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

(Including a Supplemental Environmental Impact Statement, Initial Regulatory Flexibility Analysis and Regulatory Impact Review)

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Abbreviations Used in this Document

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

Final Supplemental Environmental Impact Statement (FSEIS) Cover Sheet

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Name of Action

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

Type of Action

(X) Administrative
() Draft

( ) Legislative
(X) Final

Summary

A red snapper Individual Transferable Quota (ITQ) program, proposed in Amendment 8 (with its associated Environmental Assessment [EA], Regulatory Impact Review [RIR], and Initial Regulatory Flexibility Analysis [IRFA]) and approved by NMFS in 1995 [60 FR 61200], was never implemented because of Congressional action taken through the 1996 Sustainable Fisheries Act (SFA) to place a moratorium on the development or implementation of new ITQ programs until October 1, 2000. The Council and commercial fishermen remained interested in an ITQ-type program for the red snapper fishery, and this amendment, if approved would implement, such a program. 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 optimum yield (OY).

Public hearings were held during October 2005. The Council reviewed public comments and informal review comments during their November 2005 meeting in Fort Walton Beach, Florida, and modified the document based on these comments. Minutes of hearings and written comments are available from the Council office.

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

Table of Contents for FSEIS
The table of contents and sections comprising the FSEIS are as follows:

Cover Sheet	
Summary	Section 1 Executive summary
Purpose and Need	Section 3 Purpose and need for action
Alternatives including the proposed actions	Section 4 Management alternatives
Affected environment	Section 5 Affected environment
Environmental Consequences	Section 6 Environmental consequences
References	Section 11 References
List of Preparers	Section 12 List of preparers
List of agencies, organizations, and persons to whom copies of the statement are sent	Section 13 List of agencies, organizations, and persons to whom copies of the statement are sent
Appendices	Appendix A - Alternatives considered, but Rejected
	Appendix B – Response to comments on DEIS

Fishery Impact Statement - Social Impact Assessment Summary

This integrated document contains all elements of the Plan Amendment, FSEIS, IRFA, RIR, Fishery Impact Statement (FIS) and a 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.

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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 amendment 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 did identify 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 are 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 this amendment. 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 these 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

Establishment of the IFQ Program

The existing license limitation program (**Alternative 1**) in the G0M red snapper fishery does not address overcapitalization and the subsequent derby fishing 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 quota to be consolidated in the hands of a select few. However, most concerns related to consolidation of IFQ shares and quotas can be addressed through individual program design as discussed below.

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 initial allocation, maintaining the existing fleet configuration for distributional issues, and providing the industry with the opportunity to examine the program before committing to it permanently.

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. Ownership caps proposed in **Alternative 2** and **Preferred Alternative 3**, limit consolidation and potentially the achievement of the most efficient operations to harvest the quota. While consolidation might be favored on economic efficiency grounds, concentration of share holdings in 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 participants in a fishery. Consolidation also has the potential to eliminate small-scale operations in the red snapper fishery.

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 quota because they must purchase their shares. **Alternative 1** would allow anyone to be eligible for IFQ share allocation, regardless of whether or not they fish for red snapper now or in the past. There is a chance non-user groups would apply for shares and not use them, which would not make optimal use of the fishery. **Alternative 2** would allocate quota shares only to Class 1 license holders while **Preferred Alternative 3** would allow both Class 1 and Class 2 license holders as initial recipients. From a purely economics standpoint, the initial distribution of IFQ shares is not much of an overriding concern as the provisions on 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.

Initial Apportionment of IFQ Shares

It is important to specify the method of apportioning the IFQ shares among the initial recipients. In this case, **Alternative 1**, which does not does not make such specification, is not a viable alternative. **Preferred Alternatives 2** and **4** would base the initial allocation on relative historic catch levels of the permit holders while **Alternative 3** would give equal shares of the fishery to 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 quota 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 is redistributed to the more efficient operations, this allocation 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.

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,** does not establish an appeals process under the IFQ program. Under **Preferred Alternative 2**, the appeals board is solely composed of the Regional Administrator (RA). Under **Alternative 3**, state directors comprise the appeals board, with RA still making the final decision. Under **Alternative 4**, IFQ shareholders comprise the appeals board, again with the RA making the final decision. None of the alternatives 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 is a major issue of this alternative. Neither the process nor the design 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. However, the appeals process would have the added benefit of helping to ensure any mistakes made in the initial allocation would be caught and corrected after the appeals process is finalized. **Preferred Alternative 5** serves to smooth implementation of the IFQ program by ensuring any changes to allocations due to appeals would not significantly affect the various IFQ shareholders. At the same time, it also ensures that the annual commercial quota would not be exceeded at the start of

the IFQ implementation in the event many appeals are settled in favor of fishermen toward the end of the fishing year.

Transfer Eligibility Requirements

Transferability of shares is a crucial aspect of any IFQ program in achieving its economic objectives. The less restriction placed on transfer of 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 shares, which may be beneficial to anyone without history in the fishery to enter the fishery. With more buyers involved, sellers would likely derive relatively good prices for their shares. **Alternative 2** would reward fishermen with reef fish permits because they would be the only ones allowed to buy shares as they become available. **Alternative 3** would reward the IFQ participants because they would be the only ones allowed to buy shares as they become available. **Alternative 4** is similar to **Alternative 1**, except non-permanent resident aliens or persons without U.S. citizenship are not allowed to participate in the transfer of IFQ shares. **Alternative 5** has similar effects as **Alternative 3** in the first five years of the program and then has similar effects as **Alternative 2** thereafter. **Preferred Alternative 6** has similar effects as **Alternative 2** in the first five years of the program and then has similar effects as **Alternative 4** thereafter.

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 quota 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 quota shares they own by simply holding on to them, especially with liberal leasing provisions provided for in the program. **Preferred Alternative 1** would allow people to hold quota shares but not use them. This affords fishermen flexibility in adjusting their operations according to stock or market fluctuations. This alternative would also allow fishermen to not lose their shares when severe fishing conditions saturate the quota share market. **Alternatives 2** and **3** would implement a use it or lose it provision. If either alternative were selected and actually prevented people from buying 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 shares to fish them, so the action would probably not have a great impact on people's actions. Second, the alternatives only require 30 or 50 percent of a person's quota 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 effect would be more rapid restoration of the red snapper stock.

Adjustments in Commercial Quota

Since red snapper is under a rebuilding schedule, chances are total allowable catch (TAC) can change over time. The Council is developing an amendment, which will determine subsequent TACs necessary for continued rebuilding of the red snapper stock. **Alternative 1** would not provide NMFS any direction on how to treat changes in the TAC. **Preferred Alternative 2** results in a straightforward method for calculating each shareholder's share when TAC changes occur. Under this method, large shareholders would experience greater increases in quota shares when TAC rises as well as greater decreases when TAC falls. Alternatives that divide the allocation equally among the quota shareholders (50 percent of TAC changes under **Alternative 3** or 100 percent of TAC changes under **Alternative 4**) would benefit those individuals holding smaller than average amounts of quota. **Preferred Alternative 5** affects the timing of quota issuance for the 2007 season. As the IFQ program is tentatively scheduled to begin in January 2007, this alternative would introduce some complications in the implementation of the IFQ program. Although it would restrict the planning activities of fishermen, it would ensure fishermen would not have to give up IFQ quotas when the eventual TAC and quota adopted for the 2007 season would be substantially lower.

Vessel Monitoring System (VMS)

A VMS requirement would enhance enforcement of the red snapper fishery IFQ program, but costs are an important consideration. **Alternative 1** would benefit IFQ shareholders 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**), 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 are 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.

Cost Recovery Plan

The collection of fees in an IFQ program is required by the Magnuson-Stevens Act to recover costs for enforcement and program administration including data collection, management and distribution. These costs are generally expected to be higher than those incurred under the current license limitation system. **Alternative 1** does not provide for a cost recovery program while **Alternative 2** and **Preferred Alternative 3** 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 resides on the IFQ shareholder under **Alternative 2** and on 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 $383,625. 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. It is worth noting 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 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 quota is met, without an IFQ program. Overall, an IFQ program for red snapper will help to achieve the goal of reducing derby fishing, stabilize the market for red snapper, and allow fishermen to fish all year long or until their own quota is met.

1.0 Executive Summary

This amendment includes a FSEIS, which examined the impact of amending the GOM Reef Fish FMP to address overcapacity in the red snapper fishery. The Council most recently addressed this overcapacity in 1995, in Amendment 8 to the GOM Reef Fish FMP. 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 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. IFQ programs provide the opportunity to better utilize fishing and handling methods and reduce bycatch of non-targeted species.

Gear conflicts may also be reduced under IFQ programs. Additional conservation benefits may also be realized. Increased catch efficiency will result from the extension of the fishing season. Subsequent changes in fishing practices could include fewer areas fished and reduced crowding of prime fishing areas. As a result, these areas can be fished continually, while less desirable fishing areas are 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 harvested 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 equates to reduced number of snags on bottom structure and biota, particularly for fragile corals and sponges, which are easily broken off. Improving catch efficiency may also result in a decrease in regulatory discards of red snapper.

1.1 Description of Alternatives

The range of alternatives considered by the Council to reduce overcapacity in the commercial red snapper fishery 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 to address overcapacity in the commercial red snapper fishery, but ultimately rejected without detailed study, are presented in Appendix A of this amendment, along with the rationale for their rejection.

