Filing of an appeal must be completed within 90 days of the effective date of the final regulations implementing the IFQ program. [1] **Hardship arguments will not be considered. Landings data from 1990 through 1992 are not subject to appeal. Landings records appeals for 1993-2004 will be based on NMFS' logbooks. If NMFS' logbooks are not available; state landings records or data that were submitted on or before June 30, 2005, can be used.**

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 120 days of the effective date of the final regulations implementing the IFQ program. Hardship arguments will not be considered.

1 Preferred Alternative of Council (11/04)
2 Preferred Alternative of AHRSAP (10/04)

Alternative 4: A special advisory panel composed of IFQ shareholders will review, evaluate, and make individual recommendations to the RA on appeals. Advisory panel members will be appointed by the Council from a pool of names submitted by state directors. Filing of an appeal must be completed within 180 days of the effective date of the final regulations implementing the IFQ program.[2] Hardship arguments will not be considered.

Preferred Alternative 5: **A total of three percent of the IFQ shares will be initially set-aside to be used to resolve disputes regarding eligibility until the appeals process is finalized. Any amount remaining in the set-aside after the appeals process has been terminated will be proportionately distributed back to the initial recipients as soon as possible that year.**

Discussion and Rationale:

Certain aspects of the IFQ program are likely to be disputed. The majority of disputes are expected to occur when the program is first implemented, and to relate to initial eligibility and allocation determinations. An appeals process would provide a formalized process for hearing and resolving such disputes. The Council and NMFS would require those with disputes to state the nature of their dispute in a letter, and include information supporting their claim. None of the alternative appeals processes considered by the Council would allow for the consideration of hardship arguments. Additionally, landings data from 1990 through 1992 would not be subject to appeal. And landings data appeals for 1993-2004 would be based on NMFS' logbooks. If NMFS' logbooks were not available, state landings records or data submitted on or before June 30, 2005, could be used. 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. The Council and AHRSAP favor having an appeals process but differ in their view of how such a process should be structured. The Council's **Preferred Alternative 2** would require the RA and his or her support staff hears and resolves disputes. The Council adopted in Reef Fish Amendment 8 (60 FR 61200) an appeals process similar to that proposed in **Alternative 3**, which would require each state participant submit his or her individual position on appeals issues to the RA, rather than have the group of state participants develop a consensus position on the issue. The AHRSAP favors the appeals process specified in **Alternative 4**. However, this type of process is difficult to implement, because individual catch data are protected from public view by the confidentiality provisions of the Magnuson-Stevens Act and other laws. Therefore, this alternative would require each fisherman that filed an appeal sign an agreement allowing panel participants to review his or her catch data.

Preferred Alternative 5 would require NMFS reserve a small portion (i.e., 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. 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.

Summary Comparison of Physical, Biological, and Ecological Consequences:

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.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would not establish an appeals process under the IFQ program. **Preferred Alternative 2**, and **Alternatives 3** and **4**, differ in the structure and composition of the appeals process each proposes, and the time frame within which appeals could be filed. Fishermen may consider **Alternative 4** to be the most equitable because it would require appeals be reviewed by a panel of IFQ shareholders. However, data confidentiality laws make this alternative difficult to implement. In order for a fisherman to participate in the appeals process specified in **Alternative 4**, he or she would have to sign an agreement allowing the advisory panel to view his or her catch records. None of the alternatives provide for hardship arguments, which could be detrimental to fishermen who wish to file an appeal based on this criterion. **Preferred Alternative 5** would reduce the possibility that IFQ shareholders would be adversely affected by the identification of new IFQ shareholders or needed share adjustments through the appeals process.
The existence and design of an appeals process have mainly equity effects. Neither the process nor its design is expected to noticeably affect the benefits associated with the implementation of the IFQ program, primarily because each would only marginally affect the initial distribution of IFQ shares among eligible participants. The socioeconomic effects of such an action would be substantial only if the number of successful appeals were large compared to the number of qualifying persons or vessels. One important feature of an appeals process is it provides potential participants an avenue to resolve disputes about transfers of Class 1 and Class 2 licenses and the landings history associated with each license. These issues are particularly important when an IFQ program is proposed for a long or indefinite time period.

The Council's proposed IFQ program would assign specific fishing privileges to individuals based on past participation criteria. Therefore, affected interests are expected to question the data used in determining initial eligibility and allocations. An appeals process would provide a mechanism for limiting the initial social and legal costs associated with any disputes. As a result, the net benefits of **Alternative 1** are ranked lowest. **Preferred Alternative 2** is expected to be the least costly from an administrative standpoint, while providing the same benefits as the other alternatives. **Preferred Alternative 5** would mitigate any potentially negative consequences of the appeals process on initial IFQ shareholders.

4.7 Action 7. Transfer Eligibility Requirements

Alternative 1: No action. Do not limit to whom shares/allocations can be transferred.

Alternative 2: IFQ shares/allocations can be transferred only to individuals/vessels with a valid commercial reef fish permit. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.[1,2]

Alternative 3: IFQ shares/allocations can be transferred only to IFQ shareholders. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.[1,2]

Alternative 4: IFQ shares/allocations can be transferred only to U.S. citizens and permanent resident aliens. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.

Alternative 5: IFQ shares/allocations can be transferred only to initial IFQ shareholders during the first 5 years of the IFQ program and all individuals/vessels with a valid commercial reef fish permit thereafter. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.

Preferred Alternative 6: IFQ shares/allocations can be transferred only to individuals/vessels with a valid commercial reef fish permit during the first 5 years of the IFQ program and U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.

Discussion and Rationale:

Most IFQ programs worldwide allow individual quotas to be transferred among a defined group of potential IFQ participants. But individual transferable quotas are contentious because, while necessary to achieve economic efficiency objectives, they lead to consolidation, which may have undesirable social consequences if unchecked. For example, excessive consolidation can increase unemployment in isolated communities where there are limited alternatives to fish harvesting and processing industries. The Council recognizes these issues, yet understands IFQ shares and allocation must be transferable if its proposed IFQ program is to best balance social, economic, and biological tradeoffs, and improve the red snapper fishery's ability to achieve OY.

The issue of transferability and consolidation must be considered in the context of balancing two opposing goals: economic efficiency and social equity. Economic efficiency is maximized when: IFQ shares and allocation are freely transferable in the short and long term; IFQ shares and allocation are as divisible as possible, that is, IFQ share and allocation holders are allowed to transfer any portion of their IFQ share or allocation; and the tenure of their IFQ share is either long term or permanent, which minimizes uncertainty in the fishing industry and encourages long-term planning and stewardship among IFQ shareholders.

Transferability provisions have two main and related purposes. First, they rationalize the fishery by having those who are eligible and wish to participate in the fishery compensate those who wish to leave the fishery. Second, they ensure IFQ shares and allocation are held by those eligible participants who are willing to pay the highest price for them. The

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1 Preferred Alternative of Council (11/04)
2 Preferred Alternative of AHRSAP (10/04)

latter promotes efficiency in the industry because those willing to pay the highest price for IFQ shares and allocation are usually those who expect to utilize them most profitably, either by fishing at a lower cost than others, or by transforming their catch into a more valuable product.

Left unrestricted, transferability would likely have a range of social impacts. For example, it could cause IFQ shares and allocation to become concentrated in some communities over time, and cause others to lose some or all of their IFQ shares and allocation. It is difficult to predict the pattern and overall movement of IFQ shares and allocation in advance because these will ultimately depend on the overall structure of the Council's proposed program and on other environmental factors beyond the Council's control.

Alternative 1 would increase the marketability of IFQ shares and allocation by not limiting to whom they could be transferred. This is the only alternative that would allow IFQ shares and allocation to be transferred to foreign persons and corporations.

Alternative 2, which the Council and AHRSAP originally preferred, would allow IFQ shares and allocation to be transferred only to U.S. citizens or permanent resident aliens who possess a valid commercial reef fish permit. This alternative is intended to favor the participation of current commercial reef fish participants in the proposed IFQ program. It would limit the universe of persons eligible to participate in the program to about 1,100, which could adversely impact the market for IFQ shares when compared to **Alternative 1**.

Alternative 3 would allow IFQ shares and allocations to be transferred only to IFQ shareholders. This would further limit the universe of eligible persons to about 600 if the Council's proposed initial eligibility alternative were adopted, assuming inactive red snapper license holders do not become IFQ shareholders. The market for IFQ shares and allocation would not function as effectively under this scenario as it would under a scenario that defines a larger universe of potential transferees. However, it may be reasonable to allow initial IFQ shareholders an exclusive opportunity to purchase IFQ shares and allocation for a limited time period, particularly if IFQ shareholders are defined based on historical participation because many of these individuals have operated under restrictive quotas since 1990.

Alternative 4 would allow IFQ shares/allocations to be transferred to any U.S. citizen or permanent resident alien. This would greatly expand the universe of eligible participants, and enhance the market in which IFQ shares and allocations are bought and sold.

Alternative 5 would allow IFQ shares and allocations to be transferred only to IFQ shareholders for the first five years of the IFQ program, and, thereafter, only to persons holding valid commercial reef fish permits. This alternative would initially define a universe of about 600 potential transferees, and then expand this universe to encompass about 1,100 potential transferees. While it may be reasonable to favor these groups, which have invested time and capital in the fishery, the Council believes the general public should eventually have the opportunity to participate in the proposed IFQ program.

Preferred Alternative 6 would limit the universe of eligible transferees for the first five years of the program to those persons who currently participate in the commercial reef fish fishery, then allow all U.S. citizens and permanent resident aliens to purchase IFQ shares and allocations. It should be noted, however, persons possessing IFQ shares and allocations would still be required to possess a valid commercial reef fish permit in order

to possess, land, or sell red snapper managed under the IFQ program. This alternative is believed to be the most equitable because it initially favors commercial reef fish fishermen, but ultimately recognizes red snapper are a public resource.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Defining transferability restrictions is an administrative action, which would not directly affect the physical, biological, or ecological environments. However, this action would indirectly affect the red snapper stock, associated species, and surrounding ecosystem by influencing the degree of consolidation that occurs under the proposed IFQ program, as well as the potential use of purchased shares and allocation. Generally, the amount of effort applied to the fishery can be expected to decrease as IFQ shares and allocation are consolidated among fewer, more efficient individuals. This would result in less gear and time used in pursuing red snapper and, consequently, less adverse impacts in the form of habitat interactions, regulatory discards, and bycatch of non-target species. Additionally, effort (and overall fishing mortality) would be expected to decline if IFQ shares and allocations were purchased by members of the general public who place a greater value on conserving, rather than harvesting, the red snapper resource. For these reasons, the net benefits of **Alternative 1** are expected to be greatest, followed by those of **Alternative 4**, **Preferred Alternative 6**, then **Alternatives 2**, **5**, and **3**.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would not restrict the transfer of IFQ shares and allocation. This would allow environmental organizations and other interest groups to buy shares for conservation purposes, which could limit the fishery's ability to achieve OY. IFQ share/allocation holders would still be required to possess a valid commercial reef fish permit in order to actively harvest red snapper. **Alternative 2** would reward commercial reef fish permit holders because only they would be allowed to buy IFQ shares and allocation. This alternative is not expected to benefit IFQ shareholders wishing to sell shares or allocation, because it would limit the number of potential buyers, which would likely lower the market price of IFQ shares and allocation. **Alternative 3**, which would allow only IFQ shareholders to buy shares and allocation, would further limit the number of potential buyers, also potentially adversely affecting market prices.

Alternative 4 would allow IFQ shares and allocation to be transferred to any U.S. citizen or permanent resident alien. This alternative would benefit members of the general public who are interested in purchasing IFQ shares or allocation. It also would benefit initial IFQ shareholders, but could allow IFQ shares and allocation to become unaffordable for other fishermen wishing to enter the fishery. **Alternative 5** would combine the transfer eligibility criteria proposed in **Alternatives 2** and **3**, initially limiting transfers to IFQ shareholders, then to commercial reef fish fishery participants. This would enable IFQ shareholders to purchase more shares at a lower cost during the first five years of the program, before allowing others to enter the fishery. It may not benefit those IFQ shareholders wishing to sell their shares or allocation because it would limit the number of potential buyers, potentially lowering the market price for IFQ shares and allocation.

Preferred Alternative 6 would combine the transfer eligibility criteria proposed in **Alternatives 2** and **4**, initially limiting transfers to commercial reef fish participants before opening the market to the general public. This alternative would prohibit IFQ

shareholders from transferring IFQ shares or allocation to family members who do not possess a commercial reef fish permit during the first five years of the program, unless they transferred their commercial reef fish permit as well. This alternative would likely limit market prices during the first five years of the program while transfers were limited but, eventually, would benefit both IFQ shareholders and the general public by allowing IFQ shares and allocation to be purchased by those who value them the most.

Transfer restrictions are usually established to ensure the implementation of an IFQ program will not change the structure of a fishery too rapidly or too dramatically. Wilen 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." In the Council's proposed IFQ program, the "sectors" would be defined as either the recipients of initial IFQ shares and allocation, commercial reef fish permit holders, all U.S. citizens and permanent resident aliens, or anyone, regardless of citizenship.

Economists argue the free flow of IFQ shares across sectors would produce the highest overall profits (producer surplus) from the red snapper resource. However, if the goal of the proposed program is to increase benefits to the Nation, then transfers to non-U.S. citizens should probably be restricted. Allowing unrestricted transfer of red snapper IFQ shares and allocation among U.S. citizens would likely produce larger net National benefits, since net National benefit calculations, by definition, exclude any benefits that accrue to citizens of other countries. However, one cannot totally rule out the potential benefits of foreign ownership, such as supplying capital so that domestic capital can be used more efficiently elsewhere.

Persons arguing against unrestricted transfers are often concerned with resource rent distributions after the transfers. IFQ shareholders wanting to sell IFQ shares or allocation would likely prefer to have few, if any, limits placed on transfers to increase the market price of IFQ shares and allocation. Buyers would likely prefer limited competition for IFQ shares and allocation to depress their market prices. The actual change in price that would result from the various alternatives being considered cannot be quantified.

IFQ share and allocation transferability influences whether IFQ programs are able to achieve their economic objectives. The less restriction placed on transferability, the more effective an IFQ program becomes in realizing its objectives. Consequently, the net economic benefits of **Alternative 1** are ranked highest, followed in descending order by those of **Alternative 4**, **Preferred Alternative 6**, **Alternative 2**, **Alternative 5**, and **Alternative 3**. However, net economic benefits do not always translate to net social benefits. For example, **Alternative 1** would allow non-U.S. citizens (other than permanent resident aliens) to benefit from the proposed IFQ program. If such benefits were not considered desirable from a social perspective, then the net benefits of this alternative would be reduced.

4.8 Action 8. Use it or Lose it: IFQ Shares or Allocations

Preferred Alternative 1: No action. Do not specify a minimum landings requirement (i.e., use it or lose it provision) for retaining IFQ shares.[1]

[1] Preferred Alternative of Council (11/04)

Alternative 2: Any IFQ share certificates that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders.[2] "Inactive" is defined as:

A. Less than 30 percent annual average harvest of allotted IFQ shares over a three-year moving average period, except in case of death or disability.
B. Less than 50 percent annual average harvest of allotted IFQ shares over a three-year moving average period, except in case of death or disability.

Alternative 3: Any IFQ share certificates that remain inactive for five years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as:

A. Less than 30 percent annual average harvest of allotted IFQ shares over a five-year moving average period, except in case of death or disability.
B. Less than 50 percent annual average harvest of allotted IFQ shares over a five-year moving average period, except in case of death or disability.

Discussion and Rationale:

In the initial stages of an IFQ program, a use requirement would serve to reduce the number of speculators and IFQ shareholders beyond their current harvesting capacity. Marginally efficient operators could also be affected by the use requirement, although this group may be expected to intensify their fishing effort if only to receive financial benefits from the future sale of their IFQ shares. In later stages of an IFQ program, a use requirement would compel fishermen to consolidate IFQ shares to the extent needed to match their catch capacity. It would also reduce the number of IFQ shareholders who buy shares without the intent of using them, such as fishermen seeking to monopolize ownership.

The Council's **Preferred Alternative 1** would not impose use restrictions on IFQ shares. This alternative would be expected to benefit stock rebuilding and assist the fishery in achieving OY by not forcing IFQ shareholders to utilize all or a portion of the allocation associated with their IFQ shares in any given year. **Alternative 2A** is the preferred alternative of the AHRSAP, which feels IFQ shares should be revoked and proportionately redistributed to remaining IFQ shareholders if less than 30 percent of the allocation associated with those shares is utilized over a 3-year moving average period. However, the AHRSAP believes IFQ shareholders or their heirs should be exempted from this requirement in the event such inactivity was related to death or disability. **Alternative 3** also would address the AHRSAP's recommendation, but would allow for a longer period of inactivity before IFQ shares were revoked.

Summary Comparison of Physical, Biological, and Ecological Consequences:

The primary disadvantages of a use it or lose it provision are the instability such a requirement would bring to the harvest sector and the indirect negative effects it would

[2] Preferred Alternative of AHRSAP (10/04)

have on the physical, biological, and ecological environments by forcing IFQ shareholders to utilize the allocation associated with their IFQ shares in order to maintain those shares. **Alternative 2B** proposes the strictest utilization requirements, followed by **Alternatives 2A**, **3B**, and then **3A**. If some IFQ allocation were not utilized (e.g. held by lending institutions), then fishery interactions with habitat and non-target species would be reduced, and the red snapper stock would likely recover more rapidly. Consequently, the physical, biological, and ecological benefits of **Preferred Alternative 1** are expected to be greatest, followed by those of **Alternatives 3A, 3B, 2A,** and then **2B.**

Summary Comparison of Socioeconomic and Administrative Consequences:

Most IFQ shareholders would be expected to utilize their IFQ shares and allocation to generate revenue and, hopefully, profits. It would seem irrational to assume an IFQ shareholder might forgo potential income associated with IFQ shares and allocation, especially with relatively liberal transferability restrictions. However, it is possible environmental groups or others might be interested in purchasing IFQ shares for conservation purposes. A use it or lose it provision would prevent them from doing so.

Preferred Alternative 1 would allow people to hold IFQ shares without utilizing the associated red snapper allocation. This would help those fishermen facing personal hardships, as well as those who wish to purchase IFQ shares for conservation reasons. Additionally, if the red snapper stock were to decrease to a level that made targeting them cost-prohibitive, IFQ shareholders may leave allocation unused. Consequently, regulations requiring IFQ shareholders utilize a portion of their allocation could disrupt the efficiency of some fishing operations.

Alternatives 2 and **3** would implement a use it or lose it provision. If such a provision actually prevented people from buying and holding IFQ shares to reduce fishing mortality on the red snapper stock, then producer surplus and net National benefits would increase. However, the effects of any such activity are expected to be small for two reasons. First, most people are expected to utilize the allocation associated with IFQ shares. Second, the alternative use it or lose it provisions the Council is considering would require only 30 or 50 percent of a person's IFQ shares be utilized on average over the most recent three-or five-year period. Consequently, those wanting to limit red snapper harvests would still be able to maintain their IFQ shares while utilizing only a portion of those shares only one or two of every three years, or three or four of every five years. This would reduce producer surplus, assuming its effects on the market availability of red snapper would not substantially change the price of red snapper.

The net effects of **Preferred Alternative 1** are ranked first for two complementary reasons. First, certain conditions in the fishery or in the general economy may create an incentive to not utilize IFQ shares for one or two seasons. Under such conditions, utilizing IFQ shares could reduce profits due to lower revenues and/or higher costs. If IFQ shareholders were compelled to utilize a portion of their IFQ shares in order to retain them, their overall profits would be reduced compared to a situation where they were afforded the flexibility to adjust their operations to changing fishery conditions. Second, unutilized IFQ shares would likely benefit red snapper stock rebuilding because unutilized allocation could not be applied the following fishing year. The net effects of **Alternative 3** are ranked higher than those of **Alternative 2** because **Alternative 3** is less restrictive with respect to the minimum landings requirement.

4.9 Action 9. Adjustments in Commercial Quota

Alternative 1: No action. Do not specify provisions for annual adjustments in the commercial quota.

Preferred Alternative 2: Allocate adjustments in the commercial quota proportionately among recognized IFQ shareholders (e.g., those on record at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment.[1,2]

Alternative 3: Allocate adjustments in the commercial quota as follows among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Fifty percent of the adjustment will be distributed proportionately among individual shareholders based on the percentage of the commercial quota each holds at the time of the adjustment; the remaining 50 percent of the adjustment will be distributed equally among individual shareholders.

Alternative 4: Divide quota increases equally among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Divide quota reductions equally among the (specify number) recognized IFQ shareholders who hold the largest amount of IFQ shares.

Preferred Alternative 5: For 2007 issue 51 percent of 5 mp, which is 2.55 mp of the initial commercial quota, or 51 percent of whatever TAC has been selected as the preferred alternative by the Council and submitted to the Secretary. Any allocation balance resulting from a decision to specify a larger TAC would be distributed after the date of publication of the final rule setting the new TAC, but no later than July 1, 2007.

Discussion and Rationale:

The Council periodically reviews and adjusts TAC in response to new data and information, which generally take the form of new or updated red snapper stock assessments. 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 two alternative means to handle commercial quota adjustments under an IFQ program. The adjustment could either be proportionately distributed among IFQ shareholders based on the percentage of the commercial quota each holds at the time of the adjustment, or disproportionately distributed among IFQ shareholders based on a predefined set of criteria.

Alternative 1 would not specify a predefined strategy for distributing commercial quota adjustments among IFQ shareholders and, consequently, would require the Council address this issue if and when a quota adjustment occurred. Both the Council and the

1 Preferred Alternative of Council (11/04
2 Preferred Alternative of AHRSAP (10/04)

AHRSAP favor **Preferred Alternative 2** because they believe a proportional adjustment strategy is more equitable. **Alternative 3** would likely be considered unfair by those IFQ shareholders who initially harvested the greatest amount of red snapper because it would allow for a proportional distribution of only 50 percent of commercial quota increases. Conversely, those IFQ shareholders who initially harvested the least amount of red snapper would likely consider this alternative unfair because it would require 50 percent of a commercial quota reduction be distributed equally among them and those who take a larger percentage of the quota.

Those IFQ shareholders with the most shares would likely consider **Alternative 4** unfair because it would require commercial quota increases be distributed equally among all IFQ shareholders, and commercial quota reductions be deducted from just their allocation. Neither this alternative nor **Alternative 3** would effectively promote the Council's capacity reduction objectives, because each would reward those IFQ shareholders who would otherwise likely sell their IFQ shares.

Preferred Alternative 5 addresses the commercial quota allocation strategy for the 2007 fishing year. The Council proposed this action because the recent SEDAR red snapper stock assessment suggests the current 9.12 mp TAC should be reduced to continue rebuilding under the plan recently approved in Reef Fish FMP Amendment 22. The Council is currently evaluating in Reef Fish FMP Amendment 27 alternative TACs ranging from 5 to 9.12 mp. Consequently, as a precautionary measure and under certain circumstances, **Preferred Alternative 5** would require NMFS issue initial IFQ allocations based on a 5 mp TAC to eliminate the possibility IFQ shareholders would be required to forfeit allocation during the 2007 fishing year after the TAC adjustment becomes effective.

Specifically, if the Council has not yet specified the TAC for the 2007 fishing year at the time red snapper allocation must be issued to IFQ shareholders, then this alternative would require NMFS issue 51 percent of a proxy 5 mp TAC (2.55 mp) to IFQ shareholders. Alternatively, if the Council has identified and submitted for Secretarial review a preferred TAC in Reef Fish FMP Amendment 27 at the time the red snapper allocation must be issued for the 2007 fishing year, then it would require NMFS issue 51 percent of that preferred TAC to IFQ shareholders. Should the final TAC for the 2007 fishing year require additional allocation adjustments, such adjustments would be proportionately distributed among IFQ shareholders after the 2007 TAC becomes effective, but no later than July 1, 2007.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Alternative 1 would require the Council determine how to treat TAC adjustments on a case-specific basis. Therefore, the effects of this alternative would need to be determined at the time the Council proposes a specific distribution strategy. **Preferred Alternative 2** would positively affect the physical, biological, and 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 their catch, which minimizes fishery interactions with bottom habitat and non-target species. The allocation strategies proposed in **Alternatives 3 and 4** would likely provide less efficient fishermen an incentive to retain their IFQ shares. Consequently, these alternatives would be expected to reduce the environmental benefits of the IFQ program

by slowing the rate of consolidation. This would adversely impact the physical, biological, and ecological environments, and could hinder the IFQ program's effectiveness in reducing bycatch of red snapper and other non-target species. **Preferred Alternative 5** would limit the amount of IFQ allocation NMFS could issue at the program's inception if the Council's proposed TAC for the 2007 fishing year has yet to be implemented at that time. This alternative would benefit the red snapper stock and surrounding ecosystem by reducing the possibility the commercial fishery would exceed its quota for the 2007 fishing year.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would not specify a pre-defined strategy for how to distribute TAC adjustments among IFQ shareholders. The strategy proposed in **Preferred Alternative 2** would provide larger increases in allocation to those IFQ shareholders holding a larger percentage of the commercial quota when TAC increases, and larger reductions in allocation to those same IFQ shareholders when TAC decreases. Alternatives that would divide quota adjustments equally among IFQ shareholders (50 percent of TAC changes under **Alternative 3**, or 100 percent of TAC changes under **Alternative 4**) would benefit those shareholders with smaller than average IFQ shares. An equal allocation methodology would tend to limit consolidation by providing IFQ shareholders with relatively small shares the incentive to retain their shares in anticipation of a future increase. Consequently, an equal distribution strategy could reduce producer surplus and the degree of consolidation relative to a proportional allocation methodology. These types of effects are expected to be more pronounced if TAC reductions were deducted from the allocations of the largest IFQ shareholders, as proposed in **Alternative 4**. **Preferred Alternative 5** would limit the amount of commercial quota that could be allocated to IFQ shareholders at the start of the 2007 fishing season in the event TAC for the 2007 fishing year has yet to be defined at that time. This alternative would reduce the potential complication of implementing the IFQ program before the 2007 TAC has been determined and implemented. Although it would restrict fishermen's planning activities, it would reduce the possibility they would have to forfeit a portion of their allocation when the 2007 TAC became effective.

The net effects of **Alternative 1** cannot be determined until a specific allocation strategy is proposed. The net effects of **Preferred Alternative 2** are ranked highest because this alternative would promote efficiency in the fishery by supporting the IFQ program's natural tendency to concentrate IFQ shares and allocation in the hands of the most efficient operators. An equal allocation scheme, which is a component of **Alternatives 3** and **4**, would be expected to limit consolidation by providing less efficient operators a disincentive to transfer their IFQ shares. The net effects of **Preferred Alternative 5** are expected to be positive because this initial allocation limitation would reduce the possibility IFQ shareholders would have to forfeit allocation during the 2007 fishing year.

4.10 Action 10. Vessel Monitoring Systems (VMS)

Alternative 1: No action. Do not require commercial red snapper vessels be equipped with VMS.

Preferred Alternative 2: Require all fishing vessels engaged in harvesting red snapper under the IFQ program to be equipped with VMS. The

purchase, installation, and maintenance of VMS equipment must conform to the protocol established by NMFS in the *Federal Register.*

Sub-option→ A) The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for or arranged by the owner of the IFQ shares;

B) The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for by NMFS;

C) The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for jointly by the owner of the IFQ shares and NMFS;

C) The purchase, installation, and maintenance of the VMS equipment will be paid for by NMFS. Communications costs will be paid for or arranged by the owner of the IFQ shares.

Note: This action may be unnecessary if VMS requirements in Amendment 18A are approved by the Secretary. The Council has approved Amendment 18A to require VMS for all commercial reef fish vessels.

Discussion and Rationale:

Rights-based fishery management programs, such as IFQs and cooperatives, are becoming increasingly popular tools for addressing overcapacity in U.S. fisheries and across the globe. The importance of adequate enforcement is a recurring theme in current literature about the effectiveness of such programs. This subject is often troubling because enforcement is generally quite costly, and often viewed as both burdensome to a highly regulated industry and obstructive to commerce.

Alternative 1 would not require vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS units, whereas **Alternative 2** would. The four sub-options under **Preferred Alternative 2** address the costs of purchasing and operating VMS units. **Preferred Alternative 2A** would require the IFQ share or allocation holder engaged in harvesting red snapper pay all costs associated with the VMS unit. This alternative would likely more adversely affect those IFQ program participants fishing relatively small allocations because they will earn less revenue from the red snapper fishery. **Alternative 2B** would require NMFS cover the costs of the VMS requirements. **Alternative 2C** would require NMFS and the IFQ share or allocation holder jointly share the costs. **Alternative 2D** would require NMFS pay for the VMS units, and the IFQ share or allocation holder engaged in harvesting red snapper pay the associated communication costs.

VMS is considered a cost effective law enforcement tool, which is highly effective in achieving acceptable levels of compliance. Requiring VMS in the proposed red snapper FQ fishery would facilitate commercial sales, allow fishers to be more competitive over a broader geographic area, and enhance the potential for larger profits, while helping enforce program regulations and other regulatory measures already effective in GOM fisheries. Specifically, fishery and enforcement program managers could utilize VMS to easily recognize and document the following types of potential violations:

$ Fishing over quota;
$ Closed area/time activity;
$ Stringent position reporting 24 x 7 throughout area/time openings;

$ Transshipments; and
$ Selling to unauthorized dealers.

VMS would enable enforcement agents to be notified of the time and place of landings, and present at the dock for cooperative agency inspections of documented violations. For example, if an IFQ share or allocation holder had taken their red snapper allocation and declared they were targeting another species for which they were permitted, then enforcement agents could use VMS technology to meet their vessel at the dock and inspect the landed catch to confirm the fishing activity they declared, confirm any red snapper on board did not exceed their available IFQ allocation, ensure they were selling to an authorized dealer, and ensure no transshipment occurred at sea.

Additionally, VMS could reduce costly at-sea enforcement for:

Closed Seasons: Law enforcement agents could use VMS to determine compliance with seasonal closures (if any), reducing or eliminating the need for random surface or aerial patrols.

Prior Notice of Landing: Vessel operators could use VMS to notify NOAA law enforcement agents of the designated landing site three hours prior to offloading their catch.

Vessel Clearances: VMS could be used to clear those vessels intending to land catch at a location that is outside the IFQ regulatory area. Normally, such a request and clearance would be required in writing. However, VMS technology could eliminate this requirement.

Primary Ports: Normally, clearance is provided from an authorized NOAA law enforcement agent/officer in a primary port. VMS technology could eliminate this requirement.

Closed Areas: Law enforcement agents could use VMS to determine compliance with area closures (such as marine protected areas or 50-fathom depth contour restrictions), reducing or eliminating the need for random surface or aerial patrols.

High Grading: VMS would allow surface patrols to locate and randomly check vessels for high grading activity.

Transshipments: VMS would enable the detection of transshipment movements based upon vessel signatures.

Quota Busting: VMS could help enforcement agents identify vessels engaged in quota busting activities through comparative analysis and vessel signature.

Reducing enforcement costs could actually reduce industry costs by providing more fluidity in marketing and allowing law enforcement resources to be shifted from offshore activities to auditing and paper-trail processes, which would be expected to become even more important under an IFQ program.

As noted above, the Council's proposed VMS action could be unnecessary if the Secretary approves and implements the VMS requirements currently proposed in Reef

Fish FMP Amendment 18A. Reef Fish FMP Amendment 18A was approved for submission to the Secretary at the September 2005 Council meeting.

Summary Comparison of Physical, Biological, and Environmental Consequences:

Requiring VMS in the commercial red snapper fishery (**Preferred Alternative 2)** would directly and indirectly benefit the physical, biological, and ecological environments. Because VMS could be used to track fishing activities in real time, it would facilitate law enforcement agents' efforts to enforce IFQ program regulations and, therefore, improve the program's effectiveness in achieving conservation goals. For example, VMS could be used to enforce existing closed areas, and to help surface patrols locate and randomly check vessels for high grading and quota busting activities. Additionally, if fishermen were required to pay for VMS units (**Preferred Alternative 2A**), then a VMS requirement could increase the amount of capacity reduction that occurs under the IFQ program by providing less efficient fishermen the incentive to transfer their shares and allocation to more efficient fishermen. Fishermen who are more efficient generally spend less time pursuing their catch, which minimizes the adverse impacts of fishing on target species, non-target species, and vulnerable bottom habitat. Therefore, the net effects of **Preferred Alternative 2A** are expected to be greatest, followed by those of **Alternative 2C**, **2D**, **2B**, and then **Alternative 1.**

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would benefit IFQ participants in the short term, by not requiring vessels engaged in harvesting red snapper utilize VMS units, thereby alleviating concerns regarding cost, maintenance, and perceived intrusive monitoring. However, it would likely reduce the effectiveness of the IFQ program. **Preferred Alternative 2** would require all fishing vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS. This would increase the operating costs of vessels engaged in the commercial red snapper fishery. These costs would either be borne by IFQ participants (**Preferred Alternative 2A**), by NMFS (**Alternative 2B**), or by both groups (**Alternatives 2C** and **2D**). If IFQ share or allocation holders were responsible for some (**Alternative 2C**) or all (**Preferred Alternative 2A**) of the costs of installing and maintaining VMS units, those with small amounts of red snapper allocation (i.e., current Class 2 license holders) could determine the revenues they earned from red snapper landings were not offset by the costs of participating in the fishery. Additionally, some fishermen may consider a VMS requirement to be an intrusion on their privacy and their autonomy as an independent fisherman.

Depending on the number of vessels operating in the fishery, the first year cost of a VMS requirement would range from less than $0.5 million to about $2.7 million. VMS-related communication costs would range from about $58,000 to $470,000 in future years. Maintaining and/or replacing VMS units would require additional cost outlays in future years. However, those costs cannot be estimated with existing information. If IFQ share or allocation holders were responsible for VMS costs, then producer surplus would be expected to decrease by the variable component of the total VMS costs, because a VMS requirement is neither expected to increase revenue nor decrease fishing costs that are not related to the VMS requirement. If NMFS were responsible for VMS costs, then producer surplus would not change, because transfer payments would be excluded from the calculation.

A VMS program would most likely reduce other costs associated with monitoring and enforcing the proposed IFQ program. The net effects of **Alternative 1**, which would not require VMS, are ranked higher than those of **Preferred Alternative 2** from the standpoint of vessel operations, because **Alternative 1** would not require IFQ share or allocation holders to incur costs associated with a VMS program. **Preferred Alternative 2** would reduce the producer surplus of fishery operations if the cost of the VMS program were fully (**Alternative 2A**) or partially (**Alternatives 2C** and **2D**) borne by IFQ share or allocation holders. **Alternative 2B** would lower the cost burden on IFQ share or allocation holders, which would improve the profits of vessel operations. Certainly, a VMS requirement would likely enhance the effectiveness of the proposed IFQ program. While analysts cannot conclude the benefits of a more effective program would outweigh the costs of a VMS requirement, such a requirement is likely to provide net benefits in the long term as more fisheries adopt IFQ programs.

4.11 Action 11. Cost Recovery Plan

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

Alternative 2: All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The fee collection and submission will reside with the recognized IFQ shareholder. The fees would be calculated at the time of sale of fish to the registered IFQ dealer/processor after which the recognized IFQ shareholder will be responsible for submitting such fees to NMFS.

A. The collected fees would be submitted by the IFQ shareholder to NMFS
(i) quarterly.
(ii) by (enter date).

B. For all IFQ pounds landed and sold, the cost recovery fee will be based on:
(i) the actual* ex-vessel value of the red snapper landings.
(ii) the standard** ex-vessel price of the red snapper landings as calculated by NMFS.

C. An annual Registered IFQ Dealer/Processor Ex-vessel Value report (IFQ Buyer report) from each IFQ registered buyer who operates as a shore-side processor and purchases IFQ red snapper would be:
(i) required
(ii) not required

Preferred Alternative 3. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The fee collection and submission will reside with the recognized IFQ dealer/processor. The fees would be calculated at the time of sale of fish to the registered IFQ dealer/processor after which the recognized IFQ dealer/processor will be responsible for submitting such fees to NMFS.

A The collected fees would be submitted by the IFQ dealer/processor to NMFS

Sub-option→(i) quarterly.
(ii) by (enter date).

B. For all IFQ pounds landed and sold, the cost recovery fee will be based on:

Sub-option→ (i) the actual* ex-vessel value of the red snapper landings
(ii) the standard** ex-vessel price of the red snapper landings as calculated by NMFS.

C. An annual Registered IFQ Dealer/Processor Ex-vessel Value report (IFQ Buyer report) from each IFQ registered buyer who operates as a shore-side processor and purchases IFQ red snapper would be:

Sub-option→(i) required.
(ii) not required.

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

Section 304(d)(2)(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 (LASAF) established under Section 305(h)(5)(B) of the Magnuson-Stevens Act. The Act provides an exception for any such fees reserved under Section 304(d)(4)(A) of the Magnuson-Stevens Act, which must be deposited in the Treasury and available, subject to annual appropriations, to cover the costs of new direct loan obligations and new loan guarantee commitments as required by section 504(b)(1) of the Federal Credit Reform Act (2 U.S.C. 661c(b)(1). 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. Both **Alternative 2** and **Preferred Alternative 3** would make IFQ share or allocation holders responsible for the cost recovery fee. However, these alternatives differ with respect to who each would make responsible for collecting and submitting those fees. **Alternative 2** would have the fee collection and submission responsibility reside with the recognized IFQ share or allocation holder, whereas **Preferred Alternative 3** would have the fee collection and submission responsibility reside with the IFQ dealer/processor. **Preferred Alternative 3A(i)B(i)C(i)** would require: IFQ dealers/processors submit collected fees to NMFS on a quarterly basis; the cost recovery fee be calculated based on the actual ex-vessel value of the red snapper landings; and each IFQ registered buyer who operates as a shore-side processor and purchases red snapper under the IFQ program submit annual Registered IFQ Dealer/Processor Ex-vessel Value reports (IFQ Buyer reports) to NMFS.

Summary Comparison of Physical, Biological, and Environmental Consequences:

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.

Summary Comparison of Socioeconomic and Administrative Consequences:

Alternative 1 would not establish a cost recovery program; **Alternative 2** and **Preferred Alternative 3** would establish such a program. **Alternative 2** and **Preferred Alternative 3** are similar, except with respect to who each would make responsible for fee collection and submission. This responsibility would reside with the IFQ share or allocation holder under **Alternative 2**, and with the IFQ dealer/processor under **Preferred Alternative 3**.

NMFS would determine the percentage of the ex-vessel value of red snapper landings that would be used to calculate the actual amount of the cost recovery fee associated with each sale transaction. This percentage would not exceed three percent. Based on a 4.65-mp red snapper commercial quota, a fee of three percent, and an ex-vessel price of $2.83 per pound, the total amount of cost recovery fees collected would equal $394,785. The IFQ share or allocation holder involved in the sales transaction would pay the fee at the time of the sales transaction. Producer surplus would be reduced by the amount of the fee, plus any other costs associated with paying the fee. Those costs would include time and materials required for completing any paperwork, such as annual dealer reports, and submitting the cost recovery fee to NMFS.

The proposed IFQ program would require dealers obtain a red snapper IFQ dealer endorsement in addition to a commercial reef fish dealer permit, and have the electronic capability needed to input sales transaction data, such as pounds purchased and ex-vessel values. Although IFQ share or allocation holders would be responsible for paying the cost recovery fees, dealers would be responsible for collecting those fees at the point of sale, and remitting the fees to NMFS. Also, dealers would be required to submit year-end reports describing the total ex-vessel value of red snapper they purchased from IFQ share or allocation holders. Dealers might pass on to IFQ share/allocation holders or others, such as retailers and consumers, some of the monetary and/or non-monetary costs presented by these requirements, for example, by reducing the ex-vessel value of red snapper or by charging one or more additional “service” fees. Lower prices could, in turn, result in lower recovery fees. However, some dealers might not have adequate leverage to make others responsible for these costs.

The net effects of **Alternative 1** are ranked first from an economic standpoint because that alternative would not impose additional administrative fees and costs on IFQ program participants. **Alternative 2** and **Preferred Alternative 3** would recover some of the administrative and enforcement costs associated with the IFQ program. Imposing a cost recovery fee would be expected to distort the net benefits and economic impacts of the IFQ program. Such a fee could encourage fishing operations to collectively exceed the economically optimal operating level for the fishery, somewhat analogous to the way

open access systems promote inefficiency. The net effects of these two alternatives are similar, except with respect to who they impact.

5.0 AFFECTED ENVIRONMENT

Section 1502.15 of the CEQ regulations states "environmental impact statements shall succinctly describe the area(s) to be affected or created by the alternatives under consideration." The following is a description of the physical, biological, economic, social, and administrative environments affected by this action.

5.1 Physical environment

The physical environment for reef fish, including red snapper, 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 GOM has a total area of 564,000 km^2 (218,000 sq. mi.). 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, anti-cyclonic 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. In the GOM, adult red snapper are found in submarine gullies and depressions; over coral reefs, rock outcrops, and gravel bottoms; and are associated with oil rigs and other artificial structures (GMFMC, 2004a).

5.1.1 Environmental Sites of Special Interest Relevant to Red Snapper

Cooperative Texas Shrimp Closure (Figure 5.1.1) - A shrimp nursery ground off Texas cooperatively closed by the Council and the state of Texas for 45 to 60 days out to either 15 or 200 miles. The closure results in shrimp growing to approximately 39 count/pound (5,474 square nautical miles).

Longline/Buoy Gear Area Closure (Figure 5.1.1**)** - 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 (Figure 5.1.2**)** - 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 (Figure 5.1.2**)** - No-take marine reserves cooperatively implemented by the state of Florida, National Ocean Survey (NOS), the Council, and the National Park Service (see jurisdiction on chart) (185 square nautical miles).

Flower Garden Banks Habitat Area of Particular Concern (HAPC) (Figure 5.1.3**)** - Pristine coral area protected by preventing use of any gear that interacts with the bottom. Subsequently, this area was made a marine sanctuary by NOS (41 square nautical miles).

Florida Middle Grounds Habitat Areas of Particular Concern (HAPCs) (Figures 5.1.4 - 5.1.5**)** - Pristine soft coral area protected from use of any fishing gear interfacing with bottom (348 square nautical miles).

Stressed Areas for Reef Fish **(**Figures 5.1.4 - 5.1.5**)** - 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 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, the Council has submitted to NMFS the Generic Amendment 3 for addressing EFH requirements, HAPC, and adverse effects of fishing in the following FMPs of the GOM: Shrimp, Red Drum, Reef Fish, Stone Crab, Coral and Coral Reefs in the GOM and Spiny Lobster and the Coastal Migratory Pelagic resources of the GOM and South Atlantic (GMFMC 2005a). This amendment, if implemented, will define EFH for each FMP and establish the following HAPCs **(**Figures 5.1.4 - 5.1.5**)**: the Florida Middle Grounds, Madison-Swanson Marine Reserve, Tortugas North and South Ecological Reserves, Pulley Ridge, and the individual reefs and banks of the Northwestern GOM: 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. The amendment will also implement the following fishing restrictions in the GOM: 1) Prohibit bottom anchoring over coral reefs in HAPCs (East and West Flower Garden Banks, McGrail Bank, Pulley's Ridge, and North and South Tortugas Ecological Reserves) and on the significant coral resources on Stetson Bank; 2) prohibit the use of trawling gear, bottom longlines, buoy gear, and all traps/pots on coral reefs in the East and West Flower Garden Banks, McGrail Bank, Pulley's Ridge, and North and South Tortugas Ecological Reserves HAPCs and on the significant coral communities on Stetson Bank; and 3) require a weak link in the tickler chain of bottom trawls on all habitats throughout the GOM 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. Finally, the amendment will establish an education program on the protection of coral reefs when using various fishing gears in coral reef areas for recreational and commercial fishermen.

5.2 Biological environment

The biological environment is described in detail in the final EIS for the Generic Essential Fish Habitat amendment and is incorporated here by reference (GMFMC 2004a).

5.2.1 Red Snapper Life History and Biology

Red snapper demonstrate the typical reef fish life history pattern (Table 6.2). Eggs and larvae are pelagic while juveniles are found associated with bottom features or over barren bottom. Spawning occurs over firm sand bottom with little relief away from reefs during the summer and fall. Adult females mature as early as 2 years and most are mature by 4 years (Schirripa and Legault, 1999). Red snapper have been aged up to 57 years, but most caught by the directed fishery are 2- to 4 years old (Wilson and Nieland, 2001). A more complete description of red snapper life history can be found in the Council's EFH EIS (GMFMC, 2004a)

5.2.2 Status of the Red Snapper Stock

Since the late 1980s, the stock has been considered to be overfished and undergoing overfishing. Prior to 2005, the red snapper stock was last assessed in 1999 (Schirripa and Legault, 1999), upon which the current stock rebuilding plan is based on. While the assessment (Schirripa and Legault, 1999) concluded the stock was still undergoing overfishing and was overfished, there was, and still is, considerable uncertainty about the estimates of B_{MSY} (two to four billion pounds). B_{MSY} is critical in determining the rebuilding strategy as well as understanding a stock's productivity. Much of the uncertainty is due to a lack of understanding of the stock-recruitment relationship, in part because the stock has never been assessed at any level approaching B_{MSY} (i.e., $B_{CURR} < B_{MSY}$). This makes it difficult to determine how heavily density-dependent factors such as space, cannibalism, predation, and shrimp bycatch reduction may influence the stock-recruitment relationship (RFSAP, 2000).

Unique to other fisheries, rebuilding the red snapper stock is constrained due to bycatch mortality on juvenile red snapper by the shrimp trawl fishery. This non-directed fishery catches substantial numbers of juvenile red snapper as bycatch. Therefore, to end overfishing and rebuild the red snapper stock, large reductions in bycatch mortality from the shrimp fishery need to be achieved either through technological means such as BRDs, or through a reduction in effort by the shrimp fishery.

For the rebuilding plan, BRDs were estimated to achieve approximately a 40-percent reduction in red snapper bycatch. In addition, recent analyses of the economic performance of the shrimp fishery have indicated an economic downturn that will likely cause shrimp effort to decline. Given this information for bycatch, projections showed the red snapper stock could rebuild to B_{MSY} within the longest time period recommended by NMFS guidelines. These guidelines suggest rebuilding times should not exceed the time it would take to rebuild in the absence of fishing plus one mean generation time (31 years for red snapper [12 years plus 19.6 years]). The implemented rebuilding plan maintains TAC at 9.12 mp, ends overfishing between 2009 and 2010, and rebuilds the red snapper stock to B_{MSY} by 2032.

Considerable new information on GOM red snapper was available for a red snapper assessment that began in 2004. The preferred assessment model was a more generalized form of the model used in 1999, with a greater ability to include information from multiple ages, stocks, fleets, and habitats. The model was able to incorporate an extended time-series of catch data dating back to 1872 to attempt to refine estimates of long-term stock productivity. The model outcome still indicates the red snapper stock is overfished and undergoing overfishing. However, the model also indicated the juvenile fishing mortality rate associated with the shrimp fleet had declined compared to the rate found in the late 1980s. The model also suggested the fishing mortality rate in some segments of the directed fishing fleets had increased. The Southeast Data, Assessment, and Review (SEDAR 7) advisory report (SEDAR, 2004a) recommended in setting TAC, the Council needs to weigh reductions in shrimp trawl bycatch. Higher TACs would mean there would need to be a greater reduction of the effective shrimp trawl mortality on red snapper.

5.2.3 Status of BRD Performance in the GOM

Monitoring the performance of BRDs in the fishery through an observer program from 2001 to 2003 indicates the Gulf fisheye BRD performance has been lower than expected. Total finfish reduction estimate was 16.5 percent, and F reduction for red snapper was 11.7 percent. Shrimp reduction was 2.0 percent. The study provided evidence to suggest changes in fishing procedures intended to maintain a high shrimp yield may have inadvertently reduced the effectiveness in excluding unwanted bycatch. Results also give an indication the performance of fisheye BRDs may be improved by placing them behind the elephant ears and closer to the tie-off rings. However, a review of the 2001-2003 database indicates a substantial portion of the GOM fleet use codends that are too short to allow the fisheye BRD to be placed behind the elephant ear without risk of considerable shrimp loss. In some cases, the fisheye BRD would have to be placed as close as 5.5 feet (1.7 m) from the tie-off rings in order to be placed behind the elephant ear.

To address the potential gear configuration, an experiment was started in fall of 2004 to evaluate the potential effect of allowing vessels to configure the elephant ear to pull from the bottom of the codend, thus eliminating the elephant ear interaction problem. The results from the 2004 experiment testing elephant ears under the codend indicate most vessels can successfully pull elephant ears from the bottom of the codend with little or no operational difficulty. However, the preliminary reduction rates fail to show this configuration is an improvement over the 2003 results. Based on this information, it is unlikely the performance of the Gulf Fisheye BRD can be substantially increased without causing excessive shrimp loss.

The Jones-Davis BRD is the only other design certified for use in the western and central GOM. It is a funnel-type BRD similar to the Extended Funnel and Expanded Mesh BRDS certified for use in the eastern Gulf and south Atlantic. Funnel-type BRDs have a history of consistent performance in reducing finfish while maintaining a high shrimp retention rate. The Jones-Davis BRD incorporates a spooker cone that restricts passage of fish into the codend. While the cone appears to increase fish escapement, the shrimp loss with this design is higher than other funnel-type BRDS. This design has seen limited acceptance due to the complexity in design and cost of construction (greater than $300). Due to their consistent performance of funnel-type BRDs, the Harvesting Systems and Engineering Division of NMFS plans to conduct research to simplify and improve their design in order to obtain wider acceptance in the GOM as well as the south Atlantic shrimp fishery.

5.2.4 General Information on Reef Fish Species

The NOS collaborated with NMFS and the Council to develop distributions of reef fish (and other species) in the GOM (SEA 1998). NOS obtained fishery-independent data sets for the GOM, 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). 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 GOM, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages are summarized in Table 6.2 and can be found in more detail in GMFMC (2004a). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation (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 GOM, particularly off Texas through Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath, red, gag, and yellowfin) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981a). More detail on hard bottom substrate and coral can be found in the FMP for Corals and Coral Reefs (GMFMC and SAFMC 1982).

5.2.5 Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 42 species (Table 6.1). Stock assessments (and most recent assessment) have been conducted on 11 species: red snapper (SEDAR 2004, 2005), vermilion snapper (Porch and Cass-Calay, 2001), yellowtail snapper (Muller et al., 2003), gray triggerfish (Valle et al., 2001), greater amberjack (Turner et al., 2000), hogfish (Ault et al., 2003), red grouper (NMFS, 2002), gag (Turner et al., 2001), yellowedge grouper (Cass-Calay and Bahnick, 2002), and goliath grouper (Porch et al., 2003). 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). Stock assessments for greater amberjack, gray triggerfish, and vermilion snapper are currently being conducted.

Of the 11 species for which stock assessments have been conducted, the 2004 Report to Congress on the Status of the U.S. Fisheries (NMFS, 2005) classifies five as overfished (greater amberjack, red snapper, vermilion snapper, goliath grouper, and Nassau grouper), and four as undergoing overfishing (red snapper, vermilion snapper, red grouper, and greater amberjack). Many of the stock assessments and stock assessment reviews can be found on the Council's Web site (www.gulfcouncil.org).

5.2.6 Protected Species

There are 28 cetacean species that have confirmed occurrences in the GOM (Davis and Fargion, 1996). Of these, six marine mammal species are listed as endangered species. Additionally, all five of the sea turtles found in the GOM (Kemp's ridley, loggerhead, green, leatherback, and hawksbill) are protected under the Endangered Species Act (ESA). Fish species listed under the ESA in the GOM include the threatened Gulf sturgeon and the endangered smalltooth sawfish. For information on these species, refer to the final EIS to the Council's Generic EFH amendment (GMFMC, 2004a) and the recently completed a biological opinion for Reef Fish Amendment 23 (NMFS, 2005).

The biological opinion prepared for Reef Fish Amendment 23 (NMFS, 2005) evaluated the effects of all fishing activity authorized under the FMP on threatened and endangered species, in accordance with section 7 of the ESA. The biological opinion, which was based on the best available commercial and scientific data, concluded the continued operation of the GOM reef fish fishery is not likely to jeopardize the continued existence of threatened or endangered species.

5.3 Social and Economic Environment

Section 8 provides a detailed description of the social and economic environment potentially affected by measures in this amendment, and is incorporated herein by reference. In summary, the reef fish fishery and its red snapper component are composed of commercial and recreational sectors. Within the commercial sector are fishing vessels, dealers, support industries, and fishing communities. Recreational anglers participate in the reef fish fishery through several fishing modes, such as shore, private/rental, charter boats, and headboats. Charter boats and headboats comprise the for-hire fishery. In addition, there are also areas considered as fishing communities that may either provide place of residence, business, or employment associated with the recreational pursuit of the reef fish. Some of these areas similarly provide residence or business opportunities for the commercial fishing sector.

Commercial vessels that participate in the reef fish fishery harvest red snapper if they have either a Class 1 or 2 license. They also harvest species such as other snappers, groupers, and amberjack. Although for-hire vessels target some particular reef fish species, such as red snapper and grouper, these vessels generally target a variety of species, including species outside the reef fish fishery management unit such as mackerel. This amendment would specifically affect the commercial reef fish fishery, particularly Class 1 or 2 license holders.

5.4 Administrative Environment

5.4.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ, an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over United States 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 GOM. 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 GOM 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 OLE, 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 5-year "GOM Cooperative Law Enforcement Strategic Plan - 2001-2006."

5.4.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. 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 states primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004b).