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, this species is overfished and undergoing overfishing. It is currently under a rebuilding plan from a previous assessment, which is designed to end overfishing between 2009 and 2010 and rebuild the stock by 2032. The time frame to end overfishing might be adjusted contingent on management alternatives the Council will select in a joint FMP amendment for red snapper and shrimp currently under development. The major management methods used to date to reduce mortality in the commercial fishery and rebuild the stock have been trip limits, seasonal closures, reductions in TAC, and requirement of bycatch reduction devices (BRDs) in shrimp trawls, which catch many juvenile red snapper. The shrimp trawl fishery causes high levels of bycatch mortality on juvenile red snapper. As previously mentioned, the joint amendment affecting both red snapper and the GOM shrimp fishery is currently under development. This amendment will contain measures to reduce red snapper mortality resulting from the directed fishery, as well as from shrimp trawl bycatch, in order to rebuild the red snapper stock.

Although the actions under consideration are directed toward red snapper, they are likely to have indirect effects on many 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 an IFQ program may cause some current participants to target other species of reef fish, these newly targeted species (some of which are overfished and/or undergoing overfishing) would 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 hold Class 1 licenses that allow a daily vessel trip limit of 2,000 pounds of red snapper and 628 entities hold Class 2 licenses that 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.

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 the environmental consequences of each action. 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 of environmental consequences of alternatives considered for proposed Action 1. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 1: IFQ Program Management	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No Action (Status Quo). Maintain existing license limitation program.	Maintain degree of gear interaction with bottom	-	2	Maintain processor costs	+	2	No effect		1
	Maintain frequency of regulatory discards	-		Maintain short-term employment opportunities	+				
	Maintain bycatch	-		Maintain high capital investment	-				
	Maintain frequency/ severity of quota overruns	-		Maintain vessel production costs	-				
				Maintain low ex-vessel prices	-				
				Derby fishery	-				
	Maintain spawning season closure	+		Reduced safety	-				
				Shorter fishing seasons	-				
				Maintain high operator costs	-				
				Maintain fluctuating market supply	-				
				Maintain overcapitalization	-				
Alt. 2: Implement an IFQ program.	Less gear interaction with bottom	+	1	Less overcapitalization	+	1	No cost to enforce current trip limit and license system	+	2
	More efficient harvesting	+		Employment losses	-				
	Increased compliance	+							
	Less regulatory discards	+		Higher ex-vessel prices, revenues, and processor costs	+		More efficient data collection	+	
	Promote conservation ethic	+		Lower vessel production costs	+		Admin. costs of new tasks	-	
	High grading	-		Improve safety	+		Litigation over initial share allocation	-	
	Fewer quota overruns	+		Windfall for some individuals	+				
	Less bycatch	+		Lengthen fishing season	+				
	Eliminate spawning season closure	-		Improve reliability of supply for markets	+				
				Increase efficiency	+				

Table 1.3.1(b): Summary of environmental consequences of alternatives considered for proposed Action 2. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 2: IFQ Program Duration	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No Action (Status Quo). Do not specify duration of IFQ program.	Longest period of the biological benefits described in Table 1.3.1(a)	+	1	Increase fishery efficiency	+	1	No effect		1
				Increase net revenue stream	+				
				Least uncertainty	+				
Alt. 2: Indefinite program length, must review every a. 5 or b. 10 years.	Intermediate period of the biological benefits described in Table 1.3.1(a) (periodic review could prompt change or end of program)	+	2	Increase fishery efficiency	+	2	Cost of periodic review: highest for 2a, lowest for 2b.	-	2a: 3
				Increase net revenue stream	+				2b: 2
				Intermediate uncertainty	-				
Alt. 3: IFQ program sunsets after 5 or 10 years	Shortest period of the biological benefits described in Table 1.3.1(a)	-	3	Maintain existing fleet for short-term distributional issues	+	3	Cost of new plan amendment	-	4
				Highest uncertainty	-				
				Reach compromises in initial allocation	+				
				Reduce efficiency	-				
				"Test run" before industry commits to IFQ program	+				
				Decrease net revenue stream	-				
				Reduce producer surplus	-				
				Weaken market for shares	-				

Table 1.3.1(c): Summary of environmental consequences of alternatives considered for proposed Action 3. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 3: Ownership caps	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. Do not constrain the number or amount of shares that can be owned by a participant in the IFQ program.	Less bycatch	+	1	Concentration of market power	-	6	Least number of shareholders to track and associated admin. costs	+	1
	Less regulatory discards	+		Worse working conditions	-				
	Less interaction with bottom	+		Increased efficiency	+				
				Reduce small scale operations	-				
				Reduced crew wages	-				
				Lower ex-vessel prices and revenues					
Alt. 2: Cap shares at 2a. 2% 2b. 5% 2c. 10% or 2d. 15%	More interaction with bottom as cap size increases	-	2a: 2 2b: 3 2c: 5 2d: 6	Less concentration of market power as cap size increases	+	2a: 1 2b: 2 2c: 4 2d: 5	Highest number of shareholders to track and associated admin. costs	-	2a: 2 2b: 3 2c: 5 2d: 6
	More regulatory discards as cap size increases	-		Higher ex-vessel prices and revenues	+		Probability of litigation increases as size of cap decreases	-	
	More bycatch as cap size increases	-		Allow for small-scale operations	+				
				Better working conditions	+				
				Maintain or increase crew wages	+				
Alt. 3: Cap at ~8%	More interaction with bottom than Alt. 2a or 2b, less than Alt. 2c or 2d	+/-	4	Less concentration of market power than 2c or 2d, more than 2a or 2b.	+	3	More shareholders to track and associated admin. costs	-	4
	More bycatch than Alt. 2a or 2b, less than Alt. 2c or 2d	+/-		Better working conditions	+		Probability of litigation higher than Alt. 2c or 2d, lower than 2a or 2b	-	
	More regulatory discards than Alt. 2a or 2b, less than Alt. 2c or 2d	+/-		Allow for small-scale operations	+				
				Maintain or increase crew wages	+				
				Higher ex-vessel prices and revenues	+				

Table 1.3.1(d): Summary of environmental consequences of alternatives considered for proposed Action 4. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 4: Initial eligibility	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. No restrictions.	Increase interaction with bottom if less efficient fishermen	-	3	Windfall profits for the greatest number of people	+	2	Most shareholders to track and admin. costs	-	3
	Increased regulatory discards if less efficient fishermen	-		Current participants must compete with outsiders	-		NMFS must determine how to determine eligibility	-	
	Increase bycatch if less efficient fishermen	-		Outsiders can participate	+				
				Undermines IFQ program	-				
Alt. 2: Only Class 1 license holders eligible.	More regulatory discards of red snapper because no bycatch allowance	-	2	Windfall profits for Class 1 license holders only	+	3	Least number of shareholders to track and admin. costs	-	1
				Class 1 license holders get more shares b/c don't share with others	+				
	Less bycatch	+		Class 2 license holders and outsiders shut out of initial allocation and windfall profits	-		Litigation from current Class 2 license holders more likely	-	
	Less interaction with bottom	+							
Alt. 3: Only Class 1 and Class 2license holders eligible.	Less regulatory discards of red snapper because bycatch allowance	+	1	Windfall profits for Class 1 and Class 2 license holders	+	1	Intermediate number of shareholders to track and admin. costs	-	2
				Current participants don't have to share with outsiders	+				
	Intermediate level of bycatch	-		Outsiders can't participate	-		Litigation from current red snapper fishermen less likely	+	
	Intermediate interaction with bottom	-		Allow for small-scale operations	+				
				Maintain or increase crew wages	+				
				Higher ex-vessel prices and revenues	+				

Table 1.3.1(e): Summary of environmental consequences of alternatives considered for proposed Action 5. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 5: Initial apportion-ment	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. No method-ology specified.	More interaction with bottom if less efficient fishermen participate	-	3	More capital investment	-	3	Staff time developing allocation system before implement-ation	-	1
				Prevent implementation of IFQ program until system developed	-				
	More regulatory discards if less efficient fishermen participate	-		Higher vessel production costs	-		IFQ program effectiveness undermined	-	
				Depressed ex-vessel prices	-				
				Lower processor costs	+				
Alt. 2: Proportion-al allocation.	Less interaction with bottom because most efficient fishermen	+	1	Reward historically successful harvesters	+	1	Borderline businesses get no boost, so less participants over time and lower admin. costs	-	2
	Less regulatory discards	+		Increase efficiency	+				
	Less bycatch	+		Increase producer surplus	+		Less argument for hardship	+	
				Increase net benefits to Nation	+				
Alt. 3: Equal allocation.	More interaction with bottom if less efficient fishermen participate	-	2	Aid harvesters with smaller than average catch histories	+	2	Borderline and new businesses get boost, so more participants over time and higher admin. costs	-	3
	More bycatch	-		Detrimental to harvesters with larger than average catch histories	-				
	More regulatory discards	-		"Level playing field" for less successful or new harvesters	+				
Alt. 4: Historical captain's license holders may select seven years of landings	No effect	-	-	Holders of such license can optimize years used for allocation	+	-	Marginal workload increase to treat these holders differently than all others	-	-

Table 1.3.1(e) (continued): Summary of environmental consequences of alternatives considered for proposed Action 5. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 5: Initial apportion-ment (continued)	Physical/Biological/ Ecological			Socio/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Suboption 2A: Allow Class 1 license holders to select: i) 5 years data **ii) 10 consecutive years data** iii) All years data During the time period: iv) 90 to 99 v) 90 to 00 **vi) 90 to 04** vii) 93 to 02 viii) 94 to 03 ix) 95 to 04	Because no predictable difference in the average landings for shareholders depending on the number of years or particular range of years selected, Cannot predict which suboptions have positive or negative biological effects		-	Suboptions 2Ai and 2Aii allow years of catch to be dropped, which could benefit harvesters who haven't fished every year during the qualifying period and those with above average variation in their catch history	+		Because no predictable difference in the average landings for shareholders depending on the number of years or particular range of years selected, cannot predict which suboptions have positive or negative admin-istrative effects		-
				Suboptions 2Ai and 2Aii, which allow years to be dropped, diminish need for hardship provisions	+				
				Suboptions 2i and 2ii would make it more difficult for fishermen to determine how program will impact them	-				

Table 1.3.1(f): Summary of environmental consequences of alternatives considered for proposed Action 6. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 6: Appeals process	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. No appeals process established.	No effect		-	Those unhappy with initial allocation have no recourse	-	4	Litigation with no resolution process	-	4
Alt. 2: Regional Administr-ator decides on appeals	No effect		-	Beneficial if favorable outcome of appeal	+	3	Less litigation because can resolve through appeal	+	1
				Detrimental if unfavorable outcome of appeal	-				
				Allow IFQ participants to verify share allocation	+				
				Lowest credibility	-		Lowest cost of resolution process	-	
Alt. 3: State Board of Directors decides on appeals	No effect		-	Beneficial if favorable outcome of appeal	+	2	Less litigation because can resolve through appeal	+	2
				Detrimental if unfavorable outcome of appeal	-				
				Allow IFQ participants to verify share allocation	+		Intermediate cost of resolution process	-	
				Intermediate credibility	+				
Alt. 4: Panel of IFQ fishermen decides on appeals	No effect		-	Beneficial if favorable outcome of appeal	+	1	Less litigation because can resolve through appeal	+	3
				Detrimental if unfavorable outcome of appeal	-		Intermediate cost of resolution process	-	
				Allow IFQ participants to verify share allocation	+				
				Highest credibility	+				

Table 1.3.1(f) (continued): Summary of environmental consequences of alternatives considered for proposed Action 6. Preferred alternatives are in bold, and the type of effect is indicated with – or +.

Action 6: Appeals process (cont.)	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 5: Set aside 3% of current quota to resolve appeals	No effect	-		Means to award more shares after an appeal without taking shares away from another shareholder	+		Less litigation – can resolve through appeals process	+	
				Highest credibility	+		Lower litigation cost	+	

Table 1.3.1(g): Summary of environmental consequences of alternatives considered for proposed Action 7. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 7: May transfer to…	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1 – Anyone	If shares not used, less damage to bottom	+	1	Less expensive to enter fishery	-	1	Highest potential number of participants and admin. costs	-	6
	If shares not used, less regulatory discards and bycatch	+		If shares not used, least efficient	-				
	Unused shares help stock rebuild more quickly	+		Higher windfall profits and sale price	+				
				Highest rents	-				
Alt. 2 – Reef Fish permit holders only	Increased gear interaction with bottom	-	6	Lower rents	+	5	Intermediate potential number of participants and admin. costs	-	3
				Lower efficiency	-				
				Lower windfall profits and sale price	-				
				Not able to transfer to family member	-				
				Reward reef fish fishermen	+				
				Non-reef fish fishermen can never participate	-				
Alt. 3 – IFQ shareholders only	Increased gear interaction with bottom	-	5	Lower windfall profits and sale price	-	6	Number of participants stays the same, least admin. costs	+	1
				Lower efficiency	-				
				Lower rents	+				
				Not able to transfer to family member	-				
				Reward IFQ shareholders	+				
				Non IFQ shareholders can never get into fishery	-				

Table 1.3.1(g)(continued): Summary of environmental consequences of alternatives considered for proposed Action 7. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 7: May transfer to…(cont.)	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 4 – all citizens/ aliens	If shares not used, less regulatory discards and bycatch	+	2	Higher windfall profits and sale price	-	2	Second highest potential number of participants and associated admin. costs	-	5
	If shares not used, less damage to bottom	+		Current participants can't retain exclusive rights	-				
	Unused shares help stock rebuild more quickly	+		Outsiders can participate	+				
				More expensive to enter fishery	-				
				Lower rents	+				
				Lower efficiency	-				
Alt. 5 – IFQ shareholders only 1st 5 years, then Reef Fish permit holders only	Increased gear interaction with bottom	-	4	Lower rents	-	4	Number participants stays same first five years, less cost	+	2
				Reef Fish permit holders can gain access eventually	+				
				IFQ shareholders can't retain exclusive rights	-		More complicated	-	
				Lower windfall profits and sale prices in first 5 yrs.	-				
				Lower efficiency	-				
				Not able to transfer to family member	-				
Alt. 6 – Reef Fish permit holders only 1st 5 years, then all citizens/ aliens	If shares not used, less damage to bottom	+	3	Lower rents	+	3	Intermediate potential number of participants and admin. costs	-	4
				Lower windfall profits and sale prices in first 5 years	-				
				Lower efficiency	-		More complicated	-	
				Cannot transfer to all family members in first 5 yrs.	-				
	Unused shares help stock rebuild more quickly	+		Outsiders may participate	+				
				More expensive to enter fishery	-				
				Reef fish permit holders can't retain exclusive rights	-				

Table 1.3.1(h): Summary of environmental consequences of alternatives considered for proposed Action 8. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 8: Use it or lose it	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. No minimum landings require-ment.	If shares not used, less damage to bottom	+	1	Decreased consumer surplus	-	5	No tracking of landings required	+	1
	If shares not used, less regulatory discards and bycatch	+		Decreased net benefit to Nation	-				
	Unused shares help stock rebuild more quickly	+		Decreased employment opportunities	-				
				Less likelihood of derby fishing	+				
Alt. 2: Inactive 3 years, revoked. Inactive means moving average landings less than 2a. 30% or 2b. 50% of allotment	Increase interaction with bottom if obligation to fish shares	-	2a: 2 2b: 4	Increased producer surplus	+	2a: 1 2b: 3	Must track landings of each permit holder	-	2a: 2 2b: 4
				Increased efficiency	+				
	Less bycatch reduction if obligation to fish shares	-		Increased employment opportunities	+		Revoke unused shares after 3 years	-	
	All quota caught	-		Increased likelihood of derby fishing	-		More likely to revoke if require average 50% of allotment landed	-	
				Slight increased net benefit to Nation	+				
Alt. 3: Inactive 5 years, revoked. Inactive means moving average landings less than 3a. 30% or 3b. 50% of allotment	Increase interaction with bottom if obligation to fish shares	-	3a: 3 3b: 5	Slightly increased producer surplus	+	3a: 2 3b: 4	Must track landings of each permit holder	-	3a: 3 3b: 5
				Increased efficiency	+				
	Less bycatch reduction if obligation to fish shares	-		Slight increased net benefit to Nation	+		Revoke unused shares after 5 years	-	
	All quota caught	-		Increased employment opportunities	+		More likely to revoke if require average 50% of allotment landed	-	
				Increased likelihood of derby fishing	-				

Table 1.3.1(i): Summary of environmental consequences of alternatives considered for proposed Action 9. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 9: Adjust quota	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1 – No provision made	Increase gear interaction with bottom	-	4	Continued overcapitalization	-	4	Later plan amendment required	-	4
	Rebuilding plan undermined	-		Continued derby fishing	-				
Alt. 2 – Allocate increases and decreases proportionately based on percentage of quota held	Less interaction with bottom	+	1	Highest producer surplus	+	1	Fewer participants after a few years, less admin. costs	+	1
	Less regulatory discards	+		Most consolidation	-				
	Less bycatch	+		Most efficient fishers rewarded when quota up	+				
				Most successful fishers docked when quota down	-				
Alt. 3 – 50% of increase or decrease distributed proportionately, 50% of increase or decrease distributed equally	Increase interaction with bottom	-	2	Lower producer surplus	+	2	More participants after a few years, more admin. costs	-	2
	Increase bycatch	-		More consolidation	+				
				Benefits less successful harvesters	+				
	Increase regulatory discard mortality	-		Most efficient docked less than with Alt. 2 or 4	-				
Alt. 4 increases distributed equally to all, decreases divided equally among largest shareholders	Increase bycatch	-	3	Lowest producer surplus	-	3	More participants after a few years than for Alternatives 2 and 3, more admin. costs	-	3
	Increase interaction with bottom	-		Less consolidation	+				
				Penalizes most successful harvesters	-				
	Increase regulatory discard mortality	-		Benefits less successful harvesters	+				

Table 1.3.1(i) continued: Summary of environmental consequences of alternatives considered for proposed Action 9. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Alt. 5: Issue by July 1, 2007 any increases in TAC determined prior to that date.	Efficiently implement rebuilding plan TAC	+		Shareholders are able to catch the increase in TAC in 2007	+		Increased cost due to addition of a TAC allocation mid-year	-	

Table 1.3.1(j): Summary of environmental consequences of alternatives considered for proposed Action 10. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 10: Vessel Monitoring Systems	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1: No action. Do not require VMS.	Existing amount of gear interaction in protected areas	-	2	More fines from violations	-	1	IFQ program effectiveness undermined because little enforcement	-	1
	Maintain amount of protection of species in closed areas	-							
Alt. 2: Require VMS for all vessels in red snapper IFQ program	Less gear interaction in protected areas	+	1	If IFQ shareholders pay part/all of the cost of VMS, increase operating costs	-	2	If NMFS pays part/all of the cost of VMS, cost to government	-	2
	More protection for species in closed areas	+		Perception of government intrusion on fishing practices	-		More effective enforcement	+	
				If shares sold to more efficient fishermen, increased efficiency	+		Must verify ongoing possession of operational VMS	-	
				If shares sold to less efficient fishermen, decreased efficiency	-		Must continually monitor location of participants	-	

Table 1.3.1(k): Summary of environmental consequences of alternatives considered for proposed Action 11. Preferred alternatives are in bold, and the type of effect is indicated with – or +. Rank 1 = best alternative for given class of consequences.