6.0 ENVIRONMENTAL CONSEQUENCES

This section describes the potential direct, indirect, and cumulative effects of each alternative on the physical, biological, ecological, socioeconomic, and administrative environments, as well as: 1) the effects of the alternatives in the context of the Magnuson-Stevens Act National Standards; 2) mitigation measures included in the proposed actions and alternatives; 3) any unavoidable adverse effects of the proposed actions, 4) the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and 5) any irreversible or irretrievable commitments of resources associated with implementing the proposed actions.

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."

6.1 Action 1. IFQ Program

6.1.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Alternative 1 would maintain the current commercial red snapper fishery two-tiered limited access program, and associated trip limits (2,000 pounds for Class 1 license holders; 200 pounds for Class 2 license holders), and closed seasons. These management measures directly affect target species, bycatch species, and their habitat, by influencing the amount and distribution of fishing effort applied to the red snapper fishery.

The primary effects of these regulations on the physical environment generally result from fishing gear interactions with bottom habitat. Fishing gear can damage or disturb bottom structures by snaring or entangling them during normal fishing operations. The significance of such effects depends on the vulnerability of the affected habitats to disturbance, as well as the rate at which they can recover from such disturbance (Barnette, 2001). For example, corals are more vulnerable to adverse impacts from fishing gear and slower to recover from such impacts than are sand, mud, and hard bottom habitats (Barnette, 2001).

The commercial red snapper fishery generally has minimal impacts on the physical environment (see Section 5.1) because it primarily utilizes vertical line gear and operates over sand and mud bottom, artificial structures, and low-relief hard bottom habitat. Bandit rigs and handlines account for 95.9 percent of commercial red snapper landings (2000-2003 data; Poffenberger, 2004). These gear types can accidentally snag or entangle bottom structures (Barnette, 2001) and, if lost or improperly disposed of, may cause long-term damage to particularly vulnerable habitat, such as corals (Hamilton, 2000; Barnette, 2001). However, several marine protected areas, HAPCs, and gear-restricted areas identified in Section 5.1.1 protect particularly vulnerable habitat in the northern and western GOM where the commercial red snapper fishery primarily occurs. The VMS actions proposed by the Council in this amendment and in Amendment 18A to the Reef Fish FMP are intended to improve compliance with these area-based regulations, as well as with other conservation and management measures.

Bottom longline gear accounts for just 3.6 percent of commercial red snapper landings (2000-2003 data; Poffenberger, 2004). The extent of damage caused by bottom longline gear used in the commercial red snapper fishery is uncertain, and generally depends on the substrate it impacts, as well as on currents and the amount of line swept across the bottom by hooked fish (Barnette, 2001). However, it is expected to be minimal given the small contribution of bottom longline gear to total commercial red snapper landings.

Derby conditions encouraged by existing regulations adversely affect the biological and ecological environments by reducing fishermen's ability to avoid or minimize incidental catches of red snapper and other reef fish species, including vermilion snapper, gag, red grouper, greater amberjack, gray triggerfish, and other groupers, and by making it difficult for fishery managers to track the quota, which sometimes results in overages.

Section 5.2 describes the life history and biology of red snapper and other potentially affected species. In summary, red snapper are long-lived, spawn during summer and fall, and mature by two years of age (Wilson and Nieland, 2001; Fitzhugh et al., 2004). Juveniles occupy soft bottoms and low-relief habitat after settlement, become vulnerable to the Gulf of Mexico shrimp trawl fishery at approximately 4 inches TL (10-cm TL; Goodyear, 1995; Gallaway et al., 1998), and recruit to non-trawlable reef habitats at approximately 7-8 inches TL (18-20 cm TL; Gallaway et al., 1999).

Red snapper are considered overfished and undergoing overfishing (Schirripa and Legault, 1999; NMFS, 2003). Amendment 22 to the Reef Fish FMP implemented a rebuilding plan designed to end overfishing between 2009 and 2010, and rebuild the stock by 2032 using a constant catch strategy (see Section 5.2.2). However, the Council is currently reviewing the rebuilding trajectories underlying this plan following a recent SEDAR stock assessment.

A number of species commonly caught as bycatch or as secondary target species by commercial red snapper fishermen also are overfished and/or undergoing overfishing (See Section 5.2.4). Currently, rebuilding plans are in effect for red grouper, greater amberjack, and vermilion snapper. Additionally, gag is considered to be fully utilized. The discard mortality rates of some bycatch species are high. For example, approximately 23 percent of vermilion snapper captured and returned to the water are estimated to die (Poffenberger, pers comm).

The red snapper commercial quota has been 4.65 mp since 1996, and has been filled in as few as 58 days. The commercial fishery was open for 110 days in 2004. Fishermen exceeded the commercial quota four times between 1996 and 2004, but harvested just 4.62 mp of red snapper in 2004. The greatest commercial overage occurred in 2000, when the fishery landed more than 4.84 mp of red snapper (GMFMC, 2004b). Commercial quota overages negatively affect the red snapper stock by increasing fishing mortality rates and, potentially, slowing the rate of stock rebuilding.

Fishery managers implemented a 15-inch TL minimum size limit in the commercial red snapper fishery in 1996 to reduce the rate of commercial harvest and ameliorate the effects of a derby fishery. However, the derby fishery, in conjunction with this minimum size limit has increased the number of red snapper discards (see Section 6.0 in Appendix A). Between August 1, 2001, and July 31, 2003, commercial fishermen discarded an estimated 738,000 red snapper (Poffenberger and McCarthy, 2004). Of these, 84 percent were discarded by vessels using bandit rigs, 15 percent by vessels using handlines, and one percent by vessels using bottom longlines (Poffenberger and McCarthy, 2004). Class 1 license holders accounted for a majority of the discards (83 percent). Regulations were identified as the primary reason for most discards. Approximately 19 percent of red snapper were discarded due to seasonal closures. Four percent of all discards were discarded due to the endorsement requirement. Predation by dolphins and seabirds has been indicated as one factor contributing to high red snapper discard mortality rates, which are estimated to range from 71 percent (western Gulf) to 82 percent (eastern Gulf) in the commercial fishery (Thompson, 2005).

Commercial fishermen primarily harvest red snapper 2 to 4 years of age, even though these fish are long-lived and can reach a maximum age of 57 years (Allman et al., 2004). They mature as early as 2 years of age and 10-12 inches FL (25-30 cm FL), but do not

reach maximum fecundity until they are approximately 15 to 20 years of age (Fitzhugh et al., 2004). The fecundity of a 4-year old fish is four times less than the fecundity of a 10-year old fish (Fitzhugh et al., 2004). The commercial longline fishery typically selects for older red snapper (mean age = 7.8 years), while the commercial handline fishery selects for younger red snapper (mean age = 4.1 years; Allman et al., 2004). Few fish older than 12 years of age are observed in handline catches, while longline catches include a wide distribution of ages ranging from one to 57 years (Allman et al., 2004).

Red snapper are gonochorists and possibly aggregate, or at least form schools, when spawning (Dormeier and Colin, 1997). Spawning occurs from April to October, and peaks from June through August. Currently, the commercial fishery opens in February each year and remains open for the first ten days of each month until the spring quota is met. If the spring quota is met, the fishery is closed and reopens in October. The fishery remains open for the first ten days each month during the fall until the fall quota is met. These ten-day seasons were established to prevent market gluts and improve market prices. However, they also reduce fishing pressure during the spawning season, allowing a greater number of red snapper to spawn before being harvested.

Preferred Alternative 2 would replace the current two-tiered limited access system, along with its associated trip limits and seasonal closures, with an IFQ program designed to reduce overcapacity and end derby conditions in the commercial red snapper fishery. Such a program 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. On average, commercial fishermen harvest 100 lbs or more of red snapper on 4,075 trips, annually. These trips occur during the first ten days of each month beginning in February until the spring quota is met, and the first ten days of each month beginning in October until the fall quota is met. An IFQ program would enable fishermen to fish in more optimal weather conditions, and when and where catch rates are higher and bycatch rates are lower, expending less time and effort to catch the same amount of red snapper. Reducing fishing effort (e.g., the amount of gear used or trips made) and the rate of bycatch would benefit both target and non-target species, as well as the habitat within which they occur. Most IFQ managed fisheries also are successful at constraining catches within the allowable quota (NRC, 1999).

Additional biological and ecological benefits could be realized if the incentives provided IFQ shareholders to ensure the fishery is productive (and IFQ shares valuable) over the long term (NRC, 1999) encourage them 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, in identifying, developing, and implementing needed conservation and management measures, as well as increased "self-policing," which would help reduce illegal activities, and improve overall fishery compliance.

The IFQ program proposed in **Preferred Alternative 2** could promote high grading and/or effort shifting, both of which could negatively impact the red snapper stock and/or other reef fish species. High grading can increase the total number of red snapper discards. Effort shifting can increase the total fishing mortality rate on species not managed with a commercial quota. Generally, IFQ programs are expected to increase fishermen's incentive to high grade (NRC, 1999), which typically occurs when there is a significant price differential between fish of different sizes. Red snapper ranging from one to two pounds (14-16 inches TL) command the highest market prices per pound

because they yield a two-person dinner and are less expensive than larger fish (B. Antozzi, pers comm.). However, the Council is currently evaluating in Amendment 27 to the Reef Fish FMP alternatives that could minimize or mitigate the adverse effects of any high grading activity by reducing or eliminating the existing red snapper commercial minimum size limit. Effort shifting could occur if fishermen who become more efficient under the IFQ program decided to spend additional time targeting other species, such as vermilion snapper, gray triggerfish, or groupers. However, commercial fishing mortality on most target species is constrained by a catch quota. As a result, any adverse effects on the red snapper stock and/or non-target species caused by such activities are expected to be minor and outweighed by IFQ program benefits related to reducing effort and improving fishing practices.

6.1.2 Direct and Indirect Effects on the Social and Economic Environment

The current management scheme encourages overcapitalization and derby fishing. Consequently, **Alternative 1** would continue to result in higher than necessary levels of capital investment, increased operating costs, shortened seasons, limited safety at-sea, wide fluctuations in red snapper supply, and depressed ex vessel prices. The IFQ program proposed in **Preferred Alternative 2** is expected to decrease the overcapitalization observed in the fleet, lengthen the fishing season, lower operating costs by affording vessel owners more flexibility in their input choices and trip planning, improve market conditions through a steadier supply of fresh red snapper, and increase ex-vessel prices.

Although an IFQ program is expected to reduce overcapacity in the fishery, the removal of excess capital would depend on several factors, including: 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 the availability of credit. IFQ share/allocation holders with little supplementary income would likely continue fishing with an old boat as long as it covered its variable costs. Therefore, significant changes in fleet size and structure could take longer as vessels reach the end of their economic lives (Geen et al, 1990). Conversely, if there were significant earning possibilities in other fisheries, the structural impacts of an IFQ program would be expected to occur more rapidly (Grafton, 1996).

IFQ programs can result in employment losses and increased management, monitoring, and enforcement costs. Fewer vessels and crew will be needed as IFQ shares and allocation are consolidated. Employment losses would have adverse trickle down effects on small fishing communities where job opportunities are scarce or skills of displaced fishermen are low. In addition, industry profits could be reduced overall if high grading and/or quota busting activity compromised stock rebuilding.

6.1.3 Direct and Indirect Effects on the Administrative Environment

The current two-tiered limited access program, which would be maintained under **Alternative 1**, is quite burdensome to administer, requiring monthly notices of season openings and closures, enforcement of differential trip limits, and predictions of when the fishery will take its seasonal quotas. However, the administrative requirements of the IFQ program proposed in **Alternative 2** are expected to be more burdensome. Some of the new requirements presented by the Council's proposed IFQ program include issuing IFQ share certificates and allocation, reviewing and resolving appeals, tracking share and

allocation transfers, enforcing a share ownership cap, and monitoring and accounting for cost recovery fees. These administrative functions would be performed by NMFS and NOAA's Office of Law Enforcement (NOAA OLE), who would participate with IFQ share/allocation holders and dealers in an electronic accounting/ reconciliation process. Section 4.1.1 provides more details on this process, including information on the types of data that would be collected under the proposed IFQ program. The Council is proposing several provisions intended to alleviate staffing and resource burdens, including a prohibition on share transactions during the month of December and a cost recovery fee.

6.2 Action 2. IFQ Program Duration

6.2.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Specifying the duration of the IFQ program is largely an administrative action, which would not directly affect the physical, biological, or ecological environments. However, should the IFQ program prove successful in producing the environmental benefits described in Section 6.1.1, the longer it remained effective, the longer it would benefit the red snapper stock, non-target species, and their habitat. Both **Alternative 1** and **Preferred Alternative 2** would allow the proposed program to continue indefinitely, unless or until revised, substituted, or terminated by the Council. However, **Alternative 2** differs in that it would require periodic reviews at either 5-year (**Preferred Alternative 2A**) or 10-year (**Alternative 2B**) intervals. This required review provision is expected to further benefit the physical, biological, and ecological environments by increasing the likelihood the Council would identify and adjust, as needed, components of the IFQ program that are not working as predicted, and take action to address any unintended consequences. **Alternative 3** would limit the duration of the proposed program to either five (**Alternative 3A**) or ten years (**Alternative 3B**), which would limit and, potentially reverse, the anticipated environmental benefits unless the Council took additional action to extend the program beyond the predefined timeframe.

6.2.2 Direct and Indirect Effects on the Social and Economic Environment

The length of the IFQ program will influence its effectiveness in achieving intended objectives related to addressing derby fishing conditions and overcapitalization. A program of indefinite duration (**Alternative 1** and **Preferred Alternative 2**) would encourage long-term planning and investment, allowing fishing operations to adjust their capital to socially optimal levels. An indefinite program also would reduce uncertainty about the value of IFQ shares, and increase incentives to invest in the fishery. Attaching a sunset provision to the proposed IFQ program (**Alternative 3**) would reduce the program's effectiveness in improving the overall efficiency of the harvesting sector.

The value of an IFQ share is determined based on the present value of the stream of net revenues derived from owning the IFQ share. Limiting the duration of the program would decrease the stream of net revenue. Limiting the duration of the program also would create some uncertainty about the value of IFQ shares, which would weaken their marketability. Buyers would not want to purchase IFQ shares if they could not recoup the cost before the IFQ program expired. Sellers would not want to sell IFQ shares below their value. Consequently, it would be difficult for buyers and sellers to reach an agreeable market price. If the number of IFQ share transfer transactions were reduced as a result, the program would be slower in achieving its efficiency objectives. That would

reduce producer surplus and net National benefits, unless the limited number of IFQ share transactions that occurred redistributed IFQ shares to the most efficient operations.

The market for IFQ allocation transfers should still function under a program of limited duration. It is not known whether allocation transfers would be as effective as share transfers in improving fishery efficiency. However, it is not likely allocation transfers would reduce fishing capacity as well as IFQ share transfers.

While an IFQ program of indefinite duration would likely provide the greatest potential for fleet adjustment and efficiency gains, there may be some benefits to a program of limited duration, at least initially. For example, restricting the duration of the program may help affected interests reach compromises on initial allocation, maintain the existing fleet configuration for distributional issues, and provide the industry the opportunity to test the proposed program before committing to it permanently.

6.2.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would have the least effect on the administrative environment, because it would not require any future action to extend or evaluate the effects of the proposed IFQ program. **Alternative 3** would require the Council review and evaluate the program after a certain number of years, and take additional action to continue the program if desired. This administrative burden would occur sooner under **Alternative 3A** (5 years) than it would under **Alternative 3B** (10 years). **Preferred Alternative 2** also would require periodic review and evaluation, but would not require additional Council action if the program was performing as anticipated. **Preferred Alternative 2A** would require periodic review more frequently than would **Alternative 2B**.

6.3 Action 3. Ownership Caps and Restrictions on IFQ Share Certificates

6.3.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Placing ownership caps and restrictions on IFQ shares is an administrative action, which would not directly affect the physical, biological, or ecological environments. However, it could indirectly affect the red snapper stock and surrounding ecosystem by influencing the amount of consolidation that occurs in the fishery. If ownership caps limited the consolidation of IFQ shares among the most efficient operations, then **Alternatives 2A-D** and **Preferred Alternative 3** would limit the proposed program's effectiveness in providing the environmental benefits described in Section 6.1.1. Limited consolidation would result in more vessels in the fishery. Fishermen who are less efficient generally spend more time pursuing their catch. Both result in increased effort, which is likely to increase fishing gear interactions with bottom habitat, and the incidence of regulatory discards and other bycatch. **Alternative 1** would not limit consolidation in the fishery. Consolidation would be most limited under **Alternative 2A**, followed by **Alternative 2B**, **Preferred Alternative 3**, **Alternative 2C**, then **Alternative 2D**.

6.3.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not cap the amount of IFQ shares that could be owned by a single individual or entity, which would enable shareholders to purchase as many shares as needed to maximize their profits. The ownership caps proposed in **Alternative 2** and

Preferred Alternative 3 would limit the consolidation of IFQ shares, or the extent to which they could be concentrated among IFQ shareholders. While consolidation might be favored to increase economic efficiency (e.g., for exploiting economies of scale), allowing IFQ shares to be held by a relatively small number of individuals or entities could provide those individuals or entities excessive market power. This could harm some fishery participants by affecting working conditions, crew wages, and the price of red snapper, although the presence of multiple substitutes from domestic and foreign sources may reduce the effects of consolidation on market prices. Consolidation also has the potential to eliminate small-scale operations in the red snapper fishery.

The current commercial red snapper fleet consists of 136 Class 1 license holders, and from 482 to 628 Class 2 license holders. The two percent cap proposed in **Alternative 2A** could result in 50 IFQ shareholders. The number of IFQ shareholders could be reduced to 20 under the five percent cap proposed in **Alternative 2B**; to about 15 under the cap proposed in **Preferred Alternative 3**; to ten under the ten percent cap proposed in **Alternative 2C**; and to seven under the fifteen percent cap proposed in **Alternative 2D**. These proposed caps would not restrict the amount of IFQ allocation that could be owned by a single individual or entity in a given year.

Currently, about ten IFQ shareholders would receive IFQ shares exceeding two percent of the commercial quota, and only one or two IFQ shareholders would receive shares exceeding five percent of the commercial quota, if IFQ shares were issued using the methodology in the Council's preferred alternatives, and shareholders selected the best years of catch data associated with their license to use in determining their initial share allocation. These caps would allow a substantial amount of consolidation to occur, and may provide the appropriate balance between efficiency and consolidation.

6.3.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not be burdensome to administer because it would not require fishery managers consider the number of IFQ shares held by an individual or entity when reviewing and authorizing IFQ share transactions. The direct administrative effects of enforcing the ownership caps proposed in **Alternative 2** and **Preferred Alternative 3** would be similar. Both these alternatives would require NMFS staff track and monitor the number of shares held by both individuals and corporations. Alternatives that would allow IFQ shareholders to hold larger amounts of shares would be expected to result in the smallest number of IFQ shareholders, easing the administrative burden of enforcing ownership caps.

6.4 Action 4. Eligibility for Initial IFQ Allocation

6.4.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Determining who is initially eligible to receive IFQ shares is largely a socioeconomic and administrative action, which would not directly affect the physical, biological, or ecological environments. However, such a decision would have definite indirect effects because it would influence the total number of initial IFQ shareholders and how the fishery is prosecuted.

Alternative 1 would not restrict initial eligibility in the proposed IFQ program. This would not likely be an effective way to reduce capacity in the red snapper fishery, and would be expected to have negative indirect effects on the red snapper stock, non-target species, and their habitat. IFQ shareholders with little experience in the fishery could reduce overall fishery efficiency if they decided to fish their shares, rather than transfer their shares or allocation to more experienced fishermen or to others interested in holding, rather than fishing, shares to conserve the resource. This would likely increase the amount of interactions between fishing gear and benthic habitat, as well as the incidence of regulatory discards and other bycatch.

Alternative 2 also is expected to negatively affect the red snapper stock because the Class 2 license was originally established to allow fishermen targeting other reef fish species the opportunity to retain red snapper captured incidentally during the red snapper season openings. If these fishermen were not allocated IFQ shares, they would be forced to either purchase shares or discard their red snapper bycatch. As noted in section 6.1.1, the discard mortality rate of this species ranges from 71 to 82 percent (SEDAR, 2005).

Preferred Alternative 3 would benefit the biological and ecological environments by enabling Class 2 license holders to maintain their red snapper "bycatch allowance," thereby avoiding the discard mortality that would likely occur under **Alternatives 1** and **2**. They might even be able to further reduce the rate of discards by purchasing additional allocation from other IFQ share or allocation holders after they have landed their initial allocation.

6.4.2 Direct and Indirect Effects on the Social and Economic Environment

Initial recipients of IFQ shares would benefit from any windfall profits resulting from the proposed IFQ program. Windfall profits are those profits realized when an IFQ shareholder sells IFQ shares they were not required to purchase (NRC, 1999). The revenue generated from such a sale is the windfall profit. These profits are not available to subsequent owners of IFQ shares who are required to purchase their shares.

Alternative 1 would allow anyone to be eligible to receive an initial IFQ share allocation, regardless of whether or not they fish for red snapper now or have participated in the fishery in the past. This would likely introduce inefficiency into the fishery at the very start of the IFQ program by penalizing the more efficient operations. Additionally, it would slow down consolidation under the IFQ program. This alternative could allow non-user groups, or others wishing to preserve the species, to obtain and not utilize IFQ shares, which would not optimize yield from the fishery. **Alternative 2** would allocate IFQ shares only to Class 1 license holders, requiring current Class 2 license holders to purchase IFQ shares in order to remain in the fishery.

Preferred Alternative 3 would broaden the number of red snapper fishery participants eligible to remain in the fishery to include Class 2 license holders. This would encourage the continued participation of fishermen who have been active in this fishery. Class 2 license holders combined would receive IFQ shares totaling about five to eight percent if they were included in the initial allocation. The current preferred allocation methodology described in Action 5 would allocate Class 2 license holders about 7.8 percent of the commercial quota in the form of IFQ shares. If they were excluded from the definition of eligible participants, as proposed in **Alternative 2**, then that percentage of the

commercial quota would be redistributed among those eligible to receive initial IFQ share allocations.

6.4.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would result in the largest number of IFQ shareholders and, consequently, the greatest administrative burden related to issuing more IFQ share certificates, and reviewing, authorizing, and tracking more IFQ share transactions. In comparison, **Alternative 2** would result in the fewest number of IFQ shareholders; **Preferred Alternative 3**, an intermediate number of IFQ shareholders.

6.5 Action 5. Initial Apportionment of IFQ Shares

6.5.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Determining how IFQ shares will initially be allocated among IFQ shareholders is largely a socioeconomic and administrative action, which would not directly affect the physical, biological, or ecological environments. However, it would indirectly affect the red snapper stock, non-target species, and the surrounding ecosystem by influencing how the fishery is prosecuted, and therefore, the degree to which the environmental benefits described in Section 6.1.1 are realized.

The effects of **Alternative 1** cannot be estimated at this time because that alternative would require NMFS develop an initial allocation strategy if the proposed IFQ program were approved. **Preferred Alternative 2** is more likely than **Alternative 3** to favor more efficient red snapper fishermen, who generally spend less time pursuing the same amount of fish and, therefore, have less interactions with bottom habitat, and a reduced frequency of regulatory discards and other bycatch. However, because catch histories follow the permit, rather than the individual or vessel, it is difficult to determine which sub-options under **Preferred Alternative 2** would provide the greatest protection to the physical, biological and ecological environments compared to the status quo (**Alternative 1**) or to a methodology that would equally distribute IFQ shares among all shareholders (**Alternative 3**).

6.5.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 is not likely to be considered fair from a social or economic standpoint, because it would require NMFS determine outside the Council process how to allocate initial IFQ shares among IFQ shareholders. **Preferred Alternative 2** would base the initial IFQ share allocation on the relative catch histories associated with current red snapper licenses. This initial allocation methodology would benefit those who hold licenses with the largest catch histories. If these individuals or corporations were the most efficient operations, which might be assumed if recent catch data also are used in calculating initial allocations, then this method would increase producer surplus and net benefits to the Nation.

Preferred Alternative 2 contains sub-options that would allow IFQ shareholders to select the years of annual catch data associated with their license they wish to be considered in determining their initial allocation. Omitting years of catch data tends to benefit those with licenses that have sporadic catch histories or more than average

variation in their catch histories. Additionally, it diminishes the need for hardship provisions. However, it would reduce producer surplus if it disfavored the most efficient operations.

Alternative 3 would allocate all IFQ shareholders an equal percentage of the commercial quota, which would benefit those who hold licenses with smaller than average catch histories at the expense of those who own licenses with larger than average catch histories. This allocation methodology would more widely distribute the windfall profits resulting from the IFQ program. However, it would likely require Class 1 license holders purchase additional IFQ shares to continue operating at the level they currently operate. Until IFQ shares were redistributed to more efficient operations, this methodology would likely decrease producer surplus and net benefits to the Nation.

Preferred Alternative 4 addresses the particular circumstance of Class 1 historical captain license holders. Because these licenses were issued in 1998, they have no associated landings data prior to 1998. Consequently, this alternative would allow this group of Class 1 license holders to use seven, rather than ten, years of catch data in determining their initial allocations. This allocation methodology would provide Class 1 historical captain license holders larger IFQ shares than they would have received if they were required to use ten years of landings data, which would reduce the amount of IFQ shares allocated to the remaining IFQ shareholders.

Determining how to initially allocate IFQ shares among eligible participants is a particularly difficult decision in implementing an IFQ program because there is usually disagreement among the industry about which allocation methodology is the most fair and equitable. From an economic perspective, the manner in which IFQ shares are initially distributed among IFQ shareholders has little significance on the long-term efficiency of the fishery as long as restrictions on IFQ share transferability or ownership are minimal.

6.5.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would likely delay implementation of the proposed IFQ program and require NMFS commit a considerable amount of resources to developing an initial IFQ share allocation methodology. The administrative effects of **Preferred Alternatives 2** and **4** are not expected to differ substantially. Each would require NMFS calculate landings history by year for each IFQ shareholder, and each is likely to result in some appeals. The initial allocation methodology proposed in **Alternative 3** would be the easiest to administer, because it would require IFQ shares be equally distributed among IFQ shareholders, without consideration of historic participation in the fishery.

6.6 Action 6. Establishment and Structure of an Appeals Process

6.6.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Establishing an appeals process for an IFQ program is an administrative action, and is not expected to impact the physical, biological, or ecological environments.

6.6.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not establish an appeals process under the IFQ program. **Preferred Alternative 2** and **Alternatives 3** and **4** would establish different types of appeals processes, the effects of which relate primarily to their equitability. None of these alternatives would likely have a noticeable effect on the economic benefits expected of the IFQ program, primarily because an appeals process would only marginally affect the initial distribution of IFQ shares among eligible participants. Economic effects would only be evident if the number of successful appeals was large relative to the number of IFQ shareholders. An appeals process would be beneficial in providing appellants a formal mechanism to use in recording and resolving their disputes about transfers of Class 1 and Class 2 licenses, and the landings histories associated with those licenses. Such a mechanism would be particularly important if the IFQ program were to be implemented for a long or indefinite time period.

Preferred Alternative 5 would reduce the likelihood appeals resolved in favor or appellants would adversely affect those initially allocated IFQ shares. Setting aside a relatively small portion of IFQ shares for appeals purposes would limit the possibility and amount of any additional needed IFQ share adjustments. The balance of any IFQ shares set aside and not used in resolving appeals would be proportionately distributed back to all IFQ shareholders based on the amount of shares they were originally allocated. However, if needed adjustments were to exceed the amount of the three percent set-aside, then the shares of all IFQ shareholders would be proportionately deducted, as needed.

6.6.3 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 **Alternatives 3** and **4**, would be somewhat burdensome to administer; however, the burden would be reduced under **Preferred Alternative 2**, followed by **Alternative 3**, then **Alternative 4**. **Alternatives 3** and **4** would require special panels be appointed, which would require additional administrative time, costs, and effort. The set-aside proposed in **Preferred Alternative 5** would allow needed IFQ share adjustments resulting from the appeals process to occur more expeditiously.

6.7 Action 7. Transfer Eligibility Requirements

6.7.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Determining IFQ share and allocation transferability restrictions is largely a socioeconomic and administrative action, which would not directly affect the physical, biological, or ecological environments. However, transferability provisions would indirectly affect the red snapper stock, 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. These factors are critical to the program's effectiveness in providing the environmental benefits described in Section 6.1.1. Generally, the amount of effort applied to the fishery can be expected to decrease as IFQ shares and allocation are consolidated among fewer, more efficient individuals. This would result in less gear and time used in pursuing red snapper and, consequently, less adverse impacts

in the form of habitat interactions, regulatory discards, and bycatch of non-target species. Additionally, effort (and overall fishing mortality) would be expected to decline if IFQ shares and allocations were purchased by members of the general public who place a greater value on conserving, rather than harvesting, the red snapper resource.

The transferability provisions proposed in **Alternatives 1** and **4**, and in **Preferred Alternative 6**, would allow IFQ shares to be purchased for conservation reasons and, therefore, are expected to result in the most beneficial effects over the long term. However, **Preferred Alternative 6** would prohibit such transactions during the first five years of the program. Among the remaining alternatives, the transferability provision proposed in **Alternative 2** would create the most competition for IFQ shares, followed by **Alternative 5**, then **Alternative 3**. Competition would be expected to encourage increased efficiency and a conservation ethic, as those investing in IFQ shares would be expected to want the maximum return possible on their investment.

6.7.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not restrict the transfer of IFQ shares and allocation, which would benefit non-user groups who wish to buy shares or allocation for conservation reasons, but could prevent the fishery from achieving OY. Transfer provisions generally are intended to address concerns that IFQ programs will too rapidly or too dramatically change the structure of a fishery. Wilen 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." In the Council's proposed IFQ program, the "sectors" would be defined as either the recipients of initial IFQ shares and allocation, commercial reef fish permit holders, all U.S. citizens and permanent resident aliens, or anyone, regardless of citizenship.

Unrestricted transferability across all sectors would enable IFQ share and allocation holders to best maximize profits (producer surplus) from the red snapper resource. However, this alternative would authorize foreign transfers, which may need to be restricted to maximize net National benefits. Allowing unrestricted transfer of IFQ shares and allocation among U.S. citizens would likely produce larger net National benefits because net National benefit calculations, by definition, exclude any benefits that accrue to citizens of other countries. However, one cannot totally rule out the potential benefits of foreign ownership, such as, supplying capital so domestic capital can be used more efficiently elsewhere.

Those opposed to unrestricted transfers are often concerned about the impacts of transfers on the distribution of resource rent. IFQ shareholders interested in selling all or a portion of their shares or allocation would likely prefer to have few, if any limits placed on transfers to increase the marketability and value of their IFQ shares and allocation. Additionally, windfall profits are likely to increase as transferability restrictions are decreased. Buyers would likely prefer limited competition for IFQ shares and allocation to depress their market prices. The actual change in price that would result from the various alternatives being considered cannot be quantified.

Alternative 2 would reward commercial reef fish permit holders by allowing them the exclusive right to buy IFQ shares and allocation as they become available. This

alternative could reduce the marketability and purchase price of IFQ shares and allocation by limiting the number of eligible transferees. **Alternative 3** would reward IFQ shareholders by allowing them the exclusive right to buy IFQ shares and allocation as they become available. This alternative could further reduce the marketability and purchase price of IFQ shares and allocation by further limiting the universe of eligible transferees. It would prevent commercial reef fish permit holders who do not initially receive IFQ shares from participating in the red snapper fishery.

Alternative 4 would allow IFQ shares and allocation to be transferred to any U.S. citizen or permanent resident alien. This alternative would encourage new entry in the fishery, and allow IFQ shares and allocation to become more valuable than they would under more restrictive transferability alternatives. Increasing the value of IFQ shares and allocation would benefit IFQ shareholders, but would likely make it difficult for most fishermen who do not initially receive IFQ shares to purchase shares or allocation. **Alternative 5** would combine the transfer eligibility criteria proposed in **Alternatives 2** and **3**, initially limiting transfers to IFQ shareholders, and then to commercial reef fish permit holders. This would enable IFQ shareholders to buy more shares and allocation at a lower cost during the first five years of the program, before the universe of eligible transferees is broadened to include other commercial reef fish participants. However, it would limit the marketability and potential value of IFQ shares and allocation during that initial five-year time period.

Preferred Alternative 6 would combine the transfer eligibility criteria proposed in **Alternatives 2** and **4**, initially limiting transfers to commercial reef fish participants, before opening the market to the general public. This alternative would prohibit IFQ shareholders from transferring shares and allocation to family members who do not possess a commercial reef fish permit during the first five years of the program, unless they transferred their commercial reef fish permit as well. The marketability and value of IFQ shares and allocation would be somewhat limited during the first five years of the program while transfers were restricted but, eventually, this alternative would benefit both IFQ shareholders and the general public by allowing IFQ shares and allocation to be purchased by those who value them the most.

6.7.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would have the least impact on the administrative environment because it would not require fishery managers verify transfer eligibility. The remaining alternatives would require NMFS review documentation demonstrating status as a U.S. citizen or permanent resident alien, a commercial reef fish permit holder, or an IFQ shareholder. The number of eligible transferees constrains the total number of people that could participate in the IFQ program, and could affect the frequency of transfers. Consequently, alternatives restricting transfers to IFQ shareholders (**Alternatives 3** and **5**) would be expected to be less administrative burdensome than would alternatives that would identify a larger number of eligible transferees (**Alternatives 2, 4**, and **Preferred Alternative 6**).

6.8 Action 8. Use it or Lose it: IFQ Shares or Allocations

6.8.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Establishing a use requirement is largely a socioeconomic action, which would not directly affect the physical, biological, or ecological environments. However, such a requirement would indirectly affect the red snapper stock, non-target species and their habitat by influencing the rate of fishing mortality applied to the red snapper stock, or the amount of the commercial catch landed annually. **Preferred Alternative 1** would allow IFQ shareholders to hold their full red snapper allocation for conservation or other purposes, whereas **Alternatives 2A-B** and **3A-B** would force them to utilize a portion of their allocation in order to maintain those shares. Consequently, **Preferred Alternative 1** could benefit the physical, biological, and ecological environments if it reduced fishing mortality on the red snapper stock, and/or the frequency of fishing interactions with habitat and non-target species. Although **Alternatives 2A-B** and **3A-B** would be expected to negatively affect the environment relative to **Preferred Alternative 1**, they would not be expected to jeopardize the sustainability of the red snapper stock because total harvests would still be constrained to the commercial quota.

6.8.2 Direct and Indirect Effects on the Social and Economic Environment

Preferred Alternative 1 would allow people to hold IFQ shares without utilizing the associated red snapper allocation. Generally, IFQ shareholders are expected to utilize their red snapper allocations to generate revenue and, hopefully, profits. It would seem irrational not to do so; particularly if transferability restrictions are limited. However, it is possible some fishery stakeholders might wish to purchase IFQ shares for conservation reasons. This alternative would benefit individuals or organizations who wish to purchase IFQ shares to reduce fishing mortality on the red snapper stock, as well as IFQ shareholders who face personal hardships. Also, it could benefit IFQ shareholders if future circumstances made it cost-prohibitive to target red snapper. In this case, a use requirement could disrupt the efficiency of some fishing operations.

The use requirements proposed in **Alternatives 2A-B** and **3A-B** would be expected to increase producer surplus and net National benefits. However, such benefits are expected to be small for two reasons. First, most IFQ shareholders are expected to utilize, rather than to hold, their IFQ shares and allocation. Second, the utilization requirements specified in **Alternatives 2A-B** and **3A-B** would allow those IFQ shareholders interested in limiting red snapper harvests to maintain their IFQ shares while utilizing only a portion of those shares only one or two of every three years, or three or four of every five years. This would reduce producer surplus, assuming its effects on the marketability of red snapper would not substantially change the price of red snapper.

6.8.3 Direct and Indirect Effects on the Administrative Environment

Preferred Alternative 1 would not increase the administrative burden of the proposed IFQ program because it would not require fishery managers ensure IFQ shareholders utilize a portion of their IFQ shares. **Alternatives 2A-B** and **3A-B** would present additional tracking requirements associated with IFQ share and allocation transactions, and, thus, a substantial administrative burden. The differences in the administrative burden of **Alternatives 2A-B** and **3A-B** are negligible. Both alternatives would require

the same types of monitoring activities, regardless of the number of years over which they would require landings be averaged. They differ only in that **Alternatives 2A-B** could require administrative action to revoke unutilized IFQ shares after the first three years of the program, whereas **Alternatives 3A-B** would not require fishery managers evaluate IFQ share utilization until the first five years of the program had elapsed. However, the likelihood IFQ shareholders would allow their shares to be revoked is expected to be low, given they will be economically valuable.

6.9 Action 9. Adjustments in Commercial Quota

6.9.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

Establishing a plan for how quota adjustments would be allocated is largely a socioeconomic and administrative action, which would not directly affect the physical, biological, or ecological environments. However, such a plan could indirectly affect the red snapper stock, non-target species, 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 Section 6.1.1.

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 environment 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, which minimizes fishery interactions with bottom habitat, as well as the occurrence of regulatory discards and bycatch.

Alternatives 3 and **4** would likely limit the degree to which IFQ shares are consolidated by providing IFQ shareholders an incentive to retain their shares even if the associated allocation is fished less efficiently. Consequently, the fishery would not likely become as efficient as it would if **Preferred Alternative 2** were adopted, adversely impacting the physical, biological, and ecological environments, and hindering the IFQ program's effectiveness in reducing the discards and discard mortality that normally occurs in overcapitalized fisheries.

Preferred Alternative 5 would require NMFS limit the initial distribution of IFQ allocation to an amount that equals the smallest commercial quota being considered by the Council for the 2007 fishing season or the quota submitted by the Council for Secretarial review. This alternative would benefit the red snapper stock and surrounding ecosystem by reducing the possibility the commercial fishery would exceed its quota for the 2007 fishing year.

6.9.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not specify a pre-defined strategy for how to distribute TAC adjustments among IFQ shareholders. **Preferred Alternative 2** proposes to provide larger increases in allocation to those IFQ shareholders holding a larger percentage of the

commercial quota when TAC is increased, and larger reductions in allocation to those same IFQ shareholders when TAC is reduced.

Alternatives 3 and 4 would divide all or a portion of quota increases equally among IFQ shareholders, which would benefit those shareholders holding smaller than average IFQ shares. An equal allocation methodology would likely limit the amount of consolidation that occurs under the IFQ program by providing IFQ shareholders with relatively small shares the incentive to retain those shares in anticipation of a future increase. Consequently, these alternatives could reduce producer surplus and slow consolidation relative to **Alternative 2**. Such effects would be expected to be more pronounced if TAC reductions were deducted from the allocations of only the largest shareholders, as proposed in **Alternative 4**.

Preferred Alternative 5 would limit the amount of commercial quota that could be allocated to IFQ shareholders at the start of the 2007 fishing season in the event TAC for the 2007 fishing year has yet to be defined at that time. This alternative would reduce the potential complication of implementing the IFQ program before the 2007 TAC has been determined and implemented. Although it would restrict fishermen's planning activities, it would reduce the possibility they would have to forfeit a portion of their allocation when the 2007 TAC became effective.

6.9.3 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. The administrative effects of **Preferred Alternative 2**, and **Alternatives 3** and **4**, are not substantially different. 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 under all three alternatives. **Preferred Alternative 5** could require administrators calculate and distribute IFQ allocations for the 2007 fishing year twice, but also could prevent them from having to retract allocations during the fishing year.

6.10 Action 10. Vessel Monitoring Systems

Note: This action may be unnecessary if the Secretary approves and implements the VMS requirements proposed in Reef Fish FMP Amendment 18A.

6.10.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

A VMS requirement could directly benefit the physical, biological, and ecological environments by improving compliance with conservation and management measures designed to sustain the red snapper stock, other reef fish stocks, and their EFH over the long term.

Alternative 1 would not establish a VMS requirement for vessels engaged in harvesting red snapper. However, these vessels may still be required to utilize such technology if the Secretary approves and implements the VMS requirement proposed in Reef Fish FMP Amendment 18A.

Preferred Alternative 2 would establish a VMS requirement, which would benefit the red snapper stock, and associated species and habitat, if the Secretary did not approve and implement the VMS requirement proposed in Reef Fish FMP Amendment 18A. Because VMS could be used to track fishing activities in real time, it would help enforcement agents enforce regulations designed to protect and conserve managed fisheries in which red snapper vessels participate. For example, VMS could be used to monitor compliance with existing marine reserves, such as the Madison-Swanson, Steamboat Lump, and other marine reserves described in Section 5.1.1, which are designed to protect particularly important and/or vulnerable habitat types, or a portion of vulnerable reef fish populations, from the effects of fishing. A VMS requirement also would help surface patrols locate and randomly check commercial red snapper vessels for high grading and quota busting activities, and could assist law enforcement agents in enforcing gear boundaries (i.e., 20- and 50-fathom boundaries for longline deployment).

Preferred Alternative 2A and **Alternative 2C** could facilitate the Council's capacity reduction objectives by discouraging less profitable red snapper fishermen from retaining or purchasing IFQ shares and allocation. If these shares and allocation were transferred to more efficient fishermen, as would be expected under the program, then the adverse effects of the fishery on bottom habitat, regulatory discards, and bycatch would be further minimized. **Alternatives 2B** and **2D** would not have the same potential capacity reduction benefit because they would require NMFS pay all or most of the costs of the proposed VMS program.

6.10.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would benefit IFQ participants in the short term, by not requiring vessels engaged in harvesting red snapper utilize VMS, thereby alleviating concerns regarding cost, maintenance, and perceived intrusive monitoring. However, the IFQ program would likely be less effective if VMS were not a component of program monitoring and enforcement. Additionally, these vessels may still be required to utilize such technology if the Secretary approves and implements the VMS requirement proposed in Reef Fish FMP Amendment 18A. **Preferred Alternative 2** would require all fishing vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS. Implementing a VMS program would increase the cost of operating commercial red snapper vessels. Depending on the number of vessels engaged in the harvest of red snapper, the first year cost of a VMS program would range from less than $0.5 million to about $2.7 million. The communication costs in future years are projected to range from about $58,000 to $470,000. VMS unit replacement and maintenance would present additional costs in future years. However, these costs cannot be estimated with existing information.

VMS program costs would either be borne by IFQ participants (**Alternative 2A**), NMFS (**Alternative 2B**), or by both groups (**Alternatives 2C-D**). Requiring IFQ share/allocation holders to pay some (**Alternative 2C**) or all (**Alternative 2A**) of the costs of installing and maintaining VMS units could create financial hardship for some fishermen, especially those who are not operating at a high profit level. Those IFQ participants with small amounts of red snapper allocation (i.e., current Class 2 license holders) could determine the expense of participating in the fishery was not offset by the revenues they earned from red snapper landings. Additionally, some fishermen may consider a VMS requirement to be an intrusion on their privacy and their autonomy as an independent fisherman. If IFQ participants were responsible for VMS costs, the producer

surplus would be expected to decrease by the variable component of the total VMS costs, because VMS is neither expected to increase revenue nor decrease fishing costs not associated with the VMS. Producer surplus would not change if NMFS were responsible for the cost of the VMS program because transfer payments would be excluded from the calculation.

6.10.3 Direct and Indirect Effects on the Administrative Environment

Implementing an IFQ program without a VMS requirement (**Alternative 1**) would increase the administrative burden of monitoring and enforcing program regulations, and could result in a greater incidence of illegal activity. **Preferred Alternative 2** would directly benefit the administrative environment by facilitating monitoring and enforcement of program regulations. However, it would present additional administrative costs in the form of monitoring vessels engaged in the fishery and, possibly, paying some or all of the costs of the VMS program. These costs would be minimized under **Preferred Alternative 2A**, followed by **Alternative 2C**, **Alternative 2D**, and then **Alternative 2B**.

This action also could indirectly affect the administrative environment by influencing the total number of IFQ participants and, potentially, the number and frequency of program transactions. Alternatives requiring NMFS pay some or all of the VMS program costs could encourage some fishermen to remain in the fishery when they might have otherwise left due to an increasing cost of participation. Conversely, alternatives requiring IFQ participants pay some or all of the costs of the VMS program could encourage some fishermen to leave the fishery because this additional cost would reduce the profitability of their operations.

6.11 Action 11. Cost Recovery Plan

6.11.1 Direct and Indirect Effects on the Physical, Biological, and Ecological Environment

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 described in Section 6.1.1. None of the cost recovery alternatives is expected to directly or indirectly affect the physical, biological, or ecological environments.

6.11.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not establish a mechanism to recover some of the costs of administering the proposed IFQ program. **Alternative 2** and **Preferred Alternative 3** would establish such a mechanism, both requiring IFQ share/allocation holders pay administrative fees. These two alternatives are similar in all respects, except **Alternative 2** would require the IFQ share or allocation holder submit the administrative fees, whereas **Preferred Alternative 3** would require IFQ dealers/processors collect and submit administrative fees.

NMFS would determine the percentage of the ex-vessel value of red snapper landings that would be used to calculate the actual amount of the cost recovery fee associated with each sales transaction. This percentage would not exceed three percent of the ex-vessel value of red snapper harvested under the IFQ program. Based on a 4.65 mp commercial

red snapper quota, a fee of three percent, and an ex-vessel price of $2.83 per pound, the total amount of cost recovery fees collected would equal $395,785. The IFQ share or allocation holder involved in the sales transaction would pay the fee at the time of the sales transaction. Producer surplus would be reduced by the amount of the fee plus any other costs associated with paying the fee. Those costs would include time and materials required for completing any paperwork, such as annual dealer reports, and submitting the fee to NMFS.

The cost recovery strategy proposed in **Preferred Alternative 3** would be more costly to IFQ dealers/processors because it would make them responsible for collecting and submitting fees to NMFS. Additionally, it would require they submit year-end reports describing the total ex-vessel value of red snapper they purchased from IFQ share/allocation holders. Dealers might pass on to IFQ share/allocation holders or others, such as retailers and consumers, some of the monetary and/or non-monetary costs presented by these requirements. Such costs could be passed onto IFQ share/allocation holders by reducing the ex-vessel value of red snapper or by charging one or more additional "service" fees. Lower prices could, in turn, result in lower recovery fees. However, some dealers might not have adequate leverage to make others responsible for these costs.

6.11.3 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. **Alternative 2** and **Preferred Alternative 3** would require NMFS account for cost recovery fee transactions. The administrative effects of these two alternatives are not expected to differ to a large extent. However, sub-options that would require payments be processed four times per year **(2A(i)** and **3A(i))** would require more administrative effort and would not integrate as well with current federal budget processes as would sub-options that would allow payments be processed just once annually **(2A(ii)** and **3A(ii))**. Additionally, sub-options that would require NMFS calculate the standard ex-vessel price of red snapper each year **(2B(ii)** and **3B(ii))** would be more burdensome than those which would base fees on the actual ex-vessel value of red snapper landings **(2B(i)** and **3B(i))**. 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. Finally, sub-options that would require administrators collect, examine, and verify annual buyer reports **(2C(i)** and **3C(i))** also would increase administrative costs. However, such reports would simplify the account reconciliation process.

6.12 Comparison of Alternatives to Magnuson-Stevens Act National Standards

The primary management objectives of the FMP, as amended, are essentially the same as National Standards 1, 2, 4, and 5. The furtherance of these objectives is discussed under these respective standards. A primary management goal of the FMP is to maximize net economic benefits consistent with resource stewardship for the continuing welfare of living marine resources. Specific objectives to accomplish this goal that are relevant to the IFQ program include increasing the stability of the red snapper fishery in terms of

fishing patterns and markets, avoiding the derby fishing season, promoting flexibility for the fishermen in their fishing operations, providing for cost-effective and enforceable management of the fishery, and optimizing net benefits from the fishery. The effects of the alternatives as they relate to the Magnuson Act and National Standards are discussed below:

National Standard 1

This National Standard requires conservation and management measures to prevent overfishing while achieving, on a continuing basis, the OY from the fishery (16 U.S.C. § 1851(a)(1)).
Although separate issues, the prevention of overfishing and the achievement of OY are related. In effect, the most important limitations on the specification of OY are the management measures designed to achieve it must also prevent overfishing.
"Overfishing" is defined in the Magnuson-Stevens Act as a level or rate of fishing mortality that jeopardizes the capacity of a fishery to produce MSY on a continuing basis (16 U.S.C § 1802(3)(29)).

The Council has developed objective and measurable definitions for determining if red snapper are overfished or undergoing overfishing as required by the National Standard Guidelines (50 CFR § 600.310(d)(2)). Under these definitions the red snapper stock is overfished and undergoing overfishing. Consistent with the National Standard Guidelines, the Council has instituted a program to rebuild the stock. The Council periodically specifies the TAC of red snapper to assure harvesting up to TAC contributes to rebuilding of the stock.

The alternatives of Section 4.0 will not change the process by which the Council establishes the TAC and catch limits, but rather will modify the distribution of harvesting allocations among fishermen and sustain existing management measures that address overfishing. The IFQ program would improve the prevention of overfishing by providing for reductions in discard mortality that normally increase with increased fishing effort in overcapitalized fisheries. The slower paced fishery anticipated under the IFQ program would reduce this fishing mortality with fewer fishermen operating over a longer season. Fishermen would also minimize their operating costs and land fish that would otherwise be discarded. The slower paced fishery would enhance the ability of NMFS to prevent the fishery from exceeding the overall TAC or catch limit because the individual landings of fish would be more closely monitored. A derby fishery would continue under the current license limitation system and would become more severe under the no action alternative.

The achievement of OY is enhanced as a result of improvements in the prevention of overfishing. Reductions in wastage of fish from discard mortality are likely to produce increases in future yields. Fishing mortality of young, undersized fish results in a loss of the growth of those fish. This lost growth represents foregone future biomass and potential harvest. Additional bycatch mortality occurs when red snapper are caught incidental to other reef fish fisheries during quota closures and must be discarded. The reduction of such loss would increase the benefits to the Nation in terms of potential food production, recreational opportunities, and economic, social, and ecological factors. The IFQ program further optimizes the yield from these fisheries by addressing problems associated with allocation conflicts, bycatch loss, discard mortality, excess harvesting capacity, product wholesomeness, safety, and economic stability. The current license

limitation system would, to some extent, reduce the excess harvesting capacity. The license limitation system would not achieve the other potential benefits, as the derby fishery would be continued. These problems would be exacerbated by the no action alternative. The contribution of each of the three alternatives in Action 4 is to the achievement of OY and is also discussed under the Section 303(b)(6) factors in Section 7.5. However, the IFQ program would contribute to the achievement of OY by reducing the likelihood of localized and pulse overfishing by spreading fishing effort over time. Providing fishermen with incentive to more carefully plan their trips also should reduce total fishing mortality. This should reduce discard mortality. Therefore, the proposed IFQ program is consistent with National Standard 1.

National Standard 2

National Standard 2 requires conservation and management measures to be based on the best scientific information available (16 U.S.C § 1851(a)(2)). The analytical work and data sources queried in developing this amendment were extensive. This analytical work relied on the most current landings data, economic, social, and biological information available at the time of the analysis. Data sources are given in references cited in Section 11. This amendment is based on the best scientific information available and is consistent with National Standard 2.

National Standard 3

This standard requires an individual stock of fish to be managed, to the extent practicable, as a single unit throughout its range, and interrelated stocks of fish to be managed as a unit or in close coordination (16 U.S.C § 1851(a)(3)). The range of red snapper extends throughout the GOM. The species is found inside State fisheries jurisdictions and in the EEZ. They are also found in Mexican waters, which are outside the jurisdiction of the Council, but are managed as separate stocks. Based on differences in growth, reproduction, and age at capture, recent scientific reports (Cowan et. al., 2002; Wilson and Nieland, 2002; Gold et. al., 2002) and the SEDAR Assessment Reports (2004) have shown red snapper migrate significant distances and can be managed as separate migratory groups east and west of the Mississippi River. Genetically these migratory groups may be a single stock. Management of red snapper as a single stock allows for better enforcement of TAC, reduces angler confusion resulting from separate TACs, and prevents effort shifting by fishermen relocating to a different area once the regional TAC is met.

Directed commercial fishing does not occur throughout the range of the U. S. stock but is largely restricted to the area from Pensacola, Florida, through Texas. This fishery accounts for 96.8 percent of the total commercial fishery, based on 1993 catch records (Goodyear, 1994). The management program will apply to all fishing in the EEZ and, with limited exception, to fishing in State waters by fishermen with vessel permits. The fishery occurs predominately in the EEZ. Therefore, the management program is consistent with National Standard 3.

National Standard 4

Under National Standard 4, conservation and management measures shall not discriminate between residents of different states (16 U.S.C § 1851(a)(4)). Further, if it becomes necessary to allocate or assign fishing privileges among U.S. fishermen, such

allocation shall be: 1) fair and equitable to all such fishermen; 2) reasonably calculated to promote conservation; and 3) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges. This National Standard raises two issues, discrimination and allocation.

Discrimination. An FMP must not differentiate among people or corporations based on their state of residency and must not rely on or incorporate a discriminatory state statute (50 CFR § 600.325(b)). All fishermen are afforded the same treatment under any of the three alternatives, regardless of their state of residence. However, management measures that have different effects on persons in various geographic locations are permissible. IFQ program would not discriminate between residents of different states. The preferred alternative would distribute shares proportionately among those who have historically participated in the fishery regardless of the location of their respective homeport.

Allocation. An "allocation" or "assignment" of fishing privileges is defined in the National Standard Guidelines as direct and deliberate distribution of the opportunity to participate in a fishery among identifiable, discrete user groups or individuals (50 CFR § 600.325(c)(1)).
To be consistent with the "fairness and equity" criterion, an allocation should be rationally connected with the achievement of OY or with the furtherance of a legitimate FMP objective (50 CFR § 600.325(c)(3)(i)(A)). Otherwise, inherent advantage of one group to the detriment of another would be without cause. In addition, an allocation of fishing privileges may impose hardships on one group if they are outweighed by the total benefits received by another group (50 CFR § 600.325(c)(3)(i)(B)).

The IFQ program would restructure the current fishery. Some fishermen would be better off and some would be worse off. Although this program would not prevent most persons from entering these fisheries, those persons who receive an initial allocation of harvesting privileges would have a competitive advantage over subsequent participants by not having to pay for those privileges. In brief, those persons benefited by receiving an initial allocation are persons holding Class 1 and Class 2 licenses for harvest of red snapper. Currently these persons make up the universe of persons who can legally harvest red snapper in commercial quantities.

An allocation of fishing privileges may be considered consistent with the conservation criterion if it encourages a rational, more easily managed use of the resource, or if it optimized the yield in terms of size, value, market mix, price, or economic or social benefit of the product
(50 CFR § 600.325(c)(3)(ii)). The IFQ program satisfies this criterion because it would allow fishermen to adjust their fishing operations according to weather conditions, market prices, and other factors that currently are discounted in a race for fish during relatively short fishing seasons. This IFQ system would decrease fishing mortality due to discards and bycatch because fishermen would have an incentive to minimize their costs. In addition, the IFQ program would provide an incentive for fishermen to land a premium product that would maximize market value. This would occur as a result of a greater ability for fishermen to coordinate their landings with market variables, and more time while fishing to clean and properly preserve their catch. Hence, the overall yield, in terms of volume and value, from the resource would be optimized. The license limitation and no action alternatives would be unlikely to promote these incentives among fishermen.

Finally, consistency with National Standard 4 requires avoidance of excessive shares. An allocation must be designed to avoid creating conditions that foster any person or other entity from acquiring an inordinate share of fishing privileges or control by buyers and sellers that would not otherwise exist (50 CFR § 600.325(c)(3)(iii)). Although the National Standard Guidelines do not specifically define an "excessive share," they imply conditions of monopoly or oligopoly. The Council does not feel a monopoly or oligopoly would occur and owner/operators would remain the dominant entities in the fishery. Consequently, the Council recommended a limit on ownership of licenses or IFQ shares. The Council can change the allocation scheme. Such a change may occur if the Council determines the program in operation allows for too much or too little consolidation. Therefore, the proposed IFQ program is consistent with National Standard 4.

National Standard 5

This standard requires conservation and management measures to promote efficiency in the use of fishery resources, where practicable, except that no such measure will have economic allocation as its sole purpose (16 U.S.C § 1851(a)(5)). The National Standard Guidelines recognize that, theoretically, an efficient fishery would harvest the OY with the minimum use of economic inputs such as labor, capital, interest, and fuel (50 CFR § 600.300(b)(2)). Hence, an efficient management regime conserves all resources, not just fish stocks. Implementing more efficient management would change the distribution of benefits and burdens in a fishery if it involves the allocation of harvesting privileges. This standard mandates that any such redistribution should not occur without an increase in efficiency unless less efficient measures contribute to other social and biological objectives.

The no action alternative for Action 1 results in continuation of the current license limitation system, which promotes the derby fishery under which the commercial quota is harvested as rapidly as possible. Further, seasonal closures under the current license limitation create inefficiency in the fishery by precluding flexibility as to when a person can fish. Under open access with no trip limits total harvest would be completed more rapidly than under the vessel trip limits of the license limitation and no action alternatives. As the number of participants in the fishery either remains static (license limitation) or decrease (IFQ) under which efficiency in harvesting capacity is gained over that in the initial allocation of licenses.

The proposed IFQ program provides fishermen an opportunity to reduce economic waste associated with overcapitalization, congested fishing grounds, and fishing mortality due to bycatch discard. Harvesting costs would be lowered because of reduced vessel operating costs. The quality and value of fishery products would be increased. Processing and marketing costs should decrease as the need to hold amounts of processed fish in storage until sold is diminished. Moreover, the replacement of short intensive fishing seasons with longer, predictable seasons would increase safety at sea and reduce the cost of human capital and equipment invested in the production of products. The IFQ program also would provide biological benefits in terms of reduced discard and waste, and enhanced prevention of overfishing. These social and biological considerations indicate economic allocation is not the sole purpose of the IFQ program. Therefore, the proposed IFQ program is consistent with National Standard 5.

National Standard 6

National Standard 6 requires management measures allow for variations among, and contingencies in, fisheries, fishery resources, and catches (16 U.S.C § 1851(a)(6)). Variations, uncertainties, and unforeseen circumstances can be experienced in the form of biological or environmental changes, or social, technological, and economic changes. Flexibility of a management regime is necessary to respond to such contingencies (50 CFR § 600.335(b) and (c)).

None of the alternatives would change the way in which the overall catch limits are determined. These catch limits respond to changes in stock conditions to the extent they are based on periodic biological estimates. However, the IFQ program would provide for increased flexibility for fishermen to adjust their fishing effort to changes in biological or economic conditions. The IFQ program would allow fishermen to fish when conditions are most favorable (to the fishermen) and to reduce fishing effort when conditions are less favorable. Under open access management, a fisherman who wants to participate in these fisheries to any extent is forced to participate during the relatively short fishing seasons, regardless of prevailing economic conditions. The IFQ program would enhance the ability of the fishery to respond to variations and contingencies. Therefore, the proposed IFQ program is consistent with National Standard 6.

National Standard 7

This National Standard requires management measures to minimize costs and avoid unnecessary duplication (16 U.S.C § 1851(a)(7)). Management measures should not impose unnecessary burdens on the economy, individuals, organizations, or governments (50 CFR § 600.340(c)).

The RIR indicates the IFQ program would initially increase annual administration and enforcement costs by about $2.0 million (excluding VMS) depending on the level of law enforcement efforts, but would also increase benefits in terms of increased revenues by approximately $4.20 million. Harvesting costs are also expected to decrease, but at this time no estimates can be provided. The annual federal cost of the current license limitation system (no action alternative) is only about twenty one percent of the expected cost of the IFQ system. The cost recovery fee is expected to cost the harvesting sector approximately $348 thousand a year, based on a quota of 4.65 mp. This fee would be collected by NMFS for the purpose of supporting administration of the IFQ program. A fisherman would be afforded greater flexibility under the IFQ program by adjusting his share holdings and determining when he would conduct fishing. Fishermen who choose to exit the fishery under either license limitation or IFQ system may receive economic benefit if they sell their share harvest privilege. The burdens on fishermen who do not receive an initial allocation of licenses or IFQs and on society as employment patterns shift, and other transition costs, are discussed in the RIR. Additionally, referendums were held and the fishermen voted for this IFQ program.

Section 304(d)(2)(A) of the Magnuson-Stevens Act provides the Secretary the authority to 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 shall be in addition to any other fees charged under the Magnuson-Stevens Act and shall be deposited in the Limited Access System Administration Fund (LASAF) established under section 305(h)(5)(B) of the Magnuson-Stevens Act except that the portion of any such fees reserved under section 304(d)(4)(A) of the Magnuson-Stevens Act shall be deposited in the Treasury and available, subject to annual appropriations, to cover the costs of new direct loan obligations and new loan guarantee commitments as required by section 504(b)(1) of the Federal Credit Reform Act (2 U.S.C. 661c(b)(1). Collection of such fees is necessary to recover cost for enforcement and program administration including data collection, management, and distribution.

Under the cost recovery plan proposed for the IFQ program, NMFS would determine the percentage of the ex-vessel value of red snapper landings that would be collected. The program would impose a fee of up to three percent of the ex-vessel value of red snapper harvested under the IFQ program. Based on a 4.65 mp commercial red snapper TAC, a fee of three percent, and an ex-vessel price of $2.83 per pound, the fee would be $383,625. Commercial red snapper fishermen would pay the fee. Producer surplus would be reduced by the amount of the fee plus any other costs associated with paying the fee. Those costs would include time and materials required for completing the paperwork and paying the fee.

Management measures proposed for the IFQ program would replace the existing limited access system currently used to manage red snapper and, therefore, are not duplicative. The cost recovered from ex-vessel sale will not cover the anticipated costs of administering and enforcing the IFQ program, and, therefore, have been minimized. Therefore, the proposed IFQ program is consistent with National Standard 7.

National Standard 8

The National Standard provides that conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities (16 U.S.C § 1851(a)(8)).

As indicated in previous sections, the adoption of an IFQ program would help in preventing overfishing and rebuilding of the overfished red snapper stock. It should do this largely through the reduction of excess fishing capacity as the IFQ shares are consolidated. The IFQ program as compared to the current license limitation system should not alter the sustained participation of fishing communities, nor create adverse economic impacts on such communities. In fact, the reduction of the excess fishing capacity in excess of that needed to efficiently harvest the commercial quota should result in a more profitable industry thereby benefiting the communities where they live. Current licensed red snapper fishermen are so broadly dispersed that distinct red snapper communities are not recognizable. Therefore, the proposed IFQ program is consistent with National Standard 8.

National Standard 9

The Magnuson-Stevens Act requires fishery management plans establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery (16 U.S.C. §1853(a)(11)). National Standard 9 requires conservation and management measures, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch (16 U.S.C. §1851(a)(9)).

NMFS currently collects bycatch data on the commercial reef fish fishery using a supplemental discard data form, which is completed by a stratified, random sample of 20 percent of commercial reef fish permit holders. The Marine Recreational Fisheries Statistics Survey collects bycatch data on the recreational fisheries. The recent approval and implementation of Reef Fish Amendment 22 requires NMFS supplement bycatch information collected through these programs with observer data on catch, effort and discards, as funding permits. This bycatch reporting methodology is consistent with the recommendations of the National Working Group on Bycatch and of the Gulf States Marine Fisheries Commission's Fishery Information Network Committee.

The Council's proposed IFQ program is anticipated to further minimize bycatch and bycatch mortality in the commercial red snapper fishery by ending the race for fish associated with the current management regime. Derby conditions resulting from participants competing for their share of the TAC quota have shortened the commercial season to, on average, 70 days per year. When competing to harvest as many fish as possible before the fishery is closed, fishermen have little incentive to fish in areas where bycatch rates are low or to handle non-target and regulatory discards with caution. By allocating harvest privileges, the IFQ program is expected to provide fishermen greater flexibility in deciding when, where and how to fish. In theory, fishermen who are guaranteed a defined portion of the TAC will try to avoid bycatch to the extent possible to increase the profitability of their operations. Additionally, the capacity reduction benefits of the IFQ program are expected to decrease bycatch in the fishery by reducing the total number of vessels and fishing days spent pursuing red snapper. Therefore, the proposed IFQ program is consistent with National Standard 9.

National Standard 10

This national standard provides that, conservation measures shall, to the extent practicable, promote the safety of human life at sea (16 U.S.C § 1851(a)(10)).

More than any other management system or set of fishery rules, an IFQ system would accomplish this national standard. It would do so by eliminating the derby fishery and associated race for harvest that exists under the current license limitation system and the monthly 10-day mini-seasons. This system results in fishermen feeling obligated to go to sea during unsafe weather conditions. This seems necessary to them to get their share of the catch harvested during each mini-season. Because of this, some vessels have been lost at sea in the GOM fishery. The IFQ would result in each fisherman having a share that he/she could harvest whenever they feel it would be most advantageous to them, considering both the weather and price at the dock. Therefore, the proposed IFQ program is consistent with National Standard 10.

6.13 Effects on the Social Environment

As described in the social impact statement, there is little data to adequately describe the affected environment for red snapper fishing communities. 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 changes in federal fishing regulations. Data from the 1990 and 2000 Census was used for the descriptions in this document so that it is possible to see changes in the communities in those ten years. Fishing communities were ranked according to the dealer reported number of pounds to get an idea of communities dependent on the red snapper fishery. To match with the census data from 2000, landings data from 2000, along with the 2004 landings data, were used. Permit data used here are based on the permits for red snapper as of June 2005.

A problem with the exclusive use of secondary data is there is not enough information to know the social impacts of changes in regulations on any one community. Landings data may be inconclusive in it does not tell how many of the boats unloading in any given port are owned or operated by people from that community. A boat home ported in one location may not necessarily unload its catch at that location.

If permits data are examined, the homeport of a vessel may be in a different community than where the owner and/or operator live. An analysis of the mailing addresses of license holders may not identify which community a vessel is docked in or unloaded in because the owner may reside in another community. As the price of water front property continues to rise, it is becoming more common in many communities for fishermen and others working in fishing- dependent businesses to live inland, away from the water. This compounds the problem of trying to identify fishing communities as a certain location where people dependent on marine resources live and work. In some areas, fishermen who used to live in one community may now be dispersed in several outlying communities with more affordable housing.

The census data offers its own set of problems when trying to identify the number of people who are dependent on fishing resources in a given community. First, the census is only conducted every ten years. In the span of ten years much can change in a coastal community due to the increasing pressure to develop waterfront property. Second, people who work seasonally in fishing-dependent areas may or may not be counted in a particular community dependent on fishing, depending if they are residing in that community at the time of the census. A third and major problem is in the census, fishing is combined with farming and forestry occupations under the occupation category and with agriculture, forestry, and hunting under the industry category. Therefore, it is impossible to discern how many people are actually dependent on fishing from the other occupations. Further, people who rely on other supplemental work outside of fishing related occupations may report their occupation under another category.

Changes in federal fishing regulations that limit the amount of a species caught, or limit the seasons when a particular species can be caught, the number of fishing trips in a given time frame, and place restrictions on gear used, have the potential to impact communities that depend on these fisheries. At this time, it is not possible to fully analyze the impacts the proposed IFQ program for red snapper would have on individual communities that are fishing-dependent.

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 culled 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.

The following is a guideline to the types of data needed:

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

5. This list of data needs is not exhaustive or all-inclusive, and this list should be revised periodically in order to better reflect on-going and future research efforts.

When analyzing secondary data relating to the red snapper fishery in the GOM, five communities were chosen to be highlighted. These include Port Isabel, Texas; Port St. Joe, Florida; Destin, Florida; Golden Meadow, Louisiana; and Galveston, Texas. Note, the demographics for Destin for 1990 are not included and the demographic data points are slightly different from the other tables since U.S. Census Bureau Quick Facts were used for analysis.

Port Isabel, Texas

Port Isabel is adjacent to the Laguna Madre on the easternmost tip of Cameron County. The GOM is easily reached from Port Isabel via the Brazos-Santiago Pass, some three miles to the east. According to Impact Assessment, Inc., the contemporary economy of Port Isabel is based in tourism, commercial fisheries, and petroleum industry support services. The surrounding estuarine and near shore marine waters are popular destinations for recreational anglers. The shrimp industry became a viable form of industry in the 1950s. In 1960 alone, Port Isabel captains and crew harvested over 7 mp of shrimp. 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 (Impact assessment, Inc. 2005).

In 2004, Port Isabel ranked first in pounds of red snapper landed in the GOM. In 2000, they ranked twenty-third, illustrating their increasing importance as a fishing community dependent on the red snapper fishery. Currently (June 2005), Port Isabel has four Class 1 licenses registered by homeport and three Class 1 licenses registered by mailing address. There are no Class 2 licenses registered by homeport or mailing address. According to the 2000 Census, 6.1 percent of the people living in Port Isabel were listed in the agriculture, forestry, fishing and hunting category under industry, and 3.8 percent in the farming, fishing, and forestry category under occupations. The census data may not adequately reflect all of the people involved in the fishing industry in Port Isabel due to the petroleum industry, which some people may work intermittently with fishing.

Port Isabel Demographics (U.S. Census Bureau 2000)

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
And Percent who speak English less than very well	39.2	28.9

Factor	1990	2000
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.

Port St. Joe, Florida

Port St. Joe is located in the Florida Panhandle (Gulf County) on the east banks of St. Joseph Bay. This waterfront community is less than three miles from the GOM. St. Joseph Peninsula stretches 15 miles on a north-south axis about five miles offshore of the town, forming a large natural shield from heavy seas that occasionally affect this part of the GOM. Port St. Joe's economy is slowly moving away from the timber industry and toward redevelopment as a tourist destination, although commercial fisheries remain important (Impact Assessment, Inc. 2004).

"The Creek, Seminole, Apalachee and Apalachicola Indian nations are known to have occupied this area throughout the 18th and 19th centuries. Saint Joseph, as the city was originally called, was first a trading stop. By 1840, however, it was formally established as a shipping port. Oysters were Port St. Joe's first important seafood industry. By 1915, there were 117 known oyster beds, 250 shuckers, 400 fishermen, and two canneries. After World War II, however, the focus of St. Joe's commercial harvesters shifted from oysters to shrimp and crab; meanwhile, charter boat fishing also gained popularity. The establishment of the St. Joe Paper Mill and several chemical companies in the late 1930s transformed St Joe from a fishing community into a "company town." The plants served

as a main source of employment during the 20th century, but most have since closed" (Impact Assessment Inc., 2004).

There is an active and productive commercial fishing fleet based in Port St. Joe with some captains reportedly fishing as far as 80 miles offshore. Generally, shellfish are not harvested unless the Apalachicola market indicates a demand. In 2004, Port St. Joe ranked second in dealer reported landings of red snapper for the GOM, behind Port Isabel, Texas. Currently (June 2005) there are six Class 2 licenses listed by homeport, and three listed by mailing address. There are no Class 1 licenses listed by homeport or by mailing address. The numbers of pounds landed as compared to the number of permits registered by mailing address or homeport here suggest many of the boats unloading red snapper in Port St. Joe are from other locations around the GOM. The low percentage of people reporting their occupation under the agriculture, forestry, fishing and hunting category for industry on the 1990 and 2000 census suggests few people in St. Joe consider fishing their primary occupation, although fishing is still important in this town of few industries.

Due to the rise in cost of waterfront land in Port St. Joe some fishermen can no longer afford waterfront property. Commercial fishermen now dock at Raffield or Wood Fisheries, but a few use privately owned piers, usually located behind a residence. Increasing tax rates for waterfront property have led small fish houses and packing plants to relocate or close over recent decades (Impact Assessment Inc., 2004).

Port St. Joe Demographics (U.S. Census Bureau 2000)

Factor	1990	†2000
Total population	4,044	3,644
Gender Ratio M/F (Number)	1,924/2,120	1,710/1,934
Age (Percent of total population)		
Under 18 years of age	25.6	23.6
18 to 64 years of age	56.8	54.9
65 years and over	17.6	21.5
Ethnicity or Race (Number)		
White	2,542	2,497
Black or African American	1,480	1,097
American Indian and Alaskan Native	10	8
Asian	8	8
Native Hawaiian and other Pacific Islander	--	0
Some other race	4	2
Two or more races	--	32
Hispanic or Latino (any race)	27	20
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	12.3	7.7
Percent high school graduate or higher	68.8	80.2
Percent with a Bachelor's degree or higher	11.0	14.6
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	1.4	4.7
And Percent who speak English less than very well	0.2	1.5
Household income (Median $)	23,089	33,800
Poverty Status (Percent of population with income below poverty line)	18.1	13.0
Percent female headed household	18.6	14.8
Home Ownership (Number)		
Owner occupied	1,087	1,073

Factor	1990	†2000
Renter occupied	147	329
Value Owner-occupied Housing (Median $)	45,200	73,500
Monthly Contract Rent (Median $)	184	346
Employment Status (Population 16 yrs and over)		
Percent in the labor force	56.6	49.8
Percent of civilian labor force unemployed	7.0	6.4
Occupation (Percent in workforce)**		
Management, professional, and related occupations	--	30.1
Service occupations	--	23.0
Sales and office occupations	--	24.9
Farming, fishing, and forestry occupations	3.1	0.0
Construction, extraction, and maintenance occupations	--	13.6
Production, transportation, and material moving occupations	--	8.5
Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting	2.5	1.2†
Manufacturing	22.7	10.9
Percent government workers	23.2	25.7
Commuting to Work (Workers 16 yrs and over)		
Percent in carpools	18.5	11.5
Percent using public transportation	0.5	0.0
Mean travel time to work (minutes)	--	21.8
Percent worked outside of county of residence	11.9	23.3

**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 in this group; 1990 figures do not. Mining includes the offshore oil industry workforce.

Destin, Florida

In 2004, Destin ranked third in pounds of red snapper landed behind Port Isabel and Port St. Joe. In 2000, Destin ranked highest in landings by weight. Currently (June 2005), Destin has ten Class 1 licenses registered by homeport and four Class 1 licenses registered by mailing address. There are twenty Class 2 licenses registered by homeport and thirteen Class 2 licenses registered by mailing address. According to the 2000 Census, 1.2 percent of the people living in Destin were listed in the agriculture, forestry, fishing and hunting category under industry, and 93 percent in the farming, fishing, and forestry category under occupations.

Destin Demographics (U.S. Census Bureau, Fact Finder 2000)

Factor	†2000
Total population	3,644
Gender Ratio M/F (Number)	1,710/ 1,934
Age (Percent of total population)	
Under 18 years of age	19.4
18 to 64 years of age	63.6
65 years and over	17.0
Ethnicity or Race (Number)	
White	10,698
Black or African American	41
American Indian and Alaskan Native	44
Asian	115

Factor	†2000
Native Hawaiian and other Pacific Islander	9
Some other race	41
Two or more races	171
Hispanic or Latino (any race)	296
Educational Attainment (Population 25 and over)	
Percent less than high school graduate	15.0
Percent high school graduate or higher	91.9
Percent with a Bachelor's degree or higher	31.4
Language Spoken at Home (Population 5 years and over)	
Percent who speak a language other than English at home	6.8
And Percent who speak English less than very well	21.1
Household income (Median $)	53,042
Poverty Status (Percent of population with income below poverty line)	5.5
Percent female headed household	14.8
Home Ownership (Number)	
Owner occupied	75.3
Renter occupied	24.7
Value Owner-occupied Housing (Median $)	153,800
Monthly Contract Rent (Median $)	-
Employment Status (Population 16 yrs and over)	
Percent in the labor force	63.9
Percent of civilian labor force unemployed	10.7
Occupation (Percent in workforce)**	
Management, professional, and related occupations	9.2
Service occupations	6.9
Sales and office occupations	13.6
Farming, fishing, and forestry occupations	.93
Construction, extraction, and maintenance occupations	5.1
Production, transportation, and material moving occupations	3.8
Industry (Percent in workforce)**	
Agriculture, forestry, fishing and hunting	1.2
Manufacturing	4.2
Percent government workers	9.1
Commuting to Work (Workers 16 yrs and over)	
Percent in carpools	9.8
Percent using public transportation	0.3
Mean travel time to work (minutes)	19.8

**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.

Galveston, Texas

The city of Galveston is located 50 miles south of Houston. The Port of Galveston and the University of Texas Medical Branch are primary employers in the area. Tourism is an important aspect of the local economy. Commercial fisheries are prosecuted both offshore and near shore as well as in estuarine waters. There are numerous dockside hotels and other businesses frequented by boaters and recreational anglers. There are also several charter boats operating in the area (Impact Assessment Inc., 2004).

In 2004, Galveston was forth in number of pounds landed as reported by dealer codes. In 2000, Galveston ranked twenty-second in pounds landed. Currently (June 2005) there are eleven Class 1 licenses and six Class 2 licenses listed by homeport. There are five Class

1 licenses and four Class 2 licenses listed by mailing address. According to the 2000 Census, only 0.3 percent of the people living in Galveston were listed in the agriculture, forestry, fishing and hunting category under industry, and 0.3 percent in the farming, fishing, and forestry category under occupations. The numbers dropped in both categories since the 1990 census. As with the other communities, the exact number of people involved in fishing is unknown since each category includes other occupations lumped with fishing.

Galveston Demographics (U.S. Census Bureau 2000)

Factor	1990	2000
Total population	59,070	57,247
Gender Ratio M/F (Number)	28,539/ 30,531	27,649/ 29,598
Age (Percent of total population)		
Under 18 years of age	24.7	23.4
18 to 64 years of age	61.9	62.9
65 years and over	13.4	13.7
Ethnicity or Race (Number)		
White	36,315	33,582
Black or African American	17,161	14,592
American Indian and Alaskan Native	144	243
Asian	1,387	1,839
Native Hawaiian and other Pacific Islander	N/A	42
Some other race	4,063	5,571
Two or more races	N/A	1,378
Hispanic or Latino (any race)	12,649	14,753
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	13.7	10.3
Percent high school graduate or higher	70.0	74.4
Percent with a Bachelor's degree or higher	21.1	23.7
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	19.8	26.5
And Percent who speak English less than very well	7.6	11.2
Household income (Median $)	20,825	28,895
Poverty Status (Percent of population with income below poverty line)	24.2	22.3
Percent female headed household	16.3	16.9
Home Ownership (Number)		
Owner occupied	10,136	10,399
Renter occupied	14,021	13,443
Value Owner-occupied Housing (Median $)	57,200	73,800
Monthly Contract Rent (Median $)	309	531
Employment Status (Population 16 yrs and over)		
Percent in the labor force	62.7	59.7
Percent of civilian labor force unemployed	9.0	10.1
Occupation (Percent in workforce)**		
Management, professional, and related occupations	N/A	35.2
Service occupations	N/A	24.2
Sales and office occupations	N/A	24.0
Farming, fishing, and forestry occupations	1.8	0.3
Construction, extraction, and maintenance occupations	N/A	8.3
Production, transportation, and material moving occupations	N/A	8.0

Factor	1990	2000
Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting	1.5	0.3
Mining (includes the offshore oil/gas industry workforce)	1.0	0.5
Manufacturing	5.7	4.1
Percent government workers	32.1	31.5
Commuting to Work (Workers 16 yrs and over)		
Mean travel time to work (minutes)	N/A	19.1
Percent worked outside of county of residence	5.5	9.5

**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.

Golden Meadow, Louisiana

Golden Meadow has a fully developed commercial and recreational fisheries infrastructure. There are numerous seafood docks and dealers, and a number of boat construction and repair yards. There are at least two marine railways with lifts capable of out-hauling large offshore commercial fishing vessels and smaller oil field supply vessels. Numerous large and small recreational and commercial vessels dock along the banks of Bayou Lafourche. The importance of recreational fishing to the area is also evident in the number of RV camps, cabin rentals, and motels that serve visiting anglers (Impact Assessment Inc., 2004).

While Golden Meadow's commercial fishing industry has thrived for many decades, some local fishermen report having recently experienced an economic downturn. One fisherman who has been in this industry since 1966 blames the influx of imported shrimp for decline in local profits. Shrimp, crab, and oysters are important products here, and there are many state license holders, but there are also active federal permits and harvest of offshore fish species. A local processor was active in 2000 (Impact Assessment Inc., 2004).

According to the 2000 U.S. Census, 6.0 percent of the population in Golden Meadow listed their industry as agriculture, forestry, fishing, and hunting category and 7.5 percent of the population listed their occupations under farming, fishing, and forestry category. Based on these numbers, there may have been an increase in the number of persons claiming fishing as their primary occupation in Golden Meadow since 1990.

In 2004, Golden Meadow ranked fifth in dealer reported landings. They ranked third in 2000. Currently (June 2005) there are zero Class 1 or Class 2 licenses registered by homeport. There is one Class 1 license and one Class 2 license listed by mailing address. These numbers suggest most of the fishermen who offload red snapper here live in other areas.

Golden Meadow Demographics (U.S. Census Bureau 2000)

Factor	1990	2000
Total population	2,049	2,193
Gender Ratio M/F (Number)	970/1,079	1,069/1,124
Age (Percent of total population)		
Under 18 years of age	26.3	27.9
18 to 64 years of age	58.5	56.6

Factor	1990	2000
65 years and over	15.2	15.5
Ethnicity or Race (Number)		
White	1,939	2,029
Black or African American	0	11
American Indian and Alaskan Native	92	106
Asian	9	9
Native Hawaiian and other Pacific Islander	N/A	0
Some other race	9	17
Two or more races	N/A	21
Hispanic or Latino (any race)	87	32
Educational Attainment (Population 25 and over)		
Percent with less than 9th grade	41.8	27.0
Percent high school graduate or higher	44.2	54.3
Percent with a Bachelor's degree or higher	6.2	8.1
Language Spoken at Home (Population 5 years and over)		
Percent who speak a language other than English at home	54.5	40.0
And Percent who speak English less than very well	17.2	10.3
Household income (Median $)	16,373	28,690
Poverty Status (Percent of population with income below poverty line)	22.7	18.8
Percent female headed household	11.9	9.9
Home Ownership (Number)		
Owner occupied	573	637
Renter occupied	204	184
Value Owner-occupied Housing (Median $)	37,400	57,600
Monthly Contract Rent (Median $)	173	243
Employment Status (Population 16 yrs and over)		
Percent in the labor force	46.6	50.1
Percent of civilian labor force unemployed	3.1	4.4
Occupation (Percent in workforce)**		
Management, professional, and related occupations	N/A	20.2
Service occupations	N/A	13.0
Sales and office occupations	N/A	18.2
Farming, fishing, and forestry occupations	3.2	7.5
Construction, extraction, and maintenance occupations	N/A	11.6
Production, transportation, and material moving occupations	N/A	29.5
Industry (Percent in workforce)**		
Agriculture, forestry, fishing and hunting (and mining)	4.1	6.0
Mining (includes the offshore oil/gas industry workforce)	11.4	12.0
Manufacturing	4.5	8.0
Percent government workers	10.9	12.8
Commuting to Work (Workers 16 yrs and over)		
Mean travel time to work (minutes)	N/A	30.9
Percent worked outside of county of residence	9.8	13.3

**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 for those census years.

6.14 Mitigation Measures

6.14.1 Action 1: IFQ Program Mitigation Measures

The analysis of whether to implement an IFQ program or not (**Alternative 1**) demonstrates the positive outcome of eliminating the current derby fishery. However, implementing an IFQ program **(Preferred Alternative 2)** does have negative effects associated with it. In making the fishery more efficient, there would be employment losses as well as short-term negative losses for those who do not receive shares equal to their current landings. These effects are mitigated to an extent in that shares would be transferable and allow those who wish to participate, or participate further in the fishery, to purchase or lease IFQ shares. Other negative effects outlined above (Sections 6.1.1 and 6.1.2) include potential high grading and quota busting activity. Such activities can be more easily monitored and enforced with VMS (Action 10).

Administrative costs for enforcement, monitoring, and management of an IFQ program would increase. These costs would be partially mitigated through a cost recovery plan (Action 11). This plan would recover up to 3 percent of the dockside value of the catch and these dollars would only be spent on the administration and enforcement of the program. Assuming an IFQ program does increase the value of red snapper, the monies available for administration and enforcement would also increase.

6.14.2 Action 2: IFQ Program Duration

Limiting the duration of an IFQ program (**Alternative 3 suboptions 3a and 3b)** negatively affects the economic and administrative environments by providing uncertainty to the fishery. Not knowing if the program would continue would make planning future business decisions more difficult. Selecting either **Alternative 1** or **Preferred Alternative 2** avoids this uncertainty. These effects of selecting **Preferred Alternative 2** are mitigated to an extent by a periodic review of the proposed IFQ program by the Council and their ability to terminate the program at any time. For the administrative environment, a sunset provision **(Alternative 3**) would add the cost of developing and implementing another amendment should the Council determine the IFQ program should be continued. Selecting **Preferred Alternative 2**, which provides a periodic review of the program, provides the opportunity to evaluate the program without the administrative cost of developing a new amendment.

6.14.3 Action 3: Ownership Caps and Restrictions on IFQ Share Certificates

As described in Section 4.3, ownership caps (**Alternative 2** and **Preferred Alternative 3**) are intended to limit concentration of market power, provide opportunity for new entry into the fishery, provide competition in the labor market, and ensure the resource supports a reasonable number of participants. However, with ownership caps, the fishery becomes less efficient by limiting consolidation, which, for the physical and biological environments, could result in greater interaction of gear with the bottom, increases in discard mortality, and increases in bycatch. **Preferred Alternative 3** provides for the maximum percentage of IFQ shares be issued to a recipient at the time of the initial apportionment, therefore, there are no additional measures for mitigating the preferred alternative**.** For the physical and biological environments, the overall positive gains made by changing from a derby fishery to an IFQ program (See Section 4.1.1) should outweigh the negative effects caused by ownership caps. For the increased administrative costs

compared to status quo, these costs are partially recovered through the cost recovery program (Action 11).

6.14.4 Action 4: Eligibility for Initial IFQ Allocation

Alternatives for eligibility in the initial allocation of quota shares focus on traditional participants in the fishery (Class 1 and Class 2 license holders). **Preferred Alternative 3** restricts eligibility to persons who own a Class 1 or Class 2 license. Provisions in the IFQ program allowing transfers of IFQ shares/allocations mitigate the effects of selecting **Preferred Alternative 3**
For the physical and biological environments, if the number of participants were high (**Alternative 1**), inefficiency in fishing practices by some individuals would result in greater interaction of gear with the bottom, and increases in discard mortality and bycatch. If the number of participants is kept low (**Alternative 2**), then there is a greater likelihood discard mortality rates would increase from non-participant fishermen. Therefore, selection of **Preferred Alternative 3**, which allows all current participants in the fishery to be eligible for shares, strikes a compromise between the negative effects of **Alternatives 1** and **2**. Increasing the number of participants in the fishery (**Alternative 1** and **Preferred Alternative 3**) does increase the administrative costs compared to **Alternative 2**, which restricts eligibility. However, these costs are partially recovered through the cost recovery program (Action 11).

6.14.5 Action 5. Initial Apportionment of IFQ Shares

The initial apportionment of IFQ shares would affect how windfall profits are distributed among participants and would not affect the physical and biological environment. **Alternative 1** does not provide a mechanism for allocating IFQ shares and would make implementation of the IFQ program impossible. Using historical landings provided a sense of fairness among AHRSAP members because it would reflect the investment participants had in the fishery. Dividing the initial shares based on catch history (**Preferred Alternative 2 suboptions A** and **B** and **Preferred Alternative 4**) would increase the administrative costs compared to an equal distribution (**Alternative 3**). However, these costs are partially recovered through the cost recovery program (Action 11). Using catch history as a basis for IFQ apportionment could add to the administrative costs of the IFQ program through litigation by participants who question their landings. To avoid this litigation, an appeals process (Action 6) is proposed as part of the IFQ program.

6.14.6 Action 6. Establishment and Structure of an Appeals Process

The establishment of an appeals process (**Preferred Alternative 2** and **Alternatives 3** and **4**) would not affect the physical and biological environment. Additionally, in the likelihood there was a change in distribution of shares as a result of the appeals process, this would likely pertain to only a small portion of the total IFQ shares allocated. Therefore, the appeals process should minimally affect the economic and social environments. The appeals process, regardless of how it is structured, would have administrative costs. However, these costs would be minimal compared to the potential cost of litigation should there be no appeals process. The selection of **Preferred Alternative 5** (three-percent set aside of the commercial quota for appeals), in addition to **Preferred Alternative 2** or **Alternatives 3** or **4**, could further reduce litigation costs.

Preferred Alternative 5 would allow managers to distribute corrected IFQ share amounts resulting from appeals without deducting IFQ shares from other shareholders.

6.14.7 Action 7. Transfer Eligibility Requirements

For the physical and biological environments, **Alternatives 1** and **4**, which allow IFQ shares to be transferred to the greatest number of participants, there is the possibility some potential shareholders may not wish to fish their shares. This could help rebuild the stock more quickly. Conversely, these two alternatives could allow inefficient fishermen into the fishery who could increase gear interaction with the bottom, increase discard mortality, and increase bycatch. **Alternatives 2**, **3**, and **5** would allow for the fishery to consolidate and become more efficient, thus decreasing gear interaction with the bottom, discard mortality, and bycatch. However, because these alternatives constrain transfers to within the fishery, they would likely result in the entire quota being fished. **Preferred Alternative 6** mitigates these negative effects by limiting the initial opportunities to transfer shares to commercial reef fish permit owners for five years, after which the general public is provided the opportunity to enter the fishery

For the social and economic environments, **Alternatives 1** and **4** would result in IFQ shares increasing in value due to supply and demand, as these alternatives allow IFQ shares to be transferred to the greatest number of participants. However, this increase in value could eliminate some current participants in the reef fish fishery who could not afford it or reduce their ability to obtain additional shares. **Alternatives 2**, **3**, and **5**, because they limit who could purchase shares, would limit the prices shares could achieve, but would give current participants within either the red snapper or reef fish fisheries a greater opportunity to buy more shares. Preferred **Alternative 6** mitigates these negative effects by limiting the initial opportunities to transfer shares to commercial reef fish permit owners for the first five years of the IFQ program, after which the general public is provided the opportunity to enter the fishery.

All the alternatives would have some administrative costs required to monitor transfers. An increase in the number of shares being transferred would increase these costs.

6.14.8 Action 8. Use it or Lose it: IFQ Shares or Allocations

The "use it or lose it" requirement (**Alternatives 2 suboptions A** and **B**, and **Alternative 3 suboptions C and D**) serves to reduce the number of speculators in the IFQ program, reduces individuals receiving IFQ shares beyond their current harvesting capacity, and keeps individuals from not fishing IFQ shares (e.g., non-fishing organizations from buying shares for conservation). Preventing shareholders from not fishing their allocated IFQ shares would increase producer surplus and net National benefits. Also, because "banking" of IFQs is not allowed in the red snapper IFQ program, those landings forgone in one season would not be actually be recouped in the succeeding seasons, thereby removing financial incentives to not use shares.

A "use it or lose it" requirement would add to the administrative burden for the fishery by adding an additional component to share tracking. However, these costs are partially recovered through the cost recovery program (Action 11).

6.14.9 Action 9. Adjustments in Commercial Quota

As the red snapper stock is periodically evaluated, adjustments in TAC, either up or down, would likely be needed. Action 9 provides guidance to NMFS on how to adjust IFQ shares in response to changes in TAC. The no action alternative (**Alternative 1**) would not specify a method for changes in the commercial allocation and would likely result in less consolidation and continued overcapitalization of the fishery. Additionally, the Council would ultimately need to decide on share distribution, adding to the administrative burden. **Preferred Alternative 2** and **Alternatives 3**, and **4** are provided to mitigate the effects of not having an adjustment method. Any added administrative burden would be minimal because the IFQ program would already track participant shares. The Council may select **Preferred Alternative 5** in addition to any other alternative. Selection of **Preferred Alternative 5** may results in a slight increase in administrative effort to calculate IFQ shares prior to 2007, and then again during 2007 once the Council has determined the final TAC.

6.14.10 Action 10. Vessel Monitoring Systems (VMS)

Some fishermen would consider requiring VMS an intrusion on their privacy and their autonomy as an independent fisherman. Additionally, dependent on which sub option **of Preferred Alternative 2** (**suboptions a, b, c**, and **d**) is selected, they could have purchase, installation, or maintenance costs associated with a VMS requirement. However, the positive effects outlined in Section 4.10 resulting from enhanced enforcement of the fishery, mitigate these negative effects. Thus, the cost of VMS translates into a cost savings for industry by providing more fluidity in marketing and allowing law enforcement resources to be shifted into the auditing and paper-trail processes, without reduced emphasis on offshore enforcement for regulatory compliance.

Implementation of a VMS would increase administrative costs to NMFS. Depending on which sub option is selected in **Preferred Alternative 2** (**Preferred suboption a, and suboptions b, c**, and **d**), NMFS could be required to cover the purchase, installation, or maintenance costs, in addition to in-house equipment and personnel costs associated with a VMS program. However, these costs would be mitigated in two ways. Some costs would be partially recovered through the cost recovery program (Action 11). Additionally, VMS allows at-sea vessel tracking, which reduces at-sea enforcement costs, and increases dockside enforcement efficiency.

6.14.11 Action 11. Cost Recovery Plan

Action 11 is a mitigation measure allowed under the Magnuson-Stevens Act to recoup some of the administrative and enforcement costs associated with an IFQ program. There would be costs for the fishermen associated with fee payments (**Alternative 2 and Preferred Alternative 3)** and fee submission **(Alternative 2)** and for dealer/processors for fee submission **(Preferred Alternative 3).** However, these costs should be more than compensated for through the increases in profits provided by the IFQ program over the current derby fishery. For the fishermen, these increased profits would result from the flexibility the IFQ program provides on when and where to fish, and for the dealer, these increased profits would result from a better product, a year-round market, and diminished illegal sales.

6.15 Cumulative Effects Analysis (CEA)

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

Various approaches for assessing cumulative effects have been identified, including checklists, matrices, indices, and detailed models (MacDonald, 2000). CEQ offers guidance on conducting a CEA in a report titled "Considering Cumulative Effects under the National Environmental Policy Act". 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 relation to regulatory thresholds.
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.

The CEA for the biophysical environment will follow these 11 steps. Cumulative effects on the biophysical environment and the socio-economic environment will be analyzed separately.

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. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed actions (Section 6.1-6.11);
II. Which resources, ecosystems, and human communities are affected (Section 5.0); 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 GOM. These are the waters extending from the seaward side of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida state waters to 200 miles. As stated in Section 5, red snapper are distributed in waters off the Yucatan, throughout the GOM, to the waters off North Carolina. While recent evidence suggests GOM red snapper undergo longer migrations and have lower site fidelity than previously estimated (Patterson et al., 2001), there is little evidence from multiple tagging studies that GOM red snapper move beyond GOM waters. However, Burns (2004) reported one adult red snapper tagged off northwestern Florida was recaptured off northeastern Florida. Red snapper have pelagic larvae, thus, some exchange of fish between regions could occur. However, larval movement patterns are not well understood. Within the GOM, evidence suggests there are an eastern and a western stock based on genetic and life history data (SEDAR, 2004).

Most red snapper are sold in markets outside of the GOM. Major markets include New York, Montreal, and Toronto (B. Antozzi, pers comm). Other, but less important markets include San Francisco, Los Angeles, Seattle, Vancouver, and the Gulf States. However, most red snapper are landed in the GOM and would primarily affect local communities. Approximately 98 percent of Class 1 licensed reef fish vessel owners have mailing addresses in the GOM. Additionally, approximately 93 percent of the reef fish permitted dealers are located in the Gulf States.

3. Establish the timeframe for the analysis

Establishing a timeframe for the CEA is important, when the past, present, and reasonably foreseeable future actions are discussed. It would be advantageous to go back to a when the red snapper stock was in a natural, or somewhat modified (but ecologically sustainable) condition. However, data collection for many fisheries including red snapper began when these species were already fully exploited. For the commercial fishery, general canvass data are available from 1962-2004, but recreational landings information was not collected until 1981, and those landings data through 1985 are highly uncertain.

Management of red snapper did not begin until the implementation of the Reef Fish FMP in 1984, which established size and bag limits. Red snapper quotas were not put in place until 1990 in Amendment 1 (see Section 2.2). Shortly afterwards, the derby fishery began when the quota was filled prior to the end of the fishing year. A moratorium on reef fish permits was established in 1992 through Amendment 4 and red snapper licenses were established in 1994 through Amendment 5. In 1995, NMFS approved an IFQ program in Amendment 8; however, this program was not implemented because of Congressional action that set a moratorium on IFQs through the 1996 SFA. In November 2005, Amendment 22 was approved by NMFS and established a red snapper rebuilding plan. The plan start date was January 2001, it ends overfishing between 2009 and 2010, and it rebuilds the stock to B_{MSY} by 2032. The plan also calls for periodic reviews of the stock to ensure the plan's rebuilding trajectory is maintained. A red snapper stock

assessment was completed in July 2005 and the Council will be evaluating measures to ensure rebuilding continues within the guidelines of the plan.

Amendment 26 is designed to establish an IFQ program for the red snapper fishery and end the current derby fishery. Therefore, the timeframe for the CEA should start in the early 1990s when the condition of the current fishery began. Action 2 of this amendment sets the IFQ program duration. While the current preferred alternative does not limit the duration of the IFQ program, it does require the program to be evaluated every 5 years. Assuming the IFQ program is implemented for the 2007-fishing year, the timeframe for the CEA should extend through 2012 when the program will be reviewed.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.

Past actions affecting the red snapper fishery are summarized in Section 2.1. However, three amendments have been implemented in the past year and are worth mentioning. As discussed above, Amendment 22 established a red snapper rebuilding plan, red snapper biological reference points and status determination criteria, and new bycatch reporting methodologies. This amendment was approved in November 2004, and a final rule was implemented on July 5, 2005 (70 FR 32266). A final rule for Amendment 23 was implemented on July 8, 2005 (70 FR 33385). This rule established: 1) Status determination criteria and biological reference points for vermilion snapper; a 10-year vermilion snapper rebuilding plan that would end overfishing and rebuild the stock to B_{MSY}; and 3) measures to constrain the allowable harvest in the commercial and recreational sectors to that required for the rebuilding plan. A final rule for Amendment 24 was effective August 18, 2005 (70 FR 41161), and established a limited access system for the commercial Gulf of Mexico reef fish fishery.

Currently, there are two amendments that have been transmitted by the Council to NMFS. Generic Amendment 3 for addressing EFH requirements, HAPCs, and adverse effects of fishing for all the Council's FMPs and has been approved by the Secretary. This amendment proposes to define EFH for each FMP, identify the HAPCs (see Section 5.1.1), and establish fishing restrictions in the GOM. Amendment 13 to the Shrimp FMP has also been approved by the Secretary. This amendment proposes to: establish a separate vessel permit for the royal red shrimp fishery or an endorsement to the existing federal shrimp vessel permit; define MSY, OY, the overfishing threshold, and the overfished condition for royal red and penaeid shrimp stocks in the Gulf; establish bycatch reporting methodologies and improve collection of shrimping effort data in the EEZ; require completion of a Gulf Shrimp Vessel and Gear Characterization Form; establish a moratorium on the issuance of commercial shrimp vessel permits; and require reporting and certification of landings during the permit moratorium.

The Council has recently submitted Amendment 18A for Secretarial review. This amendment examines enforcement and monitoring issues, including simultaneous commercial and recreational harvest on a vessel, maximum crew size on a USCG inspected vessel when fishing commercially, use of reef fish for bait, and VMS requirements on commercial reef fish vessels. This amendment also addresses administrative changes to the framework procedure for setting TAC for reef fish, and measures to reduce bycatch and bycatch mortality of endangered sea turtles and smalltooth sawfish taken inadvertently in the commercial and charter/headboat reef fish fisheries. Reef Fish Amendment 25 and Coastal Migratory Pelagics (CMP) Charter

Vessel Amendment 17 (a joint plan amendment) propose to extend the current moratorium on for-hire Reef Fish and CMP permits indefinitely by creating a limited access system. The intended effect of these amendments is to cap the number of for-hire vessels operating in these two fisheries at the current level. Finally, the Council completed working on two Reef Fish FMP regulatory amendments to establish trip limits to extend the commercial grouper fishing seasons, and constrain red grouper harvest in the recreational fishery such that landings do not exceed the target catch levels provided for in the red grouper rebuilding plan implemented in 2004 (Secretarial Amendment 1). These amendments will either extend or modify trip limits established through an emergency rule (70 FR 8037, February 17, 2005; 70 FR 48323, August 15, 2005), and recreational bag limit reductions and closed season implemented through an interim rule (70 FR 42510, July 25, 2005). Proposed measures in the regulatory amendments include reducing the trip limit for the commercial fishery, changes to the red grouper and aggregate grouper bag limits, and a recreational closed season for red, gag, and black grouper.

Foreseeable future actions include several amendments. At the August 2005 Council meeting, the Council initiated the development of a Shrimp FMP regulatory amendment to consider changes to the BRD certification criteria, to consider certification of three funnel-type BRDs, and potentially decertify the Fisheye BRD. The commonly used Fisheye BRD has been found to be inadequate for reducing juvenile red snapper bycatch due to misplacement of the BRD in the net and changing fishing practices. The Council also proposed a joint amendment to the Shrimp FMP (Amendment 14) and Reef Fish FMP (Amendment 27) be initiated to address bycatch.
The document contains alternatives that could further reduce directed harvests of red snapper and reduce bycatch in the directed red snapper and shrimp fisheries. The amendment will also address changes in red snapper TAC required to keep within the rebuilding path developed in Amendment 22. The Council is also working on a generic amendment to establish guidelines for aquaculture and has instructed staff to begin working on an IFQ program for the grouper fishery.

It is difficult to assess non-Council and other non-fishery related actions including natural events. The commercial fishing sector is developing a vessel buy-back program for the grouper fishery of the GOM. The purpose of this program is to reduce latent and active effort in the grouper fishery. A business plan has been developed and a referendum among active reef fish holders has been conducted. Hurricanes, red tide, and other natural events can hinder fishing operations. Hurricanes such as Ivan and Katrina have devastated local fishing operations and it is difficult to assess the impacts of these events on the overall fishery. A major red tide event occurred off the central west coast of Florida in 2005 that killed large numbers of fish. The effects of red tide and hurricanes will not be known until assessments of affected species are conducted.

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stresses concern.

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.

The red snapper fishery has changed over time. As described in Section 7.5, crew size has been reduced and the fishery has expanded from a few ports to many throughout the GOM. Additionally, landings of red snapper have continued to decline since 1965, principally due to closures of foreign fishing grounds. Since the implementation of the red snapper quotas in 1990, ex-vessel prices have declined sharply during the time periods the season is open (see Section 7.3). These factors have led to a less safe fishery, total potential revenue that cannot be achieved, higher bycatch and regulatory discards, a highly regulated fishery, exacerbated user conflicts between different license holders, and eroded net economic benefits (see Section 8.2).

Two other fisheries affect the red snapper stock; the directed recreational red snapper fishery and the shrimp fishery. The number of trips in the recreational fishery has nearly tripled since the mid-1980s (GMFMC, 2004). Allocation of TAC for the recreational fishery has been set at 49 percent of the red snapper TAC since 1991. Before 1997, the fishery was managed primarily with bag and size limits. However, the recreational TAC was changed to a hard quota in 1997 by Congress, and resulted in quota closures in 1997, 1998, and 1999. Subsequently, fixed closures were instituted for this fishery. In general, the recreational harvest has exceeded its quota in most years (see Section 8.4.3).

As described in Sections 5.2.2 and 5.2.3, juvenile red snapper bycatch by the shrimp fishery has impeded rebuilding of the red snapper stock. To mitigate the effects of shrimping on red snapper recovery, BRDs are required in the shrimp trawls to reduce the level of bycatch. However, the reductions anticipated from these devices have been less than anticipated. Other reductions in shrimp trawl bycatch are being realized from economic changes in the shrimp fishery. Imported shrimp have driven the domestic prices of shrimp to low levels and have driven vessels out of the fishery. As a result, estimates of effort reductions in Amendment 22 were approximately 30 percent. Effort may be further reduced with recent increases in the cost of fuel and the devastation to shore side processing facilities and fleet vessel loss due to recent hurricane activity. The impacts of Hurricanes Katrina and Rita on the effort reduction in the shrimp fishery and number of vessels that will likely be fishing in the near future are unknown, but it is expected that there will be a reduced number of active vessels at least in the short term.

The red snapper stock has been declared by NMFS to be overfished and undergoing overfishing. As described in Section 5, this stock condition is a result of over harvesting by the directed fishery and the high level of juvenile red snapper bycatch in the shrimp fishery. Therefore, fishing activities have induced stress on this stock. Red snapper is not the only reef fish stock in the GOM overfished or undergoing overfishing. Four other stocks are overfished and three others are undergoing overfishing as summarized in Section 5.2.5.

Fishing gear used to target red snapper is primarily hook-and-line. This gear, as described in Section 6.1.1, only affects red snapper EFH minimally. Adult red snapper habitat, as described in GMFMC (2004), is sandy and rocky bottoms, around reefs, and underwater objects from shallow water to 200 m, and possibly even beyond 1200 m. Spawning occurs in offshore waters from May to October at depths of 18 to 37 m over fine sand bottom away from reefs. Eggs are found offshore in summer and fall and larvae, post larvae, and early juveniles are found July through November in shelf waters

ranging in depth of 17 to 183 m. Early and late juveniles are often associated with structures, objects or small burrows, but also are abundant over barren sand and mud bottom. Late juveniles are taken year round at depths of 20 to 46 m. Adults are concentrated off Yucatan, Texas, and Louisiana at depths of 7 to 146 m and are most abundant at depths of 40 to 110 m. They commonly occur in submarine gullies and depressions, and over coral reefs, rock outcroppings, and gravel bottoms.

The major action of this amendment is to establish an IFQ program (Action 1). Other actions (Action 2-11) are in support of the program. An IFQ would reduce the stress on the red snapper stock and other reef fish stocks through reductions in regulatory discards and bycatch as fishermen are allowed to become more efficient as summarized in Section 6.1.1. This reduction in stress on the red snapper stock would be in addition to reductions in stress required through the red snapper rebuilding plan and from reductions in effort occurring in the shrimp fishery. Further bycatch reductions from the shrimp fishery may occur through technological advances in BRDs.

For the socioeconomic environment, the IFQ program should reduce the stresses of a derby fishery as outlined in Section 8.2. Derby fisheries create negative social and economic conditions by: Reducing or eliminating considerations about weather in deciding when to fish, which adversely affects safety at sea; interrupting normal fishing patterns; flooding the market with fish, which depresses ex-vessel prices and reduces producer surplus; making it difficult to comply with and to enforce fishery regulations, which frustrates fishery participants and reduces regulatory effectiveness; and increasing competition and differential regulations, which exacerbates user conflicts. As described in the SIA and in Section 6.13, there is little information available to understand the social stresses on communities, and stresses can only be inferred from catch and economic information. Known social stresses in the red snapper fishery are either based on the season openings and closures, or based on employment practices. Scheduling concerns arise when fishermen feel they must fish during season openings even though there may be vessel repair needs, family or community obligations, or safety issues due to weather conditions. With seasonal closures also come employment issues where crew may only be needed during specific times of the year.