Action 11: Cost recovery plan	Physical/Biological/ Ecological			Social/Economic			Administrative		
	Effect	+/-	Rank	Effect	+/-	Rank	Effect	+/-	Rank
Alt. 1 – No cost recovery	No effect		-	No effect		1	NMFS pays all admin. costs of IFQ program	-	3
Alt. 2 – Shareholder keeps records and sends $ to NMFS	No effect		-	Cost to IFQ shareholders for cost recovery	-	2	NMFS pays less admin. costs of the IFQ program	+	2
				Increased admin. costs to shareholders	-		NMFS must track individual reports	-	
Alt. 3 – Dealer keeps records and sends $ to NMFS	No effect		-	Cost to IFQ shareholders for cost recovery	-	3	NMFS pays less admin. costs of the IFQ program	+	1
				Increased administrative costs to dealers	-		NMFS must track consolidated dealer reports		
				Lower price paid to harvesters	-				

1.4 Major Conclusions

While there are likely to be negative social, economic, and administrative impacts associated with some of the proposed alternatives, the social, economic, and biological consequences of not addressing overcapitalization and associated derby fishing could 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 Privatization of a Public Resource

All limited entry systems, by definition, restrict the number of participants in the fishery. IFQ programs are one such 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, shares would be given, without charge, to those who can demonstrate the required level of historical participation in the fishery. When these shares are then sold, the selling price would be pure profit for the original permit holder, as no money was initially paid for the shares. 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 sell 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. This stewardship would diminish if participants have no particular stake in a fishery.

1.5.2 IFQ Eligibility and its Effects

Overcapitalization occurs when the harvest capacity of a fishery exceeds the TAC. In order to reduce overcapitalization, harvest capacity must be reduced. If this were achieved by reducing the number of participants in the fishery through an IFQ plan, then some current (or potential future) participants would be excluded from the initial allocation and must pay to enter the fishery. These participants, who do not land enough fish or meet the qualifying criteria, must leave the fishery or buy shares from others to remain. In contrast, those who qualify for the new IFQ program would be assured of privileges to land a certain amount of fish and windfall profits if they later sell their 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 in the initial IFQ allocation to persons who own a Class 1 or Class 2 license; permanent resident

aliens who currently own a Class 1 or Class 2 license would be included in the initial allocation subject to any other qualifications included in this 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 people who are currently not 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

Excessive consolidation is another potential pitfall of IFQ programs. 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 issues…". Consolidation occurs when the shares needed to harvest fish 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 shares goes up and smaller operators could not afford to buy their way into the fishery. In some cases, these smaller operators might lease shares and become economically dependent on absentee owners. The Council is considering imposing caps on the number of shares each entity may hold in the proposed IFQ program to limit consolidation.

1.5.4 Years Chosen For Landings History

Initial distribution of IFQ shares would be based on the average annual landings associated with a current Class 1, Class 2, or historical Class 1 license. The choice of years to be selected, are addressed in the suboptions for Action 5 in Section 4. 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). 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 inclusion of the data benefits most permit holders.

The concept of basing initial allocation on more than the last few years could be objectionable to some. Those who bought their permits from other people could object if the landings of the original owner were lower than those of the current owner. This is because the earlier years of low landings would bring down the average landings the current owner's allocation would be based on, possibly causing the amount he/she could land in the future to be less than current levels. The opposite could also occur, resulting in a current permit holder receiving more shares than his/her current landings seem to merit. However, 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, since 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, included alternatives that allow for a range of types of IFQ programs. If the Council ultimately chooses to implement an IFQ program for the commercial red snapper fishery, they will choose between many options to determine how the program will be designed, as described in Section 4. The Council believes the IFQ program described by the preferred alternatives in this amendment would be the best means to reduce overcapitalization in the red snapper fishery, while achieving the best economic outcome for current red snapper commercial fishermen and biological outcomes 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 IFQ program proposed in this amendment would be adopted. 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 will present the results of the second referendum to the Council in March 2006, and, at that time, the Council may elect to submit the plan amendment to the Secretary. Secretarial approval of an IFQ program would be contingent on a positive majority vote in the second referendum, as well as 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 shrimping 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 in many areas of the GOM 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 incur red snapper fishing trips in weather conditions they would have otherwise foregone 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

[1]This statement deserves a qualification. Specifically, 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."

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 overcapitalization 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 on the issuance of new reef fish permits.[2] As identified in the 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 afforded to it by enactment 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 caught 5,000 pounds of red snapper landings 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

[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.

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.

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 is intended to help the Council address overfishing by reducing the rate of discard mortality that normally increases with increased fishing effort in overcapitalized fisheries (NRC, 1999; Leal et al., 2005). IFQs provide the opportunity to better utilize fishing and handling methods and reduce bycatch of non-targeted species. Improving catch efficiency may also result in a decrease in regulatory discards of red snapper and other reef fish species by allowing fishermen the choice on when and where to fish. Additionally, the slower paced fishery anticipated under the IFQ program will support fewer fishermen operating over a longer season.

This amendment evaluates the pros and cons of an IFQ program relative to the current license 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 GOM red snapper fishery.

Note. Preferred Alternatives/suboptions are in bolded text.

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 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.

Following the expiration on the moratorium on IFQs, 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.

This amendment represents the first step in the process of implementing an IFQ program in the GOM commercial red snapper fishery. Specifically, in addition to the moratorium, Congress specified that a referendum among license holders be conducted prior to any IFQ plan development and that a second referendum be held following plan preparation but prior to submission of the plan to the Secretary.

The existing license limitation program in the GOM red snapper fishery, including vessel entry restrictions, a TAC policy enforced with periodic fishery closures, and catch-per-trip limits for qualifying vessels, does not address overcapitalization and the subsequent derby fishing existing in the fishery. The current limited access program **(Alternative 1**) used to manage the commercial red snapper fishery curbs 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 bycatch of non-targeted species, high discard mortality, and insufficient attention to safety. Excess capacity and the race for fish have resulted in economic instability and reduced earnings by affected 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. Detrimental biological and environmental effects of the current limited access management system include regulatory discards of red snapper and other reef fish species, harvest of juvenile red snapper, quota overruns, and the impact of gear on benthic habitats.

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 the month starting in February until the spring quota is filled, and to the first ten days of the month starting in October until the fall quota is filled.

The proposed IFQ program (**Preferred Alternative 2**) analyzed in this document represents the Council's attempt to address the existing and emerging problems resulting from an overcapitalized fishery. The implementation of an IFQ program is expected to decrease the overcapitalization observed in the fleet and promote catch efficiency. Improved catch efficiency, in conjunction with elimination of the current fishing season and trip limits, would lengthen the fishing season and lower operating costs by affording vessels owners more flexibility in their input choices and trip planning, which is expected to promote safer at-sea operating conditions. Additionally, the IFQ program is expected to improve market conditions by supporting a steadier supply of fresh red snapper, increasing ex-vessel prices, and reduce adverse impacts on non-targeted species and habitat.

Preferred Alternative 2 would implement an IFQ program in the GOM red snapper fishery as compared to **Alternative 1**, which maintains the current limited access management initiative.

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 a TAC, which is set by fishery managers based on an estimated sustainable catch level. Quota holders 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 individual quota allocated, except through the purchase or lease of other quota shares. There are different methods of allocating IFQ shares. However, allocations based on past catch history are most commonly used.

Once allocated, IFQ quota would be valued for the privilege it provides to catch fish. A transferable IFQ program would allow the market to reduce fishing capacity, as quota could be consolidated among fewer vessels, which would then have an incentive to fish efficiently to maximize their profits. Fishermen who desired more quota than they received through initial allocations could purchase additional shares. Conversely, those fishermen who were allocated too little quota to make fishing worthwhile, and have no money to purchase additional shares, could sell their quota and invest their money elsewhere. 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 proposed IFQ program would allow a market to develop where quota is bought and sold. These types of programs allow quota shares 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.

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 will be defined as an annual allocation in pounds granted to each IFQ shareholder at the beginning of each fishing year. The allocation is based on the annual commercial quota. The IFQ shares and annual allocations can be transferred to other persons by sale, lease, or general transfer, e.g., to other family members. Persons must have an annual allocation or portion thereof, to harvest red snapper.

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 certificate 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 certificate holder would be required to possess a current 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. All IFQ share certificate holders who sell red snapper directly from their vessel in lieu of a dealer would be required to possess a current

federal dealer permit for GOM reef fish and a red snapper IFQ dealer/processor endorsement. 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.

Additionally, possessing, transporting, selling, purchasing or processing in intrastate or interstate commerce any red snapper harvested under an IFQ in violation of the aforementioned restrictions in this paragraph, 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 shareholder has enough shares/allocations in his/hers account prior to the sale transaction. Recipients of IFQ dealer/processor permits 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 transfers of IFQ shares and the annual allocations of poundage to 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, transfers of IFQ shares and annual allocations would not be allowed during December to allow NMFS the time necessary for end-of-year program management.

IFQ share certificate and allocation debits and transfers would be tracked using an electronic accounting/reconciliation process developed by NMFS, in which the IFQ share certificate holder, dealer, NMFS, and NMFS General Counsel for Enforcement and Litigation (GCEL) would participate. The IFQ share certificate holder and dealer accounts would record IFQ share transactions. The NMFS accounts would monitor IFQ share transactions, as well as quota shares suspended prior to issuance and other legal actions taken against IFQ share certificate holders in which IFQ is garnished by GCEL. Only pursuant to sanctions or rule violations would IFQ share certificates or portions thereof revert to the management program. Any IFQ shares permanently revoked would be eliminated enabling the TAC to be reallocated among the eligible participants.