Fishermen do face economic stresses. These manifest themselves as either additional cost to conducting the business of fishing, or from reducing ex-vessel prices for harvested fish. Added costs include increases in such items as fuel, ice, food, and insurance. Factors reducing ex-vessel prices for fishermen include market gluts, increases in imported fish, or fish health issues.

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.

Currently, the red snapper stock is below the level that can sustain an optimal harvest based on red snapper population demographics. Stock assessments have indicated red snapper are overfished and undergoing overfishing (i.e., the stock is not being managed at a maximum sustainable long-term state). Amendment 22 established biological thresholds and status criteria for the red snapper stock, and includes a plan to rebuild the stock to the biomass where MSY or OY can be harvested on a continuing basis. Harvest is presently constrained to a TAC of 9.12 mp, of which 4.65 mp is allocated to the commercial sector. Current regulations (season closures, size limits, trip limits, and a quota) have been developed to ensure the harvest does not exceed 4.65 mp. Therefore, the stock is protected from further biological stresses identified in Step 5 above, and the fishery must operate within the financial constraints of the commercial TAC.

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 red snapper was conducted in 1986, followed by assessments in 1989, 1990, 1992, 1995, 1997, 1998, and 1999. The most recent assessment was completed in 2005 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 these assessments, reliable commercial landings data are available back to 1962, although the SEDAR assessment used sporadic landings data going back to the 1880s. Reliable recreational data are only available since 1981. As stated in the SIA and in Section 6.13, information is lacking on the social environment of the red snapper fishery, although 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 1990 when the logbook program was initiated. Cost data are based on a 1994-1995 survey conducted by Waters (1996).

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

Cause-and–effect relationships are presented in Table 6.15.1.

Table 6.15.1. The cause and effect relationship of fishing and regulatory actions within the time period of the CEA.

Time periods	Cause	Observed and/or expected effects
1962-1983	Growth and recruitment overfishing	Declines in mean size and weight
1984	13-inch minimum size limit for the recreational and commercial fisheries	Slowed rate of overfishing
1990	3.1 mp quota for commercial fishery and 7 fish bag limit	Further slow rate of overfishing
1991-1992	2.04 mp commercial quota	Continue to slow rate of overfishing
1992	Establish red snapper endorsement and trip limits	Begin derby fishery
1993-1998	3.06 mp commercial quota	Continue to slow rate of overfishing
1994	Increase minimum size to 14	Increase yield per recruit, increase the

Time periods	Cause	Observed and/or expected effects
	inches in the commercial and recreational fisheries	chance for spawning, and slow rate of overfishing
1995-1997	Increase minimum size to 15 inches in the commercial and recreational fisheries and reduce the bag limit to 5 fish	Increase yield per recruit, increase the chance for spawning, and slow rate of overfishing
1996	Raise total quota to 9.12 mp	Reduce rebuilding rate for fishery
1997-2005	Reduce recreational season length; establish red snapper Class1 and Class2 endorsement	Constrain harvest in recreational fishery
1998	Shrimp trawls in the EEZ required to use NMFS-certified BRDs west of Cape San Blas	Reduce fishing mortality rate on age 0 and age 1 red snapper
1998-2005	Reduce bag limit to 4 fish	Reduce fishing mortality rate in recreational fishery
2000-2005	Raise recreational minimum size limit to 16 inches	Increase yield per recruit, increase the chance for spawning, slow rate of overfishing
2004	Shrimp trawls in the EEZ required to use NMFS-certified BRDs east of Cape San Blas	Further reduce fishing mortality rate on age 0 and age 1 red snapper
2004	Implement red snapper rebuilding plan	Provide mechanism to monitor harvest for rebuilding

9. Determine the magnitude and significance of cumulative effects.

The main action of this amendment (Action 1) is to establish an IFQ program. The benefits and tradeoffs of an IFQ system are described in detail in Sections 4.1 and 6.1. Positive effects include: reducing bycatch and regulatory discards, helping the red snapper stock size to increase, and improving the economic environment. Negative effects include: increasing fishermen's costs (e.g., VMS), increasing dealer's costs (e.g., reporting, higher prices), and increasing administrative costs. All the other actions (2-11) in this amendment define how the IFQ program is structured. To evaluate what the cumulative effects of these considered actions in the amendment are, including past, current, and reasonably foreseeable actions, best-case and worst-case groupings of alternatives for actions 2-11 were developed for each environment. These groupings are based on the rankings provided in the discussion of each action in Section 4 and to provide a range of IFQ programs to be evaluated.

For the biological environment, the best-case and worst-case alternatives are provided in Table 6.15.2. The best-case alternatives reduce gear interactions with the environment, decrease the amount of bycatch, decrease the number of regulatory discards, and decrease the chance of quota overruns. What these alternatives suggest is the physical, biological, and ecological environment would be protected best if the efficiency of the fishery is increased, the fishery is further consolidated, there is an increase in certainty of future of IFQs, and some shares are not fished. Additionally, a VMS requirement would protect closed areas, and an appeals process and a cost recovery plan would have little influence on this environment. On the other hand, an IFQ system that reduces fishery efficiency increases the number of participants in the fishery, ensures all shares are fished, and does not require VMS would be less beneficial for the physical, biological, and ecological

environments. This would create an IFQ program where the amount of bycatch, number of regulatory discards, and chance of quota overruns would be greater.

Best-case and worst-case alternatives for each action are presented in Table 6.15.3 for the social and economic environments. Best-case alternatives increase the efficiency of the fishery, increase or maintain producer surplus, decrease operating costs, and reduce uncertainty. These fishery characteristics are similar to those provided above for the best-case alternatives for the physical, biological, and ecological environment. The worst-case social and economic environment alternatives, like the worst-case physical, biological, and ecological environment alternatives, require a fishery with the opposite characteristics.

One characteristic of the IFQ program difficult to assess are windfall profits. Those alternatives reducing the number of participants in the program (mainly Actions 3, 4, and 5) would increase windfall profits for the remaining participants, are favored by the best-case alternatives. How windfall profits would be addressed is a political decision dependent on who the Council and the Class 1 license holders want to distribute these profits to and what type of fishery they want to develop from the program. A fishery with few participants favors a limited number of participants receiving a large windfall profit, while a fishery with many participants would favor smaller windfall profits distributed to more participants.

Table 6.15.4 lists the best-case and worst-case alternatives for the administrative environment for Actions 2-11. Best-case alternatives reduce the costs of administering the IFQ program, decrease the amount of share tracking by reducing the number of participants, select an appeals process to reduce litigation, select VMS to assist in enforcement but place the costs on the fishermen for the system, and select alternatives that do not require future plan amendments (e.g., Actions 2 and 9). For the worst-case group of alternatives, the program would have high costs while not implementing a cost recovery plan, increase the number of participants and the number of shares that need to be tracked, have no appeals process running the risk of increased litigation, and not having VMS making enforcement of the program more difficult.

As mentioned previously, the main action of this amendment would be to establish an IFQ program. While the best-case and worst-case alternatives discussed above show how the IFQ system could be improved or hindered for particular environments, the overall significant benefits of the program, primarily improving the economic environment of the fishery, exceed those derived from Actions 2-11 which determine the program's structure. Therefore, in comparing this amendment to past, current, and reasonably foreseeable actions, the emphasis will be on Action 1 relative to Actions 2-11.

From 1990 to the present, past actions (see Section 2.2) for the directed red snapper fishery, while trying to constrain harvest to allow for stock rebuilding and ultimately achieve OY (revised in Amendment 22), have resulted in a derby fishery. Therefore, these actions have been positive for the red snapper stock. However, consequences of the resulting style of fishing on the stock have been increases in discard mortality rates and gear interaction with the physical environment as fishermen rush to complete trips under the current 10-day monthly seasons (1997 regulatory amendment and Amendment 14) and 2,000- or 200-pound trip limits (1992 emergency rule and Amendment 6). The IFQ program would allow fishermen the opportunity to choose when and where they want to

fish, thus minimizing discard mortality and gear/bottom interactions (See Section 4.1). They would also be able to improve their economic environment through this program.

Present actions being considered by the Council and NMFS include Generic EFH Amendment 3, Shrimp Amendment 13, Reef Fish Amendment 18A, joint CMP Amendment 17/Reef Fish Amendment 25, and red grouper regulatory amendments. These amendments on the whole and taken in conjunction with this amendment should provide further protection to the red snapper stock. Generic EFH Amendment 3 would establish fishing gear restrictions in HAPCs as well as define red snapper EFH. Shrimp Amendment 13 establishes a permit moratorium on the shrimp fishery and is the first step towards a limited entry system. Controlling shrimp effort could be important for future efforts to limit juvenile red snapper bycatch from shrimp trawls. Reef Fish Amendment 18A proposes to clarify the prohibition of reef fish for bait and establish VMS for reef fish vessels, actions that should ensure undersized red snapper are discarded rather than cut up for bait and keep reef fish vessels out of closed areas. Joint CMP Amendment 17/Reef Fish Amendment 25 would establish a limited access system for charter vessels and headboats, which would cap effort of the for-hire industry and help limit the chance of recreational quota overruns. The red grouper regulatory amendments would establish commercial trip limits for all grouper species and reduced bag/aggregate limits and a closed recreational season for red, gag, and black grouper. These trip limits could cause reef fish fishermen with Class 1 and Class 2 licenses to redirect their effort to red snapper once grouper trip limit was met. However, the commercial red snapper quota would ensure red snapper were not over harvested through this behavior.

Reasonably foreseeable actions include: a shrimp regulatory amendment to revise BRD certification criteria, a joint Shrimp/Reef Fish plan amendment to reduce red snapper bycatch and revise the red snapper rebuilding plan, a Reef Fish amendment to establish a grouper IFQ program, and a generic aquaculture amendment. These actions would provide a positive benefit to the red snapper stock by reducing bycatch, continue red snapper stock rebuilding, enhance reef fish fishing efficiency, and develop alternative sources of seafood to relieve pressure on domestic stocks. One negative effect for the IFQ program would be the revised rebuilding plan. This plan would be based on the most recent assessment. If the assessment indicates TAC needs to be reduced, commercial red snapper fishermen may determine the current derby fishery would give them an advantage in their individual harvest over the IFQ program. Thus industry support for the program could decline.

The major non-Council/non-fishery related actions affecting the red snapper fishery are hurricanes. It is difficult to assess what the results of Hurricanes Ivan and Katrina are. However, tag/recapture data (Shipp 2002) suggests hurricanes do move sedentary stocks significant distances. If enough vessels are damaged and not replaced, fewer vessels fishing for red snapper could result. However, Congress in providing assistance to hurricane victims could provide low interest loans for small businesses and let fishermen get back into the fishery. The IFQ program, because it could enhance the economic environment for fishermen, could be beneficial for fishermen needing to rebuild their businesses.

Table 6.15.2. Alternatives for each action that provide either the best- or worst-case scenario for the physical, biological, and ecological environments.

	Physical/biological environment

Action	Best case	Worst case
Action 2	Preferred Alternative 2: Do not limit the duration of the IFQ program. However, require a program evaluation every 5 years.	Alternative 3: Limit the duration of the IFQ program to five years
Action 3	Alternative 1: No action. Do not constrain the number or amount of shares that can be owned by a participant in the IFQ program.	Alternative 2: For any single fishing year, no person shall possess IFQ shares, which comprise more than the following percent of the total quota allocated to the IFQ program: two percent.
Action 4	Preferred Alternative 3: Restrict initial eligibility to persons who own a Class 1 or Class 2 license. Permanent resident aliens who currently own a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this IFQ program.	Alternative 1: No action. Do not restrict initial eligibility in the IFQ program.
Action 5	Preferred Alternative 2: Allocate initial IFQ shares proportionately among eligible participants based on the average annual landings associated with their current license(s). Allow Class 1 license holders (if eligible) to select ten consecutive years of data during the time period 1990 through 2004. Allow Class 2 license holders to select five years of data during the time period 1998 through 2004. Preferred Alternative 4: Current holders of Class 1 license issued on the basis of historical captain status may select seven years of data.	Alternative 1: No action. Do not specify a methodology for allocating initial IFQ shares.
Action 6	Any appeals process	Alternative 1 –No Action. Do not establish an appeals process
Action 7	Preferred Alternative 5: IFQ shares/allocations can be transferred only to individuals/vessels with a valid commercial reef fish permit during the first 5 years of the IFQ program and U.S. citizens and permanent resident aliens thereafter. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.	Alternative 1: No action. Do not limit to whom shares/allocations can be transferred.
Action 8	Preferred Alternative 1: No action. Do not specify a minimum landings requirement (i.e., use it or lose it provision) for retaining IFQ shares.	Alternative 3D: Any IFQ share certificates that remain inactive for five years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as less than 50% annual

	Physical/biological environment	
Action	Best case	Worst case
		average harvest of allotted IFQ shares over a five-year moving average period, except in case of death or disability.
Action 9	Preferred Alternative 2: Allocate adjustments in the commercial quota proportionately among recognized IFQ shareholders (e.g., those on record at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment.	Alternative 1: No action. Do not specify provisions for how to handle annual adjustments in the commercial quota.
Action 10	Preferred Alternative 2: Require all fishing vessels engaged in harvesting red snapper under the IFQ program to be equipped with VMS.	Alternative 1: No action. Do not require commercial red snapper vessels be equipped with VMS.
Action 11	Any cost recovery program	No cost recovery program

Table 6.15.3. Alternatives for each action that provide either the best- or worst-case scenario for the social and economic environments.

	Social/economic environment	
Action	Best	Worst
Action 2	Preferred Alternative 2: Do not limit the duration of the IFQ program. However, require a program evaluation every 5 years.	Alternative 3: Limit the duration of the IFQ program to five years
Action 3	Preferred Alternative 1: No action. Do not constrain the number or amount of shares that can be owned by a participant in the IFQ program.	Alternative 2: For any single fishing year, no person shall possess IFQ shares, which comprise more than the following percent of the total quota allocated to the IFQ program two percent.
Action 4	Preferred Alternative 3: Restrict initial eligibility to persons who own a Class 1 or Class 2 license. Permanent resident aliens who currently own a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this IFQ program.	Alternative 1: No action. Do not restrict initial eligibility in the IFQ program.
Action 5	Preferred Alternative 2: Allocate initial IFQ shares proportionately among eligible participants based on the average annual landings associated with their current license(s). Allow Class 1 license holders (if eligible) to select ten consecutive years of data during the time period 1990 through 2004. Allow Class 2 license holders to select five years of data during the	Alternative 1: No action. Do not specify a methodology for allocating initial IFQ shares.

	Social/economic environment	
Action	Best	Worst
	time period 1998 through 2004. Preferred Alternative 4: Current holders of Class 1 licenses issued on the basis of historical captain status may select seven years of data.	
Action 6	Preferred Alternative 2: The RA will review, evaluate, and render final decision 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.	Alternative 1: No Action. Do not specify provisions for an appeals process associated with the IFQ program.
Action 7	Preferred Alternative 1: No action. Do not limit to whom shares/allocations can be transferred.	Alternative 3: IFQ shares/allocations can be transferred only to IFQ shareholders. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.
Action 8	Preferred Alternative 1: No action. Do not specify a minimum landings requirement (e.g., use it or lose it provision) for retaining IFQ shares.	Alternative 2B: Any 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% annual average harvest of allotted IFQ shares over a three-year moving average period, except in case of death or disability.
Action 9	Preferred Alternative 2: Allocate adjustments in the commercial quota proportionately among recognized IFQ shareholders based on the percentage of the commercial quota each holds at the time of the adjustment.	Alternative 1: No action. Do not specify provisions for how to handle annual adjustments in the commercial quota.
Action 10	Alternative 1: No action. Do not require commercial red snapper vessels be equipped with VMS.	Alternative 2: Require all fishing vessels engaged in harvesting red snapper under the IFQ program to be equipped with VMS.
Action 11	Alternative 1: No action. No IFQ cost recovery plan will be implemented.	Either Alternative 2 or Alternative 3

Table 6.15.4. Alternatives for each action that provide either the best- or worst-case scenario for the administrative environment.

	Administrative Environment	
Action	Best case	Worst case
Action 2	Alternative 1: No action. Do not limit	Alternative 3a: Limit the

	Administrative Environment	
Action	Best case	Worst case
	the duration of the IFQ program.	duration of the IFQ program to five years.
Action 3	Alternative 1: No action. Do not constrain the number or amount of shares that can be owned by a participant in the IFQ program.	Alternative 2a: For any single fishing year, no person shall possess IFQ shares, which comprise more than 2 percent of the total quota allocated to the IFQ program.
Action 4	Alternative 2: Restrict initial eligibility to persons who own a Class 1 license. Permanent resident aliens who currently own a Class 1 license will be included in the initial allocation.	Alternative 1: No action. Do not restrict initial eligibility in the IFQ program.
Action 5	Alternative 1: No action. Do not specify a methodology for allocating initial IFQ shares.	Alternative 3: Allocate initial IFQ shares equally among all eligible participants.
Action 6	Preferred Alternative 2: The Regional Administrator (RA) will review, evaluate, and render final decision 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.	Alternative 1: No Action. Do not specify provisions for an appeals process associated with the IFQ program.
Action 7	Alternative 3: IFQ shares/allocations can be transferred only to IFQ shareholders. Eligible individuals must be persons, who are U.S. citizens or permanent resident aliens.	Alternative 1: No action. Do not limit to whom shares/allocations can be transferred.
Action 8	Preferred Alternative 1: No action. Do not specify a minimum landings requirement (e.g., use it or lose it provision) for retaining IFQ shares.	Alternative 2B: Any 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% annual average harvest of allotted IFQ shares over a three-year moving average period, except in case of death or disability.
Action 9	Preferred Alternative 2: Allocate adjustments in the commercial quota proportionately among recognized IFQ shareholders (e.g., those on record at the time of the adjustment) based on the percentage of the commercial quota each holds at the	Alternative 1: No action. Do not specify provisions for how to handle annual adjustments in the commercial quota.

	Administrative Environment	
Action	Best case	Worst case
	time of the adjustment.	
Action 10	Alternative 2A: Require all fishing vessels engaged in harvesting red snapper under the IFQ program to be equipped with VMS. The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for or arranged by the owner of the IFQ shares	Alternative 1: No action. Do not require commercial red snapper vessels be equipped with VMS.
Action 11	Alternatives 2 and 3. All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The fee collection and submission will reside with the recognized IFQ shareholder (Alternative 2) or the IFQ dealer/processor (Preferred Alternative 3)	Alternative 1: No action. No IFQ cost recovery plan will be implemented.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects of an IFQ system on the biophysical and socioeconomic environments are positive. Avoidance, minimization, and mitigation are not applicable. Cumulative effects on the administrative environment could result in placing a strain on administrative resources. However, the cost recovery program would be a source of additional revenue and help support administrative environment.

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.

6.16 Unavoidable Adverse Effects

Administrative Costs

The actual cost of the setup and operation of the proposed IFQ program may exceed the amount NMFS is able to recover from the industry, resulting in an unavoidable, adverse administrative effect. The Magnuson-Stevens Act currently allows the Secretary to collect up to three percent of the ex-vessel value of the fishery to assist in recovering the actual costs of the IFQ program. Based on 2003 TAC and ex-vessel value, the Secretary could collect up to $383,625 for the first year of the program. This cost recovery fee cannot be used for federal overhead.

The actual cost of development, implementation, and operation of the proposed IFQ program for the commercial GOM red snapper fishery is unknown. Some information can be gained by comparison to another IFQ program. NMFS implemented an IFQ program for halibut and sablefish in Alaska (Alaska IFQ program) in the mid 1990's. Developing the necessary infrastructure for the program was estimated to cost about $2 million. Because the cost of establishing infrastructure for the proposed IFQ program would not be wholly dependent on the number of participants, the proposed IFQ program could cost a similar amount to set up.

Monitoring and enforcement costs of the two programs could differ significantly, however, because the proposed red snapper IFQ program would likely have far fewer participants. Monitoring and enforcement of the Alaska IFQ program cost about $3.5 million in 2003, for a program with 2,451 permit holders. If the no action alternative were chosen for permit eligibility, then anyone could gain part of the initial allocation, and the proposed IFQ program would oversee up to 200 permit holders, if landing one half of one percent of the red snapper TAC would provide enough revenue to warrant retaining shares. Based on 2003 value, the gross value of this share would be over $60,000. Even if the preferred alternative is chosen and only Class 1 and Class 2 license holders are included in the initial allocation, the number of permit holders would be 764 as of June 30, 2005. Although we cannot predict how many permit holders there will be after the initial allocation, due to the influence of market forces on share sales, the number of participants in the proposed IFQ program (and their associated monitoring and enforcement costs) would likely be a fraction of the number participating in the Alaska IFQ program.

Loss of Employment and Community Effects

Consolidation in any fishery can result in some participants being excluded. Many of these negative effects are avoidable, if certain alternatives are chosen. For example, if initial eligibility is open to anyone, then no interested parties will be initially excluded from the program. Similarly, if shares can be transferred to any U.S. citizen, then all U.S. citizens with funds will have a chance to enter the fishery. Finally, if NMFS pays all of the initial and ongoing expenses of VMS, this would remove a burden on fishermen that could otherwise be enough to make them leave the fishery (especially part-time fishermen).

However, after the initial allocation, there would be a cost to enter the program, as new entrants must purchase shares. Therefore, those interested in entering the fishery that cannot afford to buy shares will be excluded from the program. Communities would also be affected. Consolidation is expected to result in fewer boats catching more of the TAC, causing some captains and crew who previously made at least part of their living from red snapper to lose employment revenue. The resultant loss of small fishing businesses would have a detrimental effect on some fishing communities. The extent of these negative effects on employment and communities is dependent on the degree of consolidation that occurs.

One of the principal reasons for developing the proposed IFQ program is the fishery is overcapitalized, that is, the collective harvest capacity of fishery vessels and participants is in excess of that required to harvest the TAC. To remedy this problem, by definition the harvest capacity must be reduced. Therefore, loss of employment for some current participants, and negative effects on small communities, are unavoidable adverse effects of the proposed action.

Retail Price Increases

An IFQ program could result in an increase in the average price paid for red snapper by dealers. Under the proposed IFQ program, dealers could be responsible for some administrative functions they are not currently responsible for (such as collection of cost recovery fees and submission to NMFS). The dealer could pass the increased red snapper prices and cost of administrative effort on to the consumer, resulting in higher retail prices for GOM red snapper, causing an unavoidable adverse effect on consumers.

6.17 Relationship Between Short-Term Uses and Long-Term Productivity

An IFQ program provides an avenue for the fishery to transition to a more economically efficient fishery. Over time, vessels should become more economically productive, that is, they should be harvesting the same amount of fish at lower cost and higher ex-vessel revenues. This should also result in fewer vessels actively fishing for red snapper. As discussed in section 6.1.1, the IFQ program should reduce the amount of fishing gear interacting with the bottom, lower the discard mortality rate for red snapper, and reduce bycatch in the directed red snapper fishery. Because fishermen with IFQ shares have an increased stake in the red snapper fishery, they would have an increased interest in following measures adopted to rebuild the red snapper stock.

The various alternatives for the structure of an IFQ system are mainly designed to let the IFQ program properly function and/or to address equity and Magnuson-Stevens Act concerns. Some alternatives would have more direct relevance to the issue of short-term uses vs. long-term productivity. These include:

- The duration of an IFQ program affects the probability of achieving the efficiency objective of the program. The longer the duration the higher the probability of achieving the program's objectives.

- The ownership cap helps to ensure more individuals could participate in the fishery in the short-term and long-term, but it does so at the possible expense of some operations not reaching their most efficient level.

- Provisions regarding eligibility of initial IFQ allocation would tend to limit the short-term participants in the fishery but not necessarily the long-term participants.

- Provisions on the initial apportionment of IFQ shares would determine the level of participation each recipient could have at the start of the IFQ program. Some may be able to increase their level of operation depending on such conditions as ownership cap, access to financial resources and over-all skill in business operations.

- The appeals process could have more relevance to addressing potential problems in the recording of harvest catch. While an IFQ program invites many to file appeals, the level of potential changes in allocations is likely to be low, since most landings records are currently available.

- Transfer eligibility requirements would be a very important feature of an IFQ program. These requirements would have more relevance on the long-term status of the fishery. The less restrictions imposed on transfer, the more likely for an efficient fishery to develop over the long-term, regardless of the initial conditions.

- The "use it or lose it" feature would have direct relevance on the short-term and long-term uses of the IFQ shares. If some form of "use" provision were introduced, short-term and long-term harvests of red snapper would likely be high. A "no use" provision has possibly minimal effects in the short-term but over time as TAC increases, some IFQ shares might not be fished. If coupled with the "no banking" provision, the "no use" provision could eventually lead to more savings of fish.

- Provisions for allocations in case the commercial quota is adjusted would have their effects mainly on the short-term uses of IFQ shares.

- The VMS requirement would have no effects on the short-term and long-term uses of IFQ shares. However, they do affect the profitability of harvest operations.

- Provisions regarding cost recovery would affect both short-term and long-term uses of IFQ shares mainly through the introduction of additional operating costs.

The setting of TAC would be mainly dependent on the rebuilding strategy for the stock, but the economics of the fishery would eventually change with fewer and more efficient vessels fishing the red snapper commercial quota. Under an IFQ program, a reduction in TAC for rebuilding purposes could result in relatively lower adverse impacts to the harvesting sector than the current license limitation system. The IFQ program vessels would be harvesting red snapper more efficiently and receiving a better dockside price. An increase in TAC can also result in relatively higher benefits to the harvesting sector. A strong possibility exists for higher TACs in the future to be above what is economically optimal for the harvesting sector. A non-binding TAC can only help in the long-term sustainability of the stock and the fishery dependent on it.

6.18 Irreversible and Irretrievable Commitments of Resources

Freeman (1992) defines irreversible commitments as "those that cannot be reversed, except perhaps in the long term." These would include such instances where ore was removed from a mine or a species went extinct. Irretrievable commitments are "those that are lost for a period of time" such as when the right-of-way of a road running through a forest is lost from timber production.

Amendment 26 would not result in any irreversible or irretrievable commitments of resources. The purpose of the amendment is to establish an IFQ program to allow the commercial reef fish fishery to more efficiently and safely harvest red snapper. The results of the actions proposed in this amendment should actually increase the fishery resources in the GOM without significant adverse effects on other GOM resources. These gains would be obtained through decreases in bycatch and regulatory discards.

6.19 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 4, 5, and 6.1-6.11. The other elements are not applicable to the actions taken in this document. Because this amendment concerns the management of a marine fish stock, it is not in conflict with the objectives of federal, regional, state, or local land use plans, policies, and controls (Item f). However, it should be noted the goals of this amendment are to end the red snapper derby fishery and rebuild the red snapper stock. These are goals the federal government shares with regional and state management agencies (see Section 5.4).

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 it's fishery, and should not affect land-based, urban environments.

7.0 MAGNUSON-STEVENS ACT PROVISIONS FOR LIMITED ACCESS SYSTEMS

Section 303(b)(6) of the Magnuson-Stevens Act provides for the establishment of limited access management systems in order to achieve OY if, in developing such a system, the Council and Secretary take into account: 1) Present participation in the fishery; 2) historical fishing practices in, and dependence on, the fishery; 3) the economics of the fishery; 4) the capability of fishing vessels used in the fishery to engage in other fisheries; 5) the cultural and social framework relevant to the fishery and any affected fishing communities; and 6) any other relevant considerations. These issues are discussed below.

7.1 Present Participation in the Fishery

The Gulf reef fishery is a multi-species fishery with two major user groups, namely, the recreational and commercial sectors. From 1990 through 2002, an average of 17.9 million private boat and charter fishing trips occurred, of which three percent to five percent targeted GOM reef fishes. During this period, recreational anglers harvested greater than 13.0 mp of reef fish annually (GMFMC 2005b). Red snapper is one of the most commonly harvested reef fish species by recreational anglers.

Between 1990 through 2003, commercial fishing vessels landed an annual average of 21.0 mp whole weight of GOM reef fish species, with an annual ex-vessel value of $38.7 million (GMFMC 2005b). In 2004, the commercial reef fish sector was composed of 1,129 reef fish permitted vessels. Due to the moratorium on issuance of additional commercial reef fish permits, the number of permitted vessels has declined since 1992 (GMFMC 2005b). The Council recently approved Amendment 24 to the Reef Fish FMP, which established an indefinite limited access system for the commercial reef fish fishery.

In 1996 the Councils ITQ program was implemented (60 FR 61200, November 29, 1995) by Amendment 8 and almost immediately suspended by emergency interim rule (61 FR 7751, February 29, 1996), because the Congressional Bill for the SFA was pending approval and it created a moratorium on implementing IFQs or ITQs through October 1, 2000. As a result of this action the Council developed a license limitation program for red snapper fishermen, which was implemented by Reef Fish Amendment 15 (62 FR 67714, December 30, 1997). The amendment established Class 1 licenses, which allow the license holder to land up to 2,000 pounds of red snapper per trip and Class 2 licenses, which allow the license holder to land up to 200 pounds per trip. There were 136 Class 1 and 628 Class 2 licenses issued.

Red snapper used to be the dominant species landed in the GOM reef fish fishery, with approximately one half of the catch landed by the distant water fleet, but now has been replaced by groupers. Since 1990, the red snapper fishery has been managed under an overall TAC, which is allocated between the commercial (51 percent) and recreational (49 percent) sectors. The TAC for 1993 and 1994 was set at 6 mp, and subsequently was set at 9.12 mp. The recreational fishery was managed mainly through a bag limit without any closure. In 1997, a recreational quota was implemented. In 2000, a fixed closed season was established for the recreational fishery to limit harvest.

The commercial red snapper fishery is managed under an overall quota and closes when the quota is filled. There was no closure in 1990, but the fishery has closed every year thereafter (except 2005). Landings of red snapper by the commercial sector have ranged from 2.23 mp in 1991 to 4.84 mp in 2000 (GMFMC 2004b). Since 1995, the commercial season has remained open less than 100 days annually (GMFMC 2004b).

Permitting or licensing in the commercial reef fish fishery has been in effect since 1990. The imposition of a moratorium on new issuance of commercial reef fish permits imposed a limitation on the number of participants in the reef fishery. The red snapper endorsement system further curtailed the number of permit holders who can land up to 2,000 pounds of red snapper per trip. The endorsement approach, with a few changes mostly related to the transferability of the endorsement, was readily converted into a license limitation system.

7.2 Historical Fishing Practices in, and Dependence on, the Fishery

Camber (1955), Carpenter (1965), Allen and Tashiro (1976), GMFMC (1981; 1989) and Goodyear (1992) have reviewed the history and status of the red snapper fishery. Waters (1988; 1992a) summarized these reviews and described the structure of the reef fish fishery with major focus on the commercial sector. The red snapper fishery in the GOM has been in existence for over a hundred years, and fishing practices have changed through the years in response to technological, market, stock, and regulatory changes. Hook-and-line gear was the predominant gear used in the fishery up until the late 1970's. Since then other gear types such as bandit reels (manual or power-driven) have been increasingly used. Fishing effort has now become more concentrated off Louisiana as the stock suffered large decline in many areas in the GOM and as Mexican waters were closed to U.S. fishing vessels. The overfished status of red snapper, greater marketability of other species, and regulations imposed since 1990 are some of the major factors that led to such diversified fishing practice.

The license limitation system implemented was similar to the red snapper endorsement system particularly in terms of granting the same type of license to each qualified vessel. The license limitation system likely compelled many fishermen to deviate from their historical fishing pattern. In addition to the license, a trip limit per vessel has been imposed, providing fishermen incentive to modify their fishing operation in order to maximize the number of trips they can make. For those primarily targeting red snapper, such situation may have led to a downsizing of operations or less reliance on red snapper

fishing. Implementation of open and closed seasons has also likely resulted in changes in fishing practices.

7.3 Economics of the Fishery

Sections 8.4.2 and 8.4.3 herein describe the economic characteristics of the commercial and recreational red snapper fishery. Additionally, GMFMC (1981; 1989) and Waters (1988; 1992a; 1992b) described in more details the economics of the commercial reef fishery. Landings of red snapper continued its long-term decline since 1965. The decline in landings is due in part to a prohibition on catches from foreign fishing grounds (approximately one-half of red snapper commercial landings were from Mexican waters), a decline in the size of domestic snapper population, and regulations. The commercial quota for red snapper was met on August 24, 1991, and the fishery closed the remainder of the year. Total 1991 landings were 2.2 mp. In 1992 the commercial quota of 2.04 mp was filled early and the fishery closed on February 22, 1992, but was re-opened from April 3 through May 14, 1992 under a 1,000-pound trip limit per vessel. An estimated 3.1 mp were landed in that year. In 1993 and 1994 the fishery closed after 95 days and 77 days, respectively, with estimated landings of 3.2 mp. In years thereafter, the fishery remained open as few as 52 days (1995) to as many as 97 days (2003). Early closure was due to unusually high catch rates and a derby atmosphere.

In 1991 red snapper landings had a total ex-vessel value of $5.3 million. This is only about 15 percent of total reef fish values in 1991, and is definitely a small percentage relative to previous years: 27 percent in 1985, 45 percent in 1980, 64 percent in 1970, and 73 percent in 1960. Real ex-vessel value (i.e., adjusted for inflation) of red snapper declined by approximately 68 percent since 1983. Although ex-vessel prices for red snapper increased steadily over time, the increases were unable to offset both inflation and the decline in landings. Of course, ex-vessel prices dropped significantly at the height of the derby in January and February of 1992. The drop in ex-vessel prices was also reflected in the drop of prices at the New York Fulton Fish Market due to flooding of the market with fish.

Since implementation of a quota management system, dockside prices have been unusually low. Both nominal and real average annual dockside prices generally increased over time from 1962 through 1990, but since then, prices have declined sharply during each open season both in nominal and real terms. The magnitude of the effect of quota management on real average annual dockside prices was estimated by Waters (2001) to be approximately $1.14 per pound, as measured as the vertical distance between the price-quantity relationships for the 1962-1990 and 1992-2002 periods.

Aside from domestic landings of groupers and other snappers, red snapper has also a close market substitute in imports. Annually, the U.S. imports a significant amount of fresh and frozen snappers and groupers. Most imports of fresh snappers and groupers originate from countries in the Caribbean or along the GOM, especially Mexico and Panama. Most imports of frozen snappers and groupers originate from Mexico or various countries in Southeast Asia.

Existing demand estimates (Cato and Prochaska, 1976; Keithly and Prochaska, 1985) show the demand for both snappers and groupers are price inflexible. Over time, demand for these species has become more price inflexible especially as imports have accounted for an increasing share of total snapper/grouper supplies in the U.S. The major implication of such type of demand is revenues to domestic fishermen would increase (decrease) with an increase (decrease) in landings.

Although domestic red snapper still commands a market, the increasing share of imports in the U.S. supplies of snappers necessitates the domestic harvesting industry has to be more efficient to stay competitive. The IFQ program proposed in this amendment would increase efficiency in the harvesting sector by reducing overcapacity in the commercial fishery, eliminate, to the extent possible, the problems associated with derby fishing and improve market conditions by supporting a steadier supply of fresh red snapper

7.4 The Capability of the Fishing Vessels Used in the Fishery to Engage in other Fisheries

Practically all vessels engaged in the fishery could readily be used to target other fisheries. Heavy reliance of some vessels on red snapper fishing is more a function of the skills and interests of the operators and crew members. In this respect, an IFQ program or license limitation would not likely affect the capability of fishing vessels operating in other fisheries. Because licenses are currently transferable, and, if implemented, IFQ shares would also be transferable, fishermen who hold a Gulf reef permit could purchase shares to remain operating in the red snapper fishery if they are excluded from the fishery during initial apportionment of shares.

7.5 Cultural and Social Framework

Amendment 1 to the Reef Fish FMP (GMFMC 1989) notes "the user groups utilizing and dependent on the reef fish resource need to be identified and their socioeconomic and sociocultural characteristics delineated to enable analysis of their respective impacts on the resource and the differential impacts alternative management measures may exert on the various user groups." Also, under "Research and Recommendations" it is noted, "The socio-economic and socio-cultural aspects of the reef fish fishery need to be evaluated with the purpose of examining the potential utility of a limited entry management strategy and for the purpose of allocations." There have, however, been no directed studies of the socio-cultural aspects of either the reef fish fishery generally or of the red snapper fishery in particular. However, social-science research in the GOM is currently ongoing. The social environment of the commercial and recreational fishery is described in detail in Section 8.4.4. Additionally, the Generic Essential Fish Habitat Amendment (GMFMC, 2003a) provides more extensive characterization of fishing communities throughout the Gulf coasts.

Fishermen involved in the red snapper fishery are imbedded within the larger reef fish fishery, which itself is embedded within the complex fisheries and fishing industries and

communities throughout the GOM. There are relatively few fishermen today who consider themselves "red snapper fishermen" exclusively. Fishermen landing red snapper commercially include shrimpers, "schooner"-type fishermen who fish primarily for red snapper, multi-gear fishermen who may use bandits, longlines or other gear for various fisheries throughout the year, charter or headboat fishermen who fish commercially during portions of the year, and many others. Many of the larger vessels are very mobile throughout the GOM, using various ports of convenience for service and landing bases. It should be noted, Hurricanes Katrina and Rita have severely impacted the fishery and processing facilities for red snapper and other reef fish species throughout the GOM and those coastal communities dependent on these fisheries.

Historically, the commercial red snapper fishery began from ports in the eastern GOM, principally in Florida, with sailing schooners that fished from the northeastern GOM to areas off the Yucatan Peninsula in Mexico. Although a few converted sailing craft, or more recent wooden vessels built along traditional lines but updated with modern equipment, are still used in the fishery, the majority of the vessels used in the fishery today are of diverse modern materials, sizes and designs. In addition, the majority of the fishing effort has shifted from Mexico and the eastern GOM to the middle and western GOM, largely off the coast of Louisiana and to some extent Texas.

These changes have resulted in changes in the socio-cultural character of the fishery. In the days of the "snapper schooners" crews were large and fishing focused from a few ports such as Biloxi, Pascagoula, and Tampa. Over time, with increasing technology and diversity in the fishery, the bases for the commercial catch spread throughout the Gulf States, with the fishery participants reflecting the diverse character of their home communities. Fishermen in the current commercial fishery are based in a wide variety of communities, which range from the urbanized areas of Tampa or Corpus Christi, to smaller cities and towns such as Port Isabel or Pascagoula, to very rural areas such as the parishes in south Louisiana. They may be Hispanic, Cajun, Anglo or African or Native American. Although a large proportion of the red snapper landings are still made by some of the more "traditional" red snapper vessels, the fishery in terms of participants is increasingly characterized by a more diverse set of fishermen many of who are part-time, either in the red snapper fishery or in fishing altogether.

7.6 Any Other Relevant Considerations

The current license limitation system has effectively excluded some individuals to continue their participation in the red snapper fishery. They can re-enter the fishery only through lease or purchase of existing Class 1 or Class 2 license. The reported selling price for a Class 1 license is around $50,000 and that for a Class 2 license is much lower. The proposed IFQ program would allocate red snapper quota shares only to Class 1 and Class 2 license holders based on individual landings history. While all Class 1 license holders would be entitled to some quota allocations, only 482 out of 628 Class 2 license holders have a landings record. The other 146 would be excluded from continued participation at the start of the IFQ program. Over time, however, anyone who has the wherewithal to secure IFQ quotas can participate in the red snapper fishery.

An IFQ program is expected to result in consolidation of fishing operations, resulting in a more efficient harvesting operation. Such consolidation, nonetheless, also results in the displacement of some fishermen. Those with less employable fishing or non-fishing skills, or those residing in communities with few alternative forms of employment, would be more adversely affected than others. The IFQ program applies only to the commercial sector, but the recreational sector is also a major participant in the fishery, with forty nine percent of the annual red snapper TAC being allocated to this sector. Effectively controlling the recreational sector to its allocation is still a vital component in the overall management of the red snapper stock. Although the management of the recreational sector does not directly affect the success of an IFQ program in the commercial sector in general, it does indirectly affect the benefits an IFQ program can generate for the commercial sector: 1) The red snapper rebuilding program is partly premised on controlling the overall red snapper TAC. Quota overruns in the recreational sector may eventually result in TAC reductions, and thus reduce profitability in the commercial sector; and 2) from an enforcement perspective, any recreationally caught red snapper that enter the commercial market would compete with IFQ-caught red snapper. This can only reduce the profits harvesters can realize under an IFQ program.

Red snapper pass through numerous landing ports and dealers throughout most of the northern GOM. Identification and monitoring of these dealers are important for the success of the IFQ program. The identification stage is not a big issue now. The current permitting system for reef fish dealers has kept track of these dealers, including the location of their facilities. A similar permitting system, but more specific to red snapper, would be required under the IFQ program. The monitoring issue requires establishment of a system that can track IFQ landings and prices as well as detect certain anomalies but is not burdensome on the dealers.

8.0 REVISED REGULATORY IMPACT REVIEW

8.1 Introduction

NMFS requires a 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 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 the alternatives in this plan amendment to the Reef Fish FMP would have on the commercial and for-hire reef fish industry.

8.2 Problems and Issues in the Fishery

The specific problems addressed in this plan amendment are enumerated and discussed in Section 3 and include:

1. The harvest capability of the red snapper fleet is larger than needed to harvest the commercial quota in an economically efficient manner.

2. The derby fishery compromises vessel safety by encouraging fishermen to begin or continue trips under adverse weather conditions.

3. The total revenue derived from current landings is not reaching the highest level possible because the quota system creates a derby, which tends to depress the average price paid to the fishermen. Lower prices may benefit consumers.

4. A derby fishery tends to reduce producer surplus that would otherwise be available from the fishery and has an unknown but limited effect on consumer surplus derived from the fishery.

5. The current management system contains a number of regulations, which in aggregate lead to high administration costs, difficulties in enforcement and compliance, inefficient production of available quota, frustration on the part of fishery participants, and difficulties in collecting timely data needed to track and manage the fishery.

6. The red snapper stock rebuilding program could be impacted by possible quota overruns associated with the derby fishery, and discard mortality during extended closed periods.
7. User conflicts are being exacerbated by differential trip limits under the endorsement system and by the short red snapper quota seasons, which favor those fishermen who are closer to the resource, or have vessels that can operate in inclement weather.

8. Net economic benefits are being eroded due to the market glut from the derby fishery and the inability of the industry to provide red snapper product year round.

8.3 Objectives

The objectives of this amendment are described in Section 3 and are incorporated here by reference. The major objectives identified for this plan amendment are to address overcapacity in the commercial red snapper fishery and problems associated with derby fishing.

8.4 Description of the Fishery

8.4.1 General features

Since 1990, the red snapper fishery has been managed through the setting of an annual TAC. An implicit TAC of about 6.0 mp was set in 1990, followed by explicit TACs of 4.0 mp in 1991 and 1992, 6.0 mp in 1993 through 1995, and 9.12 mp from 1996 through the present. Table 8.4.1 shows a comparison of TACs and harvests from 1990 through 2002.

Table 8.4.1. Combined red snapper harvest.

Year	TAC	Total Directed Harvest
1990	No TAC was explicitly specified	3.90 mp
1991	4.0 mp	4.17 mp
1992	4.0 mp plus emergency season	6.17 mp
1993	6.0 mp	8.31 mp
1994	6.0 mp	7.51 mp
1995	6.0 mp	6.20 mp
1996	9.12 mp	7.92 mp
1997	9.12 mp	10.20 mp
1998	9.12 mp	10.40 mp
1999	9.12 mp	10.18 mp
2000	9.12 mp	8.77 mp
2001	9.12 mp	9.13 mp
2002	9.12 mp	10.11 mp
2003	9.12 mp	9.16 mp
2004	9.12 mp	8.73 mp (preliminary)

8.4.2 The Commercial Fishery

Waters (2003) recently reviewed the history and status of the commercial red snapper fishery. U.S. fishermen have fished commercially for red snappers since the mid-1800s. During the modern period, landings of red snapper exhibited an almost uninterrupted decline between 1965 and 1980, from 14.0 mp to 5.0 mp. Landings increased for three consecutive years to 7.3 mp in 1983, primarily due to increased catches with bottom longlines, but then dropped to 2.7 mp in 1990. The decline in landings was due in part to

a decline in catches from foreign fishing grounds (GMFMC, 1981) and a decline in the size of the domestic fish population (Goodyear and Phares, 1990). Since 1990, the commercial fishery has been managed with annual quotas established as 51 percent of TAC. Table 8.4.2 shows a comparison of commercial quotas and landings from 1990 through 2004.

Table 8.4.2. Commercial red snapper harvest (from Tables 8 and 9 in Schirripa and Legault (1999), except 1999-2002 landings from NMFS SERO))

Year	Commercial Quota	Commercial Harvest	Days Open (days that open or close at noon are counted as half-days) ("+" = split season)
1990	3.1 mp	2.66 mp	365
1991	2.04 mp	2.23 mp	236
1992	2.04 mp plus emergency season	3.14 mp	52 + 42 = 94
1993	3.06 mp	3.02 mp	104
1994	3.06 mp	3.25 mp	78
1995	3.06 mp	2.95 mp	50 + 2 = 52
1996	4.65 mp	4.35 mp	64 + 22 = 86
1997	4.65 mp	4.79 mp	53 + 18 = 71
1998	4.65 mp	4.61 mp	39 + 28 = 67
1999	4.65 mp	4.67 mp	42 + 22 = 66
2000	4.65 mp	4.84 mp	33 + 25 = 58
2001	4.65 mp	4.61 mp	56 + 23 = 79
2002	4.65 mp	4.78 mp	67 + 27 = 94
2003	4.65 mp	4.58 mp	67 + 27 = 97
2004	4.65 mp	4.62 mp	63 + 32 = 95

Ex-vessel value received by commercial red snapper fishermen in the GOM increased throughout the 1962-1983 period to a record $12.0 million. Much of the increase was due to inflation, as measured by the consumer price index for all items and all urban consumers (CPI-U, with 2002 base year). After adjusting for inflation, total ex-vessel value from sales of red snapper generally followed the trend in landings.

Since 1990, the principal method of managing the commercial fishery for red snapper has been with quotas set at 51 percent of TAC and seasonal closures after each year's quota was filled. The result has been a race for fish in which fishermen are compelled to fish as quickly as possible to maximize their shares of the overall quota before the season is closed. Seasons have become shorter despite implementation of trip limits in 1992 and larger minimum size limits in 1994 and 1996. The fishing year is now characterized by short periods of intense fishing activity with large quantities of red snapper landed during the open seasons rather than lower levels of activity with landings spread more uniformly throughout the year. Recently, the fishery has been managed with separate spring (beginning in February) and fall (beginning in October) quotas with 10-day open seasons at the beginning of each month, which has spread industry landings over a greater number of months during the year.

One consequence of quota management has been unusually low dockside prices necessary for the market to absorb the large volumes of fish landed during relatively short periods of time. Both nominal and real average annual dockside prices generally increased over time from 1962 through 1990, but since then, prices have declined sharply during each open season both in nominal and real terms. The magnitude of the effect of quota management on real average annual dockside prices was estimated by Waters (2001) to be approximately $1.14 per pound, as measured as the vertical distance between the price-quantity relationships for the 1962-1990 and 1992-2002 periods.[12]

Management of the red snapper fishery has reduced industry revenues. The race for fish caused by quota management caused a downward shift in the entire price-quantity relationship so that fishermen received lower prices for any given quantity of red snapper landed. However, revenues would have declined even without a race for fish. The observation that trends in real dockside prices have followed trends in landings suggests dockside demand for red snapper is price elastic. Price elasticity of demand refers to the responsiveness of dockside prices to changes in industry landings, and is measured as a movement along the price-quantity demand relationship. When the demand relationship is price elastic, regulated reductions in landings result in a less than proportional increase in prices, which causes total revenues to fishermen to fall.

Trip limits were implemented in an effort to slow the race for fish. At the beginning of the 1993 season, 131 boats qualified for red snapper endorsements on their reef fish permits that entitled them to land up to 2,000 pounds of red snapper per trip, while boats without endorsements were limited to 200 pounds per trip. The endorsement system remained in effect until formalized into a license limitation system in 1998. Boats with endorsements were granted Class 1 licenses that entitled them to land up to 2,000 pounds per trip. Other boats with a history of landing red snapper qualified for Class 2 licenses to land up to 200 pounds per trip. Boats that did not qualify for either type of license are restricted to the recreational bag limit when the recreational red snapper season is open.

[12] The price-quantity relationship was estimated with data for 1962-1999. Updated information for 2000-2002 appears to follow the same pattern.

Currently, there are 136 Class 1 licenses and 628 Class 2 licenses. Some landings history for Class 1 licenses can be traced back to 1990, while that for Class 2 can be effectively traced back only to 1998. The longer date for Class 1 is made possible by the adoption of an endorsement system in 1993, which used landings in 1990, 1991 and 1992 as the qualifying criterion. Prior to the implementation of license limitation in the commercial red snapper fishery in 1998, any vessel without an endorsement but with a valid commercial reef fish permit could land up to 200 pounds of red snapper per trip. Since then no vessels without Class 1 or Class 2 license could land commercial amounts of red snapper.

As part of the license limitation program, Class 1 licenses were issued to qualifying historical captains. Several individuals applied under this criterion but only seven were determined to have qualified and were thus issued Class 1 licenses. To date, historical captain licenses have all been sold to other fishing entities and they are now simply part of the 136 outstanding Class 1 licenses.

Red snapper licenses are not stand-alone license for fishing purposes. They can be used only by vessels with a valid commercial reef fish permit on board. This condition has set the stage for various types of license transactions, such as placements, which have to be registered with NMFS. A placement is a transfer (usually temporary) and is a lease arrangement. A placement occurs when an owner of a Class 1 license allows his license to be used, but not purchased, by another fisherman on the latter's vessel in order to fish for red snapper. On any given year then, more than one vessel may use the same license, although not at the same time. The majority of Class 1 licenses have undergone transfers over time. Since 1990, only twenty-six Class 1 licenses have remained with the same owner. The remaining Class 1 licenses involved at least one transfer; three licenses were transferred 11 times and 10 licenses were transferred nine times.

Table 8.4.3 shows some landings statistics for Class 1 and Class 2 licenses. For this table, red snapper landings of each license holder are averaged over 1990-2004 for Class 1 and 1998-2004 for Class 2. While all 136 Class 1 licenses register some landings over the period considered, only 482 of 628 Class 2 licenses show some landings. Evident in the table is the very wide variation in average landings among Class 1 license holders and among Class 2 license holders. Average red snapper landings vary from 3,698 pounds to 74,599 pounds for Class 1 and from 0.42 pounds to 8,084 pounds for Class 2 licenses. On average, a Class 1 license holder has substantially higher red snapper landings than a Class 2 license holder. Rather surprising is the fact that some Class 2 licenses landed more red snapper than some Class 1 licenses.

Table 8.4.3. Average annual landings (pounds) of Class 1 and Class 2 license holders.

Period	No. of Entities	Mean Landings	Min Landings	Max Landings
Class 1				
1990-2004	136	25,633	3,698	74,599
Class 2				
1998-2004	482	636	0.42	8084

Sources of basic data: Permit files provided by Janet Miller of NMFS-SERO and logbook data provided by John Poffenberger of NMFS-SEFSC.

Table 8.4.4 provides additional information on the landings history of both license classes when considering only the license's best or highest landings for a given number of years, e.g., best 10 years of landings. The wide disparity in red snapper landings between Class 1 and Class 2 license holders is again very apparent in the table. There is also a wide variation in landings among Class 1 license holders and among Class 2 license holders. As expected, the mean, minimum and maximum landings in Table 8.4.4 are higher than those in Table 8.4.3. As may also be expected, the average, minimum, and maximum landings increase with fewer years considered.

Table 8.4.4. Best average annual landings (pounds) of Class 1 and Class 2 license holders.

Period	No. of Entities	Mean Landings	Min Landings	Max Landings
Class 1 (1990-2004)				
Best 10 years	136	34,378	4,985	92,265
Best 9 years	136	36,230	5,285	98,098
Best 8 years	136	38,172	5,620	100,718
Best 7 years	136	40,214	5,979	103,265
Best 6 years	136	42,409	6,347	105,427
Best 5 years	136	44,816	6,754	109,741
Class 2 (1998-2004)				
Best 7 years	482	715	0.43	9,759
Best 6 years	482	815	0.50	11,385
Best 5 years	482	933	0.60	13,662

Sources of basic data: Permit files provided by Janet Miller of NMFS-SERO and logbook data provided by John Poffenberger of NMFS-SEFSC.

The 136 Class 1 licenses are associated with 95 owners, thus some entities may be classified as fleet operations. There are 17 such entities that own a total of 58 licenses, with some possessing as many as 6 licenses. Table 8.4.5 highlights some landings information of the fleet operations in the commercial red snapper fishery. Total red snapper landings of the 17 fleet operations have increased from a little over half million pounds in 1990 to slightly below two million pounds in 2004. Part of such increase is due to some operations buying up licenses. The average landing per operation also increased from 29,779 pounds in 1990 to 115,848 pounds in 2004, indicating additional licenses brought in more than proportionate additional landings. The standard deviation from the mean is relatively large each year, implying the rather wide variation in landings from one fleet operation to another in any given year. Relative to the red snapper commercial quota, the share of the 17 fleet operations grew from 16 percent in 1990 to 42 percent in 2004. It appears, though, this share has settled at the low 40 percent for several years now.

Table 8.4.5. Landings characteristics of 17 Class 1 fleet operations, 1990-2004.

Year	Total	Mean	Std. Deviation	% to Comm. Quota
1990	506,251	29,779	27,225	16
1991	740,257	43,544	47,631	36
1992	726,798	42,752	38,865	36
1993	1,295,634	76,213	53,872	42
1994	1,173,544	69,032	46,937	38
1995	1,269,711	74,688	54,027	41
1996	1,798,211	105,777	70,274	39
1997	1,926,894	113,346	82,321	41
1998	1,937,429	113,966	73,149	42
1999	1,929,861	113,521	70,339	42
2000	1,852,406	108,965	68,598	40
2001	1,931,928	113,642	89,095	42
2002	1,986,153	116,832	89,107	43
2003	1,949,528	114,678	83,609	42
2004	1,969,429	115,848	109,657	42
1990-2004	22,994,034	90,172	26,800	40

Sources of basic data: Permit files provided by Janet Miller of NMFS-SERO and logbook data provided by John Poffenberger of NMFS-SEFSC.

Commercial vessels landing reef fish, including red snapper, may sell their catch only to fish dealers with federal reef fish permits. Based on information from the permit file, there are 227 dealers possessing permits to buy and sell reef fish species. Most of these dealers are located in Florida (146), with 29 in Louisiana, 18 in Texas, 14 in Alabama, 5 in Mississippi and 15 out of the Gulf States region. There are no specific income or sales restrictions to qualify for a federal permit for dealers, so the total number of dealers can vary from year to year. Some may be operational one year but not in another year.

8.4.3 The Recreational Fishery

The recreational component of the red snapper fishery in the GOM includes charter boats, headboats (or party boats), and private anglers fishing from shore or private or rental boats. Recreational red snapper harvest allocations since 1991 have been set at 49 percent of the TAC, or 1.96 mp in 1991 and 1992, 2.94 mp for 1993 through 1995 and 4.47 mp from 1996 to 2004 (Table 8.4.6). Before 1997, the recreational red snapper fishery was mainly managed through size and bag limits. In 1997, the recreational red snapper allocation was converted into a quota with accompanying quota closure should the sector exceed its quota. Recreational quota closures occurred in 1997, 1998 and 1999. Fixed closures were subsequently established beginning in 2000 to replace the quota closure.

Actual recreational harvests in pounds of red snapper have exceeded the allocation every year except 1991, 1996, and 2000. Recreational landings may have been overestimated. Changes in sampling methodology of the charter boat fishery indicate landings may have been overestimated by 25 to 30 percent for this sector (David Van Voorhees, pers. comm.).

Table 8.4.6. Recreational red snapper harvest (from Table 20 in Schirripa and Legault, 1999 with additional landings provided by NMFS SERO for 1999-2003; 2004 data is solely based on MRFSS).

Year	Recreational Allocation/Quota	Recreational Harvest	Days Open
1990	No allocation was explicitly specified	1.24 mp	365
1991	1.96 mp	1.94 mp	365
1992	1.96 mp	3.03 mp	366
1993	2.94 mp	5.29 mp	365
1994	2.94 mp	4.26 mp	365
1995	2.94 mp	3.25 mp	365
1996	4.47 mp	3.57 mp	366
1997	4.47 mp (quota begins)	5.41 mp	330 (closed 11/27/97)
1998	4.47 mp	5.76 mp	272 (closed 9/30/98)
1999	4.47 mp	5.51 mp	240 (closed (8/29/99)
2000	4.47 mp (seasonal closure begins)	3.92 mp	194 (4/21/00 to 10/31/00)
2001	4.47 mp	4.52 mp	194 (4/21/01 to 10/31/01)
2002	4.47 mp	5.33 mp	194 (4/21/02 to 10/31/02)
2003	4.47 mp	4.58 mp	194 (4/21/03 to 10/31/03)
2004	4.47 mp	4.11 mp (MRFSS)	194 (4/21/03 to 10/31/03)

In the Gulf states, about 3.3 million in-state anglers took almost 23 million trips and caught over 167 million fish in 2003. This tally of anglers and trips does not include anglers and trips taken solely in Texas for all fishing modes or solely through headboats for all Gulf states. More than 70 percent of anglers were from Florida, with the rest coming from Louisiana, Alabama and Mississippi, in that order. Florida accounted for a large percentage (70 percent) of the trips, 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 (NMFS, 2004b).

The typical angler in the Gulf region is 44 years old, male (80 percent), white (90 percent), employed full time (92 percent), with a mean annual household income of $42,700. The mean number of years fished in the state was 16 years for GOM anglers. The average number of fishing trips taken in the 12 months preceding the interview was

about 38 and these were mostly (75 percent) one-day trips where expenditures on average were less than $50. Seventy-five percent of surveyed anglers reported they held a saltwater license, and 59 percent of them owned boats used for recreational saltwater fishing. Those anglers who did not own their own boat spent an average of $269 per day on boat fees (Holiman, 1999) when fishing on a party/charter or rental boat. About 76 percent of these anglers who did not own their own boat were employed or self-employed and about 23 percent were unemployed, mostly due to retirement (Holiman, 2000).

For-hire vessels are currently under a moratorium on the issuance of new for-hire federal permits to fish for reef fish or coastal migratory pelagics. A total of 3,340 permits were issued under the moratorium, and they are associated with 1,779 vessels. Of these vessels, 1,561 have both reef fish and coastal migratory pelagics permits, 64 have only reef fish permits, and 154 have only coastal migratory pelagics permits. About one-third of Florida charter boats targeted three or less species, two-thirds targeted five or less species and 90 percent targeted nine or less species. About 40 percent of these charter boats did not target particular species. The species targeted by the largest proportion of Florida charter boats were king mackerel (46 percent), grouper (29 percent), snapper (27 percent), dolphin (26 percent), and billfish (23 percent). In the eastern GOM, the species receiving the most effort were grouper, king mackerel and snapper. About one-fourth of Florida headboats targeted three or less species, three-fourths targeted four or less species and 80 percent targeted five or less species. About 60 percent of headboats did not target any particular species. The species targeted by the largest proportion of Florida headboats are snapper and other reef fish (35 percent), red grouper (29 percent), gag grouper (23 percent), and black grouper (16 percent). In the eastern GOM, the species receiving the most effort were snapper, gag and red grouper.

The majority of charter boats in Alabama, Mississippi, Louisiana, and Texas reported targeting snapper (91 percent), king mackerel (89 percent), cobia (76 percent), tuna (55 percent), and amberjack. The species receiving the largest percentage of effort by charter boats in the four-state area were snapper (49 percent), king mackerel (10 percent), red drum (6 percent), cobia (6 percent), tuna (5 percent), and speckled trout (5 percent). The majority of headboat/party boat operators reported targeting snapper (100 percent), king mackerel (85 percent), shark (65 percent), tuna (55 percent), and amberjack (50 percent). The species receiving the largest percentage of total effort by headboats/party boats in the four-state area were snapper (70 percent), king mackerel (12 percent), amberjack (5 percent), and shark (5 percent) (Sutton et al., 1999).

8.4.4 Fishing communities

A “fishing-dependent community” is defined in the Magnuson-Stevens Act, as amended in 1996, as “a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community” (Magnuson-Stevens Act section 3(16)). In addition, the National Standard Guidelines define a fishing-dependent community as a social or economic group whose members reside in a specific location and share a common

dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent service and industries (for example, boatyards, ice suppliers, tackle shops)(50 CFR §600.345(b)(3).

The literature on fishing-dependent communities addresses three areas: identification of the communities, selection of variables appropriate for assessment and the assessment method itself. Community identification and selection criteria can be very complex or very simple. A simple first level approach would involve examining social and demographic variables at the county level where some fishing activity occurs. A more complex approach involves attempting to gather data and information on as small an entity as possible that qualifies as a fishing community. As the definition of community moves farther from traditional economic or political entities, less official data are available and more field research is required to complete the baseline profile and include relevant social and cultural value data.

Jacob et al. (2001) developed a protocol for defining and identifying fishing-dependent communities in accordance with National Standard 8. The project used central place theory to identify communities. A central place is where services, goods and other needs are met for the residents in the central place, as well as for those in surrounding hinterlands. It differs from using an administrative unit such as county boundaries, which may distort smaller communities or locality data as it is aggregated. The authors believed central place theory works well for defining and identifying fishing-dependent communities or localities as it provides a geographic basis for including multiplier effects that capture forward and backward linkages. In most fishing-dependent communities, forward linkages include those businesses that handle the fish once it is brought to the dock, such as fish houses, wholesalers, exporters, and seafood shops and restaurants. Backward linkages are the goods and services fishermen depend upon such as boat building and repair; net making and repair; marinas; fuel docks; bait, tackle and other gear vendors. Using their protocol of defining fishing-dependent communities, the authors initially determined five communities as commercially fishing-dependent and seven communities as recreationally fishing dependent. Further investigations resulted in validating five communities as commercially fishing dependent. The authors expressed little confidence in the data used and indicators developed based on such data to confirm the other communities as recreationally fishing-dependent communities. The five commercially fishing-dependent communities are: Steinhatchee, Apalachicola, Panama City, Ochopee/Everglades City, and Panacea.

The Generic Essential Fish Habitat Amendment (GMFMC, 2004a) provides more extensive characterization of fishing-dependent communities throughout the Gulf coasts. The fishing communities included in the characterizations are: (1) Alabama: Fairhope, Gulf Shores, Orange Beach, Bayou La Batre, and Dauphin Island; (2) Florida: Pensacola, Gulf Breeze, Ft. Walton Beach, Destin, Panama City, Panama City Beach, Port St. Joseph, Apalachicola, East Point, Carabelle, St. Marks, Horseshoe Beach, Cedar Key, Yankeetown, Inglis, Crystal River, Homosassa, New Port Richey, Tarpon Springs, Clearwater, Madeira Beach, St. Petersburg, Tampa, Cortez, Matlacha, Bokeelia, Ft. Myers Beach, Naples, Marco Island, Everglades City, Key Largo, Islamorada, Marathon,

Big Pine Key-Summerland Key, and Key West; (3) Louisiana: Venice, Empire, Grand Isle, Golden Meadow, Cutoff, Chauvin, Dulac, Houma, Delcambre, Morgan City, and Cameron; (4) Mississippi: Pascagoula, Gautier, Biloxi, and Gulfport; and, (5) Texas: Port Arthur, Galveston, Freeport, Palacios, Port Lavaca, Seadrift, Rockport, Port Aransas, Aransas Pass, Brownsville, Port Isabel, and South Padre Island.

Holland et al. (1999) identified the following areas as major activity centers for charter boats in Florida: Miami, Fort Lauderdale, Key West, Marathon, Islamorada, Naples, Ft. Myers, Ft. Myers Beach, Panama City, Panama City Beach, Destin and Pensacola. They also identified the following as major activity centers for headboats in Florida: Miami, Key West, Marathon, Islamorada, Ft. Myers, Ft. Myers Beach, Clearwater, Destin, Panama City and Panama City Beach. Sutton et al. (1999) identified the following areas as major activity centers for charter boats in the rest of the Gulf: South Padre Island, Port Aransas, and Galveston-Freeport in Texas; Grand Isle-Empire-Venice in Louisiana; Gulfport-Biloxi in Mississippi; and, Orange Beach-Gulf Shores in Alabama. They also identified the following areas as major activity centers for headboats in the rest of the Gulf: South Padre Island, Port Aransas, and Galveston-Freeport in Texas and Orange Beach-Gulf Shores in Alabama.

Further characterizations of fishing-dependent communities and approaches/data needs to assess the regulatory impacts on these communities are found in Section 7 and are incorporated herein by reference.

8.5 Impacts of the Management Alternatives

This section evaluates the economic impacts of management measures considered in this amendment. When possible, quantitative information is provided. If quantitative information is not available or cannot be derived using accepted economic techniques, a qualitative analysis is provided.

8.5.1 Establishment of an IFQ program

The first action in this amendment considers the establishment of an IFQ program in the commercial red snapper fishery. Alternatives under this action either maintain the status quo (license limitation) or implement an IFQ program.

Alternative 1: No action (status quo). Maintain the existing license limitation program.

Alternative 2: Implement an Individual Fishing Quota (IFQ) program in the GOM red snapper fishery.

Alternative 1 maintains the status quo, i.e., continues the limited entry management system and season closures in effect in the commercial red snapper fishery. Under the current system, only Class 1 and Class 2 red snapper license holders can participate in the commercial red snapper fishery. A Class 1 license entitles its owner to harvest up to 2,000 pounds of red snapper per trip during the commercial season. Class 2 license

holders can harvest up to 200 pounds of red snapper per trip. Class 1 and 2 licenses are renewable and transferable. There are 136 Class 1 and 628 Class 2 license holders under the current license limitation system. Under the existing management system, fishermen rush to harvest as much red snapper as possible as fast as they can. Consequently, the commercial red snapper season became shorter and shorter. It should be noted the shortening season started before the implementation of the license limitation system. Several regulations were passed to lengthen the season. But all, including the current license limitation system, have not materially improved the situation. The entire commercial TAC is landed in few days. By 2000, more than 4.8 mp of red snapper were harvested in 76 days (Waters, 2001). In 2004, the commercial TAC was harvested in 95 days. This derby fishery has resulted in adverse impacts on the fleet and on market conditions.

The commercial red snapper sector is marked by overcapitalization. The fleet now includes more boats, gear and crew members than required for efficiently harvesting the total allowable catch. Using data collected from a 1993 survey of commercial reef fish vessels, Weninger and Waters (2003) estimated under a right-based management scheme, the number of boats needed to harvest the same quantity of reef fish could be significantly decreased, assuming remaining vessels were allowed to harvest red snapper year-round. In addition, derby conditions inherent to management systems with license limitation and season closures decrease vessel owners' ability to select the most efficient input mix. These management schemes also preclude owners from fully benefiting from scope and scale economies. For these reasons, management systems with license limitation and season closures result in unwarranted increases in operating costs.

During the commercial season, once the race for fish starts, vessels owners feel compelled to plan fishing trips regardless of safety considerations (Thomas et al, 1993). Even under inclement or dangerous weather conditions, several vessels owners schedule trips. If they did not, the portion of the red snapper quota they would have harvested would be taken by fishermen who elected to be at sea.

It is estimated under the existing license limitation system, more than 2 mp of red snapper are discarded annually (NMFS, 2004b). Considering the high level of discard mortality in the commercial sector, this results in significant resource losses. In addition, while racing for fish, fishermen abandon a significant amount of fishing gear at sea (Leal et al., 2005). The resulting ghost fishing unnecessarily adds to an already substantial fishing pressure endured by red snapper stocks.

Derby fisheries are characterized by wide fluctuations in supply. Periods of excess supply alternate with stretches with limited to nil red snapper landings. During market gluts, sharp decline in ex-vessel prices are observed. Ex-vessel prices may be further depressed by the added bargaining power enjoyed by dealers/processors during periods of over abundant red snapper supply.

While racing for fish, crew members have little time to allocate to the proper handling of the catch. Hence, the present management system may adversely impact the quality of

the product landed. At the processing level, derby fishing conditions in the red snapper fishery led to a readjustment of the ratio between the fresh and frozen products. The large quantities of snapper landed within short time intervals forced dealers/processors to reduce the proportion of red snapper sold fresh. To absorb the excess supply, they increased their holding and freezing capacities. This adjustment has resulted in an increase in dealers/processors operating costs.

Preferred Alternative 2 proposes to manage the commercial red snapper fishery by establishing individual fishing quotas. Implementation of an IFQ program is expected to have impacts on market conditions, vessels' operating costs, and fleet dynamics.

IFQs offer advantages to fishermen by enabling them to plan investment and harvesting strategies more efficiently. IFQ programs afford participating fishermen the opportunity to schedule fishing trips and adjust trip length and landings consistent with their return maximization objectives. The added flexibility enjoyed by fishermen under an IFQ program is also expected to lower fishermen's operating costs because they can select appropriate input combinations when planning for fishing trips. Fishermen may further reduce operating costs by taking advantage of economies of scale and/or economies of scope.

At the fleet level, IFQ programs are expected to foster consolidation, resulting in a more efficient harvest by fewer vessels. Thus, the proposed IFQ program is expected to significantly curtail the overcapitalization that has prevailed thus far in the red snapper fishery. In an evaluation of potential cost savings that may result from a switch from a license limitation with seasonal closures management system to an IFQ program, Weninger and Waters (2003) estimated operating costs in the red snapper fishery could be reduced by as much as 75 percent. Although these estimates were based on a 1993 survey of commercial red snapper vessels operating in the GOM, cost savings of a comparable magnitude can still be expected in the fishery because the incentive structure has not been fundamentally altered since.

Under an IFQ program, economic incentives to race for fish are eliminated and thus, red snapper landings are expected to be more evenly distributed throughout the season. Since a known portion of the commercial quota would be reserved for each fisherman with IFQ shares, individual fishermen would know how many pounds of fish they could harvest during the fishing year. Hence, fishermen would not be compelled to invest in extra fishing power (capital stuffing) to compete for fish on a first-come-first-serve basis. They could invest in the fishing power required to minimize the cost of harvesting a given quantity of fish. Furthermore, in cases where IFQ shares were issued in relatively small denominations, the investment in IFQ shares would not necessarily be prohibitive for small operators, part-time fishermen, or fishermen who participate in several fisheries throughout the year.

The harvesting season should last longer and temporary market gluts that could reduce fish prices should disappear or be significantly lessened under an IFQ program. Factors that would tend to lengthen the season include a reduced need to fish in poor weather and

the individual fishermen's ability to postpone part of their catches to take advantage of higher prices later in the season. The ability to schedule fishing trips according to one's return expectations has a positive impact on the safety of the crew. Reportedly, fishermen enjoy safer working conditions under an IFQ program and no longer have to be at sea during inclement weather. Nevertheless, most fishing would probably still occur when fish are most abundant because harvesting during such periods would tend to minimize the costs of locating and catching fish.

As observed in other fisheries managed under an IFQ program, the lengthening of the commercial red snapper season is expected to mitigate or eliminate market gluts and have a positive impact on ex vessel prices. Fishermen are expected to enjoy sizeable revenue increases resulting from the elimination of incentives for participating in derby fishing. Based on 1993 survey, it was estimated revenues would increase by 48 percent, from $6.598 million to $9.805 million following the implementation of a rights-based management system in the GOM commercial red snapper fishery (Weninger and Waters, 2003). This is an annual revenue gain of $3.208 million in 1993 dollars, or $4.20 million in 2004 dollars. Though the primary data used to generate this estimate are dated, similar increases in revenues could be assumed under market conditions currently prevailing in the commercial red snapper sector.

Improvements in product quality as well as adjustments in product composition can also be expected to occur under an IFQ program. In order to maximize their returns, fishermen participating in an IFQ program can devote sufficient time to the proper handling of their harvest. This results in an increase in product quality. In the absence of periodic excess supply, dealers/processors would no longer need to freeze large quantities of red snapper for future sale. An increasing proportion of the red snapper harvest would be sold fresh. In the case of a regulated open access fishery such as red snapper, processors and fish dealers could respond to the glut of fish in the marketplace during the open season by increasing their capital investment in cold storage holding facilities. This is also an overcapacity problem created by the lack of clear and enforceable property rights for fish in the sea. The result is a dissipation of resource rents as in the harvest sector. When an IFQ program is adopted in the fishery, overcapacity in the harvest sector gradually disappears, but in the processing sector, a slower change in capacity occurs. Ex-vessel price increases are contingent upon changes in productive capacity by processors from predominately frozen products to predominately fresh fish product can be achieved through depreciation of capital. New fish processors can enter the market without the existing overhead and displace existing processors by offering higher ex-vessel prices. If not closely monitored, this process can have detrimental impacts on communities in terms of employment, income, and sales.

IFQ programs may also affect the bargaining power dynamics. When fishermen have more flexibility in making decisions relative to their fishing trips, they can negotiate better prices for their product. Hence, they are able to extract some of the rent previously enjoyed by dealers/processors.

Adverse economic effects resulting from the establishment of an IFQ program include potential employment losses and increased management, monitoring and, enforcement costs[1.] With the reduction in overcapacity and consolidation of effort following the implementation of an IFQ program, several captains and crew are expected to become unemployed. The degree of consolidation observed in the industry will determine the level of unemployment. During the consolidation process, it is likely many small and/or marginal operations will cash out and elect to exit the industry. This could have detrimental effects on several small fishing communities. Small communities and any targeted group of participants can be protected by the inclusion of specific provisions in the IFQ program design. Increased incentives to high-grade, i.e., discard fish of a lesser commercial value constitutes another potential detrimental impact resulting from the implementation of IFQ programs. 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).

Continuing the current management scheme in effect in the red snapper commercial fishery would maintain incentives for overcapitalization and derby fishery conditions. Thus, under the status quo alternative (**Alternative 1**), the red snapper commercial fleet will continue to be characterized by higher than necessary levels of capital investment, increased operating costs, shortened seasons, limited at-sea safety, wide fluctuations in red snapper supply and, depressed ex vessel prices.

If **Preferred Alternative 2** were selected, the management of the commercial red snapper fishery in the GOM would cease to rely on a limited entry system with season closures and implement an IFQ program. The implementation of an IFQ 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 red snapper, increase ex vessel prices.

The magnitude of impacts discussed above will depend on characteristics of the IFQ program implemented. Specifically, the incentive structure resulting from the IFQ program design will determine in large part the effectiveness of the program in achieving its stated objectives. Remaining actions included in this amendment deal with IFQ design issues.

8.5.2 Duration of IFQ Privileges

The alternatives under Action 2 determine how long the IFQ program will be in place before it ends or is reviewed. Alternatives under consideration would allow the program to continue indefinitely (**Alternative 1** and **Preferred Alternative 2)** or sunset (**Alternative 3**) the program after a specified number of years. The length of the program is expected to impact the value of IFQ shares and how they are traded. Those issues will be discussed under the various alternatives.

A sunset provision may also provide reassurance to members of the fishing industry a program that does not meet their needs will undergo a thorough review if it is reinstated after the sunset date. If the program were sunsetted after 5 years (**Alternative 3,suboption a**) it would need to go through the Council FMP analysis process before it can be reinstated. That process guarantees individuals will have the opportunity to express their concerns with the program before it can be implemented.

Fishermen are often concerned with how a management change will impact their fishing operation after it is implemented. These concerns may be justified, given the broad changes that can occur when moving from a license-based system to an IFQ program. An individual's uncertainty regarding how they will fare under a particular program may entice marginal participants to adopt a risk-averse position. That position may also provide them with additional leverage when negotiating the structure of the IFQ program during the initial implementation process or if it is implemented again in the future.

ALTERNATIVE 1: No action. Do not limit the duration of the IFQ program.

Alternative 1 and **Alternative 2** will result in the same economic impacts. They will be discussed under **Alternative 2**.

ALTERNATIVE 2: Do not limit the duration of the IFQ program. However, require a program evaluation every:

2a. 5 years (**Preferred Alternative**)[3,4];

2b. 10 years;

following the implementation of the final rule.

The NRC (1999) recommended Congress allow fishery management councils to "decide on a case-by-case basis whether to limit the duration of IFQ programs through the inclusion of sunset provisions." Most IFQ programs allocate quota as a "revocable privilege", so the government retains the right to abolish the IFQ program. The New Zealand IFQ program is an exception to the rule. IFQ shares allocated under the proposed red snapper IFQ program would be considered a revocable privilege. Therefore, if the Council and Secretary determine the program should be revoked or modified at any time in the future they retain the right to do so. Changing the program would require the Council to develop a new management plan through their normal plan amendment process.

Under **Preferred Alternative 2** the Council and Secretary would reserve the right to modify or revoke the IFQ program at any time in the future, without compensation to quota shareholders. This is different from a sunset provision, but could impact the uncertainty associated with the program. Uncertainty regarding the length of time the IFQ program will be in place would impact quota values and resource stewardship. A high amount of uncertainty would decrease IFQ share values below their optimum social value. The reduction in value would reflect the risk associated with purchasing in the

3 Preferred Alternative of the Council.
4 Preferred Alternative of the AHRSAP.

shares. The lower the uncertainty, the closer the IFQ share value would be to its optimum amount. Stewardship of the resource is affected by uncertainty because IFQ shareholders would want to extract the most value from their shares before they expire. This could result in less than optimum usage of the resource, if harvesters do not feel they have an economic incentive to protect stocks for the long term. This alternative does recognize the difficulties associated with sunsetting an IFQ program. The idea of sunsetting an IFQ program has been argued to be fundamentally inconsistent with the nature of the system that allows transfers (Pautzke and Oliver, 1997). IFQ shares take on value and, when transferred among fishermen, can represent considerable financial investments. Persons who buy into the program may make a considerable investment. To end the program would mean the loss of this investment to many fishermen. It is also argued IFQ programs provide incentives for fishermen to improve their stewardship of the resource. For these two reasons it has been difficult for resource managers to implement sunset provisions in IFQ programs. However, sunset provisions are often considered when developing IFQ programs because participants in the program are often uncertain how the program will impact their operation once implemented.

Excluding a sunset date signals to fishermen the Council intends to continue the IFQ program as long as no serious issues arise from its implementation. To date, no U.S. IFQ programs have been discontinued once the fleet was fishing under the program. That trend would be expected if this program were implemented.

Fishermen will buy and sell IFQ shares under this option based on the assumption the harvest privilege they are purchasing/selling will be in place for the long term. When determining the value of the IFQ share, several factors must be considered (NRC, 1999). One of those considerations is how long the program will be in place. People will pay less for a harvest privilege that will be in place for one year (i.e., a lease) than they would for a longer-term harvest privilege. The value of the IFQ share will increase as the length of the program increases until the discounted value, of additional years under the program, approach zero.

Preferred Alternative 2 would also setup a formal time line to review the IFQ program. It is likely the Council, the general public, and fishermen would review portions of the program on a periodic basis with or without this provision. Fishermen and the general public are expected to bring concerns to the Council as the program matures. Issues may be raised through this process the Council will want to address. These issues would be addressed in an ad-hoc manner as they are presented to the Council. A predetermined review time would allow a more complete review of the entire program to take place in a structured fashion. Formalizing the time line also allows everyone to know when the review will take place.

A formal review of the program could result in additional planned costs for the management agencies overseeing this program. Costs will depend on the scope of the review and how often the review occurs. A review every five years (**Preferred Alternative 2, suboption a**) will likely be more costly than a review every ten years. But if the first review occurred ten years (**suboption 2b**) after the program was implemented,

it is unlikely to correct any problems encountered early in the program. Fishermen would probably petition the Council and NMFS to fix those problems before the ten-year review was due. The planned costs associated with a five-year review are expected to be higher than those associated with a ten-year review. If the program encounters substantial problems that need to be fixed before the ten-year review, addressing those specific issues will increase the unanticipated management costs. Given the uncertainty of what problems may arise, it is not possible to determine the costs of planned reviews of the program versus unplanned FMP amendments. However, the unplanned costs associated with a ten-year review are expected to be higher than with a five-year review.

Literature on IFQ markets (Larkin and Milon, 2000)[5] has indicated the true market value of IFQ shares is better understood after 4 to 6 years of operation. It is during this transition period that winners and losers - and satisfaction with the program are generally determined. Therefore, a five-year review period closely reflects the markets transition period.

The program's review could range from a simple summary of comments received about the program, to a thorough analysis of impacts on incidental catch, employment, profitability, consolidation, spillover of effort into other fisheries, safety, enforcement issues, etc. Direction on the type of review expected could be provided at the time of program implementation or it could wait until policy makers have a better feel for the program. The types of data collected would limit the types of analysis that can be completed. If a very thorough analysis of the program is being contemplated, it may be appropriate to consider the types of data t needed at this time. If they are not being collected the analysis expected should be scaled back, or those data should be collected. Collecting additional data would increase the cost of the program, but the information obtained would be expected to outweigh the costs.

ALTERNATIVE 3: Limit the duration of the IFQ program to:

3a Five years;

3b. Ten years;

following implementation of the final rule, unless otherwise extended.

If the buyers and sellers are certain the program would sunset after a given number of years (the Council will not elect to "otherwise extend the program"), then the value of IFQ shares would decline as the sunset date approaches. The value of IFQ shares would ultimately reach zero at the sunset date. This same market mechanism applies to any capital asset that is depreciated over its useful life.

Selecting **Alternative 3** would increase the uncertainty associated with the future management of the commercial red snapper IFQ program. Persons holding IFQ shares would not know how the red snapper fishery would be managed after the sunset date. They would have some ideas of the options being considered, since the Council must develop an FMP amendment to manage the fishery after the IFQ program's sunset date.

5 Larkin, S. and J.W. Milon. 2000. Tradable Effort Permits: A case Study of the Florida Spiny Lobster Trap Certificate Program. University of Florida Working Paper.

However, that analysis must include a reasonable suite of alternatives. Alternatives considered would include the status quo (the IFQ program) and whatever other alternatives are determined to be reasonable at that time (i.e., trip limits, licenses, etc.). Given the length of time required to implement a new management program, that process would likely need to start two or three years after the IFQ program was implemented. Under the option that would sunset this program in five years (**Alternative 3, suboption a**) would give the industry, Council, and public a relatively short amount of time to digest the program's impacts. A ten-year sunset (**Alternative 3, suboption 3b**) would give everyone a better chance to understand the impacts of the program. However, policy markers may be less inclined to make major modifications to the program, if they know the program is temporary.

If buyers and sellers were uncertain whether the Council would extend the IFQ program after the sunset date, permanent transfers of quota would be constrained. Buyers and sellers are expected to have more difficulty reaching an agreement on the value of IFQ shares, given the uncertainty of how management may evolve. If buyers were risk averse, they would apply very large discount rates to the value of IFQ shares after the sunset date. Sellers may assume IFQ shares would retain value after the sunset date. Their position may be that the program would be renewed with little or no change, and would discount the value of future years by a smaller amount than buyers. Without that assumption they may sell IFQ shares for less than its true value. If buyers and sellers exhibited that type of behavior, few permanent transfers would take place. Buyers would not want to go into debt for a commodity that they cannot pay-off before the program ends, and sellers would not want to sell their harvest privileges for less than they are worth. Markets for the IFQ share would then have difficulty reaching a price that both parties feel is reasonable.

Limiting permanent transfers would slow the transition to a more efficient fleet. Less efficient operations would still probably be able to transfer IFQ shares. Because the price of transfers would be determined based on the expected returns in only that year, the duration of the program would not impact those values. Therefore, the transfer market should function fairly normally even when the duration of the program is limited.

The temporary transfer market could be impacted by the quantity of allocation being transferred. If the supply of allocation in that market is large enough to exceed the demand of the most efficient operations, it could reduce the price of transferred allocation. It is not possible to determine the demand for transferred allocation or the supply that would be available. Supply would depend on who has excess allocation or does not have to fish in a given year; demand would depend on who is in the market to purchase allocation and the profitability of those harvesters. Analysts cannot predict either of these values with certainty.

8.5.3 Ownership Caps and Restrictions on IFQ Share Certificates and Allocations

National Standard 4 of the Magnuson-Stevens Act states fishery management programs that allocate or assign fishing privileges shall be carried out in such manner that no

particular individual, corporation, or other entity acquires an excessive share of the privileges. This standard was included because of 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 or 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[6]. 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: No action. Do not constrain the number or amount of shares that can be owned by a participant in the IFQ program.

Selecting **Alternative 1** would allow persons eligible to purchase IFQ shares on the market regardless of their level of ownership. This option would allow the fishery to become more efficient in its operation, but may not meet the federal mandate to prevent excessive consolidation of shares.

The red snapper fishery is thought to have many substitute species and products. Given the choices consumers have in the market it is unlikely consolidation of the red snapper fishery will 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 red snapper could be affected if the fleet sells to owners in other areas. Finally, employment of the harvesting crew could be impacted if fleet contracts too much. Employment would likely be impacted by any of the alternatives under consideration.

ALTERNATIVE 2: For any single fishing year, no person shall possess IFQ shares or fish annual allocations, which comprise more than the following percent of the total quota allocated to the IFQ program:

2a: Two percent;
2b. Five percent;
2c: Ten percent;

6 Concentration of shares in a fishery is unlikely to affect final product markets, as most fisheries' outputs compete in a world market. Concentration of shares, however, could affect the balance of power between the eligible participants in the red snapper fishery.

2d: Fifteen percent;

Alternative 2 would set the ownership cap at one of four different levels. Several factors could be used to assess whether caps are needed and if the cap serves the objectives of the Council. 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. The analysis below is intended to provide the Council with a discussion of the options under consideration and available data that might form the basis for a decision of an acceptable ownership cap if one is needed. Table 8.5.1 shows the theoretical minimum number of owners in the fishery and the number of persons that would be over the cap at the time of the initial allocation. The initial allocation assumes, for simplicity, only Class 1 license holders will receive an allocation. This was not the Council's preferred alternative and will probably overestimate the actual initial allocation's people will receive. However, given the limits imposed by the current Class 2 license harvest data and the alternatives under consideration, the information in this table represents a reasonable estimate of the expected outcome. Also given the Class 2 license holders harvested about 7 percent of the TAC historically, these options would inflate the estimated caps by about 7 percent or less, depending on the alternatives selected in Actions 3 and 4.

Table 8.5.1: Theoretical minimum number of QS owners, and the number of persons over the ownership cap at the time of initial allocation.

Ownership Cap	Minimum Number of Owners Possible*	Persons Over Cap at Initial Allocation	
		1990-1999, using all years	1995-2004, using all years
2 percent	50	10	10
5 percent	20	1	2
10 percent	10	0	0
15 percent	7	0	0

* The "Minimum Number of Owners Possible" is calculated by dividing 100 percent by the ownership cap percentage. The resulting number is the total number of QS owners that would be in the fishery if the maximum consolidation occurred. Note that data indicates 136 Class 1 license holders and between 482 and 628 Class 2 license holders would receive an initial allocation of quota

The table shows 10 Class 1 license holders would be over the 2-percent cap (and the rest below it; **suboption 2a**) at the time of the initial allocation. One or two permit holders would be over the 5-percent cap (**suboption 2b**), depending on the alternative selected. The options are silent on what happens if the person is over the cap at the initial allocation. There are at least two options to deal with the situation. The first option would be to grandfather people that were over the cap. They would be allowed to keep their entire initial allocation, but would not be allowed to buy any additional quota unless they had previously sold enough shares to fall below the cap. Another option would be to

require people to forgo the portion of the allocation above the cap. That history would be reallocated among the other members of the fleet.

Permit holders under the cap would be allowed to purchase additional IFQ shares until they reach the cap. At that time NMFS would not approve the purchase of any additional IFQ shares by that person. The 10- (**suboption 2c**) and 15-percent (**suboption 2d**) ownership caps would allow everyone to purchase additional IFQ shares after the initial allocation. More efficient operators could purchase IFQ shares from less efficient harvesters and improve the overall efficiency of the fleet. Vessels that leave the fishery would result in a reduction in excess capital in the fishery. However, when a vessel leaves the fishery it reduces the number of jobs available. The jobs that remain are expected to absorb some of the wages paid to the people leaving the fishery. Whether all of those wages are distributed among the remaining crew would depend on the wage structure of the vessels harvesting the shares, relative to those that left the red snapper fishery.

Ownership caps considered under this alternative would still allow a considerable consolidation to occur. The 15-percent option would allow seven people to hold all of the IFQ shares, and the 10-percent option would allow 10 to hold all of the IFQ shares. Waters was cited earlier in this analysis as a source that estimated red snapper demand. His research indicates red snapper demand is elastic. An elastic demand for red snapper indicates no market power exists for red snapper. Because demand is elastic, a monopoly would have no power to affect the red snapper market price. Ownership caps would therefore 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.

The alternatives in this option could result in a commercial red snapper fishery less efficient than under **Alternative 1**. However, the efficiency of the fleet would be traded for less consolidation. The reduced consolidation could result in more employment.

ALTERNATIVE 3 (Preferred Alternative): For any single fishing year, no person shall possess IFQ shares that represent a percentage of the total, which exceeds the maximum percentage, issued to a recipient at the time of the initial apportionment of IFQ shares (e.g., ~ 8 percent)[2].

Preferred Alternative 3 would have about the same impact as the five- or ten -percent ownership cap option in **Alternative 2.** That discussion is included here by reference. Only the person receiving the largest allocation would be capped initially. All other harvesters would be allowed to purchase additional IFQ shares until they reached the cap. Given there is a substantial gap between the largest and second largest allocation of shares, all but one person would be allowed to purchase a considerable amount of IFQ shares before they reach the ownership cap.

8.5.4 Eligibility for Initial IFQ Allocation

This suite of alternatives determines who qualifies to receive an initial allocation of commercial red snapper IFQ shares. It is the persons that receive the initial allocation of IFQ shares that benefit from the redistribution of rents that result from an IFQ program. Those rents are realized when a person that did not have to purchase IFQ shares sells their share holdings (NRC, 1999). The revenue generated from the sale of initially allocated IFQ shares reflects those profits. These profits are not available to subsequent owners of IFQ shares because they must purchase their shares. Different allocation alternatives are designed to achieve specific management objectives (i.e., rewarding long-term participation in the red snapper fishery, recent participation, etc.). Allocations that most closely approximate maximum economic yield result in the greatest economic efficiency. Allocations with lower economic efficiency are often considered to meet other management objectives. Examples of those management objectives could be preserving the characteristics of a harvest sector, the processing sector, or fishery dependent communities.

ALTERNATIVE 1: No action. Do not restrict initial eligibility in the IFQ program.

Alternative 1 does not provide sufficient guidance to determine the individuals that would receive an initial allocation of IFQ shares. Language in this alternative could be interpreted in several different ways. For example, it could mean every U.S. citizen and permanent resident alien would be allocated a fraction of a pound of red snapper. Without further direction this option cannot be analyzed. Since an initial allocation of IFQ shares is a necessary part of any IFQ program, this alternative is not viable at this time.

ALTERNATIVE 2: Restrict initial eligibility to persons who own[7] a current Class 1 license. Current permanent resident aliens who currently own a Class 1 license will be included in the initial allocation.

Alternative 2 would result in only the owners of 136 Class 1 licenses being eligible to receive an initial allocation. Three additional licenses were initially issued, but those licenses were either annulled, revoked, or were not claimed after the owner passed away in the early 1990s. These are the only persons currently allowed to harvest up to 2,000 pounds of red snapper on a trip.

The total commercial red snapper quota would be divided among the owners of these permits based on the method selected under Action 4. Permit data indicates 95 persons own the permits. Seventy-eight persons own 1 permit, six persons own 2, five persons own 3, two persons own 4, one person owns 5, and three persons own 6 permits. The 95

[7] Permit ownership is defined as the person who actually controls transfer of the Class 1 or Class 2 license, and such person would be listed as the "qualifier" on the face of the leased/placed permit.

owners of red snapper permits would be allocated the entire commercial red snapper quota under this alternative.

ALTERNATIVE 3 (Preferred Alternative): Restrict initial eligibility to persons who own a current Class 1 or Class 2 license. Permanent resident aliens who currently own a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this IFQ program [1,2].

Preferred Alternative 3 would allow both Class 1 and Class 2 license holders to be eligible for an initial allocation. As discussed under **Alternative 2**, a total of 95 persons own 136 Class 1 permits that are eligible for an initial allocation.

Class 2 license holders are allowed to retain a trip limit of 200 pounds of red snapper. Only one trip per day is allowed. Permit data indicates 628 Class 2 licenses were issued. Harvests associated with these permits show only 482 of these permits had any landings history since 1998. Therefore, while all 628 license holders are eligible for the initial allocation, if an alternative were selected under Action 4 that is based on 1998 through 2004 catch history, only 482 licenses would qualify for an allocation. The 146 Class 2 licenses with no catch history would not be issued an initial allocation. However, if the allocation were based on an equal distribution of the commercial red snapper quota among all eligible participants, then all 628 Class 2 license holders would receive initial allocations.

A total of 764 licenses would be eligible under this option. We cannot provide information on the ownership of the Class 2 licenses at this time. The NMFS Permit Office and the SEFSC are currently compiling these data. However, it is possible a person owns more than one permit. Ninety five different persons reportedly own a Class 1 license. Assuming the same ownership structure at the time of initial allocation, approximately 723 persons will qualify for an initial allocation.

8.5.5 Initial Apportionment of IFQ Shares

Action 5 defines the method used to determine the allocation of IFQ shares among eligible participants in the program. Three primary alternatives are under consideration. The first alternative does not specify an allocation method (**Alternative 1**). That alternative will be dismissed because an IFQ program must define the allocation method for the program to be effective. **Preferred Alternative 2** would base the allocations on historic catch in the commercial red snapper fishery. Several different combinations of years are considered under that alternative. Each year combination would result in different distributions of IFQ shares among eligible participants. Finally, **Alternative 3** would allocate each program participant an equal amount of IFQ shares. The economic impacts of the alternative will be discussed under each alternative.

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

ALTERNATIVE 1: No action. Do not specify a methodology for allocating initial IFQ shares.

It is not possible to implement an IFQ program without determining the allocation to participants in the program. By definition an IFQ program gives participants an individual allocation. If people are not assigned an allocation amount, they must continue to compete with other harvesters to catch a portion of the TAC. It is the individual allocation of harvest privileges that allows harvesters to rationalize their fishing operation, such as scaling up or down their operations to maximize profits. Therefore, selecting the no action alternative would negate the benefits of the IFQ program, since it would function like a license/permit-based program. The economic benefits that would accrue to the harvesters would be similar to those that currently exist in the fishery. Consumers would also expect similar benefits to those realized under the current management system.

ALTERNATIVE 2 (Preferred Alternative): Allocate initial IFQ shares proportionately among eligible participants based on the average annual landings associated with their current license(s).

2A. Allow Class 1 license holders (if eligible) to select:

- 2(A)(i). Five years of data
- 2(A)(ii). Ten consecutive years of data (preferred option)
- 2(A)(iii). All years of data.

During the time period

- 2(A)(1v). 1990 through 1999[1,2];
- 2(A)(v). 1990 through 2000;
- 2(A)(vi). 1990 through 2004 (Preferred Sub-option);
- 2(A)(vii). 1993 through 2002
- 2(A)(viii). 1994 through 2003[1];
- 2(A)(ix). 1995 through 2004;

2B. Allow Class 2 license holders (if eligible) to select:

- 2(B)(i). Five years of data (Preferred Option);
- 2(B)(ii). All years of data.

During the time period

- 2(B)(iii). 1998 through 2002;
- 2(B)(iv). 1998 through 2003;
- 2(B)(v). 1998 through 2004 (Preferred Sub-option).

Preferred Alternative 2 would base the allocation calculation on the historic catch of commercial red snapper by persons eligible for the initial allocation. Persons who are eligible to receive an initial allocation were discussed in Action 3. Recall, the alternatives in that section range from allowing anyone who holds the catch history made during the qualifying years to receive an initial allocation, to an option that would only allow Class 1 license holders in the program. The option selected would impact the outcome under **Alternative 3.**

When selecting an alternative in this section for Class 1 licenses the Council must select one suboption from **2A(i)** through **2A(iii)** and an option from **2A(iv)** through **2A(ix)**.

Together those options would define the years to consider and how many years would actually be selected from the years considered. If the Council places special consideration on Class 1 licenses secured under the historical captain criterion, the Council must select **Preferred Alternative 4**. Although the Council may still have to select an option from **2A(iv)** through **2A(ix)** to complement **Preferred Alternative 4**, it is practically automatic the years 1998-2004 would be selected, since these are the only seven years with landings that can be ascribed to Class 1 historical captain licenses. For Class 2 licenses, the Council has to pick a suboption from **2B(i)** through **2B(ii)** and an option from **2B(iii)** through **2B(v)**. Under any of the sub-options, eligible license holders can select any particular period (i.e., specific years) for calculating their average annual landings for purposes of the IFQ share allocation. For example, under the **Preferred Alternative** for Class 1 licenses, each eligible Class 1 license holder can select any of the 6 possible 10 consecutive years of data for the period 1990-2004. Under the **Preferred Alternative** for Class 2 licenses, each eligible Class 2 license holder can select any of the 21 possible combinations of 5 years for the period 1998-2004. The succeeding discussions assume that each eligible license holder chooses the period yielding the highest annual average landings.

The sizes of the individual allocations under this alternative are expected to vary substantially. Persons who harvested more of the commercial red snapper in the past would receive a larger allocation in the future. Persons who harvested less red snapper in the commercial fishery would receive a smaller allocation. Given the available data and the alternatives under consideration, it is difficult to provide quantitative estimates of future allocations. However, information will be provided that shows the general trends that may be expected using alternatives that rely on catch history.

Action 3 contained a discussion of the number of persons that are expected to qualify. That information is included here by reference, but in summary we expect 136 Class 1 license holders are eligible for an initial allocation. Those licenses appear to be owned by 95 different persons. A total of 628 Class 2 licenses were issued, but only 482 licenses were used to harvest red snapper in the commercial fishery from 1998 through 2004. Data are not available to aggregate Class 2 licenses by common ownership. The NMFS Permit Office and the SEFSC currently are compiling these data. Therefore, information reported for Class 2 licenses is reported on a permit-by-permit basis, while the Class 1 license data will be aggregated by permit owner.

Using historic catch data to determine the initial allocation requires reasonable catch data exists for the years being considered. The data are somewhat problematic for some of the options being considered. Table 8.5.2 shows commercial catch data, for the years 1990 through 2004, are available in this analysis for just the Class 1 license holders. Data for 1990 through 1992 are considered to be less robust than data for the 1993-2004 period. These data were taken from data collected in 1993 for the purpose of issuing fishery endorsements. Class 1 license data, for the years 1993 through 2004, are available through logbooks since the endorsements issued in 1993 were simply converted to Class 1 licenses in 1997. It should be noted Class 1 historical captain licenses were issued only in late 1997 and became effective in 1998. Although the historical captain designation

was partly based on 1990-1993 landings data, logbook landings under Class 1 historical captain licenses showed up only since 1998. There are seven Class 1 historical captain licenses, and to date all such licenses have been sold to other participants in the fishery. Data for Class 2 license holders are only available for the years 1998 through 2004 using logbook reports. Recall that Class 2 licenses were implemented in 1998.

Table 8.5.2: Annual catch (lbs.) by permit Class as reported in current data, 1990 – 2004

Year	Class 1	Class 2	Total Catch	% Harvested by Class 1	% Harvested by Class 2
1990	979,924		979,924	100.00%	0.00%
1991	1,659,919		1,659,919	100.00%	0.00%
1992	1,773,086		1,773,086	100.00%	0.00%
1993	2,690,790		2,690,790	100.00%	0.00%
1994	2,729,378		2,729,378	100.00%	0.00%
1995	2,817,889		2,817,889	100.00%	0.00%
1996	4,199,115		4,199,115	100.00%	0.00%
1997	4,464,337		4,464,337	100.00%	0.00%
1998	4,592,607	231,999	4,824,606	95.19%	4.81%
1999	4,398,515	232,187	4,630,702	94.99%	5.01%
2000	4,347,779	338,192	4,685,971	92.78%	7.22%
2001	4,477,661	295,181	4,772,843	93.82%	6.18%
2002	4,619,836	313,405	4,933,241	93.65%	6.35%
2003	4,406,673	333,451	4,740,124	92.97%	7.03%
2004	4,135,474	393,790	4,529,265	91.31%	8.69%
Total	52,292,983	2,138,205	54,431,189	96.07%	3.93%

Source: Logbook data for Class 1 permits (1993-2004) and Class 2 permits (1998-2004). Data collected to allow endorsements to be issued for Class 1 permits (1990-1992).
Note: This table does not include the pre-1998 red snapper landings by vessels with reef fish commercial permits but without endorsements.

Since all the current alternatives contain years that go back before 1998, it is problematic to simply use these data for both Class 1 and Class 2 license holders when calculating allocation amounts for the alternatives under consideration. Therefore, summary results for the alternatives under consideration are not provided in this section of the document.

Table 8.5.2 reports the annual commercial catch data used in this analysis. The data in that table shows Class 2 license holders harvested between 4.81 percent and 8.69 percent of the commercial TAC during the years 1998 through 2004. Their percentage of the commercial red snapper harvest during those seven years was about 6.46 percent. Using years before 1998 to determine allocation amounts would not give Class 2 license holders credit for any harvest they made during that time.

Class 2 License Holders. In a previous version of this document, the Council's current preferred alternative would allocate quota to both Class 1 and Class 2 license holders using the years 1990 through 1999. In this situation, it may be prudent to consider the

impacts the data inconsistencies may have on that alternative. First the Class 2 license holders would only receive catch history credit for their harvests during 1998 and 1999. Data are currently not available for the years 1990 through 1997. The total catch of Class 2 license holders in the current data set is 464,186 lbs. from 1998 through 1999. The total catch of all permit holders is reported to be 30,305,560 lbs. during that time period. Dividing the catch of Class 2 license holders by the total catch shows that Class 2 license holders would be allocated less than 1.51 percent of the commercial red snapper TAC. Assuming the commercial red snapper TAC is set at 4.65 mp after the program is implemented, the Class 2 license holders would be allocated about 69,750 lbs. of red snapper. If all 482 Class 2 license holders, in this data set, were issued an equal share of the Class 2 allocation, they would each get about 145 lbs. of red snapper. Basing the allocation on the amount of red snapper they harvested from 1998 through 2004 in proportion to other Class 2 license holders yields the results shown Table 8.5.3.

Table 8.5.3: Estimates of Class 2 license holder red snapper allocations

Number of Permit Holders	Allocation Amount (lbs)	Mean (lbs)
53	< 10	4.0
36	10 - 24.99	15.7
63	25 –49.99	36.3
68	50 – 99.99	71.2
61	100 – 199.99	134.6
46	200 –499.99	316.0
23	500 – 999.99	727.6
13	1,000 +	1,720.1

Data: Logbook data for Class 2 permits (1998-2004).
Assumptions: Commercial red snapper TAC equals 4.65 million pounds. Allocation is based on Class 2 vessels receiving 1.5 percent of the TAC, and that portion of the TAC is distributed among Class 2 license holders based on their relative catch history from 1998 through 2004.

Table 8.5.3 shows that 53 Class 2 license holders would be allocated less than 10 pounds of IFQ shares, under this scenario. About 46 percent of the Class 2 license holders in the data (220 permit holders) would be allocated less than 100 pounds of IFQ. Only 36 Class 2 license holders would be allocated more than 500 pounds of IFQ at a commercial TAC of 4.65 million pounds.

Increasing the percentage of the TAC assigned to the Class 2 license holders would increase the individual's allocations by the same percentage as the TAC was increased. If they increased their portion of the commercial TAC from 1.5 percent (their 1990 through 1999 average in this analysis data set) to 6.46 percent (their 1998 through 2004 average) they would increase their allocations 4.3 fold. The first 53 permit holders in Table 8.5.3 would increase their average to about 17 pounds of red snapper each. The second group of 36 permit holders would get an allocation that, on average, would equal about 68 pounds. The 63 permit holders in the third group would be allocated 156 pounds of IFQ, on average. The 13 largest Class 2 allocation recipients would average 7,396 pounds of red snapper, based on the assumptions in this example.

Because of the data limitations for Class 2 license holders, it is not possible to provide accurate projections of the individual allocations using the current suite of alternatives, except with respect to the Preferred Alternative in combination with the Preferred Alternative for Class 1 licenses. The Council may wish to provide additional direction on how the current alternatives should be calculated given the constraints imposed by the data.

Class 1 License Holders. Class 1 license holders will be allocated the vast majority of the IFQ shares, if allocations are based on historic participation in the fishery. Depending on the alternatives selected in this amendment, the Class 1 license holders could be allocated approximately 93 percent to 100 percent of the IFQ shares.

Figure 8.5.1 shows the percentage of the Class 1 commercial red snapper fishery harvested by each of the unique Class 1 license holders. Note the lines in Figure 8.5.1 track together fairly closely under the two alternatives shown. Twenty-seven and 26 Class 1 license holders harvested less than 0.5 percent of the total Class 1 red snapper harvest from 1990-2004 (**suboption 2A(vi)**) and 1995-2004 (**suboption 2A (ix)**), respectively. Sixty-four and 63 Class 1 license holders harvested less than 1 percent of the commercial red snapper harvested under a Class 1 permit from 1990-2004 and 1995-2004, respectively. Ten permit holders harvested more than 2 percent of the Class 1 total catch during the 1990-2004 and 1995-2004 time periods. The top 4 permit holders landings were averaged in Figure 8.5.1 so the catch of the largest producers cannot be determined in order to protect confidential information.