The following data and information would be collected and monitored through the electronic accounting/reconciliation process:

- When an IFQ share certificate holder has sold red snapper, and the IFQ share certificate holder's ID number.
- Sale price of red snapper or IFQ share certificates.
- The weight of the catch.
- To whom the catch was sold and their dealer/permit number.
- Whether initial recipients hold enough IFQ share certificates to complete the sales transaction.
- Reconciliations of IFQ share certificate holder and the IFQ dealer transactions, which would be confirmed and authorized using NMFS approval codes.

IFQ share certificate holders could electronically purchase IFQ allocations from other IFQ share certificate holders to cover extra fish before they are landed (i.e. via satellite phone, cell phone or ship to shore marine operator). IFQ vessels 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 share certificates. However, any such overages would be deducted from the next year's allocation for that IFQ share certificate holder. IFQ participants would need to purchase additional shares to exceed their last load allocation by more than ten percent.

For enforcement purposes, IFQ landings would be required to be offloaded at permitted IFQ dealers between 6:00 a.m. and 6:00 p.m. daily. Persons landing IFQ catch would be required to notify NMFS Enforcement 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 would be prohibited. All of the aforementioned actions are necessary to facilitate law enforcement activities.

Realistically, there will be legal disputes arising from the allocation of IFQ shares. The number of these and their ultimate outcome will depend to a great extent on the care that has gone into developing the IFQ program and in identifying and applying criteria for participation and allocation of shares. Any increase in participation and accepted landings data may result in a proportional decrease in the shares initially allocated to the participants. Further, there will be a three percent set-aside of the commercial red snapper quota for resolving IFQ disputes. Eligible fishermen will receive an initial notification of eligibility and their respective IFQ allocation. Filing of an appeal must be completed within the time specified under Action 6 subsequent to the effective date of the final regulations implementing the IFQ program. After all disputes have been resolved administratively fishermen will receive a corrected IFQ allocation reflecting their reduction or increase in shares as a result of a settlement of any disputes. Appeals should be resolved within the first year after the effective date of the final regulations implementing the IFQ program.

The most recent SEDAR assessment indicates directed and incidental fishing mortality must be reduced in order to continue rebuilding the red snapper stock at the rate approved by the Council in Amendment 22 to the Reef Fish FMP. As a result, the Council is currently considering in a joint amendment to the Reef Fish and Shrimp FMPs alternative TACs and other measures to reduce fishing mortality. If the TAC for 2007 has yet to be determined before IFQ shares for the 2007 fishing year must be distributed, then NMFS would issue 50 percent, or 2.325 mp, of the current annual commercial quota to eligible participants prior to the start of the 2007 fishing year. The balance of the remaining quota share would be distributed after the Council adopts and the Secretary approves the TAC for 2007, but no later than July 1, 2007., 2007.

Section 304(d)(2)(A) of the Magnuson-Stevens Act provides the Secretary with 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 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.
- The projected ex-vessel value of the catch.
- The costs directly related to the management and enforcement of 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: [3] 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 by NMFS.

Within the common LASAF, separate accounts would be created to ensure the funds from the IFQ fishery are used only to pay for the direct management and enforcement costs of the IFQ

[3] During or before the last quarter of each year, the Regional Administrator may consider adjusting the IFQ fee percentage based on this formula after notification of such fee adjustment has been published in the *Federal Register*.

program, and that the funds from the permit registration and transfers (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 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 would be determined annually by the Secretary based both on IFQ fees actually collected and on an estimate of the funds required for the loan program that year. The Secretary would be expected to make an annual determination by December of that year. After that determination, an annual report would be issued by NMFS, 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 shareholders, or to transfer IFQ shares or allocations, to motivate compliance among registered IFQ shareholders and registered IFQ dealer/processors regarding their 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:

Continuing the current management scheme (**Alternative 1**) in the red snapper commercial fishery would maintain incentives for overcapitalization and derby fishery conditions. 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 be replaced by an IFQ program. IFQ programs are identified as being a highly effective way of dealing with overcapitalization in the fishing industry. Removing the race for fish has reduced the incentive

to purchase larger vessels and more equipment to fish in unsafe conditions. IFQs provide the opportunity to better utilize fishing and handling methods and reduce bycatch of non-targeted species. Gear conflicts may also be reduced under IFQ programs. Additional conservation benefits may also be realized. Increased catch efficiency will result from the extension of the fishing season. Subsequent changes in fishing practices could include fewer areas fished and reduced crowding of prime fishing areas. As a result, these areas can be fished continually, while less desirable fishing areas are 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 harvested 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 equates to reduced number of snags on bottom structure and biota, particularly for fragile corals and sponges, which are easily broken off. Improving catch efficiency may also result in a decrease in regulatory discards of red snapper and other reef fish species by allowing fishermen the choice on 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. Fishermen have an incentive to fill their quota with the most profitable catch. Furthermore, fishermen would have more time to engage in high grading because temporal limits would not exist under the IFQ program. However, overall net impacts of an IFQ program are expected to be positive compared to the status quo. Additionally, the Council is currently considering in Amendment 27 to the Reef Fish FMP alternatives that would mitigate the adverse effects of any high grading activity by eliminating the red snapper minimum size limit and requiring all red snapper captured be landed.

Environmental benefits are derived from improvements in fishing methods, processing practices, and fishery management. Fishing methods and processing practices are improved by slowing the pace of fishing and providing flexibility to fishermen to chose when to fish. A slower fishery could also reduce bycatch and the resultant discard mortality as well as waste byproducts from the processing sector. The IFQ program would improve information necessary for management decisions by requiring more sophisticated monitoring, data collection, and enforcement. Additionally, the real-time capability of an electronic IFQ transaction process would be advantageous to IFQ share certificate holders, IFQ dealer/processors, NMFS, and U.S. Coast Guard (USCG) enforcement personnel.

Summary Comparison of Socioeconomic Effects:

Continuing the current management scheme (**Alternative 1**) in the red snapper commercial fishery would maintain incentives for overcapitalization and derby fishery conditions. Thus, under the status quo alternative, the red snapper commercial fleet would 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, management of the GOM commercial red snapper fishery would be accomplished via 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 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, it has to be recognized the removal of excess capital will depend on several factors such as the amount of initial quota allocated; the malleability of capital; opportunities outside the fishery; vessel markets for those wishing to sell and exit the fishery; transferability rules; and availability of credit. In fisheries where earnings outside the fishery covered by IFQs are low, the vessel owner would probably continue fishing with an old boat as long as it covers its variable costs. Therefore, significant changes in fleet size and structure may take longer as vessels reach the end of their economic lives (Geen and Nayar, 1989). Conversely, if there were significant earning possibilities in other fisheries, the structural change under IFQs would be faster (Grafton, 1996).

One other aspect that should be pointed out is implementing an IFQ program entails costs, such as 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 skills of displaced fishermen are low.

By reducing fishing capacity, IFQ programs result in direct negative consequences for some individuals. Allocating rights to fish benefits some fishermen but not others. 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 IFQs on processors, the costs new fishermen would have to pay to gain entry, and the potential for quota to be consolidated in the hands of a select few. However, most concerns related to consolidation of quota can be addressed through individual program design such as implementing caps on the amount of quota fishermen can own.

Alternatives examined under Actions 2-11 are intended to help the Council design an IFQ program that best balances all these tradeoffs to result 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]

suboption→ **a). 5 years**;[1, 2]

b). 10 years;

following implementation of the final rule.

1 Preferred Alternative of Council (11/04)

2 Preferred Alternative of AHRSAP (10/04)

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 IFQ programs in the U.S. define the legal status of an IFQ as a "revocable privilege," not a permanent enfranchisement. The notion is as long as the program is meeting its stated objective, it will continue, but the Council reserves the right to revoke the privilege for cause. The SFA clarified IFQs: 1) Shall be considered permits; 2) shall be revoked or limited at any time in accordance with procedures under the Magnuson-Stevens Act; 3) shall not confer the right of compensation to the holder if revoked or limited; and 4) shall not create a private property right to the fish before the fish are harvested. The SFA also requires the fishery management councils to ensure any new IFQ program establishes procedures and requirements for the review and revisions of the terms of any such program (including any revisions that may be necessary once a national policy with respect to IFQ programs is implemented), and, if appropriate, for the renewal, reallocation, or re-issuance of IFQs.

Alternative 1 would not limit the duration of the IFQ program. **Preferred Alternative 2** would not limit the duration of the IFQ program, but would require the Council evaluate the program's effectiveness every five years (**suboption 2a)** relative to its ability to address the chronic, long-standing fishery problems described in Section 3 (i.e., Purpose and Need statement). The choice of a non-limited program has both management and economic implications. Harvest privileges under an IFQ program that has no limited duration are more easily marketable at a higher premium than those privileges under a program that has a limited duration. Additionally, the owner of the harvest privilege has a vested interest to conserve the stock over a longer period under a non-limited IFQ program than with privileges that terminate on some specified date. As a consequence, harvest privileges under the non-limited program effects a strong interest in a more stable stock level and, thereby, a more stable fishery. The review provision would require the Council to evaluate the effectiveness of the system and discuss whether it should be modified, extended, or terminated. The Council concluded five years (**suboption 2a)** was preferable to ten years (**suboption 2b**) for this evaluation. Little change may occur the first year and years three and four should provide a good basis for the evaluation after the fifth year. **Alternative 3** would limit the duration of the IFQ program to either five (**suboption 3a**) or ten (**suboption 3b**) years, but would not provide for an evaluation of the effectiveness of the IFQ program.