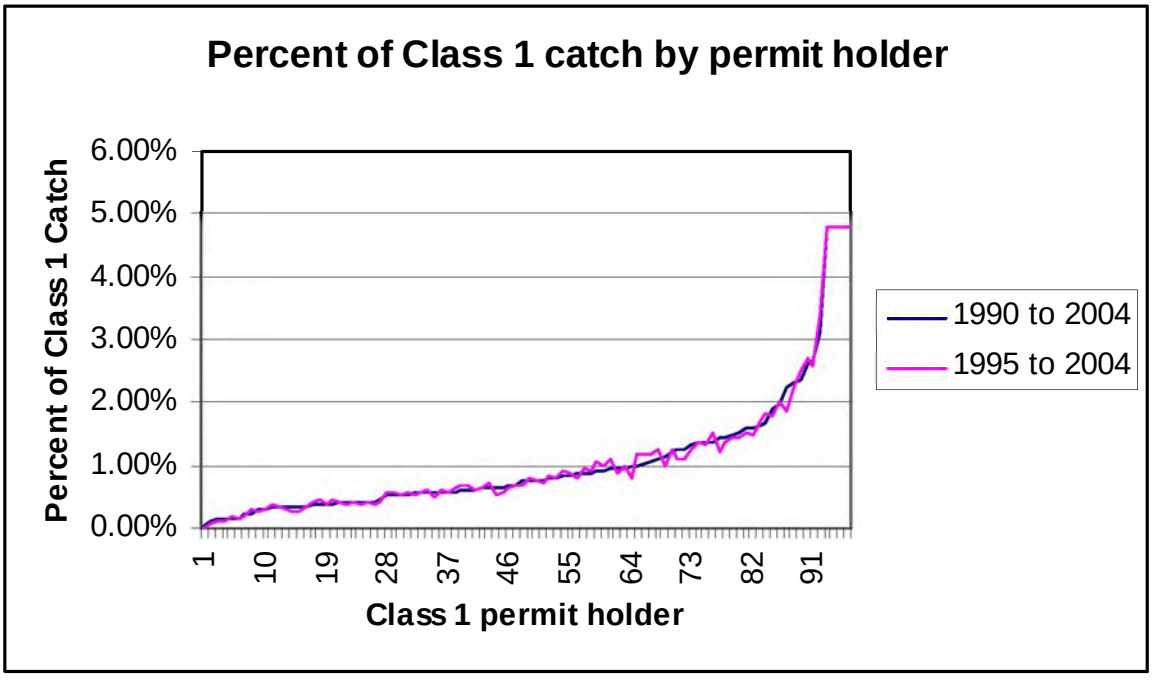

Figure 8.5.1. Percentage of the commercial red snapper fishery harvested by Class 1 license holders.

If we assume the commercial red snapper TAC will be 4.65 mp in the future, then the Class 1 license holders will be allocated from about 1,000 pounds of red snapper to over 225,000 pounds annually, with the average Class 1 license holder receiving about 35,000 pounds of IFQ.

While it appears there is little overall variation between the years considered above, individuals can realize larger impacts than would appear in Figure 8.5.1. Figure 8.5.2 shows some permit holders could gain or lose over one percent of the commercial TAC by basing the allocation on a different set of years. A change of that amount of TAC means permit holders could gain/lose over 45,000 pounds of red snapper per year. If the ex-vessel price of red snapper is $2.83 per pound it equates to over $127,000 in ex-vessel revenue per year.

Most of the permit holders do not realize changes in their allocation of that magnitude. Many of the permit holders would notice relatively small changes to their allocation. But selecting different sets of years does impact an individual's allocation amount in almost every instance. Very few permit holders are reported to have almost no change in their allocation.

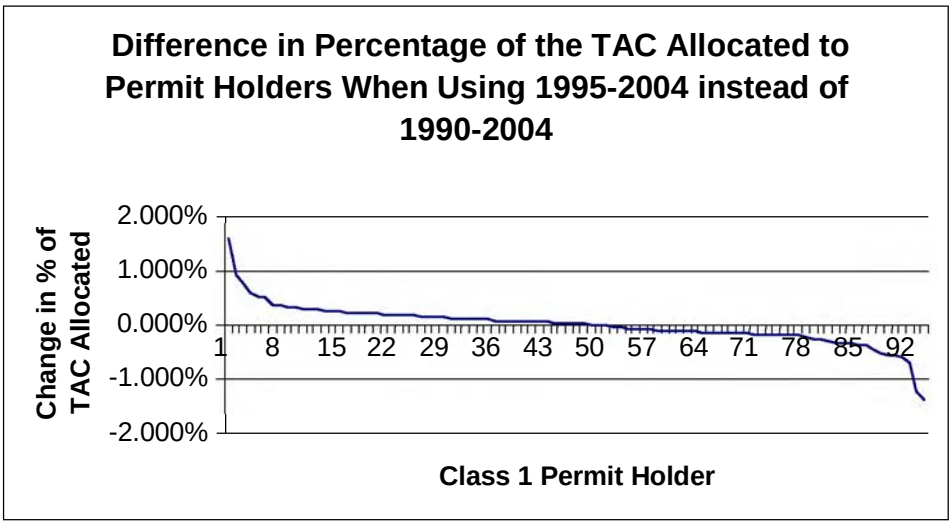

Figure 8.5.2: Changes in the percentage of TAC assigned to permit owners.

Impacts of Dropping Years of Data: **Suboptions 2A(i)** and **2A(ii)** could allow the permit holder to drop their worst years of data. **Suboption 2A(i)** states the permit holder would use their five best years of data during the qualifying period. **Suboption 2A(ii)** allows the permit holder to select their best ten consecutive years of data. It is assumed this provision applies to each permit and not the total history associated with all of the permits held by one person. So persons holding more than one permit could select the best years associated with each permit, as opposed to aggregating the catch history associated with all eligible permits they own and then dropping the worst years.

Allowing owners to drop years of data tends to increase the allocation to permit holders that have not fished every year or have had more than average variation in their annual catch. Table 8.5.4 shows the participation patterns for each of the 136 Class 1 licenses that appear to qualify for an initial allocation. According to the data, only 23 permits were fished every year between 1990 and 1999. These license holders potentially would still be able to drop years of data when they had less than average catch, under **suboption 2A(i)**. However, these license holders would likely have their allocation reduced from provisions that allow years of data to be excluded. License holders with less than average variation in the annual catch and fished all the years would have their allocation reduced the most by allowing years of catch history to be excluded. Many of the 76 persons that fished all but one year would also likely have their allocation reduced under suboption **2A(i)**.

Table 8.5.4: Participation patterns of the 136 Class 1 license holders in the red snapper fishery, 1999-2004.

Permits	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Years Fished
1									1	1	1		1	1		5
1										1	1	1	1	1	1	6
1									1	1		1	1	1	1	6
1									1	1	1		1	1	1	6
3									3	3	3	3	3	3	3	7
1		1	1					1	1	1	1	1	1	1	1	10
1		1	1	1	1		1	1	1	1	1	1				10
1		1	1	1	1	1	1	1					1	1	1	10
1	1		1	1	1	1			1			1	1	1	1	10
1	1		1	1	1	1	1	1	1	1	1					10
1	1	1				1	1	1	1	1	1			1	1	10
1	1	1	1	1	1	1	1	1	1	1						10
1		1		1			1	1	1	1	1	1	1	1	1	11
1		1	1			1	1	1	1	1	1		1	1	1	11
1		1	1	1				1	1	1	1	1	1	1	1	11
1		1	1	1	1				1	1	1	1	1	1	1	11
1		1	1	1	1	1	1	1	1	1	1			1		11
1		1	1	1	1	1	1	1	1	1	1	1				11
1		1	1	1	1	1			1	1	1	1	1	1	1	12
1		1	1	1	1	1	1	1			1	1	1	1	1	12
1	1		1	1	1	1	1	1	1	1	1		1		1	12
1		1		1	1	1	1	1	1	1	1	1	1	1	1	13
1		1	1	1	1	1	1	1	1	1	1	1		1	1	13
1		1	1	1	1	1	1	1	1	1	1	1	1		1	13
1	1		1	1	1		1	1	1	1	1	1	1	1	1	13
1	1		1	1	1	1	1	1	1	1	1	1		1	1	13
1	1	1			1	1	1	1	1	1	1	1	1	1	1	13
1	1	1	1		1	1		1	1	1	1	1	1	1	1	13
1	1	1	1	1	1	1	1	1	1	1		1		1	1	13
1	1	1	1	1	1	1	1	1	1	1	1		1		1	13
2		2	2		2	2	2	2	2	2	2	2	2	2	2	13

2		2	2	2	2	2	2	2	2	2	2	2	2	2		13
2	2			2	2	2	2	2	2	2	2	2	2	2	2	13
2	2		2	2	2	2	2	2	2	2	2	2	2	2		13
2	2	2		2	2	2	2	2	2		2	2	2	2	2	13
3		3	3	3	3	3	3		3	3	3	3	3	3	3	13
6			6	6	6	6	6	6	6	6	6	6	6	6	6	13
1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	14
1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	14
14	14	14		14	14	14	14	14	14	14	14	14	14	14	14	14
17	17		17	17	17	17	17	17	17	17	17	17	17	17	17	14
33		33	33	33	33	33	33	33	33	33	33	33	33	33	33	14
19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	15

Source: Logbook data from 1993-2004 and data collected for moratorium for 1990-1992.
Note: Shaded cells indicate the permit was active that year and blank cells indicate it had no landings associated with it that year.

License holders that participated fewer years during the qualifying period or had more than average variation in their annual catch would tend to benefit more from allocation structures that allow persons to drop years of data. Using the years 1990 through 1999 (**suboption 2a(iv)**, and allowing permit holders to use only their five best years (**suboption 2a(i)**), would benefit the eight license holders that only fished five years or less.

Dropping years of data makes it difficult for all participants to determine how they would be impacted. To calculate a person's allocation, two pieces of information are needed. The first piece of data is the individual's catch that qualifies for the program. The second piece of information is the total amount of qualifying catch. The total amount of qualifying catch cannot be calculated by individual fishermen and has to be provided by NMFS. They are the only people that can determine the denominator for the allocation. Until that piece of information is made public, individuals cannot determine their own allocation under the various options being considered. Prior to implementation of the IFQ program, NMFS will make historical landings data available to each fisherman to the extent it is allowed under the Magnuson-Stevens Act, based on the criteria in **Preferred Alternative 2** including the total amount of qualifying catch each fisherman would receive under the various combinations for years selected. This information will also provide the fishermen with the highest years combination for their IFQ shares. That information cannot be provided at this time due to the inconsistencies between the alternatives being considered and the data available.

Hardship cases: Including a provision that allows people to exclude years of data would weaken arguments for the need of hardship provisions. Persons would be able to drop years of catch history when they were sick, the vessel had mechanical problems, or some other issue caused them to harvest less in a year than they felt they should harvest. Since they are allowed to drop years of data when they had a hardship, it would be more difficult to argue for the need of hardship provisions. Appeals associated with the official data records or similar issues would still need to be heard. Issues associated with data quality are less effectively dealt with through dropping entire years of data.

Preferred Alternative: **Preferred Alternative 2A, suboption (vi)** for Class 1 license holders, except historical captain permit holders, would base the allocation on the years 1990 through 2004. These permit holders landed a total of 51,232,515 pounds of red snapper**. Preferred Alternative 4** for Class 1 historical captain permit holders would have their allocations based on the years 1998 through 2004, since these are the only years these permit holders have landings. These permit holders landed a total of 1,060,468 pounds of red snapper. Class 2 license holders would have their allocation based on the years 1998 through 2004 **(Preferred Alternative 2B, suboption (vi)**. During that period of time Class 2 license holders landed a total of 2,138,205 pounds of red snapper. Using different criteria for the three classes tends to benefit the non-historical captain Class 1 license holders at the expense of the other permit holders. Class 1 license holders would be allowed to use more years of catch, and that inflates their percentage of the quota share pool relative to the other license holders. The historical captain permit holders would be allocated about 1.95 percent of the total commercial red snapper allocation. During the years 1998 through 2004 the historical captain license holders harvested an average of 3.2 percent of the commercial red snapper. The Class 2 license holders would be allocated about 3.93 percent of the total commercial red snapper allocation. During the years 1998 through 2004 the Class 2 license holders harvested an average of 7.03 percent of the commercial red snapper. Therefore, using different qualifying years for the three permit classes decreases the historical captain and Class 2 license holders allocation by about half of what it would have been if all groups allocation was based on 1998-2004 data.

The specific preferred alternative of the Council for initial distribution is ten consecutive years (**Preferred Alternative 2A, suboption (ii)**) for the period 1990-2004 for Class 1, seven years for the period 1998-2004 for historical captain permit holders (**Preferred Alternative 4**), and 5 years (**Preferred Alternative 2B, suboption (i)** for the period 1998-2004 for Class 2. The case for Class 2 license holders can be interpreted in several ways. One way is to consider five consecutive years within the 1998-2004 period, and the other is to consider any 5 years within the 1998-2004 period. The latter interpretation matches with the Council's intent. Assuming the Class 1 license holders choose the best ten consecutive years (out of 6 possibilities per license), the historical captains choose the best seven years, and Class 2 license holders choose the best five years (out of 21 possibilities per license), the respective landings of the various classes of initial recipients for use in allocation are those presented in Table 8.5.5. Class 1 license holders would receive 89.1 percent of the entire commercial quota, Class 1 historical captain license holders would receive 3.1 percent, and Class 2 license holders would receive 7.8 percent of the entire commercial quota. **Preferred Alternative 4** would definitely benefit those who own Class 1 historical captain licenses, since they are allowed to select only those years for which they have the opportunity to fish for red snapper. If a ten-year period were selected for Class 1 historical captains, total average landings for this class would only be 0.10 million pounds instead of 0.15 mp, and the range of landings would be from 6,197 pounds to 25,481 pounds instead of those presented in Table 8.5.5.

Table 8.5.5. Class 1 and Class 2 landings using best 10 consecutive years for each Class 1 (7 years for historical captains) and best 5 years for each Class 2 license.

	Total Average Landings (million pounds)	Percent to Total	Range of Average Landings
Class 1	4.36	87.9	3,817 – 92,265
Class 1: Hist. Capt.	0.15	3.0	8,853 – 36,401
Class 2	0.45	9.1	0.6 – 13,662

Allocating more of the red snapper TAC to the Class 1 license holders, than they have harvested in recent years, would likely increase net benefits to the Nation. Waters (1996) reported low volume boats' costs accounted for a higher percentage of revenues than high volume boats. The information reported in that study indicates Class 1 license holders are more efficient harvesters of red snapper and would generate larger net benefits from its harvest.

ALTERNATIVE 3: Allocate initial IFQ shares equally among all eligible participants.

Alternative 3 would allocate an equal amount of IFQ shares to each person that is allowed to participate in the program. This alternative would benefit persons with smaller than average catch histories, at the expense of persons with larger than average catch histories. Because the alternative applies to eligible participants in the program, it is assumed each participant is defined as each permit. Basing the allocations on individual participants would allocate the same amount of IFQ shares to each person regardless of the number of permits they held. Table 8.5.6 shows estimates of the allocations made to the eligible participants in the fishery based on a commercial TAC of 4.65 mp. All of the allocation scenarios assume 136 Class 1 license holders are eligible for a share of the TAC. Allocation 1 assumes only the 482 Class 2 license holders that reported red snapper landings during the years 1998 through 2004 would qualify for an initial allocation. Allocation 2 assumes all 628 Class 2 license holders would be eligible for an allocation. Finally, Allocation 3 assumes only Class 1 license holders will be eligible for the initial allocation. Because Allocation 2 allows the most people to qualify for the program it results in the smallest allocation per participant. Each permit would be allocated 4,058 pounds of red snapper. Based on the information reported earlier in this section, almost every Class 2 license holder would receive a large increase in their allocation relative to the allocations estimated under Alternative 2 where catch history was used. Most of the Class 1 license holders would have their allocation reduced. A few Class 1 license holders were assumed to have history that would result in less than 4,000 pounds of IFQ. The average permit holder would have received an amount closer to 20,000 pounds. Highliners in the fleet would have their allocation reduced the most. Recall that, on average, the four permit holders with the most catch were allocated about 150,000 pounds of red snapper annually under some catch history options. At least one of these permit holders held as many as six permits. Therefore, they would be allocated 24,348 pounds of red snapper. That represents a considerable reduction from the 150,000 pounds, or more, they would have received under the Council's preferred alternative.

Assuming the catch of red snapper has an ex-vessel value of $2.83 per pound in the future, the total red snapper revenue per permit would range from just over $17,000 under Allocation 2 to just under $97,000 in Allocation 3.

Table 8.5.6: Allocations of red snapper based on an equal distribution of the commercial TAC.

	Allocation 1	Allocation 2	Allocation 3
Class 1 Participants	136	136	136
Class 2 Participants	482	628	0
TAC (lbs.)	4,650,000	4,650,000	4,650,000
Allocation per Participant (lbs.)	7,549	6,068	34,191
Assumed ex-vessel price	$2.83	$2.83	$2.83
Assumed ex-vessel value	$21,364	$17,172	$96,760

Source: Participant information provided by NMFS SE Region Staff (pers. comm.).

ALTERNATIVE 4 (Preferred Alternative): Current holder of Class 1 historical captain licenses may select seven consecutive years of data. .

Discussion of this alternative has been combined with the discussion of Preferred Alternative 2 above. The only issue worth reiterating here is that this alternative would provide a higher landing average for historical captain licenses than if a 10-year period were considered.

8.5.6 Establishment and Structure of an Appeals Process

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

Alternative 2 (Preferred Alternative): The RA will review, evaluate, and render final decision on appeals. Filing of an appeal must be completed within 90 days of the effective date of the final regulations implementing the IFQ program.[1] Hardship arguments will not be considered.

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 120 days of the effective date of the final regulations implementing the IFQ program. Hardship arguments will not be considered.

Alternative 4: A special advisory panel composed of IFQ shareholders will review, evaluate, and make individual recommendations to the RA on appeals. Advisory Panel members will be appointed by the Council from a pool of names submitted by state directors. Filing of an appeal must be completed

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

within 180 days of the effective date of the final regulations implementing the IFQ program.[2] Hardship arguments will not be considered.

Alternative 5 (Preferred Alternative): A total of three percent of the total IFQ shares available will be initially set-aside to be used to resolve disputes regarding eligibility until the appeals process is finalized. Any amount remaining in the set-aside after the appeals process has been terminated will be proportionately distributed back to the initial recipients as soon as possible that year.

Adoption of **Alternative 1**, which is the no action alternative, would not establish an appeals process under the IFQ program. **Preferred Alternative 2** and **Alternatives 3** and **4** consider the establishment of an appeals process. These alternatives differ in the structure and composition of an appeals process and the time frame within which appeals can be filed. **Preferred Alternative 5** presupposes the establishment of an appeals process.

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.

An appeals process provides the potential participants an avenue to set the record straight with respect to transfers of Class 1 and Class 2 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.

Preferred Alternative 5 may be seen to serve at least two functions that can help smooth the process of transitioning from the current management regime to an IFQ program. First, it allows the distribution of IFQ shares to be made even if appeals are filed. In this way, implementation of the IFQ program can proceed even if certain adjustments to individual IFQ shares have to be made as a result of some successful appeals. Second, and especially in the event many appeals are decided in favor of fishermen, the total IFQ shares available would not be exceeded. Although successful appeals mainly result in the adjustment of everyone's IFQ shares, it is possible some IFQ shares for the year may have already been fished out when appeals are settled. The only way the appellant can receive his/her rightful share would be to exceed the year's total IFQ shares available or more than proportionately reduce other participants' unfished IFQ shares. The latter would probably be met with strong resistance and may only result in costly litigations.

It is not known whether the three- percent amount under **Preferred Alternative 5** would be sufficient to cover all successful appeals. At any rate, this amount is not too large to result in potentially substantial forgone revenue and profit opportunities for certain participants if only few appeals are successfully settled toward the end of the fishing year.

8.5.7 Transfer Eligibility Requirements

The Council is considering six alternatives that would define the individuals, corporations, partnerships, associations, and other entities eligible to purchase IFQ shares after the initial allocation. For purposes of this discussion the term persons will be used to describe all those individuals and business entities. Regulations that define persons eligible to purchase IFQ shares in the future would have a direct impact on who would derive benefits from harvesting red snapper. It could also indirectly impact the seafood buyers that purchase red snapper from fishermen and the communities they live in, if the IFQ share transfers shift landings between buyers and ports. Depending on the alternative selected in this section, the decision is also expected to impact the value of the IFQ share when it is transferred.

Restrictions on who may purchase IFQ shares, after the initial allocation, are often considered when developing an IFQ program. Transfer restrictions are usually developed when policy makers are concerned that implementing the IFQ program would change the status quo too rapidly or too dramatically (Wilen and Brown, 2000). Wilen and Brown (2000) describe the implications of various transfer and cap alternatives considered as part of the North Pacific Council's halibut charter IFQ program. Wilen 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." In the case of the red snapper alternatives the "sectors" would be defined as either the initial IFQ recipients, the commercial reef fish permit holders, all U.S. citizens and permanent resident aliens, or anyone regardless of citizenship.

Many economists would argue the free flow of IFQ shares across sectors would produce the highest overall profits from the red snapper resource. However, if the goal of the program is to generate larger benefits for the U.S., transfers to non-U.S. citizens may need to be restricted. Allowing the free flow of IFQ shares among U.S. citizens would be expected to produce the greatest net National benefits. Since net National benefit calculations, by definition, exclude any benefits that accrue to citizens of other countries.

Persons arguing against the free transfer of IFQ shares are often concerned about how resource rents would be distributed after the transfers. Persons that want to sell IFQ shares would likely prefer to have few, if any limits are placed on transfers. Persons wishing to buy IFQ shares would likely prefer no one outside of their "sector" be allowed to buy IFQ shares. The people wanting to sell IFQ shares know more people in the

market place, buying IFQ shares, would tend to drive the price up. Sellers would then make more money. Buyers would tend to want the competition for IFQ shares limited, to keep the price lower. The actual change in price that would result from the various alternatives being considered cannot be estimated. However, the directional impacts discussed above are expected to occur. The more buyers in the market would tend to create more demand and drive IFQ share prices up. This is a result of potentially allowing more efficient harvesters into the pool of IFQ share buyers. Fewer buyers in the market would generate less demand (as a result of potentially excluding more efficient harvesters) and the price of IFQ shares would be expected to be lower.

Higher IFQ share prices tend to benefit the individuals that received the initial allocation of IFQ shares. The value of the IFQ share they are issued, when sold in the market, is often referred to as "windfall profits". Alternatives that increase IFQ share prices also increase windfall profits for initial recipients.

Options limiting the person allowed to purchase IFQ shares are being considered to protect U.S. citizens or persons already in the reef fish fishery. Allowing all U.S. Citizens and permanent resident aliens to purchase IFQ shares would expand the number of eligible participants in the program to those not involved in the fishing industry. The Alaska halibut and sablefish IFQ programs were designed to limit the persons allowed to purchase quota shares to fishery participants. This was done to help ensure quota shares would be owned by persons that actually harvest those species, and in some cases to help ensure crew members would have a better opportunity to buy into fishery. When the Alaska model was developed some policy makers wanted to ensure the fishery remained in the hands of fishermen. They did not want fishermen to be "sharecroppers" for persons that actually owned the quota shares. To ensure fishermen owned the quota shares, a program that restricted leasing of shares and required the owner be onboard the vessel when the shares were harvested was developed. A more open transfer and leasing structure is envisioned for the red snapper IFQ program.

Research has also shown rules developed for trading quota generate different incentives for bidding, asking, and trading in new markets (Anderson, 2004). Anderson found "efficient outcomes are not an automatic result of establishing property right and permitting its trade." This implies policymakers should pay close attention to the rules of IFQ programs that govern sales. Anderson argues selecting institutions that work well are preferable to imposing limitations on trade. Research has also indicated poor transaction decisions have typically been made during the first six years of IFQ programs because price signals did not accurately represent the market structure. Persons who made poor business decisions (by paying too much or asking too little for their IFQ shares) are often the persons who are least satisfied with IFQ programs. Therefore, he suggests the volatility of the IFQ program can be decreased if only leases are allowed during the early stages of the program. Permanent transfers could be implemented after the buyers and sellers have a better understanding of the market value of the shares.

The six alternatives being considered by the Council will be discussed next. Those alternatives range from allowing a very limited number of people to purchase IFQ shares to allowing anyone to purchase shares.

Alternative 1. No action.

Alternative 1 would not restrict the category of persons who could purchase IFQ shares in the future. It would be the most liberal of all the alternatives under consideration because it would allow persons who are not U.S. citizens to purchase IFQ shares, even if they are not resident aliens. Persons who are not U.S. citizens would be allowed to generate benefits from harvesting IFQ shares or having others harvest their shares. If the equity associated with IFQ shares increase while they are being held by non-U.S. citizens, those equity increases would accrue to the shareholder. Since they are non-U.S. citizens the value of the equity increase would not be included in the net National benefits derived from the program. If none of the IFQ shares were purchased by citizens of other countries, the net National benefits would be about the same under this alternative as under **Alternative 4**. At the other extreme, if citizens of other countries purchased all IFQ shares then any increase in quota equity would be excluded from the net National benefits of this program. This is very unlikely to happen, but it would be allowed if this option were implemented. Consumer surplus could be realized if foreign harvesters sell their catch to U.S. consumers at prices lower than they are willing to pay.

The U.S. Census population estimated the world population on April 29, 2005, was approximately 6.4 billion people. All of these individuals would technically be allowed to purchase IFQ shares. In reality this number would be greatly reduced because many individuals do not have the means, desire, or political status to purchase IFQ shares. However, it is likely some very small, but unknown, number of persons from other countries would be interested in acquiring IFQ shares. To the extent they purchase IFQ shares it would reduce the net benefits to the Nation that are derived from implementing this program.

The reduction in net national benefits that would result from implementing this option cannot be estimated. Making such an estimate would require assumptions about who would purchase IFQ shares in the future, the costs of production of firms purchasing IFQ shares, the revenue they would generate from selling their catch, and the markets they would sell their catch (foreign or domestic) to. Making such assumptions would be highly speculative and would likely generate misleading results.

Alternative 2. Commercial reef fish permit holders.

Only persons that hold a valid commercial reef fish permit would be allowed to purchase IFQ shares in the future if **Alternative 2** is selected. As of 2005, a total of 1,124 commercial reef fish permits have been issued (NMFS Permits Office). That number could change if people renew their permit that lapsed within the one-year renewal window allowed under this commercial reef fish permit program or elect to allow their permit to lapse. The number of permits has declined from 2,200, since they were first

issued. The number of permits could continue to decline in the future, but it is not expected to decline at the same rate they have in the past. The rate of decline is expected to decrease because the permits in the fishery have been used over a longer period of time and many of the people that are marginal participants have already left the fishery. Persons currently holding commercial reef fish permits include U.S. citizens and U.S. resident aliens. This option would preserve the rights of individuals that are not U.S. citizens, but hold commercial reef fish permits, to land red snapper under the terms of the IFQ program.

Implementing this alternative would prevent people outside the commercial reef fish fishery from purchasing IFQ shares, while allowing persons holding a commercial reef fish permit to buy and sell IFQ shares among themselves. Limiting the sale of IFQ shares to persons in the reef fish fishery would allow individuals already vested in the fishery to purchase the privilege to harvest red snapper without competition from other persons.

New entry into the reef fishery is allowed only if a person purchases an existing commercial reef fish permit. Because commercial reef fish permits are transferable, limiting the transfer of IFQ shares to commercial reef fish permit holders does not create a closed class of license holders. Owning a commercial reef fish permit would be required to purchase IFQ shares, which could lead to an increase in the value of these permits. Permit values would rise if the demand for permits increased as a result of persons wanting to buy into the red snapper fishery that have not been involved in the reef fish fishery. The value of permits would be tied to the profits that could be derived from harvesting red snapper and other reef fish. Persons that purchase the commercial reef fish permits may need to participate in other reef fish fisheries to help cover the cost of the permits. If that happens, the fisheries covered under the commercial reef fish permit could realize increases in effort. Effort increases could occur in fisheries managed in a way that provides economic incentives for an IFQ shareholder to enter the fishery or increase their existing effort in the fishery. The ability to increase effort in those fisheries would result from the flexibility to harvest red snapper in a more rational manner under the IFQ program.

Catch history associated with the permits could also increase their value if the buyer assumes historic catch would be of value in future allocation programs. Often allocation programs use historic catch in a fishery to determine the size of each person's initial allocation. Therefore, the catch history associated with permits could influence the permit's selling price.

Restricting the number of buyers to those that hold a commercial reef fish permit would likely reduce the selling price of IFQ shares relative to allowing anyone to purchase shares of the fishery. The reduced price is anticipated because the option limits demand. Harvesters more efficient than other harvesters in the fishery could be precluded from purchasing IFQ shares under this option, if they cannot obtain a commercial reef fish permit. Less efficient harvesters would then bid to purchase IFQ shares based on their expected profits. Since those profits would be lower than those of more efficient

operators, they would not be expected to be in a position to pay prices equal to those offered by the more efficient harvesters.

While it is possible IFQ share prices would be lower under this alternative because efficient harvesters outside the reef fish fishery are precluded from buying IFQ shares, the transfers within the sector would tend to flow to the more efficient operations in the sector. Persons that are marginal operators and want to exit the fishery would sell to those that are more efficient and offer a higher price. Persons able to extract rents from first wholesale or retail transactions might also be able to offer higher prices to ensure access to product.

The difference in selling price under the various options cannot be estimated with existing information. However, economic theory tells us increased demand for a commodity that has a fixed supply tends to increase the selling price. Therefore, the selling price of IFQ shares under this option would likely be less than it would be under **Alternative 1**, **Alternative 4**, or **Alternative 6** after the first five years of the program.

Alternative 3. IFQ shareholders

Alternative 3 would be very restrictive. Only the persons originally allocated IFQ shares would be allowed to purchase IFQ shares in the future. The problem with this alternative is it creates a closed class of persons that would ever be allowed to purchase IFQ shares. Persons would not be allowed to sell IFQ shares to anyone that was not an initial recipient of IFQ shares. This option would preclude persons from selling IFQ shares to family members or transferring IFQ shares as an inheritance to a person that was not an initial recipient of IFQ shares.

Over time, people would want to sell their IFQ shares or change their business structure. Changes in corporations or partnership would not be permitted under this alternative, because it would create a new person that was not an initial quota share recipient. Transferring of IFQ shares would be very restrictive in the future. As IFQ shares are transferred they would be consolidated among initial recipients, until all of the persons holding IFQ shares reach their ownership caps, if ownership caps are implemented. If no ownership caps were implemented, eventually only one person would own all of the IFQ shares. Once everyone reaches their use caps no IFQ share sales would be allowed. At that point IFQ shares would be forfeited. NMFS would need direction from the Council regarding how those IFQ shares would be treated.

This alternative would tend to keep the price of IFQ shares lower than under any of the other alternatives. Persons buying IFQ shares would face limited competition for shares. Shares would accumulate in the hands of IFQ participants. Over time the prices would likely decline until they have no market. That could take several years, but eventually all of the initial recipients would leave the fishery.

Given all of the problems associated with a closed class of IFQ shareholders, this alternative would only be reasonable in the short-term. Another transfer model would be needed for the longer-term.

Alternative 4. All U.S. citizens and permanent resident aliens

The U.S. Census population clock (http://www.census.gov/main/www/popclock.html) estimated the U.S. population on April 29, 2005 was approximately 296 million people. This estimate includes people that are not U.S. citizens or permanent resident aliens. Therefore, the number of persons listed above over estimates the total number of individuals that can purchase IFQ shares but does not include the companies, corporations, and partnerships that could purchase IFQ shares.

Permanent resident aliens were included in this language because some individuals are currently participating in the fishery with that legal status. When Amendment 8 to the GOM Reef Fish FMP was being developed, NOAA General Counsel advised the Council permanent resident aliens should be given consideration in that program due to their historic participation. The advice is being carried forward to this amendment for the same reasons it was applied to Amendment 8.

Alternative 4 does not require a person to hold a commercial reef fish permit to purchase IFQ shares. Any person that meets the criteria outlined in this alternative could own and fish red snapper under the IFQ program. Persons not wanting to retain their commercial reef fish permit would be allowed to sell it to someone that wanted to harvest reef fish other than red snapper.

This alternative would greatly expand the number of persons that could purchase IFQ shares. For example, persons from other U.S. fisheries could expand their operation to include red snapper, or other user groups could buy IFQ shares. Because the number of potential participants in the program is increased, the demand for IFQ shares would also likely increase. As discussed earlier, that would likely increase the market price of IFQ shares and increase the windfall profits of initial recipients of IFQ shares. It would also make entry into the fishery more expensive for entry-level fishermen.

Alternative 5. All initial IFQ shareholders for the first five years; all commercial reef fish permit holders thereafter.

Alternative 5 would result in impacts that are somewhere between those described for **Alternatives 2** and **3**. For the first five years of the program only initial IFQ shareholders would be allowed to purchase IFQ shares. After five years anyone holding a commercial reef fish permit could buy IFQ shares.

It is likely the value of IFQ shares would be lower during the first five years of the program. Restricting the sale of IFQ shares early in the program would allow persons in the fishery to stabilize their operation before additional competition enters the market place. Persons that want to leave the fishery during the first five years could sell their

IFQ shares at what may be discounted price. This may allow persons wanting to stay in the fishery to accumulate an adequate number of IFQ shares to maintain their operation. That is important because it is expected persons receiving an initial would be allocated less than they have harvested in the past in some cases. Their allocation is reduced because of the entry and exit in the red snapper fishery that occurs during the time period used for the initial allocation. If a person did not fish all of the years or had a lot of variation in their catch history they are likely to receive less IFQ shares than they have harvested in recent years.

After five years, anyone holding a commercial reef fish permit would be allowed to purchase IFQ shares. At that time the demand for IFQ shares would likely increase and the value of IFQ shares would also rise. The change in absolute prices cannot be estimated. It is expected some people would remain in the fishery for five years in order to take advantage of the expected increase in IFQ share prices.

Alternative 6 (Preferred Alternative). All commercial reef fish permit holders for the first five years; all U.S. citizens and permanent resident aliens thereafter.

Preferred Alternative 6 would result in impacts that are somewhere between those described for **Alternatives 3** and **4**. For the first five years of the program only commercial reef fish permit holders would be allowed to purchase IFQ shares. After five years all U.S. citizens and permanent resident aliens could buy IFQ shares. The impacts of this alternative are expected to be similar to those discussed under **Alternative 5.**

Selecting this alternative would allow permit holders to better understand the value of their IFQ share holdings before they are sold to persons outside the fishery. It difficult to decipher market signals for quota during the first four to six years of an IFQ program (Anderson, 2004; Larkin and Milon, 2000). Therefore, this alternative would allow members of the fleet to better understand their IFQ share's value before it can be sold to persons outside the fishery. This may help ensure permit holders would make better business decisions and increase the participants overall satisfaction with the program.

8.5.8 Use it or Lose it: IFQ Shares or Allocations

Provisions that require IFQ holders to use the harvest privileges or forfeit them back to the government were considered during the program's development. These alternatives are referred to as "use it or lose it" provisions. Concerns associated with persons buying IFQ shares for the sole purpose of not using them are often cited as a reason to consider these options. Economically, it would not make sense for fishermen to hold IFQ shares and not use them. At a minimum they would forego the revenue associated with transferring the IFQ shares. If they were efficient harvesters, the value of the IFQ shares they would forego 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 red snapper stocks by reducing total removals. Net benefits to the Nation would be reduced because the total amount of red snapper 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 substitute products for red snapper in the market.

The price flexibility associated with the amount of red snapper produced 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 red snapper and making assumptions about the amount of quota that would not be fished. Both of those tasks are beyond the scope of this analysis. However, developing a current red snapper demand curve would be helpful to future analysis of the of the commercial red snapper fishery.

The following language was taken from an FAO report discussing the reasons the Council voted not to include a use it or lose it provision in Reef Fish Amendment 8 (Keithly, 2001).

> "The Council, in developing the red snapper ITQ program, considered a "use it or lose it" criterion for individuals to maintain ITQ shares over the long run. One reason for considering such an option was that a use requirement would tend to "weed out" speculators during the early phases of the program. The use requirement would also ensure that the total annual crop not above overfishing levels was harvested over the life span of the program. This, some presumed, would effectively stop environmental groups from purchasing ITQ shares and not fishing them.
>
> The Council realized, however, that there were two drawbacks associated with including a "use it or lose it" clause. First, it would generate a certain amount of instability in the harvesting sector. Second, it would create a negative conservation impact by forcing individuals to harvest red snapper. Given these factors, the Council made a determination that no ITQ shares or portions thereof should revert back to the management program because of lack of use."

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.

<u>ALTERNATIVE 1 (Preferred Alternative): No action. Do not specify a minimum landings requirement (e.g., use it or lose it provision) for retaining IFQ shares.</u>

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 red snapper 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.

Any red snapper that is not caught as a result of this measure would remain in the ecosystem. Decreasing red snapper removals could improve the red snapper stocks. If that happened, it could improve catch rates in the future and reduce red snapper harvesting costs.

ALTERNATIVE 2: Any IFQ share certificates that remain inactive for three years will be revoked and redistributed proportionately among the remaining shareholders[2]. "Inactive" is defined as:

> A. Less than 30 percent annual average harvest of allocated IFQ shares over a three-year moving average period, except in case of death or disability.
> B. Less than 50 percent annual average harvest of allocated IFQ shares over a three-year moving average period, except in case of death or disability.

Alternative 2 could result in more of the red snapper quota being harvested on an annual basis, when compared to **Preferred Alternative 1**. IFQ shareholders would be required to harvest at least 30 (**suboption 2A**) percent or 50 percent (depending on the option selected; **suboption 2B**) 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 the 50 percent option is selected and a person does not fish the first two years, they would not be issued IFQ share certificates the third 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 the 30 percent rule or once every two years under the 50 percent rule. 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. The 50 percent requirement would make people purchase more IFQ shares to reduce the harvest a given level.

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. It is not possible to determine how many IFQ shares would be bought and not used **if Preferred Alternative 1** is selected compared to **Alternative 2**.

ALTERNATIVE 3: Any IFQ share certificates that remain inactive for five years will be revoked and redistributed proportionately among the remaining shareholders. "Inactive" is defined as:

> A. Less than 30 percent annual average harvest of allocated IFQ shares over a five-year moving average period, except in case of death or disability.
> B. Less than 50 percent annual average harvest of allocated IFQ shares over a five-year moving average period, except in case of death or disability.

Alternative 3 would have similar impacts to **Alternative 2**. The only difference between the two alternatives is the time that would elapse before the inactive IFQ share certificates are redistributed among the remaining members of the fleet. A five-year period would simply delay the redistribution so a person would have more time to qualify

for “active” status. The economic impacts of this alternative on producers, consumers, and NMFS are expected to be small.

8.5.9 Adjustments in Commercial Quota

Action 9 defines how the Council intends to account for changes in the commercial red snapper TAC and other IFQ share adjustments after the IFQ program is implemented. Four alternatives are being considered under this action item, including the no action alternative.

Table 8.5.7 shows the actual commercial red snapper TAC for 2003-2005 and hypothetical commercial red snapper TAC for 2006. The use of a hypothetical lower TAC for 2006 is merely an aid to the discussion of commercial quota adjustments under an IFQ system. Although TAC has been kept constant for a number of years now, possible changes can occur in the future depending on the status of the stock with respect to the rebuilding target. Considerable new information on GOM red snapper was available for a red snapper assessment that began in 2004. The preferred assessment model was a more generalized form of the model used in 1999, with a greater ability to include information from multiple ages, stocks, fleets, and habitats. The model was able to incorporate an extended time-series of catch data dating back to 1872 to attempt to refine estimates of long-term stock productivity. The model outcome still indicates the red snapper stock is overfished and undergoing overfishing. However, the model also indicated the juvenile fishing mortality rate associated with the shrimp fleet had declined compared to the rate found in the late 1980s. The model also suggested the fishing mortality rate in some segments of the directed fishing fleets had increased. The SEDAR 7 advisory report (SEDAR, 2004a) recommended in setting TAC, the Council needs to weigh reductions in shrimp trawl bycatch. Higher TACs would mean there would need to be a greater reduction of the effective shrimp-trawl mortality on red snapper**.** In view of this, the Council has considered how to allocate changes in the commercial TAC that may occur after the IFQ program is implemented. The economic impacts of each alternative will be discussed in qualitative terms, with quantitative examples included in the discussion.

Table 8.5.7. GOM Commercial Red Snapper TACs, 2003-2006

Year	Commercial Red Snapper TAC (lbs)
2003	4,650,000
2004	4,650,000
2005	4,650,000
2006	3,100,000

It is important to note adjustments to allocations based on changes in the commercial quota are designed to achieve different management objectives. **Alternative 1** and **Preferred Alternative 2** would ensure fishermen harvesting the greatest percentage of the historic qualifying catch would realize the largest change in allocation, if the commercial red snapper TAC changes. This option most closely represents how changes

in the TAC would be distributed under the permit-based system. Class 1 license holders would be expected to harvest a greater percentage of any TAC increase, and have their allocation decreased more when the TAC declines. **Alternatives 3** and **4** are designed to place less emphasis on historic catch in the fishery when redistributing changes in the commercial red snapper TAC. These alternatives would likely reduce economic efficiency of the fishery in order to benefit harvesters with quota holdings that are relatively small. It would also benefit fish buyers and communities associated with groups of fishermen that hold a smaller than average amount of quota. **Preferred Alternative 5** is applicable only to the 2007 fishing season, which is expected to be the first full season for the implementation of the IFQ program. This alternative affects mainly the timing of annual IFQ shares.

ALTERNATIVE 1: No action. Do not specify provisions for how to handle annual adjustments in the commercial quota.

Alternative 1 would not provide NMFS any direction on how to treat changes in the commercial red snapper TAC. Since no direction is provided, the analysts assume the result of this alternative will be the same as **Preferred Alternative 2**. This conclusion was drawn because of the way IFQ shares and the annual allocation of individual shares are treated under many IFQ programs. A description of the method for assigning IFQ shares and the annual allocation of fishing privileges is discussed under **Preferred Alternative 2**. The economic impacts are also described under **Preferred Alternative 2**.

ALTERNATIVE 2 (Preferred Alternative): Allocate adjustments in the commercial quota proportionately among recognized IFQ shareholders (e.g., those on record at the time of the adjustment) based on the percentage of the commercial quota each holds at the time of the adjustment [1,2].

Preferred Alternative 2 results in a relatively straightforward calculation to determine each person's allocation at various TAC levels and when an individual's IFQ share changes. The example in Table 8.5.8 shows the calculation process used to determine each person's allocation. This example does not represent an actual person's allocation, but is provided to show the calculation process for two fictitious fishermen.

Table 8.5.8: Example allocation calculations

Year	Fisherman 1's Catch	Fisherman 2's Catch	Total Commercial Catch (QS Pool)	Fisherman 1's % of Harvest	Fisherman 2's % of Harvest
2003	20,000	130,000	4,650,000	0.4301	2.7957
2004	18,000	150,000	4,650,000	0.3871	3.2258
2005	25,000	140,000	4,650,000	0.5376	3.0108
2006	13,000	100,000	3,100,000	0.4194	3.2258
Total	76,000	520,000	17,050,000	0.4457	3.0499

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

Fisherman 1, in the above example, would be allocated 0.4457 percent of the commercial red snapper TAC, based on an allocation scheme that used the years 2002-2005. Because (s)he caught 76,000 pounds of red snapper, (s)he would be assigned 76,000 IFQ share units. The total pool of quota share units held by everyone was 17,050,000 units. If we assume the 2007 commercial red snapper TAC will be 3.1 mp, Fisherman 1 would be allocated 13,818 pounds (3,100,000 x 0.004457) of red snapper IFQ. Assuming there are no changes in the total number of IFQ share units, changes in the commercial TAC would be proportionally distributed among quota shareholders by multiplying the new commercial TAC by the person's percentage of the total quota share pool. If we were to assume the commercial red snapper TAC increased to 4.65 mp in 2008, then Fisherman 1's allocation would increase to 20,727 pounds of red snapper. In other words, they would get 0.4457 percent of the 1.55 mp TAC increase. All other IFQ shareholder's allocation would also increase by their percentage of the fishery multiplied by difference between the new and old TAC.

Fisherman 2 would be allocated 3.0499 percent of future commercial red snapper TACs. Assuming the 2007 TAC is 3.1 mp that person would be allocated 94,545 pounds of red snapper to harvest. If the TAC increases to 4.65 mp in 2007, their allocation would increase to 141,818 pounds. That represents an increase of over 47, 000 pounds. Fisherman 1 had an increase of less than 7,000 pounds under this scenario. As a result of the 1.55-mp increase in the TAC, Fisherman 2's allocation increased about 40,000 pounds more than Fisherman 1's allocation. On the other hand, if the TAC had started at 4.65 mp and decreased 1.55 mp, Fisherman 2's allocation would have decreased about 40,000 pounds more than Fisherman 1's allocation.

Changes in the number of IFQ share units outstanding would be treated in a similar manner. Assume another fisherman, holding 100,000 IFQ share units, violated the terms of the red snapper IFQ program and the IFQ shares assigned to that person were removed from the quota share pool. The calculation of fisherman 1's percentage of the total IFQ share units would equal 0.4484 percent (76,000/16,950,000). Multiplying that percentage by the assumed 2007 commercial TAC would result in Fisherman 1 being assigned a harvest privilege of 13,900 pounds of red snapper. This is an 83-pound increase from their estimated 2006 allocation before the quota share pool was reduced by 100,000 units. Fisherman 2's allocation would increase by 557 pounds.

Preferred Alternative 2 is likely the easiest allocation method for NMFS to track a person's allotment of IFQ share units and annual allocation. Proportional changes in the fishery result in relatively simple annual allocation calculations. Other allocation methods can become much more complicated, especially when the TAC or IFQ share units are reduced. Those issues will be discussed in more detail under **Alternative 3**.

Allocation changes in TAC in proportion to a person's percentage of the fishery tends to benefit persons with a larger share of the fishery when TACs increase and benefit persons with a smaller percentage of the fishery when TACs decline. Applying this allocation method benefits fishermen that hold the privilege to harvest more red snapper before the adjustment. Persons with smaller allocations would realize a smaller increase in their

adjusted allocation when the TAC increases or the total number of quota share units in the fishery declines. However, if the commercial red snapper TAC declines, the poundage decreases in their allocation would be smaller than persons with a larger percentage of the available fish. Basically they gain less fish when times get better, but lose less fish when times get worse.

The actual economic impact to individuals would depend on a variety of factors. Those factors include whether commercial red snapper TACs would increase or decrease in the future, whether the number of IFQ share units in the pool increases or decreases, and economies of size/scale for some vessels. Because it is not possible to predict with any certainty how those factors would change in the future, the actual economic impacts on individuals cannot be calculated. The expected directional changes to a person's allocation have been described above.

ALTERNATIVE 3: Allocate adjustments in the commercial quota among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Fifty percent of the adjustment will be distributed proportionately among individual shareholders based on the percentage of the commercial quota each holds at the time of the adjustment; the remaining 50 percent of the adjustment will be distributed equally among individual shareholders.

Alternative 3 would adjust each person's annual allocation using the method described under **Preferred Alternative 2** for 50 percent of the TAC change. The remaining 50 percent of the TAC change would be divided so each IFQ shareholder would receive or lose an equal number of pounds.

Impacts on allocation: The 50 percent of the allocation that is calculated based on the proportion of the IFQ share units they hold can be calculated as was shown under **Preferred Alternative 2**. The remaining 50 percent of the increase would add 646 pounds to each IFQ shareholder's allocation. This number is based on an equal distribution of the 1.55 mp increase among the 1,200 IFQ shareholders assumed to receive an initial allocation. It is important to note if the TAC had declined by 1.55 mp, all fishermen with less than 646 pounds of red snapper allocated to them under the original TAC would not receive an allocation. Since some fishermen would likely have had an allocation smaller than 646 pounds, it would be up to the remaining fishermen to have their allocation again reduced (likely proportionally) to reach the 1.55-mp TAC reduction. This allocation system can become very complicated to track and can have some substantial impacts on smaller fishing operations in times of declining TAC. In years when TACs are increasing, persons with relatively small allocations tend to benefit.

Table 8.5.9 compares the allocations of Fishermen 1 and Fisherman 2 under the four alternatives being considered. Both fishermen would be better off when TACs increase under **Preferred Alternative 2**. Note Fishermen 1 and Fishermen 2 have the same allocation under each alternative when the TAC does not change. That is because these alternatives only impact allocations when the TAC changes. That assumes changes in the

IFQ share pool because of administrative action would result in proportional changes to the other participant's allocations.

Table 8.5.9 also shows Fishermen 1 and Fisherman 2 are both better off under **Preferred Alternative 2** when TACs increase. This result occurs because of the large number of fishermen expected to receive an allocation with relatively small catch histories (Class 2 license holders). When comparing the change in Fisherman 2's allocation under **Preferred Alternative 2** and **Alternative 4**, the 1.55-mp TAC increase only increased the allocation by about 1,300 pounds. That is the same allocation increase enjoyed by persons with small initial allocations. This would tend to more evenly distribute future TAC changes among the fleet. It also means the allocation amount is very dependent on the number of IFQ shareholders.

Table 8.5.9. Comparing the Alternative using the example allocation calculations

Alternative	Assumptions	Fisherman1 Allocation	Fisherman2 Allocation
1 & 2	3.1 million lb. TAC, 1,200 QS holders	13,818	94,545
1 & 2	4.65 million lb. TAC, 1,200 QS holders	20,727	141,818
3	3.1 million lb. TAC, 1,200 QS holders	13,818	94,545
3	4.65 million lb. TAC, 1,200 QS holders	17,919	118,828
4	3.1 million lb. TAC, 1,200 QS holders	13,818	94,545

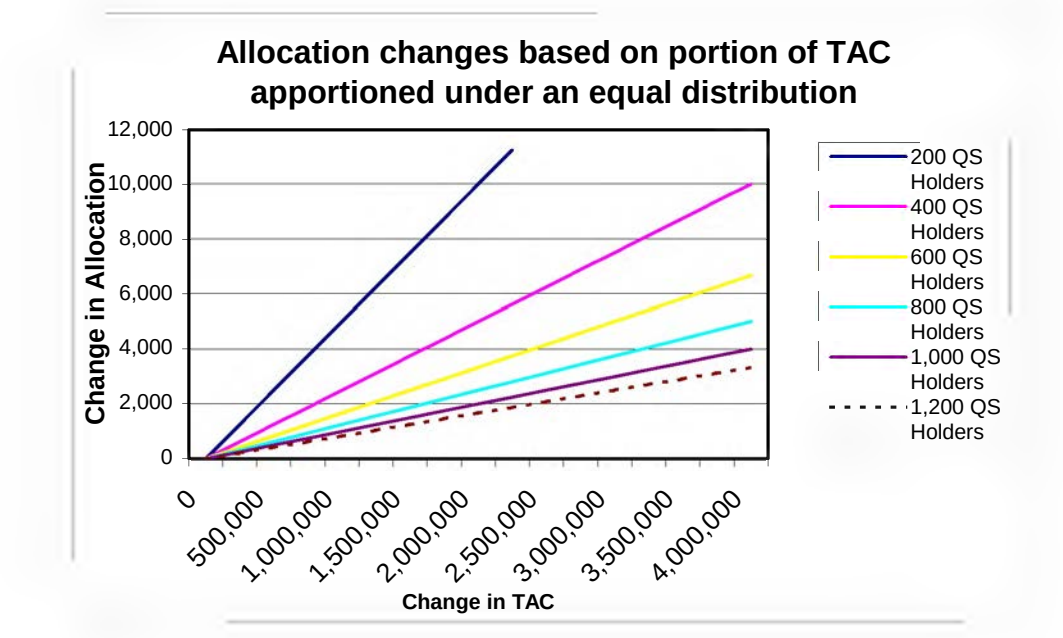

Figure 8.5.3. Individual's allocation change when the TAC is apportioned equally among all QS holders.

Figure 8.5.3 shows each individual's allocation change when the TAC is apportioned equally among all IFQ shareholders. It is obvious from this figure the number of IFQ shareholders is a very important variable in this calculation. If only 200 IFQ shareholders share a 1 mp increase, they would each receive 5,000 pounds of red snapper IFQ. However, if 1,200 IFQ shareholders were in the fishery, they would each be allocated 833 pounds. Given the importance of the number of IFQ shareholders under this alternative, it is important to consider how IFQ share transfers could be impacted.

Impacts on Transfers: Distributing TAC changes equally would impact transfers differently in years when the TAC increases then when it decreases. In years when the TAC will increase, IFQ shareholders may want to increase the number of persons holding shares. For example, it would be beneficial for a person that holds IFQ shares to transfer some of those holdings to a spouse, children, or crew so they could benefit from more IFQ shareholders receiving an equal distribution of the TAC increase. If they sold a few IFQ shares to five people, they would then be allowed to harvest six of the equal share distributions instead of 1. That could create a substantial incentive to create more IFQ shareholders. During years when the TAC will decline, quota shareholders would want to consolidate their holdings to decrease their IFQ share loses.

Assuming persons would not transfer IFQ shares just to increase or decrease their stake in the equal distribution of IFQ shares, this system would still impact transfers. If a person held a very small amount of IFQ share after the initial allocation, selling those IFQ shares would have a nominal value based on the amount of fish they are currently allowed to harvest. However, if they held the small number of IFQ shares until the TAC increases they could greatly increase the value of their holdings. This would tend to limit sales of small IFQ share holdings. Those shares would be more likely to be transferred. Financial risk would be relatively small under this scenario; TAC reductions would have little impact on the worth of these IFQ shares while TAC increases could result in a substantial gain. From a buyer's perspective, they would likely have to pay more for those IFQ shares than they would for shares held by someone with more IFQ shares with less to gain from the increase. After buying the IFQ shares they would no longer benefit from the equal allocation of TAC increases associated with those shares, once they are combined with their own holdings.

In summary, very small IFQ share holdings would likely have more value per share than larger holdings when TAC increases are distributed equally. This would tend to limit consolidation of small IFQ share holdings and the number of participants in the fishery. Persons holding larger amounts of IFQ shares would be more likely to sell to other persons holding IFQ shares that are not as greatly impacted by the equal distribution of TAC increases. If this structure encourages less efficient operations to remain in business, producer surplus will likely be reduced over that realized in **Alternative 2**.

ALTERNATIVE 4: Divide quota increases equally among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Reductions in the commercial quota will be divided among the (specify number) recognized IFQ shareholders who hold the largest amount of IFQ shares.

Alternative 4 will benefit small IFQ shareholders when TACs increase and provide them additional protection when TACs decline. Persons paying the reduction would realize the greatest negative impact.

The impact of **Alternative 4** is similar to that discussed under the equal TAC distribution portion of **Alternative 3**. Holders of small amounts of IFQ shares are less likely to sell their shares because of the value they have when TACs increase. IFQ shareholders face even less risk from holding these shares, relative to **Alternative 3**, because, TAC reductions are funded by holders of larger IFQ share amounts. If the holders of small amounts of IFQ shares transfer their holdings, they will always have their initial allocation and they have the potential to substantially increase their annual allotment should TACs increase.

Alternative 4 will encourage holders of small IFQ share amounts to remain in the fishery, when they may have sold out under **Preferred Alternative 2**. This alternative may also entice holders of large amounts of IFQ shares to distribute their shares to other persons, to escape funding the TAC reduction. IFQ shareholders would have a substantial incentive to "directly" hold fewer shares than is required to pay for the TAC decrease. Depending on where the line is set when determining the number of IFQ shareholders funding the decrease, it would determine the impact on persons funding the reduction. Given the information currently available it is not possible to determine what future TACs will be, the number of persons funding TAC reductions, or the IFQ share holdings of those persons. Therefore, it is not possible to quantify the impacts of this alternative. However, the persons funding the TAC reductions would realize all of the negative economic impacts. If other fishermen realize increased ex-vessel prices due to the reduction in supply of red snapper, they would benefit from this alternative.

Preferred Alternative 5: For 2007 issue 51 percent of 5 mp, which is 2.55 mp of the initial quota, or 51 percent of whatever TAC has been selected as the Preferred Alternative by the Council and submitted to the Secretary of Commerce. Any IFQ share balance resulting from a decision to specify a larger TAC, would be distributed after the date of publication of the final rule setting the new TAC, but no later than July 1, 2007. The general nature of economic effects of this alternative is similar to those of **Preferred Alternative 2**. The only major difference introduced by **Preferred Alternative 5** is the timing of the distribution of IFQ for the 2007 season. Being the first year of IFQ program, this alternative would add complications to the implementation of the IFQ program. It should be noted, though, that the introduction of this complication is rather outside the IFQ design process.

Preferred Alternative 5 brings about contrasting effects on the possible performance of IFQ participants. Since only about half of the commercial quota would be distributed at the start of the year, IFQ participants would face certain limitations in planning their operations for the entire year. Fishing participants may have to delay undertaking any changes in their operations. Such changes may involve making the operations more efficient by buying or selling IFQ shares. The extent of effects on profitability cannot be

determined. On the other hand, such delay in making changes may be beneficial to fishing participants especially if the eventual reduction in TAC is not large. For example, fishermen may decide to buy more IFQ shares during the first half of 2007 thinking quotas would be more expensive in the event a large TAC reduction ensues. If the TAC reduction turns out to be not as large as they expected, IFQ share prices in the second half of 2007 may not be as expensive as initially thought. They may only end up paying more for IFQ shares bought in the first half of 2007.

One potential negative economic effect **of Preferred Alternative 5** can arise from the provision to issue about 2.55 mp for the first half of the year. Under this relatively small quota, fishermen may not be able to take advantage of relatively strong demand for fish during the Lenten season. Although ex-vessel prices are still expected to increase relative to current levels, price increases during the Lenten season may be more than those in other parts of the year. It is worth noting, however, this provision for a relatively low quota for the first half of the year would ensure fishermen would not have to give up IFQ shares when TAC reductions occur in 2007.

8.5.10 Vessel Monitoring Systems (VMS)

Note - This action may be unnecessary if VMS requirements in Amendment 18A are approved by the Secretary. The Council has approved Amendment 18A to require VMS for all commercial reef fish vessels.

Much of the discussion in this section was taken from Amendment 18A to the Reef Fish FMP. It is noted, if vessels harvesting quota in the commercial red snapper fleet are required to install and use VMS equipment as a result of actions taken under Amendment 18A, then requiring them to install that equipment under this action would be duplicative and unnecessary.

Costs of VMS equipment and communication time were assumed to be the same as was estimated in Amendment 18A. That information is carried forward into this document. Two alternatives and three sub-options are being considered regarding the implementation of a VMS. These alternatives are being considered to improve enforcement of fishery regulations associated with the commercial red snapper IFQ program.

ALTERNATIVE 1: No action. Do not require commercial red snapper vessels be equipped with VMS.

Alternative 1 would continue the status quo management that does not require reef fish vessels to have a working VMS onboard. Selecting this alternative does not directly change the economic impacts on individual firms or net benefits to the Nation. However, if excluding a VMS program requires additional monitoring and enforcement of the IFQ fishery to ensure harvests are properly counted against a persons IFQ shares, the monitoring and enforcement costs of the program could increase.

ALTERNATIVE 2 (Preferred Alternative): Require all fishing vessels engaged in harvesting red snapper under the IFQ program to be equipped with VMS. The purchase, installation, and maintenance of VMS equipment must conform to the protocol established by NMFS in the *Federal Register*.

2a: (Preferred): The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for or arranged by the owner of the IFQ shares;

2b: The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for by NMFS;

2c: The purchase, installation, and maintenance of the VMS equipment and communications costs will be paid for jointly by the owner of the IFQ shares and NMFS.

2d: The purchase, installation, and maintenance of the VMS equipment will be paid for by NMFS. Communications costs will be paid for or arranged by the owner of the IFQ shares.

Preferred Alternative 2 would require all vessels harvesting red snapper under the commercial red snapper IFQ program to be equipped with a functioning VMS. This alternative further requires VMS units should be on 24 hours a day, 7 days a week. The cost of the equipment as well as the installation, maintenance, and communication costs would be borne by either the vessel owners, NMFS, or the costs would be paid jointly by the two groups.

The list of approved VMS units and communication providers was published in the *Federal Register* (March 18, 2005). Including installation by a qualified marine electrician, equipment costs range from a minimum of $1,600 for the ST-2500 to a maximum of $2,900 for the TT-3022-D. Yearly communication costs, which are provided in Table 8.5.10, range from $432 to $617.

Table 8.5.10: Monthly and Yearly Communication Costs by Provider

Monthly Cost for Xantic**	Monthly Cost for Telenor**	Monthly Cost for Orbcomm ($149 Initial Activation Fee)
$50.40	$36.00	$38.99
Yearly Cost for Xantic	Yearly Cost for Telenor	Yearly Cost for Orbcomm and Activation
$604.80	$432.00	$616.88

Source: NOAA Southeast Enforcement; compiled by Beverly Lambert

The first-year total cost per vessel, derived by aggregating equipment, installation, and communication costs, ranges from a minimum of $2,032 to a maximum of $3,517. The minimum cost is calculated using the lowest cost equipment and the lowest cost per year to use the equipment. Maximum costs are calculated using the highest cost equipment and annual fees. Sub-options considered under this alternative apply the VMS requirement to different subgroups of the commercial reef fish fishery.

The total number of vessels that must install and use a VMS under this alternative will depend on the number of vessels commercially harvesting red snapper under the IFQ program. Analysis of Action 4 in this document indicates 136 Class 1 license holders and between 482 and 628 Class 2 license holders are expected to qualify for an initial allocation of quota. These numbers are expected to decrease as transfers occur and the fleet consolidates. Because of the consolidation that is expected, these estimates should be viewed as the maximum number of vessels in the fishery. The actual number of vessels that would need VMS is expected to be less. It is not possible at this time to determine how much consolidation will occur in the future. Therefore, the size of the fleet in the long run cannot be predicted with certainty.

Table 8.5.11 provides estimates of the cost of VMS equipment for the fleet in the first year and the communication in future years. These are the costs that will be borne by the harvesters, NMFS, or both groups if this alternative is approved. Costs of maintenance and replacement of equipment are not included in these estimates. Those expenses would increase the actual cost of using the VMS.

Table 8.5.11: Cost of VMS for the commercial red snapper fleet harvesting IFQ.

	Class 1	Class 2	Total
Number of Vessels	136	482 to 628	618 to 764
Year 1 Cost per Vessel (low)	$2,032	$2,032	N/A
Year 1 Cost per Vessel (High)	$3,517	$3,517	N/A
Year 1 Cost for Fleet (low)	$276,352	$979,424 / $1,276,096	$1,255,776 / $1,552,448
Year 1 Cost for Fleet (High)	$478,312	$1,695,194 / $2,208,676	$2,173,506 / $2,686,988
Yearly Communication Cost per Vessel (low)	$432	$432	N/A
Yearly Communication Cost per Vessel (high)	$617	$617	N/A
Yearly Communication Cost for Fleet (low)	$58,752	$208,224 / $271,296	$266,976 / $330,048
Yearly Communication Cost for Fleet (high)	$83,896	$297,394 / $387,476	$381,290 / $471,378

Preferred Suboption-2a would require the vessel owners to pay for the VMS. The costs in the first year of the program could range from $1.25 million to $2.69 million, depending on the number of vessels in the program and the type of equipment purchased. Addition years of VMS usage will cost the vessel owners between $0.27 million and $0.47 million, plus any replacement and maintenance costs. The variable component of the VMS costs incurred by the commercial red snapper fleet would be expected to reduce net National benefits. Installing a VMS is not expected to allow individual vessels to generate more income. Because revenues are not expected to increase to offset costs, producer surplus, and net benefits will be reduced by approximately the variable costs of the program. The size of the reduction is proportional to the number of vessels required to have a VMS unit onboard, the cost of the system installed, and the yearly communication costs incurred.

Suboption-2b: Costs associated with the VMS program under this sub-option would be borne by the Federal government. The total costs of the program would be the same as

under **suboption 2A**. But since fisherman do not directly pay for the VMS units and communication time, their producer surplus and net benefits will not be reduced.

Sub-ption-2c: This option would require both the Federal government and vessel owners to pay part of the VMS costs. The total cost would be the same as reported in **Preferred suboption 2a.** If each group pays half of the cost, then vessel owners would pay between $0.63 million and $1.34 million the first year. Part of this amount would be the reduction in producer surplus and net benefits resulting from the first year of the program. Future years would result in reductions of $0.13 to $0.23 million dollars, annually.

Sub-ption-2d: Costs of the VMS equipment would be borne by the Federal government while communications costs would fall on the vessel owners. The total costs of the program would be the same as under **Preferred suboption 2a**. But since fisherman pays only for communication time, their producer surplus and net benefits will be reduced by less than that under **Preferred Suboption 2a**.

8.5.11 Cost Recovery Plan

The analysis addresses many issues of the "cost recovery" program's structure in Section 4.1 of this document (IFQ Program Management). That section of the document describes Section 304(d)(2) of the Magnuson-Stevens Act dealing with recovering some of the costs associated with managing an IFQ program. The SFA also addresses "cost recovery" and requires provisions of every new IFQ program: provides for the effective enforcement and management of any such program, including adequate observer coverage, and for fees under section 304(d)(2) to recover actual costs directly related to such enforcement and management (Magnuson-Stevens Act § 303 (d)(5)(B)).

In economic terms, this fee is considered a landing's tax, as opposed to the cost recovery concept that was described by Clark (979). The fee considered is not expected to cover the cost of the IFQ management program, so the industry is not truly responsible for its own management.

The Alaska halibut and sablefish IFQ program currently includes a fee implemented in 2000. The program requires the payment of three percent of the ex-vessel value of all IFQ landings to the Restricted Access Management Division of the NMFS Alaska Region to defer costs of administering the program. The program requires 25 percent of the fees collected be used to fund a low interest loan program for IFQ purchases (NPFMC, 2003). Payments are made by the IFQ holder and must be made on or before January 31 in the year after the landings. To facilitate tracking of payments IFQ buyers are required to report all landings by October 15th in the year of the landing. NMFS submits bills to all IFQ holders based on these reports for three percent of the ex-vessel gross revenues of the landings (based on the average price for the species). Persons may pay a lower amount provided they can demonstrate the actual price paid for landings. The fee can be adjusted downward by NMFS in the event recovered fees exceed the management and enforcement costs in the fishery. A similar program was also developed for the crab fisheries covered by the IFQ program currently being implemented (Magnuson-Stevens Act § 304(d)(4)(A)).

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

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.

ALTERNATIVE 2: All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The fee collection and submission will reside with the recognized IFQ shareholder.

ALTERNATIVE 3 (Preferred Alternative): All IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. The fee collection and submission will reside with the recognized IFQ dealer/processor.

Alternative 2 and **Preferred Alternative3** are similar in all respects, except with respect to the responsibility for fee collection and submission. This responsibility resides on the IFQ shareholder under **Alternative 2** and on the IFQ dealer/processor under **Preferred Alternative 3**. The general economic impacts of these two alternatives are the same, but there are some fine distinctions noted below.

NMFS will determine the percentage of the ex-vessel value of red snapper landings that would be collected. The fees would reduce the producer surplus resulting from program by up to 3 percent. Those reductions in producer surplus would also reduce net benefits to the Nation.

Assuming the commercial red snapper TAC is set at 4.65 mp (the entire TAC is harvested) and the ex-vessel value of the fish is $2.83 per pound, the fee paid by the fleet would be $383,625. Under this example the fleet's producer surplus would be reduced by $383,625, and net benefits to the Nation would be reduced by a similar amount. The actual amount collected will depend on the amount of fish sold in future years and the ex-vessel price of that catch.

Several sub-options are included under **Alternative 2** and **Preferred Alternative 3** that address who will physically pay the fee, how it will be collected, and when it will be collected. These options would result in additional bookkeeping and reporting costs. The amount of those costs would reduce producer surplus for the persons that incur the bookkeeping and reporting costs. Either the share/allocation holder (**Alternative 2)** or the dealer/processor (**Preferred Alternative 3**) would physically pay these costs.

The persons harvesting the fish would fund the fee. 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.

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. The Council's preferred alternative would select this option and require the fish buyers to provide mandatory reports. Those reports should help verify the actual prices paid to fishermen, and reduce concerns over using accurate prices for determining the fee.

There are certain considerations that need to be recognized with respect to **Preferred Alternative 3** especially when viewed against the backdrop of the permitting system and the IFQ monitoring system.

Dealers electing to participate in the IFQ program must secure the necessary IFQ dealer endorsement from NMFS. This endorsement is separate from the current reef fish dealer permit required to purchase reef fish in the GOM, and a dealer would be required to have both a current reef fish dealer permit and an IFQ dealer endorsement to participate in the IFQ program. The IFQ dealer endorsement would be issued at no cost to those individuals who possess a current reef fish dealer permit and request the endorsement. Although the current reef fish dealer permit must be renewed annually at a cost of $50 for the initial permit ($20 for each additional permit), the IFQ endorsement 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. Aside from the fee, the only other major requirements to secure or renew a reef fish dealer permit are possession of valid state wholesaler's license and a physical facility at a fixed location in the state the dealer conducts his business. There could be additional requirements for securing/renewing an IFQ dealer permit, as will be discussed below.

The IFQ monitoring system is currently envisioned to be an electronic reporting system, with the IFQ dealer serving as a major conduit between NMFS and the IFQ share/allocation holder. Each IFQ dealer must have access to computers and the Internet, and it is the responsibility of the dealer to have that access. Dealers receiving IFQ red snapper have to input both the pounds and dollar value (ex-vessel) of red snapper

landings into the NMFS electronic system via the Internet. Pound information is necessary for effectively tracking IFQs while dollar information is needed for assessing the cost recovery fee. It is also the responsibility of IFQ dealers to query the electronic system whether the fisherman selling red snapper has enough IFQ allocations. Such query returns in effect only a yes or no response without identifying the fisherman's actual remaining allocations. Only the fisherman can access that information through the electronic system.

The monitoring system described above imposes certain requirements on dealers. In the event a dealer does not have the necessary electronic capability, he/she may have to expend approximately $1,500 as a start-up cost mainly for computer/software purchase and approximately $300 a year for Internet access (J, Reed, pers. comm.). If in addition, the dealer does not possess the necessary computer/Internet skills, he/she may have to expend effort and money to acquire such skills or hire someone with the relevant capability. It should be noted, the needed skill is very rudimentary and should not be difficult to acquire. This electronic capability is mandatory for IFQ dealers and it would be an additional consideration for issuing or renewing an IFQ dealer endorsement. Inputting of the required information onto the electronic monitoring system is expected to take approximately 10 minutes per transaction (J. Reed, pers. comm.).

The described IFQ monitoring system provides the necessary data for NMFS and dealers to determine the cost recovery fee dealers have to remit to NMFS. Dealers would merely apply the required three percent recovery cost on the total value of red snapper transactions within each calendar quarter and remit the money to NMFS within 30 days after the end of each calendar quarter. On top of this quarterly remittance, dealers have to submit to NMFS an annual report detailing the value of their IFQ transactions for the year, although most of the data required can be gathered from the various electronic filing of transactions dealers undertake. This process of determining the recovery cost and remitting the money to NMFS would impose a relatively minimal monetary cost on dealers but there are certain non-monetary costs to it. Dealers have to ensure they assess the correct amount and remit the money on time. Failure on their part to do so carries some penalties, which at worst can result in heavy fines or revocation/non-renewal of IFQ dealer endorsements.

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.

8.6 Monitoring and Enforcement Costs of an IFQ Program

Costs associated with in-season management of an IFQ program are typically referred to as the monitoring and enforcement costs. Monitoring costs are the costs associated with determining how much fish is harvested, when the harvests occur, where the harvests

occur, issuing quota, transferring quota, etc. The enforcement costs are the costs associated with ensuring the harvesting vessels and fish buyers are in compliance with the existing regulations governing the harvest.

The North Pacific Council approved an IFQ program for halibut and sablefish in the early 1990's. That program was implemented by NMFS in mid 1990's. The commercial halibut and fixed gear sablefish fisheries have been operating under those programs ever since their initial implementation, but they have been modified several times. Developing the necessary infrastructure to oversee the programs was estimated to cost approximately $2 million. Once the program was operating, it was assumed the cost would be about $2.7 million annually to enforce (Pautzke and Oliver, 1997). NMFS reported at the end of the 2002 fishing year a cost recovery fee of two percent would be used to recover the $3.5 million in program expenditures from the 2,451 IFQ permit holders. The cost recovery fee was reduced to 1.4 percent at the end of the 2003 fishing year. Costs for 2003 were estimated to be about $3.4 million and were broken down by the following categories (RAM, 2003):

- International Pacific Halibut Commission: $362,260
- NMFS Law Enforcement: $1,665,741
- NMFS Sustainable Fisheries: $71,036
- NMFS Restricted Access Management (RAM): $1,308,081.

The two major components of the budget listed above are the NMFS Law Enforcement budget and the Restricted Access Management (RAM) Division budget. It should be noted, NMFS Law Enforcement personnel have indicated the budget should be considered as the minimum needed to enforce the program, and some consider it under-funded. Personal communication with their staff indicates they were short 12 staff members at times in the recent past. Those costs are not reflected here, and staff has requested an additional $1 million to fund those positions. The NMFS Alaska Region Law Enforcement Division for FY2004 had costs of about $1.9 million. The salaries and benefits accounted for about $1.1 million of the total. Contracts accounted for over $0.4 million. The remaining $0.4 million were spent on rent, travel, communications, and various other expenses. These expenses were associated with monitoring about 9,000 off-loads each year in 2003 and 2004 (pers. comm., Jeff Passer).

The RAM Division within the NMFS Alaska Region office oversees the IFQ, cooperative, and license/permit programs in the federal waters off Alaska. They are charged with determining each applicant's catch history, issuing the IFQ, monitoring transfers, determining catch levels, and a variety of other tasks. When fully staffed, RAM currently has: A Program Administrator and 2 Administrative Assistants, a Permit Supervisor who supervises 6 Permit Assistants and a Transfer Officer, and a Data Manager who supervises 4 IT Specialists and a Data Analyst for a total of 17 positions. The majority of these positions are supporting the IFQ programs. This number will increase when new programs (e.g., the crab rationalization program) are implemented. Other employees are also needed in addition to the RAM staff. The additional staff includes a Fee Coordinator to oversee the cost recovery program and an Office of

Administrative Appeals that has a Director, 2 attorneys, a paralegal, and interns. Other contract employees were also used during the startup phase of the program to write documents describing how the program would function and computer experts to develop programs and networks to provide timely information to the managers.

Reflecting on the implementation process the RAM program's director felt the following issues were very important when developing the program's management structure (pers. comm):

1. The computer infrastructure must be in place to support the program and must be robust enough to deal with changes that may occur in the program. This implies acquiring sufficient computer hardware to support the database needed to accomplish initial distribution, as well as the system to provide ongoing support to management (catch accounting, IFQ accounts, transfers, etc.). It also implies sufficient personnel are available to do the job. The RAM director indicated contractors can be helpful (essential in some cases), but they are better off having their own data capability.
2. Make sure the bureaucratic infrastructure (managers, permit clerks, etc.) is in place to provide the support the program deserves. They also indicated they received a lot of support from the RA when the program was being formed. Given they had very little program infrastructure at the beginning, the solid backing of the RA was critical to implementing the program successfully.
3. Remember the public component. IFQs are controversial and there will be a lot of anger and anxiety. Public outreach and helping folks to understand it is an absolutely essential part of the program's implementation and on-going management. RAM added an "800" number and widely advertise it so the public could contact them with no expense. They also produced public information documents to help educate the public and conducted a large number of community workshops. Enforcement staff also conducted workshops when the program was at a stage where people we about to start fishing. They felt outreach resulted in better understanding, better compliance, and better acceptance of the program and was worth the extra expenditure.

Although the details of the monitoring and enforcement system for the current amendment have not been completely worked out yet, there are some cost estimates associated with the implementation of the red snapper IFQ program, including the VMS requirement. Monitoring and enforcement can cost a minimum of $2 million dollars (D. McKinney, pers. comm., 2005). Public burden from the cost recovery fee is estimated at $384 thousand. IFQ dealers may have to expend $1,5000 in one-time costs for equipment and $300 annual cost for Internet access. The VMS requirement can cost as much as $2.7 million, with the associated communication costs in future years being projected to be as much as $470,000. Note the VMS requirement and associated costs may no longer be necessary as it is already included in a previous plan amendment (Amendment 18A) submitted by the Council to the Secretary for review, approval and implementation.

8.7 Determination of Significant Regulatory Action

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

Currently, the Council's preferred alternative is to establish a transferable IFQ system for the commercial red snapper fishery. The Council's preferred IFQ features are:

- No limit on the duration of the IFQ program, but a program evaluation is required every five years.
- A maximum IFQ share ownership equal to the maximum percentage issued to an initial recipient of IFQ shares.
- Restriction on initial eligibility only to owners of Class 1 or Class 2 license holders.
- Proportionate allocation of initial IFQ shares based on the average annual landings for 10 consecutive years of data during 1990-2004 for Class 1 license holders, 7 years for Class 1 historical captain permit holders, and 5 years of data during 1998-2004 for Class 2 license holders.
- Establishment of an appeals process, where the RA will review, evaluate, and render final decision on appeals; setting aside three percent of commercial quota to resolve appeals.
- Restriction on transfers of IFQ shares/allocations only to those with a valid commercial reef fish permit during the first five years and to U.S. citizens and permanent resident aliens thereafter.
- No minimum landings requirement for retaining IFQ shares.
- Proportionate allocation of commercial quota adjustments based on percentage holdings at the time of the adjustment; phased-in issuance of IFQ shares for the 2007 season.
- VMS requirement on all fishing vessels harvesting red snapper under the IFQ program.
- Provision for IFQ cost recovery fees to be paid by IFQ holders but collected and submitted to NMFS by registered IFQ dealers/processors.

The economic impacts of the preferred measures have been discussed above mostly in qualitative terms although some quantification has been attempted for some alternatives.

There are no estimates of the overall economic impacts of the IFQ program as currently structured, but since the value of the commercial red snapper fishery is about $13 million per year and that of the entire commercial reef fish fishery is about $50 million a year, the $100 million threshold is very unlikely to be met by the proposed IFQ program.

The proposed IFQ program is expected to improve the efficiency of the commercial red snapper fishery. This would result in better long-term profitability prospects for this sector of the red snapper fishery. A contributing factor to that improvement in efficiency is the expected consolidation of several fishing operations. Of the 136 Class 1 license holders, 17 are already engaged in fleet operations involving 58 licenses. To the extent some of these operations are already near the proposed maximum ownership cap for IFQ shares, further consolidation in the fishery is likely to involve the remaining 78 Class 1 licenses and owners and the 482[8] Class 2 licenses/owners. Of course, it may be noted, even those currently engaged in fleet operations may scale down their operations to fewer vessels to take advantage of the opportunity to cut down their operating costs especially if fuel prices continue to rise. Consolidations and reductions in number of fishing vessels mean fewer crew members would be needed. This reduction in labor requirement, which cannot be estimated at this time, also has repercussions on the supporting industries and fishing communities. This job displacement, however, may be mitigated as vessel operations become more profitable, since both crew income and owner profits can be spent or invested in fishing or other activities that can provide better, if not more, employment opportunities. Another expected result of an IFQ program is the safety improvement in fishing operations. Vessels can pick and choose more favorable time and place for fishing red snapper. With potentially increasing profits and lower crew needs, a more stable, skilled crew personnel can develop. And with this type of crew, there is likely to be a higher knowledge of safety measures and accident preventions. In addition, vessel owners/captains may be more motivated to upgrade or invest more in safety equipment to protect their investments in the fishery.

An IFQ program in the red snapper fishery is a new management system intended to replace the existing license limitation system. No other federal agency is directly involved in fisheries management, so that the proposed change in the management of the commercial red snapper fishery would not affect any existing or planned actions of those other federal agencies. Although the proposed IFQ program applies only to the commercial sector of the red snapper fishery, the recreational sector has for the last several years been managed in a different manner, so any semblance of inconsistency cannot be attributed to the proposed establishment of an IFQ program. No state in the GOM has adopted an IFQ program for the commercial red snapper fishery, but there has been established a relatively good history for states to either adopt or support federal rules on red snapper. Once an IFQ system is adopted, all states throughout the GOM will be encouraged to support this program.

There currently are no grants or loan programs for the red snapper fishery in the GOM. Presently, there is a user fee for dealers in the form of a $50 administrative issuance of

[8] Although there are 628 Class 2 license, only 482 of them have landings records for the proposed qualifying period 1998-2004.

reef fish dealer permits. Under the proposed IFQ program, an IFQ dealer endorsement would be required of any dealer purchasing red snapper. The IFQ dealer endorsement would be issued at no cost to those individuals who possess a current reef fish dealer permit and request the endorsement. Although the current reef fish dealer permit must be renewed annually at a cost of $50 for the initial permit ($20 for each additional permit), the IFQ dealer endorsement 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. There are two types of user fees for vessel owners. One is an administrative fee for renewing Class 1 or Class 2 licenses and the other is the price of these licenses in the open market. The administrative fee for licenses/permits is currently $50 for the first permit and $20 for each additional permit.

Some limited information places the price of a Class 1 license at around $50,000. There is no information on the sale price of Class 2 licenses. At any rate, this type of user fee will disappear under the IFQ program and will be replaced by the sale or transfer price for IFQ shares. Under the IFQ program, Class 1 license holders are unlikely to be significantly adversely affected, since these licenses have generally higher landings history, which is the basis for initial share allocation. The case for Class 2 is a different matter. Some have very good landings history, but many do not. In fact, 146 Class 2 licenses have no history of landings for the period 1998-2004, the Class 2 qualifying years for IFQ purposes. In addition, some Class 2 licenses have very low landings and they are apt to receive very low IFQ share allocations. Those with no or very low landings history are bound to lose their current privilege of harvesting up to 200 pounds of red snapper per trip. They would have to buy IFQ shares or have IFQ allocation transferred to them to harvest commercial quantities of red snapper. In this case, however, they may be able to fish more red snapper, depending on their ability to buy IFQ shares.

The proposed IFQ program for the commercial red snapper fishery is actually the second IFQ program designed for the fishery. The first one, approved by NMFS in 1995, was never implemented due to Congressional action taken through the 1996 SFA. Incidentally, this Congressional action also required two referenda before an IFQ can be implemented for the commercial red snapper fishery. An IFQ profile for the red snapper fishery was also developed in 2002 and to some extent served as background information for the first referendum, which favored the development of an IFQ program for the commercial red snapper fishery. In a sense, a fair amount of history exists regarding the development of an IFQ program for the commercial red snapper fishery, so an IFQ program for the red snapper fishery is not a novel approach.

Nonetheless, there are complicating issues that make the proposed IFQ controversial. First, a second referendum has to be conducted on the proposed IFQ before the Council can submit it to the Secretary for review, approval, and implementation. In the second referendum, conducted on January 17, 2006, a majority of voters supported the Council submitting the IFQ amendment to the Secretary for review. If the voting fishermen disapproved the IFQ, then the Council and NMFS could not proceed to implement an IFQ program. At its March 2006 meeting, the Council voted to submit this amendment

to the Secretary for review. Second, there are potentially 146 Class 2 licenses that would not result in any IFQ allocation and some Class 2 licenses would receive very small amount of allocation (possibly less than one pound). Even though these licenses entitle the owners to harvest only 200 pounds of red snapper per trip, such harvest can add up over the entire season. In addition, these licenses do not expire under the current license limitation system and thus provide their owners some level of protection with respect to their participation in the red snapper fishery. For the 146 Class 2 license owners, such protection would be lost under the IFQ program. Third, the initial allocation of IFQ shares can vary substantially for some eligible participants depending on the period considered for counting landings history.

The current preferred alternatives partially mitigate this problem by allowing license holders to choose their best combination of years which for Class 1 license holders is ten consecutive years within the 1990-2004 period, for Class 1 historical captain seven consecutive years (1998-2004), and for Class 2 license holders any five years within the 1998-2004 period. Fourth, the proposed IFQ program provides for cost recovery fees to be paid by IFQ shareholders. This is something new in the GOM as there was no similar provision in the first IFQ considered for the red snapper fishery. However, the authority to exact such a fee is found in the Magnuson-Stevens Act. The current preferred alternative provides for the dealer/processor to collect the fee and submit it to NMFS on a quarterly basis. As discussed in the RIR, there exist possibilities for the dealer/processor to charge fishermen additional fees in one form or another for the processing, collection and remittance of those fees. Such additional charges may be considered as ordinary part of conducting a business, but it would create some frictions between the dealer/processor and IFQ shareholders. Fifth, the VMS requirement would impose costs that compel small vessel operations to sell IFQ shares sooner than planned. If these sellers get good prices for their IFQ shares, the VMS requirement may not at all pose big problems for small operations. One important factor to note in this case is the current preferred alternative, which restricts transfers to about 1,200 reef fish commercial permit holders many of whom do not fish for red snapper, would place a limit on the price an IFQ share may command in the market.

Although most of the enumerated criteria for determining the significance of a regulatory action would not be met, the presence of controversial issues outlined above renders the proposed IFQ program a significant regulatory action.

9.0 REVISED INITIAL REGULATORY FLEXIBILITY ANALYSIS

9.1 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.

9.2 Description of reasons why action by the agency is being considered

The need and purpose of the actions are set forth in Section 3 of this document and are incorporated herein by reference.

9.3 Statement of the objectives of, and legal basis for, the proposed rule

The primary objective of this action is to establish an IFQ program for the commercial red snapper fishery. An IFQ program is expected to address the excess capacity and derby problems in the fishery. The Magnuson-Stevens Act, as amended, provides the legal basis for the rule.

9.4 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 $6.5 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.

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. As of June 30, 2005, there are 1,118 active commercial reef fish permits and 91 others that are 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. Of the 1,209 commercial permittees, 136 entities hold Class 1 licenses that allow a vessel trip limit of up to 2,000 pounds of red snapper and 628 entities hold Class 2 licenses that allow a trip limit of up to 200 pounds of red snapper. Of the 136 Class 1 licenses, 7 have been issued on the basis of historical captain criterion. All original owners of Class 1 historical captain licenses have sold their license. Waters (2003) reported the top 50 red snapper vessels averaged 2.6 mp of red snapper, or 60 percent of the industry total harvest between 1998 and 2002. Boats ranked 51-131 averaged 1.5 mp, or 34 percent of industry total for the same period. In effect, the top 131 red snapper vessels accounted for about 94 percent of industry total landings of red snapper. Waters (2002) also reported that of the vessels with commercial reef fish permits, all of which are required to submit logbooks, 782 vessels in Florida and 207 in other GOM states indicated they landed reef fish using vertical lines. Also, 155 vessels in Florida and 33 in other GOM states indicated to have landed reef fish using longlines. Furthermore, 55 vessels reported landing reef fish using fish traps. All fish trap vessels are in Florida. Red snapper are mainly caught in the northern GOM by vessels using vertical lines.

According to a survey of commercial reef fish fishermen in the GOM (Waters, 1996), fishing vessels in the reef fish fishery have the following annual gross receipts per vessel:

	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

Also affected by the measures in this amendment are fish dealers, particularly those that receive red snapper from harvesting vessels. Currently, a federal permit is required for a fish dealer to receive reef fish from commercial vessels. Based on the permits file, there are 227 dealers possessing permits to buy and sell reef fish species. Based on mail address data, most of them are located in Florida (146), with 29 in Louisiana, 18 in Texas, 14 in Alabama, 5 in Mississippi and 15 out of the Gulf states region. In addition, as part of the commercial reef fish logbook program, reporting vessels identify the dealers who receive fish landed by these vessels. Commercial reef fish vessels with

federal permits are required to sell their harvest only to permitted dealers. Based on vessel logbook records for 1997-2002, there were on average 154 reef fish dealers actively buying and selling in the red snapper market. These dealers were distributed around the Gulf states as follows: 7 in Alabama, 96 in Florida, 22 in Louisiana, 7 in Mississippi, and 22 in Texas. These numbers differ from the ones taken from the permit file, because they are averages for the three-year period. Dealers in Florida purchased about $1.8 million of red snapper, followed by dealers in Louisiana with purchases of $1.4 million and dealers in Texas with purchases of $1.3 million. Dealers in Mississippi purchased $174 thousand worth of red snappers and those in Alabama, $88 thousand. These dealers may hold multiple types of permits and because we do not know 100 percent of the business revenues, it is not possible to determine what percentage of their business comes from red snapper fishing activity.

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 the average dealer employment would not surpass the SBA employment benchmark.

Based on the gross revenue and employment profiles presented above, all permitted commercial reef fish vessels affected by the proposed regulations are classified as small entities.

9.5 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.

The proposed IFQ program would introduce two major compliance requirements. The first one involves the tracking of IFQ shares and associated activities (e.g., IFQ share/allocation transfers, red snapper landings and ex-vessel values, cost recovery fees), and the second pertains to the VMS requirements.

Under the proposed IFQ program, an IFQ dealer endorsement would be required of any dealer purchasing red snapper. The IFQ dealer endorsement would be issued at no cost to those individuals who possess a current 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 GOM reef fish dealer permit and abides by all reporting and cost recovery requirements of the IFQ program. This requirement would affect all 227 existing dealers.

Currently, an electronic reporting system is being developed for dealers and IFQ share/allocation holders. Some of the details still have to be worked out, but the general thrust of the reporting system is relatively established. The electronic nature of the reporting system would render the reporting of most IFQ activities practically on a real time basis. For example, to effect a sale of red snapper landings, the purchasing dealer has to log into the electronic reporting system and enter all the required information about the red snapper 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 red snapper. Electronic validation of the dealer-supplied information by the selling fisherman is necessary to complete the sale. Also, transfer of IFQ allocations, but not IFQ shares, would have to be effected 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 red snapper purchases into the IFQ electronic reporting system. Dealers also have to remit to NMFS on a quarterly basis, the cost recovery fees equivalent to three percent of the ex-vessel value of red snapper purchased from IFQ share/allocation holders. Although IFQ share/allocation holders pay this fee, it is 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 227 reef fish dealers have the necessary electronic capability to participate in the IFQ program. However, demonstration of this capability would be necessary for IFQ program participation.

Holders of IFQ shares and allocations would need to have access to computers and the Internet to effect 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 red snapper to a dealer, all the fisherman has to do is to validate the sale using the dealer's computer. This requirement would affect all the 136 Class 1 license holders and 482 Class 2 license holders, although in varying degrees.

The current preferred alternative would require vessels to carry VMS. Equipment and installation cost for VMS ranges from $1,600 to $2,900 per vessel depending on the type of equipment used. The annual communication cost ranges from $432 to $617 per vessel. These costs would be solely borne by the industry, although NMFS would shoulder part of the cost if funds for VMS purposes become available, as is the case with other fisheries requiring VMS. It needs noting here that the VMS requirement would not be a

part of this amendment if it is approved and implemented through another amendment to the Reef Fish FMP.

9.6 Identification of all relevant Federal rules, which may duplicate, overlap or conflict with the proposed rule

No duplicative, overlapping, or conflicting federal rules have been identified. An IFQ program considered in this amendment would still have to be approved by fishermen through a second referendum, as mandated by the Magnuson-Stevens Act.

9.7 Significance of economic impacts on small entities

Substantial number criterion

The measures in this amendment are expected to directly affect 764 vessels that have a Class 1 or Class 2 red snapper license. These vessels are estimated to earn revenues and profits, as described in Section 10.4, which are well below the $5 million threshold. Hence, all affected vessel operations fall within the definition of small entities. These Class 1 or Class 2 vessels comprise 64 percent of all vessels with commercial reef fish permits. It is clear then a substantial number of small entities would be affected by this amendment.

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 the 764 vessel operations and 227 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. In particular, there are 17 fleet operations that account for as much as 40 percent of the entire commercial quota for red snapper. These 17 operations and another 78 single vessel operations would likely receive more than 90 percent of IFQ shares. The other 482 smaller operations would receive the rest of the IFQ shares. It may be noted 146 operations that currently have a Class 2 license would likely not receive any initial IFQ allocation because they do not have red snapper landing history during 1998-2004, the period of eligibility.

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

There are several types of effects on profitability of the 764 vessels with a Class 1 or Class 2 license. The 146 Class 2 operations that have no landings record of red snapper

are most likely minimally affected by the IFQ program. The effects on them lie mostly in their relatively costless entry into the red snapper fishery should the need arise. Under an IFQ program, they have to buy or lease shares even if they intend to fish only on a limited basis. Some of the Class 2 operations that may have increasingly relied on red snapper to supplement their overall harvests may receive small IFQ shares. They would be compelled to give up red snapper fishing although they could get some remuneration from selling their IFQ shares. Their overall profits may subsequently suffer.

A more immediate effect on profitability would be brought about by the VMS requirement. In the first year of operation under VMS, vessels would incur an additional cost of $2,032 to $3,517, most of which are due to the cost of the equipment and installation. Relative to the profits of vertical line vessels in the northern GOM (Section 10.4), the VMS cost would be 7 to 12 percent for high-volume vessels and 30 to 52 percent for low-volume vessels. It may, thus, be concluded VMS costs would adversely impact the profitability of vessels, particularly low-volume vessels, in a material way. From this standpoint alone, it can be concluded the proposed rule would result in a substantial adverse impacts on small entities. Profitability would also be affected by imposition of a cost recovery fee. If the fee is set at its allowable maximum of three percent of ex-vessel revenues, this could potentially result in a bigger percentage reduction in profits, particularly for smaller operations. This effect, however, can be absorbed by most operations, if as discussed below, profitability increases under the IFQ program.

As discussed in the RIR, an IFQ system is expected to improve the profitability condition of these vessels. This improvement would generally take time, since fishermen would have to adjust their operations in order to achieve the best profitable position. Such adjustment may involve consolidation of multiple vessel operations to lower costs, schedule harvests in order to take advantage of market conditions, negotiate with purchasers to strike a long-term deal at relatively stable prices, or some other arrangements that take advantage of a relatively certain share of a season's quota at the start of the season. Some entities may be successful in making adjustments while others may not. For those that cannot effect a successful adjustment, there is always the option to sell their shares. They may leave the red snapper fishery, but would receive some remuneration for doing so.

It cannot be determined at this time the extent to which the IFQ monitoring system would affect dealers' profitability. For the relatively established dealers, the monetary cost requirement under an electronic monitoring system is probably small, especially if the dealers already have computers systems in place. On top of the cost the dealers incur to collect and remit cost recovery fees, participating dealers are also exposed to possibilities of temporarily or permanently losing their red snapper business in the event there are problems with their collection and/or remittance of the full amount of cost recovery fees. In principle, dealers collect the cost recovery fee at the time of purchase of red snapper. They are required to remit the fees to NMFS every calendar quarter, although they have the option to remit the money any time before the end of the calendar quarter. Failure to remit the full amount each calendar quarter results in dealer endorsement suspension or

revocation. To mitigate this potential adverse impact, dealers are granted a 30-day grace period from the end of the quarter to reconcile their cost recovery fee accounts. Arrears in cost recovery fees not settled within the 30-day grace period leads to suspension of the dealer red snapper endorsement. In the event of suspension, dealers are granted another 30 days to settle their accounts before their dealer endorsements are annulled. Note, however, that payment of arrears within the specified period is sufficient to reinstate the dealer endorsement.

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

Currently, the Council's preferred alternatives are:

Action 1: Establish an IFQ program for the commercial red snapper fishery (**Alternative 2**)

Action 2: No limit on the duration of the IFQ program, but a program evaluation is required every 5 years (**Alternative 2**).

Action 3: A maximum IFQ share ownership equal to the maximum percentage issued to an initial recipient of IFQ shares (**Alternative 3**).

Action 4: Restriction on initial eligibility only to owners of Class 1 or Class 2 license (**Alternative 3**).

Action 5: Proportionate allocation of initial IFQ shares based on the average annual landings for ten consecutive years of data during 1990-2004 for Class 1, seven consecutive years of data for Class 1 historical captain (**Alternative 4**), and 5 years of data during 1998-2004 for Class 2 (**Alternative 2**).

Action 6: Establishment of an appeals process, where the RA will review, evaluate, and render final decision on appeals (**Alternative 2**), and a set-aside of three percent of the quota to resolve appeals (**Alternative 5**).

Action 7: Restriction on transfers of IFQ shares/allocations only to those with a valid commercial reef fish permit during the first five years and to U.S. citizens and permanent resident aliens thereafter (**Alternative 6**).

Action 8: No minimum landings requirement for retaining IFQ shares (**Alternative 1**).

Action 9: Proportionate allocation of commercial quota adjustments based on percentage holdings at the time of the adjustment (**Alternative 2**), and phased-in issuance of IFQ shares for the 2007 season (**Alternative 5**).

Action 10: VMS requirement on all fishing vessels harvesting red snapper under the IFQ program (**Alternative 2**).

Action 11: Provision for IFQ cost recovery fees to be paid by IFQ holders but collected by registered IFQ dealers/processors (**Alternative 3**).

The economic impacts of all the alternatives have been discussed in Section 8, which is included herein by reference. The following describes the alternatives to the preferred alternatives and discusses their relative impacts on small entities.

The only other alternative under Action 1 is the no action alternative, which would maintain the current license limitation system. This system has not effectively addressed

overcapacity in the fishery and the derby effect, which has constrained the profitability of the commercial harvest industry. The proposed IFQ program is expected to improve the efficiency of the commercial red snapper fishery. This would result in better long-term profitability prospects for this sector of the red snapper fishery. A contributing factor to that improvement in efficiency is the expected consolidation of several fishing operations. In order to partly cushion the impacts of unintended IFQ allocation overruns that may result in penalties, IFQ shareholders are allowed to land up to 10 percent more than their remaining allocations for the fishing year's last fishing trip without having to purchase additional shares. However, any overages would be deducted from the next year's allocation associated with their IFQ shares. Holders of IFQ allocations, not IFQ shares, do not qualify for the 10 percent overage exemption. These persons have to buy additional allocations to cover a 100 percent of their landings.

Under Action 2, there are two rejected alternatives. One would place no duration on the IFQ program **(Alternative 1)** and the other would impose term limit on the IFQ program (**Alternative 3**). The duration of an IFQ program directly affects the effectiveness of the program in achieving its intended objectives of addressing the derby effects and overcapitalization. A sunset provision offers a lower likelihood for the program to achieve its intended objectives. On the other hand**, Alternative 1** would encourage long-term planning and investment, allowing the fishing capital to adjust to socially optimal levels. Long-term privileges also reduce uncertainty caused by changes in the "rules of the game" and provide incentives to invest in the resource. The preferred alternative has similar impacts as **Alternative 1**, but it also allows the mandatory evaluation of the IFQ program, which can address concerns relative to the performance of the commercial vessel operations.

Under Action 3, the other alternatives are **Alternative 1**, which would place a cap on ownership of IFQ shares, and **Alternative 2**, which would place a specific percentage cap on share ownership ranging from 2 to 15 percent of the commercial quota. **Alternative 1** provides a fertile ground for the intended consolidation of IFQ shares, but it can also lead to over-consolidation in the sense of eliminating historically small-scale operations in the fishery. **Alternative 2** may be too liberal (e.g., 15 percent) as to lead to over-consolidation or too restrictive (e.g., 2 percent) as to penalize the more efficient operations.

Under Action 4, the other alternatives are **Alternative 1**, which would not restrict initial eligibility in the IFQ program, and **Alternative 2**, which would restrict initial eligibility to Class 1 license holders. **Alternative 1** does not provide guidance in initially allocating IFQ shares. **Alternative 2** is too restrictive as to initially disallow continued participation in the fishery to at least 482 Class 2 license holders who have historical records of commercial red snapper landings.

Under Action 5, the other alternatives are **Alternative 1**, which does not specify a methodology for allocating initial IFQ shares, and **Alternative 3**, which would allocate initial IFQ shares equally among all eligible participants. **Alternative 1** does not provide guidance in allocating initial IFQ shares. **Alternative 3** would penalize the highliners

and reward the small-scale operations in the fishery. There are more participants who would benefit from this alternative, but the magnitude of adverse impacts on at least 136 operations would be relatively large.

Under Action 6, the other alternatives are **Alternative 1**, which does not provide for an appeals process, **Alternative 3**, which establishes an appeals board composed of state directors/designees who will advise the RA on appeals, and **Alternative 4**, which establishes an advisory panel composed of IFQ shareholders. An appeals process provides an avenue for fishermen to have their case heard with respect to possible under-allotments of IFQ shares, so all the alternatives, except **Alternative 1**, would help to correct any "undue" reductions in IFQ shares of some eligible participants. With the final decision on appeals resting on the RA, the **Preferred Alternative** may be deemed as a relative simplification of the appeals process. In addition, **Alternatives 3** and **4** would impose some burden on state directors or IFQ shareholders who mainly act in an advisory capacity to the RA. These two alternatives also present potential problems relative to confidentiality of individual landings information.

Under Action 7, the other alternatives are: **Alternative 1**, which does not limit to whom IFQ shares/allocations can be transferred; **Alternative 2**, which limits transfers only to those with valid commercial reef fish permit; **Alternative 3**, which limits transfers only to IFQ shareholders; **Alternative 4**, which allows transfers to U.S. citizens and permanent resident aliens; and, **Alternative 5**, which allows transfers only to IFQ shareholders during the first five years of the IFQ program and those with valid commercial reef fish permit thereafter. In terms of allowing IFQ shareholders to get the best price when selling IFQ shares, the various alternatives may be ranked from highest to lowest as follows: **Alternative 1**, **Alternative 4**, **Preferred Alternative 6**, **Alternative 2, Alternative 5**, and **Alternative 3**. With the exception of **Alternative 1**, all the alternatives impose limitations on ownership of IFQ shares to address concerns relative to the preservation of the historical and current participation in the commercial red snapper fishery.

Under Action 8, the other alternatives are **Alternative 2**, which provides for the revocation of IFQ shares if allocations are fished below 30 or 50 percent of a shareholder's allocation over a three-year period, and **Alternative 3**, which provides a similar revocation condition as **Alternative 2** but this time over a five-year period. These two alternatives also stipulate revoked shares would be proportionately distributed among the remaining shareholders. These two alternatives would constrain the flexibility of IFQ shareholders to adjust downward their operations for business reasons, such as cutting down costs when inputs, such as fuel, become very expensive or when the market for red snapper in particular and fish in general does not provide for a reasonable price.

Under Action 9, the other alternatives are: **Alternative 1**, which does not specify provisions for annual adjustments in the commercial quota; **Alternative 3**, which provides for a proportionate allocation among shareholders of 50 percent of quota adjustments and equal allocation among shareholders of the remaining 50 percent of quota adjustments; and, **Alternative 4**, which provides for an equal allocation of quota

increases among IFQ shareholders and equal reductions in allocations, in the case of quota decreases, among the highest IFQ shareholders. **Alternative 1** does not provide any guidance on how to allocate among IFQ shareholders any increases or reductions in commercial quota. **Alternative 3** would provide more benefit to the smaller fishing operations in times of quota increases but would also impose on them relatively large losses in times of quota reductions. Alternative 4 would favor smaller fishing operations at the expense of larger fishing operations, especially during times of quota reductions.

Under Action 10, the only other alternative is to not require VMS on commercial red snapper vessels. This alternative is less costly than the **Preferred Alternative**, but the Council maintains a VMS requirement can aid in monitoring the IFQ program from the standpoint of determining which port vessels would be landing their red snapper and in reducing at-sea enforcement of fishing rules. It should be noted there are sub-options under the Preferred Alternative that specify who bears the cost of the VMS program. Another issue worth noting is another Reef Fish FMP amendment (Amendment 18A), which the Council has approved and has submitted to the Secretary for review and implementation proposes to require VMS on all vessels with commercial reef fish permits. If Amendment 18A were approved and implemented, Action 10 would be unnecessary.

Under Action 11, the other alternatives are **Alternative 1**, which does not provide for a cost recovery plan, and **Alternative 2**, which is similar to the **Preferred Alternative 3** except the fee collection and submission would reside with IFQ share/allocation holder. As noted elsewhere in this document, the reason for a cost recovery plan (**Preferred Alternative 3**) is to abide by the Section 304(d)(2)(A) provision of the Magnuson-Stevens Act. **Alternative 2** would let the IFQ shareholder bear the cost of submitting the cost recovery fee to NMFS, whereas in the Preferred Alternative such cost would be borne by the IFQ dealer/processor. Either way, a small entity would bear the mentioned cost. One potentially mitigating factor regarding the cost recovery fee is the possibility that up to 25 percent of the fee may be used to aid in financing the purchase of individual fishing quotas by fishermen who fish from small vessels or the first-time purchase of individual fishing quotas by entry-level fishermen. A separate Council action and Secretarial (Commerce) approval are needed to effect this provision.

10.0 OTHER APPLICABLE LAWS

The Magnuson-Stevens Act (16 U.S.C. 1801 et seq.) provides the authority for U.S. fishery management. 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 within which those fisheries are conducted. This EIS is an integrated document that combines analyses necessary for the NEPA, the RFA, and Executive Order 12866: Regulatory Planning and Review.

NEPA requires all federal actions, such as the formulation of fishery management plans, to be evaluated for potential environmental and human environment impacts, and for these impacts to be assessed and reported to the public. NEPA requires federal agencies

to evaluate a range of alternatives. For this amendment, the Council conducted a SEIS (see TOC for SEIS), which includes: 1) A detailed written statement on the environmental impact(s) of the proposed action; 2) a description of adverse environmental effects that cannot be avoided; 3) alternatives to the proposed action, 4) the relationship between short-term uses of man's environment and the maintenance and enhancement of long term productivity, and 5) any irreversible or irretrievable commitments of resources should the proposed actions be implemented (Sec. 102 (2)(c) of the NEPA).

The Small Business Act, as amended, is administered by the SBA and requires NMFS to make an assessment of how regulations will affect small businesses. The RFA requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. These analyses, which describe the type and number of small businesses affected, are provided in Section 9 and will be published in the *Federal Register* in full or in summary for public comment and submitted to the chief counsel for advocacy of the SBA.

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 associated with proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. These analyses can be found in Section 8 of this amendment.

Other major laws affecting federal fishery management decision-making are summarized below.

10.1 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 wait period from the time a final rule is published until it takes effect.

10.2 Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act (CZMA) of 1972, 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.

The proposed changes in federal regulations regarding implementation of an IFQ program for the GOM red snapper fishery will make no changes in federal regulations that are inconsistent with the objectives of either existing or proposed state regulations. Consequently, NMFS has determined 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. This determination would be submitted to the responsible state agencies under Section 307 of the Coastal Zone Management Act administering approved Coastal Zone Management programs for these states.

10.3 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. Pursuant to Section 515 of Public Law 106-554, this information document will undergo a pre-dissemination review by the Southeast Regional Office, Sustainable Fisheries Division.

Scientific information and data are key components of FMPs and amendments and the use of best scientific information available 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 scientific 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 the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data should also undergo quality control prior to being used by the agency and a pre-dissemination review performed.

10.4 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 US 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.

A formal consultation for the GOM reef fish fishery was completed in 2005 and concluded the reef fish fishery was not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish. An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. The Council addressed these measures in Reef Fish Amendment 18A. Other listed species in the GOM were determined not likely to be adversely affected. Based on reinitiation triggers in 50 CFR 402.16, there is no need to conduct another consultation for the actions proposed in this amendment.

10.5 Executive Orders

10.5.1 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.

10.5.2 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 affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) creates a serious inconsistency or otherwise interfere 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. Although this action will not meet the economic significance threshold of criteria (a), this action is determined to be a significant regulatory action due to the controversial issues associated with IFQs in general.

10.5.3 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.

10.5.4 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 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. There are no recreational fishing issues addressed by the actions in this amendment.

10.5.5 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). There are no implications to coral reefs by the actions proposed in this amendment.

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.

10.5.6 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. Federalism is rooted in the belief issues that are 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 also).
No Federalism issues have been identified relative to the proposed actions. Therefore, consultation with state officials under this Executive Order is not necessary.