Alternative 1. Most regulatory actions specified through amendments do not specify the duration of the action. Any such action could be modified or terminated by subsequent amendment action at any time. IFQs can effectively reduce the excess fishing capacity in a fishery provided the market incentive for trading or consolidating IFQ shares is not inhibited by too restrictive management measures. Not restricting the duration of the program would enhance the market for such IFQ shares.

Preferred Alternative 2 would establish the IFQ program indefinitely, while requiring periodic reviews. Ideally these reviews would coincide with stock assessment updates. New information could be incorporated into the program in a timely manner to ensure participants the program is adaptive. This was the preferred alternative of both the Ad Hoc Red Snapper Advisory Panel (AHRSAP) and the Council because both groups felt the effectiveness of the proposed IFQ program should be assessed at periodic intervals. Congress in the 2004 session included proposed Magnuson-Stevens Act language requiring such review, e.g., S. 2066 and H.R. 4749. Two alternative review schedules are included in **Preferred Alternative 2**: five years (**preferred suboption 2a)** and ten years (**suboption 2b**). Both the AHRSAP and the Council support the five-year review schedule. The five-year review sequence seemed a realistic period for such assessment, at least initially. However, a ten-year review schedule may be more practical in the long-term.

Alternative 3 would limit the duration of the proposed IFQ program to either five (**suboption 3a**) or ten years (**suboption 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, negate the effectiveness of the IFQ program in reducing excess fishing capacity. No entity would likely venture capital for IFQ shares if the program ends in five years. While there may be a limited market for the ten-year period, it likely would not be very effective in reducing excess fishing capacity. If an IFQ program were allowed to operate with few restrictions it should reduce the number of participants in the fishery, resulting in a more efficient fishery that results in the same landings by a smaller number of vessels. This would result in not only the expenditure of less capital in the fishery, but also benefits to the fishery stock and affected environment.

Summary Comparison of Physical, Biological, and Ecological Consequences:

The duration of IFQ privileges would have no direct effects on the physical and biological environment. However, it would have positive indirect effects if the reduction of overcapitalization in the red snapper fishery via an IFQ program were continued. Removing the race for fish will reduce the incentive to purchase larger vessels and more equipment to fish in unsafe conditions. IFQs provide the opportunity to utilize better fishing and handling methods and reduce bycatch of non-targeted species. Gear conflicts may also be reduced under IFQ programs. **Alternative 1** and **Preferred Alternative 2** would allow the program to continue indefinitely until the Council decides to revise, substitute or terminate the proposed IFQ program. **Alternative 3** differs from **Alternative 1** and **Preferred Alternative 2** by requiring termination of the IFQ program at either five- (**suboption 3a**) or ten-year (**suboption 3b**) intervals after which a determination will be made whether to extend it. The net effects of **Preferred Alternative 2** are better than **Alternative 1**, which are better than **Alternative 3,** as the IFQ program would be most effective under **Preferred Alternative 2** than either of the other two alternatives; **Preferred Alternative 2** allows for periodic review and adjustments to improve the IFQ program.

Summary Comparison of Socioeconomic Consequences:

The duration of an IFQ program would directly affect the effectiveness of the program in achieving its intended objectives of addressing the derby effects and overcapitalization. A permanent or long-term privilege, 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 also reduce uncertainty caused by changes in the "rules of the game" and provide incentives to invest in the resource. Although **Alternative 1** and **Preferred Alternative 2** have similar economic impacts, **Preferred Alternative 2** carries with it an additional management cost resulting from the review process (**suboptions 2a, b**). A sunset provision for an IFQ program, as in **Alternative 3**, would reduce the overall efficiency of the harvesting sector. Quota values are determined based on the present value of the stream of net revenues derived from owning the quota. Decreasing the number of years the program will be in place decreases the stream of net revenues. Sunsetting the IFQ program also increases the uncertainty associated with the program. This uncertainty would weaken the market for permanently transferable shares. Buyers would not want to purchase quota if they cannot recoup the cost before the program expires. Sellers would not want to sell quota below its value. Given the uncertainty of the IFQ programs duration, reaching a market price would be difficult. Constraints on the free transfer of quota would slow the pace of quota being purchased by more efficient operations. That would reduce producer surplus and net National benefits, unless quota leases are able to redistribute quota to the most efficient operations. The market for annual quota leases should still function under a program of limited duration. However, it is not known if the lease markets would be as efficient in redistributing quota as permanent transfers, but it is likely lease markets will not reduce fishing capacity as well as a permanent program will.

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 initial allocation, maintaining the existing fleet configuration for distributional issues, and providing the industry with the opportunity to examine the program before committing to it permanently. The net effects of **Preferred Alternative 2** are better than **Alternative 1**, which are better than **Alternative 3,** as the IFQ program would be most effective and efficient under **Preferred Alternative 2** than 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:

Although the Magnuson-Stevens Act requires any IFQ program prevent a person from acquiring an excessive share of the issued quota; no specific guidance concerning appropriate limits on consolidation is provided. Limits on excessive share holdings are intended to limit concentration of market power, provide opportunity for entry, provide competition in the labor market, and ensure the resource supports a reasonable number of participants.

This action defines maximum ownership of shares allowed under the IFQ program. Due to the transferability of IFQs, the Council is considering options to restrict the cumulative amount of IFQ shares owned by any single person within a single year. Ownership caps are generally favored as a means to prevent excessive shares (or the ownership of a disproportionate amount of shares by a single person or entity). In fisheries with excessive capital, it is likely issuance of transferable quota shares will result in some consolidation, as surplus capacity leaves the fishery. While this consolidation might be favored on economic efficiency grounds, concentration of share holdings by a relatively few entities can result in excessive market power. The concentration of market power can effect working conditions, prices and wages, and harm smaller participants in the fishery. Caps on excessive shares are necessary to: 1) Prevent consolidation of market power that is used to influence ex-vessel price, crew shares and working conditions; 2) limit windfall profits during the allocation of shares; and 3) ensure the resource supports a reasonable number of participants.

Alternative 1, the no action alternative, places no ownership cap on the amount of IFQ shares a single participant may own. This alternative enhances the market incentive for trading and consolidating IFQ shares. The Council did not include a cap on the amount of shares a single participant could own for the red snapper IFQ system implemented by Reef Fish Amendment 8 ([60 FR 61200, April 1, 1996] (See Section 2.2 Management History). They did not include a cap because they felt such a restriction was not enforceable in that shares could be obtained by members of an extended family and controlled by a single member. Similarly multiple corporations could be created and controlled by a single person. However, in the last session of Congress (2004), both Senate and House Committee bills for amending the Magnuson-Stevens Act had provisions to prevent any person from acquiring an excessive share of fishing quotas (e.g., S. 2066 and H.R. 4749). Presumably that provision will be in bills introduced in 2005. The question becomes what level is considered excessive.

Alternative 2 presents four sub-alternatives for capping the IFQ shares. The 2 percent cap is similar to the level allowed in the Alaskan sablefish and halibut IFQ program. However, a management goal in that fishery was to retain the owner/operator component of the fishery,

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

rather than allowing trading of IFQ shares resulting in larger and fewer vessels and corporate fleets. This lower percentage cap also should have reduced the consolidation of IFQ shares over that level that would have occurred if the cap was set at a higher level. The 5 percent cap is in excess of most of the current landing levels of individual Class 1 license holders. The 10-percent level is anticipated to be in excess of the current landing level for individually owned fleet operations, as is the fifteen percent level.

Preferred Alternative 3 restricts the cumulative amount of IFQ shares a person or entity individually or collectively can own to the maximum percentage issued to a recipient at the time of initial apportionment of IFQ shares**.** The 8 percent level was selected by the AHRSAP because they estimated it capped the landings level of the largest existing fleet operation.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Placing ownership caps and restrictions on IFQ share certificates and allocations would not have any direct effects on the physical, biological, and ecological environments. However, placing no limits on ownership caps (**Alternative 1**) would have positive indirect biological and ecological benefits by allowing for greater share consolidation, which heightens efficiency in the fishery through improved fishing practices, and provides for more efficient management of the red snapper stock. Fishing methods are improved by slowing the pace of fishing and providing flexibility to fishermen to chose when to fish. If fishermen are able to fish with greater care they may also reduce the amount of gear lost each year. Improved fishing practices may result in fewer discards and a subsequent reduction in discard mortality. Improved fisheries management would result from more sophisticated monitoring, data collection, and enforcement.

Limiting the consolidation of shares by implementing ownership caps (**Alternative 2 suboptions a, b, c,** and **d** and **Preferred Alternative 3**) could have negative indirect effects by allowing more fishermen to participate in the IFQ program. Fishermen who are less efficient would spend more time fishing for the same catch of fish increasing the amount of interaction between gear and the benthic habitat, and would have higher levels of regulatory discards and bycatch providing for reduced protection to red snapper and other reef fish stocks. The net effects of **Alternative 1** are better than **Preferred Alternative 3**, which are better than **Alternative 2 suboptions a, b,** as greater consolidation of shares would likely occur under **Alternative 1** than either of the other two alternatives.

Summary Comparison of Socioeconomic Consequences:

The absence of any ownership cap, as in **Alternative 1**, provides a fertile ground for consolidation of operations. Consolidation is a necessary step toward the achievement of efficiency in the fishery, as owners strive to maximize profit by taking advantage of the opportunity to reduce cost and improve productivity.

Ownership caps proposed in **Alternative 2** and **Preferred Alternative 3**, limit consolidation and potentially the achievement of the most efficient operations to harvest the quota. While consolidation might be favored on economic efficiency grounds (e.g., for exploiting economics 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 could harm some participants in a fishery (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.