10.5.7 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 MPAs, HAPCs, and gear-restricted areas in the northeastern and northwestern GOM, where the commercial red snapper fishery occurs (see Section 6.1.1). These areas could benefit if VMS is required for commercial red snapper vessels (see Action 10), because VMS would improve law enforcement and deter fishermen from fishing in protected areas or using gears prohibited in specific areas.

10.6 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 (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 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. The GOM reef fish fishery is listed as a Category III fishery as required by the MMPA, as there have been no documented interactions between this fishery and marine mammals (69 FR 40407, August 8, 2004). Regulations governing Category III fisheries are specified at 50 CFR 229.5.

10.7 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501 et seq.) regulates the collection of public information by federal agencies to ensure that the public is not overburdened with information requests, that the federal government's information collection procedures are efficient, and that 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. The proposed action would change current requirements for collecting information. NMFS will submit an additional request for information collection to the OMB for review.

10.8 Essential Fish Habitat

The amended Magnuson-Stevens Act included new EFH requirements, and as such, each existing, and any new, FMPs must describe and identify EFH for the fishery, minimize to the extent practicable adverse effects on that EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of that EFH. In 1999, a coalition of several environmental groups brought suit challenging the agency's approval of the EFH FMP amendments prepared by the Gulf of Mexico, Caribbean, New England, North Pacific, and Pacific Fishery Management Councils (American Oceans Campaign et al. v. Daley et al., Civil Action No. 99-982(GK)(D.D.C. September 14, 2000). The court found the agency's decisions on the EFH amendments were in accordance with the Magnuson-Stevens Act, but held that the EAs on the amendments were in violation of the NEPA and ordered NMFS to complete new, more thorough NEPA analyses for each EFH amendment in question.

Consequently, NMFS entered into a Joint Stipulation with the plaintiff environmental organizations that called for each affected Council to complete EISs rather than EAs for the action of minimizing adverse effects of fishing to the extent practicable on EFH. (See AOC v. Evans/Daley et al., Civil No. 99-982 (GK)(D.D.C. December 5, 2001). However, because the court did not limit its criticism of the EAs to only efforts to minimize adverse fishing effects on EFH, it was decided that the scope of these EISs should address all required EFH components as described in Section 303 (a)(7) of the Magnuson-Stevens Act.

To address these requirements the Council prepared, under separate action, an EIS to analyze within each fishery a range of potential alternatives to: (1) Describe and identify EFH for the fishery; (2) identify other actions to encourage the conservation and enhancement of such EFH; and (3) identify measures to minimize to the extent practicable the adverse effects of fishing on such EFH. To comply with the guidelines articulated in the EFH Final Rule to implement the EFH provisions of the Magnuson-Stevens Act (see 50 CFR Part 600, Subpart J) the Council prepared EFH Amendment 3, which was approved by NMFS and a final rule published in December 2005.

The Council and NMFS have determined there are no adverse effects to EFH in this amendment as discussed in the Environmental Consequences section (Section 6).

10.9 Small Business Act

The Small Business Act of 1953, as amended, Section 8(a), 15 U.S.C. 634(b)(6), 636(j), 637(a) and (d); Public Laws 95-507 and 99-661, Section 1207; and Public Laws 100-656 and 101-37 are administered by the SBA. The objectives of the act are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training and counseling, and access to sole source and limited competition federal contract opportunities, to help the firms to achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NMFS, in implementing regulations, must make an assessment of how those regulations will affect small businesses. Implications to small businesses are discussed in the RIR herein (Section 8).

10.10 Migratory Bird Treaty Act

Under the Migratory Bird Treaty Act (MBTA), it is unlawful to pursue, hunt, take, capture, kill, possess, trade, or transport any migratory bird, or any part, nest, or egg of a migratory bird, included in treaties between the United States and Great Britain, Mexico, Japan, or the former Union of Soviet Socialists Republics, except as permitted by regulations issued by the Department of the Interior. Violations of the MBTA carry criminal penalties; any equipment and means of transportation used in activities in violation of the MBTA may be seized by the United States government and, upon conviction, must be forfeited to it. To date, the MBTA has been applied to the territory of the United States and coastal waters extending three miles from shore. Furthermore, Executive Order 13186 (see Section 10.5.9) was issued in 2001, which directs federal agencies, including NMFS, to take certain actions to further implement the MBTA. The actions proposed in this amendment would have no implications to the MBTA because fishing for reef fish species does not impact migratory birds.

10.11 National Marine Sanctuaries Act

Under the National Marine Sanctuaries Act (NMSA) (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the Secretary of Commerce is authorized to designate National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The National Marine Sanctuary Program is administered by the Sanctuaries and Reserves Division of NOAA. The Act provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program currently includes 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of

whales, sea lions, sharks, and sea turtles. A complete listing of the current sanctuaries and information about their location, size, characteristics, and affected fisheries can be found at http://www.sanctuaries.nos.noaa.gov/oms/oms.html. The action proposed in this amendment would have no impact to any national marine sanctuaries because it only involves commercial permits for reef fish.

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12.0 LIST OF PREPARERS

The primary staff members responsible for compiling the document are:

GOM Fishery Management Council
-Wayne Swingle,
-Assane Diagne
-Darrell Brannan

National Marine Fisheries Service, Law Enforcement
-Dave McKinney
-Beverly Lambert

National Marine Fisheries Service, Southeast Regional Office
-Heather Blough,
-Peter Hood
-Palma Ingles
-Tony Lamberte
-Phil Steele
-Andy Strelcheck
- Stephen Holiman

National Marine Fisheries Service, Southeast Fisheries Science Center
-John Poffenberger
-James Waters

National Oceanic and Atmospheric Administration, Office of General Counsel
-Shepherd Grimes
- Michael McLemore

- Monica Smit-Brunello

National Oceanic and Atmospheric Administration, Headquarters

-Lee Benaka
-John Ward

13.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

Coastal Zone Management Programs

Alabama, Florida, Louisiana, Mississippi, and Texas

Other Agencies, Organizations, or Persons

Alabama Cooperative Extension Service
Alabama Department of Conservation and Natural Resources, Marine Resources Division
Florida Fish and Wildlife Conservation Commission
Florida SeaGrant
Louisiana Cooperative Extension Service
Louisiana Department of Wildlife and Fisheries
Mississippi Cooperative Extension Service
Mississippi Department of Marine Resources
National Marine Fisheries Service Southeast Regional Office
National Marine Fisheries Service Southeast Fisheries Science Center
National Marine Fisheries Service Silver Spring Office
National Marine Fisheries Service Law Enforcement
Texas Cooperative Extension Service
Texas Parks and Wildlife Department
United States Fish and Wildlife Service
United States Coast Guard

14.0 TABLES

Table 6.1 Species of the reef fish FMP. Species in bold have had stock assessments. *Deep-water groupers (Note: if the shallow-water grouper quota is filled, then scamp are considered a deep-water grouper) **Protected groupers

Common Name	Scientific Name	Stock Status
	Balistidae--Triggerfishes	
Gray triggerfish	***Balistes capriscus***	**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***	**Overfished, 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***	**Overfished, not overfishing**
****Nassau grouper**	***Epinephelus striatus***	**Overfished, not overfishing**
Red grouper	***Epinephelus morio***	**Not overfished, overfishing**
Gag	***Mycteroperca microlepis***	**Not overfished, not overfishing**
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

Table 6.2. 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 2004).

Scientific 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	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	
Wenchman	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Shelf edge/slope

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
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	
Misty grouper	Pelagic	Pelagic				Hard bottoms, Shelf edge/slope	Hard bottoms

Scientific name	Eggs	Larvae	Post-larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
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

15.0 FIGURES

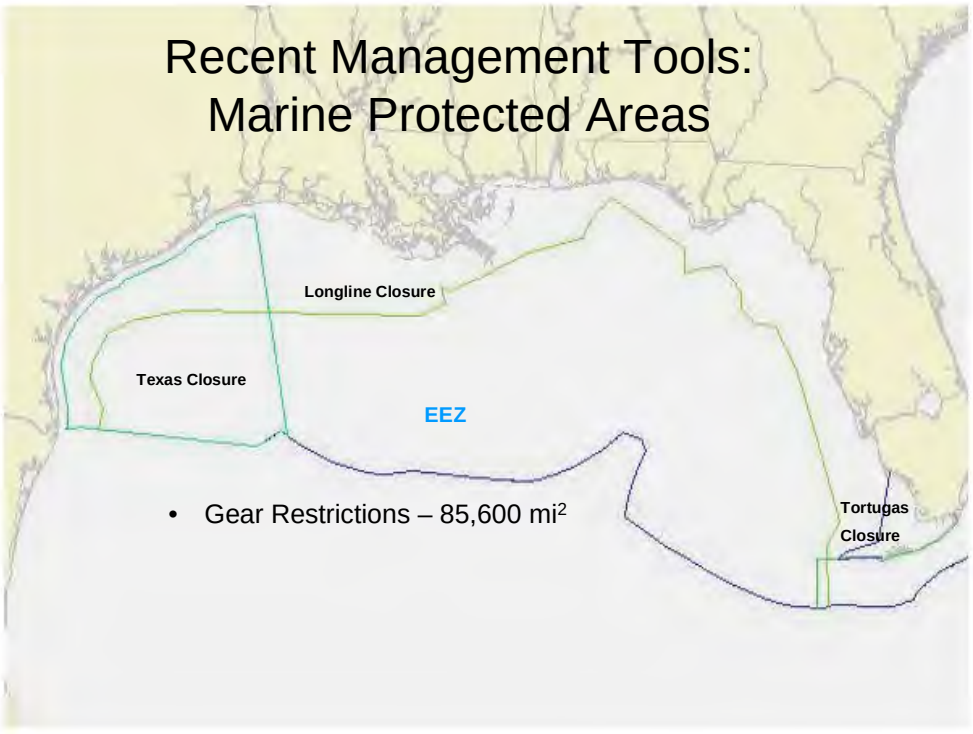
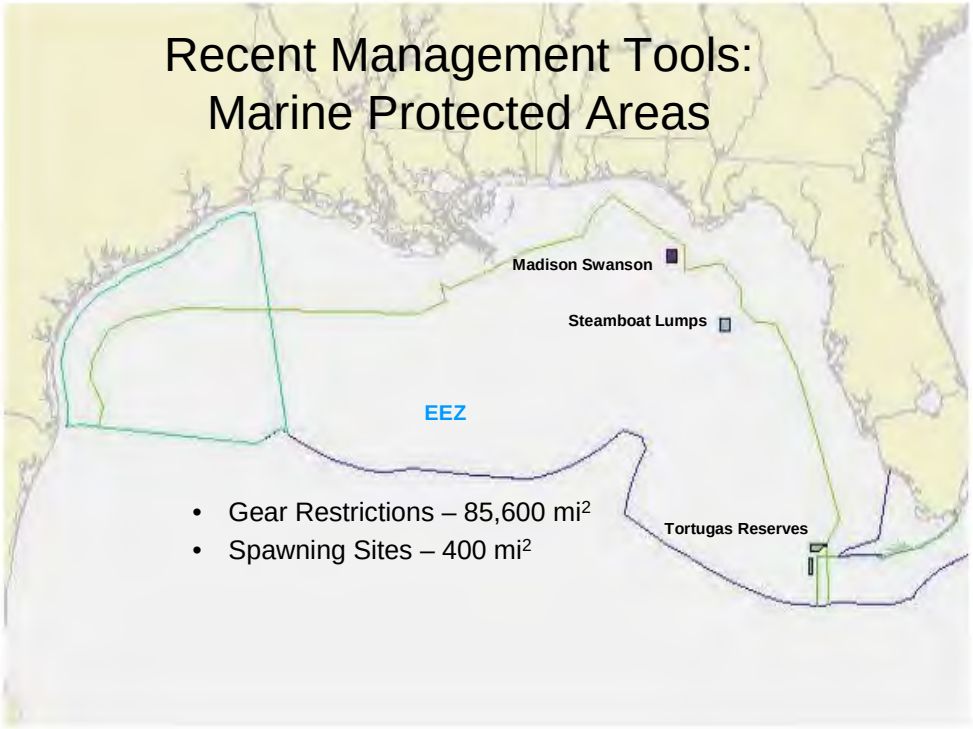


Figure 5.1.1


Recent Management Tools:
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Madison Swanson
Steamboat Lumps
EEZ
Tortugas Reserves
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²

Figure 5.1.2

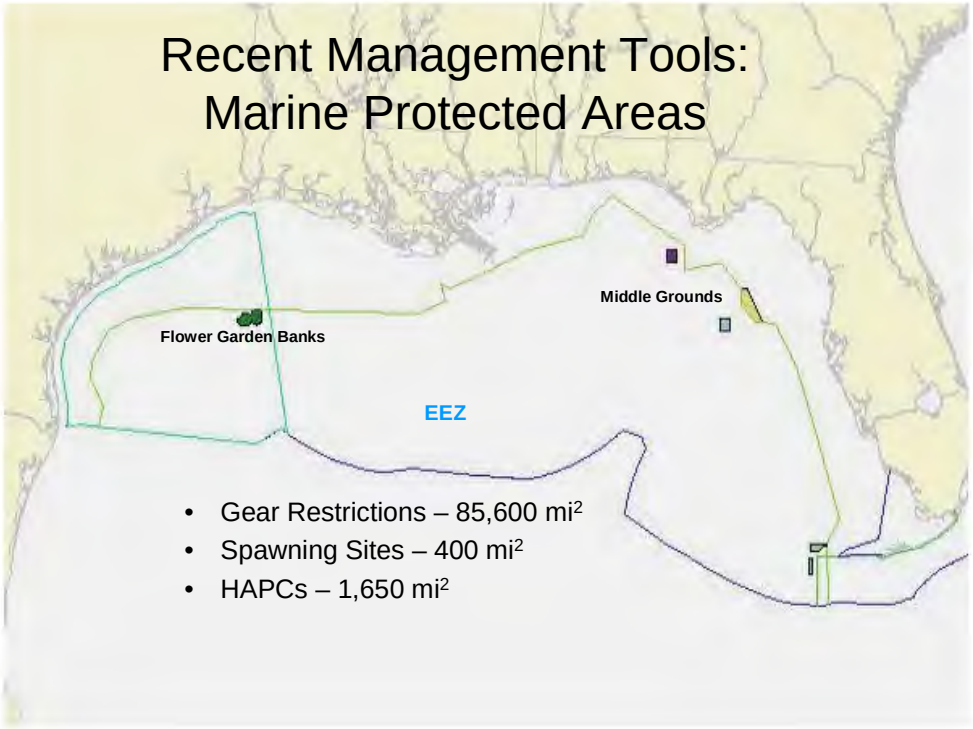
Recent Management Tools:
Marine Protected Areas
Middle Grounds
Flower Garden Banks
EEZ
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²

Figure 5.1.3

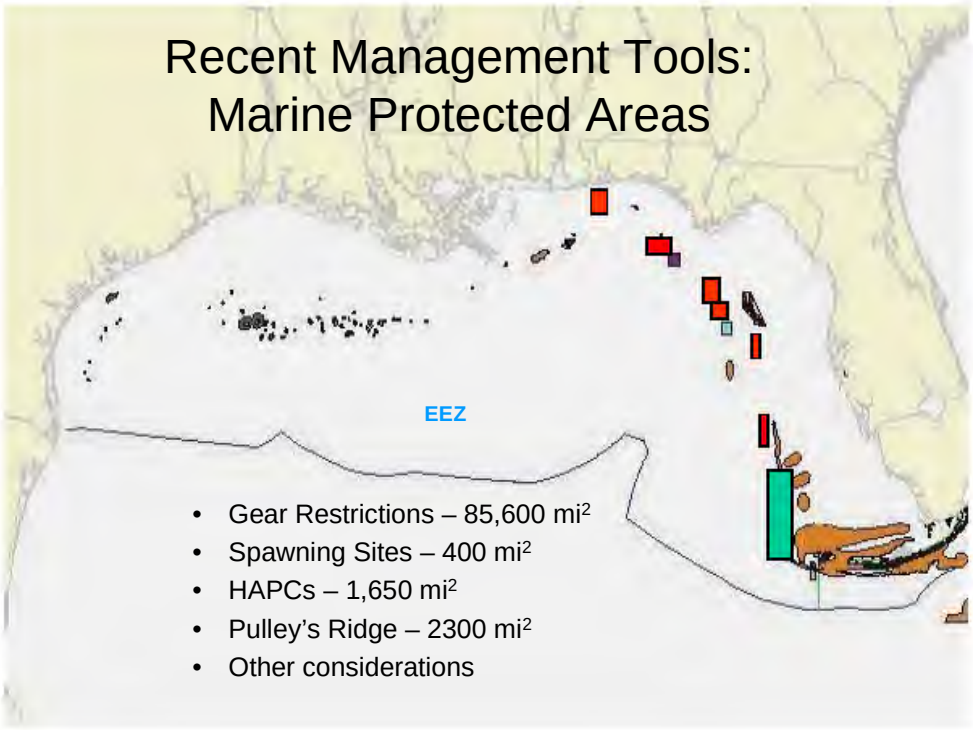
Recent Management Tools:
Marine Protected Areas
EEZ
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²
• Pulley's Ridge – 2300 mi²
• Other considerations

Figure 5.1.4

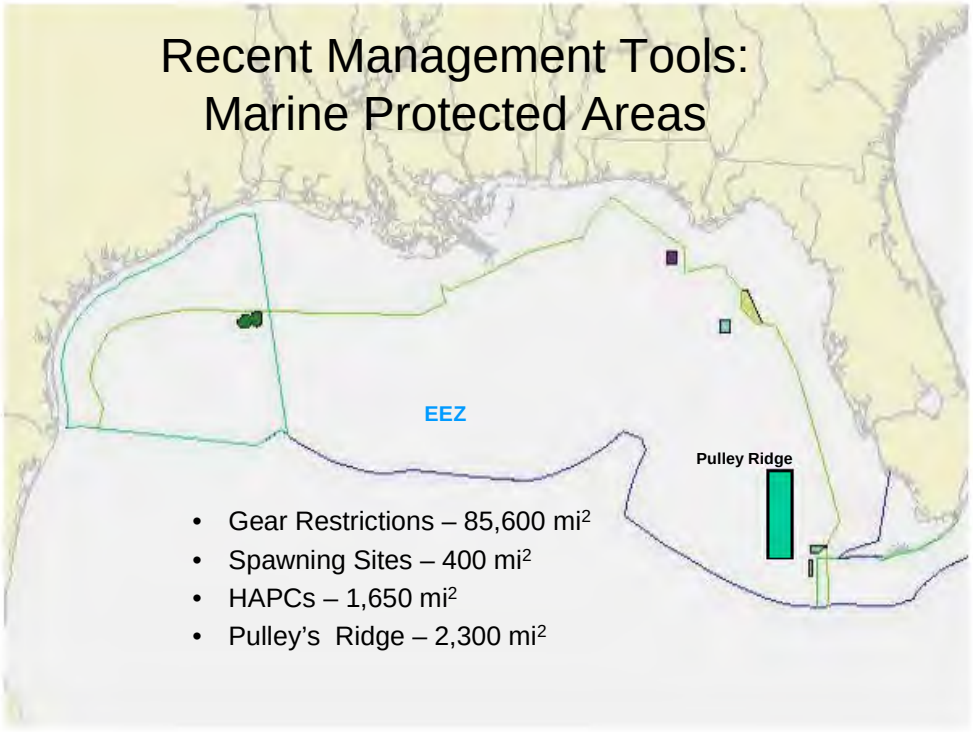
Recent Management Tools:
Marine Protected Areas
EEZ
Pulley Ridge
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²
• Pulley's Ridge – 2,300 mi²

Figure 5.1.5

16.0 APPENDICES

APPENDIX A - ALTERNATIVES CONSIDERED BUT REJECTED

This section describes alternatives the Council considered but eliminated from detailed study for the reasons described below.

UNITS OF MEASUREMENT

1. **Denominate IFQ quota share certificates as whole and gutted weight pounds of red snapper.**

Rationale: The Council deferred to NMFS administrative decisions about how IFQ shares and allocations would be defined and measured. The agency's proposed methodology is outlined under Action 1, Alternative 2.

2. **Determine IFQ certificates in percentages, in terms of commercial quota set under TAC, but issue annual quota in terms of monetary "units" relative to $1.00.**

Rationale: Defining IFQ allocations in currency, rather than poundage, would make it virtually impossible for fishery managers to ensure total mortality in the fishery was within the allowable biological limit because ex-vessel prices tend to fluctuate in response to changing market conditions.

PROGRAM DURATION

3. **Develop a system of fixed-term, cascading entitlements, such as the Australian Drop Through System.**

Rationale: This type of system would "guarantee" certain fishing privileges for a fixed time period. Refinements made to the system during this fixed time period would be implemented in stages. For example, if fishing privileges were allocated for a fixed ten-year time period, then participants could be given the opportunity to trade in their ten-year entitlements for a new ten-year entitlement after five years, with the improvements of the last five years incorporated therein. The AHRSAP and Council view this type of system as excessively complicated and burdensome on all parties involved.

4. **Confer on an IFQ shareholder the privilege to harvest a specified amount of red snapper for four years, after which time the IFQ program may or may not be extended by Council action.**

Rationale: This alternative is similar to an alternative retained by the Council for detailed analysis, which would limit the duration of the IFQ program for five years (Action 2, Alternative 3). The Council views five years as a more reasonable timeframe for understanding the effects of the IFQ program.

BYCATCH SET-ASIDE

5. **A fixed percentage of the commercial red snapper quota is to be set aside for bycatch.**

Rationale: The Class 2 category of the current red snapper endorsement system was essentially created to recognize and account for the bycatch of red snapper that occurs when fishermen target other reef fish species. The Council's preferred eligibility alternative would include Class 2 license holders as eligible participants to ensure those who typically take red snapper as bycatch are provided the continued opportunity to retain and sell red snapper. The Council considers discard mortality in the fishery when defining the red snapper total allowable catch, and is currently evaluating in Reef Fish Amendment 27 numerous alternatives that would further reduce the occurrence of regulatory discards.

ALLOCATION OF TAC ADJUSTMENTS

6. **As the red snapper fishery recovers and the commercial quota is increased, a certain unspecified percentage of the increased quota would be allocated to historical captains that have fished consistently for red snapper. Historical captains will be identified as those fishing a red snapper boat producing red snapper during a given control period (e.g., between 1997 and 2001).**

7. **As the red snapper fishery recovers and the commercial quota is increased, a certain unspecified percentage of the increased quota would be allocated to those crew members, which have actively participated in the reef fish fishery for a minimum of x years. This unspecified percentage would be distributed either: A) in equal shares; or (B) differentially. The basis of allocation would be: (i) lottery; (ii) number of years of participation; or (iii) other.**

Rationale: The Council never fully developed these alternatives because they would require IFQ shares be allocated among an increasing number of fishery participants as the stock rebuilds, which would be counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability.

8. **As the red snapper fishery recovers and the commercial quota is increased, a certain unspecified percentage of the increased quota will be allocated to federal commercial reef fish permit holders outside the red snapper IFQ system. This allocation will provide for a bycatch of x pounds per trip or y pounds per year to those excluded from the system.**

Rationale: The Council's preferred transferability eligibility requirement (Action 7, Alternative 6) would provide all reef fish permit holders the opportunity to purchase IFQ

shares and allocations. Taking away IFQ shares initially allocated to, or purchased by, existing shareholders to facilitate new entry in the fishery as the stock rebuilds would be unfair, and counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability. Regarding the bycatch component of this alternative, the Class 2 category of the current red snapper endorsement system was created to recognize and account for the bycatch of red snapper that occurs when fishermen target other reef fish species. The Council's preferred eligibility alternative would include Class 2 license holders as eligible participants to ensure those who typically take red snapper as bycatch are provided the continued opportunity to retain and sell red snapper. The Council considers discard mortality in the fishery when defining the red snapper total allowable catch, and is currently evaluating in Reef Fish Amendment 27 numerous alternatives that would further reduce the occurrence of regulatory discards.

9. **The IFQ shares of all (current) shareholders will be adjusted by an equal amount (expressed in pounds gutted weight), subject to larger poundage reductions being imposed on those shareholders with shares in excess of the required individual reductions.**

Rationale: Needed IFQ share and allocation adjustments would be defined based on percentages, rather than poundage. As a result, all IFQ shareholders would have individual shares in excess of the required individual reductions and could make a proportional contribution to the total needed reduction.

10. **Divide quota increases equally among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Divide quota reductions among the x (specify number) recognized IFQ shareholders who hold the largest amount of IFQ shares, or who hold at least x% of the commercial quota. Allocate such reductions either: (A) proportionately based on the percentage of the commercial quota each holds at the time of the adjustment; or (B) equally among those shareholders who meet the selected criteria.**

Rationale: This approach would be counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability.

PROGRAM ELIGIBILITY

11. **A person to whom a current Class 1 license has been issued and/or persons who obtained or retained catch histories through legally binding agreements will be eligible for an initial allocation. Current permanent resident aliens who currently hold a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this alternative.**

12. **A person to whom a current Class 1 license has been issued will be eligible for an initial allocation provided they can demonstrate red snapper catch records (either through harvest data or through legally binding agreements) in x of the past y years. Current permanent resident aliens who currently hold a Class 1 license will be included in this initial allocation subject to any other qualifications included in this alternative.**

13. **Restrict initial eligibility to persons who possess a current Class 1 or Class 2 license and/or who obtained or retained catch histories through legally binding agreements. Neither crew members, captains, nor a new class of historical captains would qualify, subject to aforementioned conditions. Current permanent resident aliens who currently hold a Class 1or Class 2 license would be included in this initial allocation subject to any other restrictions included in this alternative. Defining eligibility in this manner expressly precludes community development quotas being considered in the initial allocation.**

Rationale: Determining what constitutes a "legally binding agreement," and relying on such agreements to determine catch histories is expected to result in a long, complicated, and controversial initial allocation process, as well as numerous appeals that would be best addressed as civil matters. Additionally, the larger number of participants defined using this approach would be counterproductive to the program objectives of reducing overcapacity and improving fishery efficiency and profitability.

14. **Any permit holder who has landed a red snapper from 1993 to present is eligible for an initial allocation.**

Rationale: This approach would be counterproductive to the program objectives of reducing overcapacity and improving fishery efficiency and profitability.

15. **Restrict initial eligibility to persons who possess a current Class 1 or Class 2 license, and who can demonstrate red snapper catch records (either through harvest data or through legally binding agreements) in x of the past y years. Current permanent resident aliens who currently hold a Class 1 or Class 2 license will be included in the initial allocation subject to any other qualifications included in this alternative.**

Rationale: The Council never fully developed this alternative because deciding what constitutes a "legally binding agreement," and relying on such agreements to determine catch histories, is expected to result in a long, complicated, and controversial initial allocation process, as well as numerous appeals that would best be addressed as civil matters. Additionally, the Council believes it would be unfair to restrict the eligibility of current Class 1 red snapper license holders because they were not previously notified their future participation in the fishery might be subject to a minimum landings requirement.

16. Restrict initial eligibility for 50% (or any other percent) of the total IFQ shares to any permit holder who has landed a red snapper from 1993 to present. Distribute the balance of available quota shares by lottery. Any U.S. citizen shall be eligible to enter the lottery. Randomly selected entrants will receive one percent (or x%) of the total commercial allocation.

Rationale: This approach would be counterproductive to the program objectives of reducing overcapacity and improving fishery efficiency and profitability. Additionally, it would not adequately address the Magnuson-Stevens Act requirements to consider present participation in the fishery, historical fishing practices in, and dependence on, the fishery, the economics of the fishery, and the cultural and social framework relevant to the fishery and any affected fishing communities, in developing limited access systems (MSA, Section 303(b)(6)).

INITIAL ALLOCATION

17. Among all eligible Class 1 and Class 2 license holders, base the initial allocation proportionately on red snapper landings for the period January 1, 1993 through September 1, 1996 (time period included in referendum). Additionally, set aside some unspecified percent of the allocation for historical captains.

18. Among all eligible Class 1 license holders, base the initial allocation proportionately on red snapper landings for the period January 1, 1993 through September 1, 1996 (time period included in referendum). Additionally, set aside some unspecified percent of the allocation for historical captains.

Rationale: The Council never fully developed these alternatives because it believes it would be inequitable to base initial allocations on such a short time series of catch data. Additionally, such an approach would not adequately address the Magnuson-Stevens Act requirements to consider present participation in the fishery in developing limited access systems (MSA, Section 303(b)(6)).

19. Class 1 License Holders
Allocate proportionately based on the following criteria:

- **1/4 based on the average of the highest 2 out of 3 years landings from 1990 through 1992;**
- **1/4 based on average landings from 1993 through 2001 (all 9 years);**
- **1/4 based on an equal portion going to each Class 1 license holder; and**
- **1/4 based on average landings during any 3 years selected by the licensee from 1990 through 2001.**

Class 2 License Holders

Allocate proportionately based on average landings during any 3 years selected by the licensee from 1990 through 2001.

Rationale: The Council views this allocation methodology as too burdensome to be practicable. Additionally, there are no data associated with Class 2 licenses prior to 1998.

20. Among all Class 1 and Class 2 license holders, base the initial allocations proportionately on the ten years during 1990 through 2002 when landings were highest.

Rationale: This alternative is not practicable because there are no data associated with Class 2 licenses prior to 1998.

21. Among Class 1 license holders, base quota shares on landings during the eight years from 1993 through 2001 when landings were highest.

22. Among all eligible Class 1 license holders, base the allocations proportionately on the four years during 1990 through 2001 when landings were highest.

23. Issue IFQ share certificates to all eligible applicants who, based on the historical catch records of vessels they owned or operated, landed red snapper between 1990 and 1992. The validity of catch records will be determined using the same criteria used for the red snapper endorsement; i.e., logbook records first, then Florida trip tickets, then fish house receipts.

Rationale: This approach would not adequately address the Magnuson-Stevens Act requirements to consider present participation in the fishery in developing limited access systems (MSA, Section 303(b)(6)).

24. Divide 50% of the total initial allocation equally among all Class 1 and Class 2 qualifiers (during 1990-92). Distribute the balance proportionately among these participants based on landings records from 1990 through 1992.

25. Divide 50% of the total initial allocation equally among eligible Class 1 license holders (during 1990-92). Distribute the balance proportionately among these participants based on landings records from 1990 through 1992.

Rationale: Reef fish logbook data are incomplete from 1990 through 1992 and, therefore, could not be used to estimate the landings associated with all Class 1 licenses. Additionally, there are no data associated with Class 2 licenses prior to 1998.

26. Base initial allocations on catch histories and capital investment.

Rationale: It would be difficult to accurately measure capital investment in the red snapper fishery, which is just one component of a larger, multi-species fishery. Consequently, this approach would likely result in a long, complicated, and controversial initial allocation process, as well as numerous appeals, delaying implementation of the proposed IFQ program and its expected benefits to the fishery.

27. Divide the allocation equally among all qualifiers.

Rationale: This approach would limit the proposed program's effectiveness in improving fishery efficiency and profitability, and would not adequately address the Magnuson-Stevens Act requirements to consider historical fishing practices in, and dependence on, the fishery, and the economics of the fishery in developing limited access systems (MSA, Section 303(b)(6)).

28. To receive an initial allocation, eligible participants must have established a minimum landings record of 100 pounds (whole weight).

29. To receive an initial allocation, eligible participants must have established a minimum average landings record of 100 pounds per year during the qualifying years. [9]

Rationale: The Council views these alternatives as inequitable to current Class 1 and 2 license holders because they were not previously notified their future participation in the fishery might be subject to a minimum landings requirement.

30. Individuals eligible for an initial allocation will receive a minimum IFQ share of 100 pounds.

Rationale: IFQ shares are defined to equal a percentage of the commercial red snapper quota. IFQ allocations are defined to equal the actual poundage of red snapper a shareholder is ensured the opportunity to land during a given fishing year based on his or her IFQ share. Because the IFQ shares of some individuals would not support an IFQ allocation of 100 pounds, allocating each eligible participant a minimum allocation of 100 pounds would cause the commercial red snapper quota to be exceeded.

TRANSFERABILITY

31. All Initial IFQ share certificates of less than x pounds (or percent of commercial quota) will be blocked (i.e., cannot be transferred).

32. All Initial IFQ share certificates issued to Class 2 license holders will be blocked (i.e., cannot be transferred).

[9] The AP expressed desire that landings beyond 2002 should not be used in the determination of minimum harvest requirements.

33. X% of IFQ share certificates and annual allocations are fully transferable by sale, lease, gift, or inheritance, notwithstanding any specified limitations regarding to whom transfers may occur.

34. IFQ share certificates are not transferable. Annual allocations are fully transferable by sale, lease, gift, or inheritance, notwithstanding any specified limitations regarding to whom allocations may be transferred.

35. Neither IFQ share certificates nor annual allocations are transferable.

36. Any eligible individual who is initially allocated less than 5,000 pounds can transfer only to other eligible individuals who have been initially allocated less than 5,000 pounds. Transfer is also limited to natural persons who are U.S. citizens or permanent resident aliens.

37. Blocked IFQ share certificates can only be transferred to IFQ shareholders who possess only blocked certificates. Furthermore, IFQ shareholders may possess a maximum of x blocked IFQ share certificates.

38. Blocked IFQ share certificates can only be transferred to reef fish permitted vessels that possess only blocked certificates. Furthermore, IFQ shareholders may possess a maximum of x blocked shares.

39. Only IFQ shareholders can purchase IFQ share certificates during the first five years of the red snapper IFQ program.

40. There will be no transfer of IFQ share certificates to non-qualified participants during the first four years of the red snapper IFQ program (i.e., transfer of quota shares will be restricted to IFQ participants).

41. Place a moratorium on the transfer of IFQ shares, which will begin upon implementation of this amendment and will expire after: A) six months; or B) one year.

42. Annual coupons issued in denominations of pounds to shareholders could be sold, leased, or traded, with agency notification, provided coupons may be transferred only to red snapper IFQ shareholders.

43. Annual coupons issued in denominations of pounds to shareholders could be sold, leased, or traded, with no agency notification, provided coupons may be transferred only to red snapper IFQ shareholders.

44. Annual allocations issued in denominations of pounds to shareholders could be sold, leased, or traded, with no agency notification, provided

allocations may be transferred only to federal commercial reef fish vessel permit holders.

45. Annual allocations issued in denominations of pounds to shareholders could be sold, leased, or traded, with agency notification, provided allocations may be fished only by federal reef fish commercial vessel permit holders.

Rationale: The Council is concerned excessive limitations on the type or amount of share transfers would be counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability. The administrative processes for notifying the agency of IFQ transactions are outlined in Action 1, Alternative 2.

46. IFQ share certificates and annual coupons can be sold but not leased.

47. There will be no limitations on permanent transfers of IFQ share certificates or annual coupons other than to whom shares and coupons can be transferred. However, temporary, fixed term, transfers or 'leases' of IFQ share certificates and/or annual coupons will be subject to one of these three restrictions: A) A person may transfer no more than x% of their annual coupons during a fishing year; B) A person may transfer any amount of their annual coupons during x out of every y fishing years; or C) Other (specify).

Rationale: Prohibiting or restricting leasing arrangements would significantly alter the current characteristics of the industry, and would limit the proposed program's effectiveness in improving fishery efficiency and profitability.

48. IFQ share certificate and coupon transfers would remain in the commercial sector (i.e., 50% income criteria) until such time the recreational or for hire sector has developed its own IFQ system (i.e., quota shares cannot be used to increase bag limits).

Rationale: This restriction would not be consistent with the concept of IFQ programs, which function by creating a market in which shares and allocations can be purchased by those who value them the most.

49. IFQ share certificates and/or annual coupons cannot be transferred to non-qualified participants during the first five years of the red snapper IFQ program (i.e., transfer of IFQ certificates and/or coupons will be restricted to eligible participants in the fishery). Transfer is limited to natural persons who are U.S. citizens or permanent resident aliens.

Rationale: This alternative is similar to Action 7, Alternative 5, which was fully developed and analyzed in the document.

50. IFQ quota shares initially issued to Class 2 license holders may only be transferred to commercial reef fish participants: A) during the first x years of the red snapper IFQ program; or B) permanently. Transfer is limited to natural persons who are U.S. citizens or permanent resident aliens.

Rationale: This alternative is similar to Action 7, Alternative 6, which was fully developed and analyzed in the document.

USE IT OR LOSE IT PROVISIONS

51. Any coupons that remain inactive in a given year can be used by the individual IFQ shareholder within the next x years, but no interest will accrue during the time period in which the coupons are inactive. Inactive is defined as a minimum of x% usage per year.

52. Any coupons that remain inactive in a given year can be used by the individual IFQ shareholder within the next x years, and an interest rate (expressed in pounds of fish) of y percent per year will accrue until such time the unused portion of his allocation is harvested. For example, if an IFQ shareholder does not use 5,000 lbs of his allocation in year 1, and he decides to harvest this portion of his allocation in year 3, then the allowable harvest associated with the 5,000 lb allocation equals 5000 lb x (1 + 0.05) x 3, given a five percent interest rate.[28]

Rationale: These types of "banking" provisions would allow the total amount of red snapper landings to exceed the commercial quota. This would lead to overfishing, which is prohibited by National Standard 1 of the Magnuson-Stevens Act.

SANCTIONED SHARES AND ALLOCATIONS

53. IFQ shares/annual allocations sanctioned by NMFS will be proportionately reissued to shareholders for the period of the sanction. Shares will be reallocated: A) prior to final adjudication; or B) subsequent to final adjudication.

54. IFQ shares/annual allocations sanctioned by NMFS will be proportionately reissued to shareholders indefinitely. Shares will be reallocated: A) prior to final adjudication; or B) subsequent to final adjudication.

55. IFQ shares/annual allocations sanctioned by NMFS will not be reissued to shareholders.

[28]The interest rate should be tied to the growth rate of the red snapper stock with a possible discount.

Rationale: The Council deferred to NMFS administrative decisions about how to handle sanctioned IFQ shares and allocations. The agency's proposed methodology is outlined under Action 1, Alternative 2.

OWNERSHIP CAPS AND RESTRICTIONS

56. No shareholder may hold more than eight percent of the red snapper quota. Notwithstanding any of the limitations adopted under this sub-section, any eligible person who receives an IFQ share in excess of eight percent during the initial allocation may retain such excess and may fish or otherwise utilize the annual allocations derived there from, subject to sanctions for rules violations and other ownership and use restrictions adopted herein. However, such person may not own any additional share certificates for red snapper through any means until such time as that person's holdings should fall below the limitations established herein. A shareholder can harvest more than eight percent of the quota.

Rationale: This is duplicative of the Council's preferred Ownership Cap alternative (Action 3, Alternative 3). Eight percent is the maximum IFQ share that could be issued to an individual or corporation using the Council's preferred initial allocation criteria.

57. No quota holder may hold more than two percent of the red snapper quota or annual allocation. Notwithstanding any of the limitations adopted under this sub-section, any eligible person who receives an IFQ share in excess of two percent during the initial allocation may retain such excess and may fish or otherwise utilize the annual allocations derived there from, subject to sanctions for rules violations and other ownership and use restrictions adopted herein. However, such person may not receive any additional share certificate or annual allocations for red snapper through any means until such time as that person's holdings should fall below the limitations established herein.

Rationale: This is duplicative of an alternative retained and fully analyzed by the Council (Action 3, Alternative 2).

58. No person may fish more than x percent of the IFQ coupons (denominated in pounds) issued in any given year.

59. Notwithstanding any maximum imposed on possession of IFQ share certificates in any given year, no vessel may utilize more than x percentage of the annual coupons in that year (denominated in pounds).

Rationale: These alternatives would neither limit the percentage of commercial quota held by a single individual or entity in the form of IFQ shares, nor the poundage of red snapper allocated to a single individual or entity based on the amount of their IFQ share.

They would simply prohibit IFQ shareholders from harvesting 100% of their IFQ share and/or allocation. This would be inconsistent with National Standard 1 of the Magnuson-Stevens Act, which requires conservation and management measures achieve optimum yield.

60. Allow coupon shares/allocations that are greater than the share totals.

Rationale: This alternative does not address the purpose of the action, which is to prevent one or more entities from monopolizing the red snapper fishery. Additionally, allowing the total amount of red snapper landings to exceed the commercial quota would result in overfishing, which is prohibited by National Standard 1 of the Magnuson-Stevens Act.

LANDINGS RESTRICTIONS

61. Restrict landings of shareholders who hold shares of 20,000 pounds or greater to no more than 15% of their annual share per month, not including coupons, which may be bought during the year. But, in no event, shall any vessel land more than 20,000 pounds in any given month. Purchased shares would be included in the next year's cumulative owner's total to be landed.

Rationale: The Council does not believe it is necessary to propose regulations designed to prevent market "flooding," and is concerned unnecessary market restrictions would hinder the proposed program's effectiveness in reducing overcapacity and improving fishery efficiency and profitability.

MONITORING IFQ TRANSACTIONS

62. Establish a "clearing house" to administer the transfer of IFQ shares. This entity shall be composed of representatives from the industry and state and federal fishery agencies.

63. Require all sales and leases of IFQ share certificates be registered with and approved by NMFS. An administrative fee will be charged to handle the cost of registering share transfers. Share transfer registration is allowed only during the months of January through October each year (or during another 10-month period defined by NMFS). The agency shall deny transfer of share certificates or portions thereof that are subject to pending sanctions.

64. Allow the transfer of IFQ share certificates to transpire under the usual procedures for transfer of private properties.

65. Annual coupons issued in denominations of pounds to IFQ shareholders can be freely sold, leased, or traded, with no agency notification.

66. Transfer of annual allocations issued in denominations of pounds to IFQ shareholders must be registered with the agency.

67. Implement an electronic system in the IFQ program similar to that used in the halibut/sablefish fishery managed by the North Pacific Fishery Management Council.

68. Implement a quota tracking system similar to that used in the South Atlantic wreckfish fishery.

69. Require the following persons to file reports regarding landings and other information covered by IFQ holdings: A) vessel/boat captains; B) red snapper dealers or first buyers; and/or C) all IFQ share certificate holders.

Rationale: The Council deferred to NMFS administrative decisions about how IFQ transactions should be monitored and tracked. The agency's proposed methodology is outlined under Action 1, Alternative 2.

APPEALS PROCESS

70. Employ a licensed arbitrator to render an opinion.

Rationale: The Council views a licensed arbitrator as an unreasonable expense given the success of less expensive processes used to resolve appeals of other fishery management decisions.

71. The Council will appoint commercial industry members to a special advisory panel charged with reviewing and evaluating appeals. Advisory panel recommendations must be provided individually to the Council Chairman or directly to the Regional Administrator (RA). The Council Chairman would provide the initial recommendations to the RA. The RA would render the final opinion on the appeal. Advisory Panel members would be selected by the Council from a minimum of three recommendations by each state director. Persons submitting appeals must state their case in writing and submit it to the Council or NMFS for distribution to the Advisory Panel before the appeal is scheduled for review.

Rationale: The Council retained for detailed analysis an alternative that would have IFQ shareholders make recommendations to the Regional Administrator regarding appeals (Action 6, Alternative 4). The Council believes it would be inequitable for non-IFQ shareholder industry members to be involved in resolving IFQ related appeals.

72. The appeals board will consist of each of the state directors or their designees, plus one fisherman from each state. The fishermen will be

selected by the Regional Administrator from the recommendations of state directors, and will be selected from those fishermen who, if an IFQ system is selected, have agreed to accept their allocation. Each state director will submit a minimum of three recommendations.

Rationale: The Council viewed this appeals process as overly complicated, and retained for detailed analysis alternatives that would have either state directors (Action 6, Alternative 3) or IFQ shareholders (Action 6, Alternative 4) make recommendations to the Regional Administrator regarding appeals.

73. The Council will appoint members from participants in the IFQ system.

Rationale: This alternative duplicates Action 6, Alternative 4, which was retained and fully analyzed by the Council.

74. Allow each major red snapper association to elect or appoint a member.

Rationale: This alternative is similar to Appeals Process Alternative 4, which was retained by the Council and fully analyzed.

75. The Council will appoint members who have no association with the red snapper industry.

Rationale: This Council views as inequitable an appeals process that would allow the general public to review and resolve IFQ related appeals.

SET ASIDE FOR LEGAL DISPUTES

76. Initial allocations will be qualified by the condition they may be reduced during the first four years of the IFQ program based on the outcome of legal disputes.

77. Initial allocations will be qualified by the condition they may be reduced during the first five years of the IFQ program based on the outcome of legal disputes.

Rationale: Because all appeals will be resolved within one year of the effective date of the final rule, there would be no need to reduce the amount of initial IFQ share allocations four or five years into the program based on the outcome of legal disputes.

78. An amount recommended by the NOAA General Counsel, Southeast Region, but not more than x percent, will be set for use in resolving any legal disputes. Any set aside balance will be distributed back to the initial shareholders.

Rationale: The Council never fully developed this alternative because NOAA General Counsel cannot predict the number, type, or outcome of any legal disputes that might occur in response to the proposed program, and it retained for detailed analysis a similar alternative, which defined the amount of the set aside to equal the amount defined by the Halibut/Sablefish IFQ program in effect in the Alaska region.

MINIMUM SIZE LIMIT

79. Under an IFQ system, the commercial minimum size limit for red snapper shall be 13 inches and TAC will remain 9.12 million pounds. The SEFSC should adjust its assessment model to more accurately estimate the impact of eliminating the minimum size limit.

Rationale: The Council deferred to Reef Fish FMP Amendment 27 the evaluation of alternative TAC and minimum size limit alternatives because it views such regulatory changes as beyond the scope of this amendment.

APPENDIX B – RESPONSE TO COMMENTS ON DSEIS

The Environmental Protection Agency (EPA) submitted the only comments received by NMFS on the DSEIS. This appendix includes the EPA comment memo and NMFS' response. The EPA rated the DSEIS an LO (Lack of Objections).

The majority of EPA comments relate to the desirability of the Council's preferred alternatives for IFQ program components and design. IFQ programs are considered limited access systems, the development of which is subject to requirements under Section 303(b)(6) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Specifically, the MSA requires regional fishery management councils and the Secretary of Commerce consider the following factors in developing a limited access system:

(1) Present participation in the fishery;
(2) Historical fishing practices in, and dependence on, the fishery;
(3) The economics of the fishery;
(4) The capability of fishing vessels used in the fishery to engage in other fisheries;
(5) The cultural and social framework relevant to the fishery and any affected fishing communities; and
(6) Any other relevant considerations.

The Council's rationale for many of its preferred alternatives is largely based on these considerations. Additional explanation or clarification specific to each EPA comment and/or recommendation follows. This information is organized under the major subject headings referenced in the EPA comment memo.

1. Environmental Justice

Response: Section 6.13 of the DEIS and FEIS describes five Gulf of Mexico fishing communities: 1) Port Isabel, Texas; 2) Port St. Joe, Florida; 3) Destin, Florida; 4) Galveston, Texas; and 5) Golden Meadow, Louisiana. Of the approximately 400 fishing communities identified in the Gulf of Mexico, these five are considered to be the most significantly affected by the Council's proposed IFQ program because they are responsible for the majority of the red snapper landings. The demographic information reported for these communities in the DEIS and FEIS was collected through the census. This information describes community-wide demographics, rather than the demographics of only those populations in the communities that rely on the red snapper fishery. For this reason, there is no analytical value in describing in the FEIS the demographics of each community relative to state demographics. Demographic information on red snapper fishing communities is not available to use in evaluating the effects of the proposed IFQ program on low-income and minority populations. Such information cannot be discerned from census data because the census data fields combine fishing with farming and forestry occupations under the occupation category, and with agriculture, forestry, and hunting under the industry category. Although fishing community demographics are unknown, any impacts of the proposed IFQ program on low-income and minority populations within those communities are not considered discriminatory because the program is designed to recognize and benefit those who traditionally participated in the fishery, regardless of their race or income status.

2. Action 1 (IFQ Program Implementation)

Response: In a 1999 review of the effectiveness of IFQ programs worldwide, the National Research Council (NRC) concluded such programs are valuable in addressing many of the problems experienced in the Gulf of Mexico red snapper fishery, including overcapacity and derby conditions. We have noted this information in Section 3.0 of the FEIS, and referred the reader to the NRC publication for case studies of existing IFQ programs.

The Council's proposed overage provision would allow each IFQ shareholder to land up to ten percent more than the balance of their IFQ allocation on the last trip of the fishing year. This provision is included to relieve law enforcement agents of having to apply limited resources to investigating and prosecuting small amounts of accidental overages. Such overages are expected because it is difficult to accurately estimate the weight of landings at sea. The total amount of accidental overages is expected to be minimal compared to the total red snapper harvest, and would be deducted from IFQ shareholder allocations the following year to eliminate any potential adverse effects on stock rebuilding.

We have reconciled in the FEIS the conflicting statements that appeared in the DEIS about the potential effects of the proposed IFQ program on high grading. Generally, the IFQ program is expected to increase fishermen's incentive to discard low value fish in favor of high value fish. However, the overall environmental benefits of the IFQ

program to the red snapper stock, its habitat, and other non-target species, are expected to outweigh the adverse effects of any high grading activity. Additionally, the Council is currently evaluating in Amendment 27 to the Reef Fish Fishery Management Plan alternatives that would reduce or eliminate the commercial red snapper minimum size limit.

3. Action 2 (IFQ Program Duration)

Response: We included in Section 4.2 of the FSEIS text indicating the five-year program reviews proposed by the Council would consider the effectiveness of the IFQ program in addressing the chronic, long-standing fishery problems referenced in Section 3 (i.e., Purpose and Need statement). These problems include, but are not limited to, overcapacity, derby conditions, reduced net revenues, and user conflicts.

4. Action 3 (Ownership Caps and Restrictions on IFQ Share Certificates)

Response: The eight percent ownership cap proposed by the Council would prohibit any single person or entity, individually or collectively, from accumulating an amount of shares that exceeds the highest percentage of total red snapper currently being harvested by a single person or entity. That maximum share amount is currently estimated to be eight percent. The Council considered the pros and cons of a ten percent ownership cap, but concluded the alternative to cap the maximum share amount at the highest current harvest level is more consistent with the MSA Section 303(b)(6) requirements for developing limited access systems. We added parenthetical text to the Council's preferred alternative to address the EPA recommendation to clarify that language.

5. Action 5 (Initial Apportionment of IFQ Shares)

Response: The time series of data preferred by the Council for use in allocating initial quota shares to IFQ shareholders are consistent with the MSA requirements for developing limited access systems provided at Section 303(b)(6), and with most of the criteria recommended in the EPA comment memo. There are no time series of data that meet all the EPA's recommended criteria. Although reef fish logbook data are incomplete from 1990 through 1992, allowing current Class 1 participants to consider data associated with their license(s) during this timeframe enables the program to recognize the relative contribution of landings to total red snapper harvest prior to their being constrained by the implementation of the red snapper endorsement system. This is consistent with the EPA recommendations to favor historically efficient fishers and to consider how fishery operations might change under the IFQ program. Section 4.5 of the FEIS contains clarifying text about the various factors considered in evaluating the pros and cons of alternative data time series.

6. Action 6 (Establishment and Structure of an Appeals Process)

Response: We clarified in Sections 4.6 and 6.6 of the FSEIS the proposed IFQ program would set aside three percent of IFQ shares, rather than of the total allowable catch, for use in resolving appeals.

7. Action 7 (Transfer Eligibility Requirements)

Response: We recognize the Council's preferred transfer eligibility alternative might result in IFQ shares and allocations being transferred to less experienced fishermen after initial restrictions are removed. However, we expect transferred allocations would be harvested by those who are most efficient because they are able to generate the largest profit for the IFQ shareholder or allocation holder. Additionally, we support the Council's desire to recognize red snapper as a public resource. In the sixth year of the program onward, the preferred alternative would provide all interested U.S. stakeholders the ability to purchase IFQ shares and allocations for any reason, including for conservation purposes. A primary objective of IFQ programs is to provide a market in which shares can be purchased by those who value them the most.

8. Action 8 (Use It or Lose It: IFQ Shares or Allocations)

Response: In addition to ensuring fishermen are not encouraged to fish when they would otherwise remain inactive, the Council's preferred alternative would allow interested U.S. stakeholders the ability to purchase and hold IFQ shares and allocations for conservation reasons. Either outcome would have positive biological benefits, and would be consistent with the concept of IFQ programs in that shares and allocations would be held by those who value them the most, rather than just by those who are able to fish them within a specific time frame.

9. Action 9 (Adjustments in Commercial Quota)

Response: Section 4.9 of the FSEIS clarifies under what conditions the red snapper total allowable catch might be adjusted.

10. Action 10 (Vessel Monitoring Systems (VMS))

Response: This action would require all fishing vessels participating in the IFQ program be equipped with a vessel monitoring system (VMS) unit. The intent of this requirement is to ensure compliance with IFQ program regulations is effectively monitored and enforced. IFQ program participants would already be subject to a VMS requirement if the Secretary were to approve the VMS action proposed in Reef Fish Amendment 18A prior to the implementation of Reef Fish Amendment 26. We did not update the discussion of Reef Fish Amendment 18A in the FEIS because the status of that amendment has not changed since the DEIS was filed.

The VMS actions in both Reef Fish Amendment 18A and 26 would require the industry, rather than NMFS, pay the cost of purchasing, installing, and maintaining required VMS equipment. Although current Class 2 red snapper licenses are responsible for a minor amount of the total red snapper catch, the vessels on which they are used also profit from the sale of other targeted reef fish species. Consequently, individual fishery operations are not considered to be experiencing hardship simply because their red snapper landings are restricted by a Class 2 license.

11. Other Comments (Species Scientific Name)

Response: Table 6.1 of the FSEIS provides the scientific names of red snapper and other species managed under the Reef Fish Fishery Management Plan.

17.0 INDEX