Ownership caps being considered would allow the fleet to reduce from 136 Class 1 license holders and 480 to 628 Class 2 license holders to 50 (2 percent cap; suboption 2a), 20 (5 percent cap; suboption 2b), about 15 (cap based on largest allocation; **Preferred Alternative 3**), 10 (10 percent cap; suboption 2c), or 7 (15 percent cap; suboption 2d). Currently about 10 permit holders are over the 2 percent cap and only 1 or 2 permit holders are over the 5 percent cap, depending on the allocation years selected. These cap levels would facilitate a substantial amount of consolidation in the fleet and may provide the appropriate balance between efficiency and consolidation. The net effects of **Alternative 1** may be ranked first from an economic efficiency standpoint. The net effects of **Preferred Alternative 3** may be ranked higher than **suboption 2c**, **suboption 2d**, and **Alternative 1** but lower than **suboption 2a** and **suboption 2b** from a market power standpoint. **Alternative 1** does not cap the ownership of shares by any IFQ participant, so it affords the most efficient operations to expand to a level that provides the best profit scenario for owners of IFQ shares. The presence of substitutes, such as domestic production of other reef fish and imports of red snapper and other reef fish, holds in check the possible development of monopolistic or oligopolistic tendencies in the market for red snapper. These tendencies would reduce the benefits consumers can derive from the consumption of red snapper and need to be avoided according to National Standard 4 of the Magnuson-Stevens Act. **Preferred Alternative 3** may result in similar effects as the 5 or 10 percent cap of **Alternative 2**. The 2 percent cap in **Alternative 2** is the most constraining and it would result in some owners forfeiting some potential shares they may initially receive or in compelling them to sell excess shares right after the implementation of the IFQ program. Any cap on share ownership tends 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]

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

***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.

Eligibility for the initial allocation of quota shares is one of the most controversial aspects of the implementation phase of the IFQ program. Controversy focuses on who should be eligible for initial allocations and the criteria that should be used to allocate shares (see Action 5). Ideally, initial allocation should widely distribute shares to avoid granting excessive windfall profits to a few participants in the fishery. Broader initial allocations will distribute benefits more equitably and compensate more individuals as shares are consolidated. Share distribution should consider investments of time and capital in the development of the fishery. 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.

Ownership of a Class 1 or Class 2 license and a GOM reef fish permit are the current qualifications for participation in the red snapper fishery. Their use for defining eligibility in the IFQ program would maintain the current fishery participation and reduce the possibility of further overcapitalization by prohibiting entry of new participants.

Discussion and Rationale:

Alternative 1. This no action alternative would not restrict initial eligibility in the IFQ program and allow anyone to be eligible to participate in the IFQ program.

Alternative 2 would restrict the persons to whom IFQ shares would be issued to only persons who own a current Class 1 license. This would include about 131 active Class 1 (7 inactive) owners who historically landed about 93 percent of the total annual commercial landings of red snapper. Consequently, it would exclude about 469 active (and 159 inactive) Class 2 license owners who historically land 7 percent (or less) of the total annual commercial landings of red snapper.

Preferred Alternative 3 would restrict the persons to whom IFQ shares would be issued to only persons who own a current Class 1 or Class 2 license. This would restrict the allocation to all persons who can or could legally harvest and land commercial quantities of red snapper. As noted above, this potentially could include 599 active (and 166 inactive) Class 1 and Class 2 license owners. Because of the structure of the license system many license owners may not be participating in the reef fish fishery at all as persons were granted a license with no provision that it be periodically renewed.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Alternative 1 would allow anyone to be eligible to participate in the IFQ program. This would likely not be an effective way to reduce capacity in the fishery and would have negative indirect effects on the physical, biological, and ecological environment. Persons with little experience in the fishery would be less efficient and spend more time fishing for the same catch of fish. This would increase interactions between gear and benthic habitat, and increase levels of regulatory discards and bycatch providing for reduced protection to red snapper and other reef fish stocks. Should Class 2 license holders be excluded from eligibility, as proposed in **Alternative 2**, there would also be a negative direct effect on the biological environment. The Class 2 license was originally established as a "bycatch" license allowing fishermen to keep red snapper they incidentally caught during the red snapper season openings. Without some IFQ shares, these fishermen would be forced to discard any red snapper they caught. The commercial discard mortality rate as described in the latest red snapper stock assessment (SEDAR 7, 2004a) ranges from 71 percent (eastern Gulf) to 82 percent (western Gulf). Those fish that could have been kept but were released would add to the total mortality applied by the commercial fishery. **Preferred Alternative 3** would allow Class 2 license holders to keep red snapper and avoid the discard mortality that would occur under **Alternative 2**. Additionally, if previous Class 2 license holders are able to obtain additional shares (purchase or lease), they could further reduce the number of red snapper they would need to discard once they had used their initial allocation. Therefore, the net effects of **Preferred Alternative 3** are better than **Alternative 2**, which are better than **Alternative 1,** as participation in the IFQ program would be restricted to present participants in the fishery.

Summary Comparison of Socioeconomic 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 sells quota shares they did not purchase (NRC, 1999). The revenue generated from the sale of initially allocated quota, is the windfall profit. These profits are not available to subsequent owners of quota because they must purchase their shares. **Alternative 1** is very broad and does not provide sufficient guidance for purposes of initially allocating IFQ shares. This alternative would allow anyone to be eligible for IFQ share allocation, regardless of whether or not they fish for red snapper now or in the past. There is a chance non-user groups, or others wishing to preserve the species, will apply for shares and not use them, which would not make optimal use of the fishery.

If **Alternative 1** were chosen, IFQ shares would be thinly spread across all applicants. This will introduce inefficiency into the fishery at the very start of the IFQ program by penalizing the more efficient operations. Additionally, it would also slow down the consolidation process of the IFQ program. **Alternative 2** would allocate quota shares only to Class 1 license holders, and **Preferred Alternative 3** would broaden the initial allocation to also include Class 2 license holders. Depending on the years selected, Class 2 license holders would probably receive about 5 to 7 percent of the initial allocation, if they were included in the initial allocation (**Preferred Alternative 3**). If they were not included in the initial allocation (**Alternative 2**), that percentage of the TAC would be redistributed among the remaining participants**.** Net effects cannot be estimated at this time, as there is no way of identifying the universe of recipients.

Without specifying initial recipients, everyone interested would apply for inclusion in the program.

From a purely economics standpoint, the initial distribution of IFQ shares is not much of an overriding concern as are the provisions on share ownership and transfer. However, 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. In this case, the net effects of **Alternative 1** may be ranked the lowest. **Alternative 2**, which provides for a more restrictive universe of initial participants, may hasten the consolidation process under an IFQ program, but at the same time it would disallow some potentially efficient operations with Class 2 license to incur more costs (through purchases of shares) in order remain in the red snapper fishery. On the other hand, expanding the universe of initial participants to those with little or no history of fishing in the red snapper fishery would slow down the consolidation process. Thus, it appears **Preferred Alternative 3** may be an intermediate alternative and hence may be ranked first.

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;

suboption→ 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.]

suboption→ 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:

suboption→ i) **Five years of data;**

ii) All years of data.

During the time period

iii) 1998 through 2002;

iv) 1998 through 2003;

suboption→ v) 1998 through 2004.

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

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:

Allocating IFQ shares based on landings histories is generally considered an equitable way to recognize both present and historical participation in the fishery, as required by Section 303(b)(6) of the Magnuson-Stevens Act. Such an allocation strategy would provide each participant an IFQ share essentially equivalent to the percentage of commercial quota they landed during the base years chosen.

Catch history has been used as the primary factor for determining the initial allocation of quota among participants in U.S. IFQ programs. Catch history is frequently relied on for determining the distribution of shares and is perceived by fishermen to be a fair measure of participation in a fishery. It is typically a quantifiable and verifiable indication of participation. Another factor used in initial allocations may include dividing part of the quota equally among all verified participants. It should be noted, catch history can also be distorted or substantially shifted from historical trends by speculative entry into the fishery.

This issue was the most difficult addressed by the AHRSAP who were striving to allocate the resource in the fairest manner possible (See Appendix A for other alternatives considered but rejected). The Council preferred alternative was as follows: "Among all red snapper license holders, (i.e., Class 1 and Class 2 license) base the initial allocation on 10 out of 10 consecutive years; the individual chooses either 1990 through 1999 or 1994 through 2003." The AHRSAP's preferred alternative was essentially the same except they chose 1993 through 2002 because they felt illegal red snapper landings by longlines biased the data for 2003. The Council and AHRSAP preferred alternatives were subdivided into the alternative sections that follow.

Alternative 1. If the no action alternative was selected it would be impossible to allocate the IFQ shares and to allocate fairly.

Preferred Alternative 2 would allow historical landings including those by persons who held the license prior to the current license owner, to be credited to the current license owner to the extent those data can be determined and verified. The AHRSAP felt the earlier landing records (1990-1993) benefited the highliners since there was no limit on catches, whereas more recent entrants in the fishery are benefited by the more recent data. They suggested **Preferred suboption 2A(ii)** (i.e., the 10-year period) as being more fair to Class 1 license holders, while complying with the Magnuson-Stevens Act provisions that the "current participation in the fishery be taken into account". **Suboption 2A(i)** would limit eligible Class 1 license holders to using only five years of landings data recorded during the preferred time period. This would simplify the data analyses necessary to compute the allocations of the participants, but is less likely to be considered fair by many participants. **Suboption 2A(iii)** would require Class 1 license holders to use all years of landings data recorded during the preferred time period.

Preferred suboption 2A(vi) would allow Class 1 license holders to use the years 1990 through 2004 as the baseline years for determining their initial allocation. **Preferred Suboptions 2B(i),** and **suboption 2B(ii),** would limit eligible Class 2 license holders to using five years or all years, respectively, of landings data recorded during the preferred time period. **Suboptions 2B(iii),** and **(iv)**, and **Preferred suboption 2B(v)** would allow 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 their initial allocation. Under this alternative, participants will be provided with a summary of their landings history in pounds, which also includes the percentage quota they are eligible for based on each year of landings and the percentage quota they are eligible for based on a combination of years of landings.

Selection of different year "groups" by fishermen could result in total IFQ shares exceeding the allowable TAC. All IFQ shares will be allocated based on the following:

Quota Share/Quota Share Pool x TAC = IFQ

Alternative 3. The majority of the current Class 1 license holders who are the owner/operators of most of the vessels in the fishery would conclude this alternative was grossly unfair because they ventured the capital to create the fishery harvesting capacity and would get an IFQ share equal to that for the 469 Class 2 license holders. The broader initial allocation proposed under this alternative would lead to more equitable distribution of benefits and compensation of more individuals as shares become concentrated. Conversely, broad distributions are more likely to leave initial recipients with smaller allocations.

Preferred Alternative 4. This alternative could be chosen in addition to any other alternative and suboption. **Preferred Alternative 4** would allow current holder of a Class 1 license issued on the basis of historical captain status to use seven consecutive years rather than ten. That was allowed because as Table 8.5.4 indicates, for the first seven permits, there are no landings data archived in the trip ticket files for the period 1990-1997. These are the data files for the licenses issued to historical captains, and have data for the seven years 1998-2004.

Summary Comparison of Physical, Biological, and Ecological Consequences:

The IFQ system of quota share allocations is an economic solution to the race for fish. If TAC remained the same, the initial apportionment of IFQ shares would not have any direct effects on the physical, biological, and ecological environment. However, should the time periods and resulting catch histories chosen favor fishermen who are more efficient at catching red snapper, this could indirectly benefit the biological, physical, and ecological environment. Fishermen who are more efficient would spend less time fishing for the same catch of fish, reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. Conversely, fishermen who are less efficient would spend more time fishing, which increases gear interaction with the benthic habitat and raises the level of regulatory discards and bycatch. This would have a negative impact on the physical, biological and ecological environment. However, because catch histories follow the permit, not the individual or vessel, it is difficult to determine which time periods **(Preferred Alternative 2**, **suboptions A** and **B** and **Preferred**

Alternative 4) would provide the greatest protection to the biological, physical, and ecological environment compared to status quo (**Alternative 1**) or equally dividing shares (**Alternative 3**). The net effects of **Preferred Alternatives 2** and **4** are better than **Alternative 3**, which are better than **Alternative 1,** as the initial allocation of IFQ shares proposed under **Preferred Alternative 2** would go to those fishermen who have historically caught the most fish.

Summary Comparison of Socioeconomic Consequences:

Alternative 1 is not a viable alternative, as it would essentially prevent the establishment of an IFQ program. **Preferred Alternative 2** would base the initial allocation on relative historic catch levels of the permit holders while **Alternative 3** would give equal shares of the fishery to all persons eligible for an initial allocation. **Preferred Alternative 2** would benefit those harvesters that have had the largest historic catch. If these harvesters run the most efficient operations, which might be assumed based on their ability to historically harvest the largest percentage of the catch, this method would increase producer surplus and net benefits to the Nation. Allocating quota shares equally (**Alternative 3**) will 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, many Class 1 license holders would need to purchase quota from the Class 2 license holders to maintain their fishing operation. Until the quota is redistributed to the more efficient operations, this allocation would likely result in lower producer surplus and net benefits to the Nation.

Preferred Alternative 2, suboptions A and **B** allow permit holders to choose which years of catch would be considered in determining their initial allocation. Dropping years of catch tends to benefit harvesters that have not fished every year during the qualifying period and individuals that have more than an average variation in their catch history. If the most efficient operations consistently harvest larger amounts of fish, this option would reduce producer surplus. A benefit of allowing permit holders to drop years of data would be that it diminishes the need for hardship provisions. Allowing individuals to drop years of data would also make it more difficult for fishermen to determine how the program will impact them. They will need to wait until fishery managers provide them with the total quota share pool before they can estimate their initial allocation. **Preferred Alternative 4** specifically addresses the situation with Class 1 historical captains permit holders. These permits took effect in1998 so a maximum of seven years of data are available. 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 license 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.

The net effects of **Alternative 1** can be ranked lowest, since it is almost equivalent to not having an IFQ program. Shares have to be allocated to individuals in order for an IFQ program to function. **Alternative 3**, which allocates IFQ shares equally among eligible participants, would benefit low producers at the expense of high producers. Consolidation of shares in the hands of the most efficient operators can still occur under this alternative, but it would be much slower

than if most of the current efficient operators were provided with shares according to their catch histories. In fact, a few more efficient operations would have to be scaled down at the start of the IFQ program. In effect, **Alternative 3** would introduce further inefficiencies in the red snapper fishery at the start of the IFQ program. **Preferred Alternatives 2** and **4**, on the other hand, would allow more efficient operators to capitalize on their catch histories as they transition to an IFQ management regime. In effect, **Preferred Alternatives 2** and **4** would promote economic efficiency right at the start of the IFQ program, and thus may be ranked first among the three alternatives. Sub-options within **Preferred Alternative 2** have varying impacts on the initial recipients of IFQ shares, although the general tendencies of those impacts are to preserve the best historical levels of operations for each participant. For many Class 1 license holders, **suboption A(i)(vi)**, is the most advantageous. However, for those fishermen with historical captain licenses, **Preferred Alternative 4** would be the most advantageous as this alternative would optimize landings in the limited number of years during which these license existed. For Class 2 license holders, **suboption B(i)(v)** is the most advantageous.

The initial allocation can be particularly difficult because management actions have to be perceived as fair and equitable by the industry. From an economic perspective, the initial distribution of privileges has little significance on the long-term efficiency of the industry as long as restrictions on transferability or ownership are minimal.

Fisheries managers interested in establishing sound fisheries policies should deal with equity and fairness considerations during the initial allocation rather than through limitations on quota transferability. Transferability is a crucial feature of an IFQ program. The less restrictions imposed, the better the system functions towards achieving a more efficient commercial fishery. Equity and fairness, if considered in quota transferability, would require the imposition of restrictions that would result in additional costs as IFQ shares move from the less efficient to the more efficient operations. Restrictions on transfer may even negate the intended fairness issue. For example, if only a limited group of individuals were allowed to buy shares, anybody who sells shares for a variety of reasons would be getting lower prices than if a larger group of people are allowed to buy in. Also, other people outside of the "eligible" group may not be able to buy into the fishery even if they used to be fishery participants. These individuals may have left the fishery due to hardship reasons and now would no longer be allowed in because they do not belong to the "eligible" group.

The main issue regarding equity and fairness at the initial distribution phase is even if it were to result in a highly inefficient fishery, the absence of many restrictions on transferability would still allow the fishery to eventually move to the more efficient level. On the other hand, restrictions on transferability due to equity and fairness considerations would keep the fishery functioning at the less efficient level either permanently or for a long time.

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.

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:

Disputes are likely to arise over certain aspects of the IFQ program. A large portion of these disputes would occur when the system is first implemented and would be related to establishing IFQ shares or the right to participate in the program. Even though the criteria established under the IFQ program would regulate these issues, there would be some instances where judgment is required on whether certain criteria are met. Establishment of an appeals process would provide a formalized process to hear disputes and render a recommendation on the issues. The appeals process could involve an appeals board or allow the RA to resolve any disputes involving the criteria for acceptance of eligibility and landings data. Regardless of who attempts to resolve such disputes, the final regulations implementing the IFQ program would be binding until amended. Persons would be notified of the appeals process by the Council and NMFS and persons with disputes would be required to set forth the nature of their disputes in a letter, that should include relevant information supporting their claim. Hardship arguments would not be considered.

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

Alternative 1, the no action alternative, would not establish a formal appeals process. Both the Council and AHRSAP favored having an appeals process but differed on the structure of the appeals process. The allocation process is likely to create a number of disputes under the IFQ program that need resolution via the appeals process.

Preferred Alternative 2. The Council's preferred alternative was for the RA to hear the disputes and render the opinion (using his/her staff).

Alternative 3. Under the rules of Reef Fish Amendment 8 [60 FR 61200], the Council adopted an appeals process structured as in **Alternative 4**. Each state participant had to submit his/her individual position on the appeals issues to the RA, rather than the group developing a consensus position on the issue.

Alternative 4. This structure was the preferred alternative of the AHRSAP. The difficulties with this structure are all the allocation data on an individual basis are protected from public view by the confidentiality rules under Magnuson-Stevens Act and other laws affecting fisheries data. Therefore, for the panel participants to review such data, each fisherman would need to voluntarily sign an agreement allowing this practice.

Preferred Alternative 5. This alternative may be chosen in addition to other alternatives. This alternative provides a total of three percent of the IFQ shares would be set aside to resolve disputes regarding eligibility for IFQ shares until the appeals process is completed. Any amount remaining in the set-aside after the appeals process is completed would be proportionately distributed back to the initial recipients. The RA estimated the three-percent set-aside should be adequate to make any needed adjustments resulting from appeals. However, if needed adjustments should exceed the three-percent set aside, the shares of all IFQ shareholders would be proportionately deducted as needed. The set-aside principally allows the appeals process to be completed more expeditiously.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Establishing an appeals process for an IFQ program is an administrative action. Therefore, none of the alternatives in Action 6 would have any direct or indirect effects on the physical and biological environments.

Summary Comparison of Socioeconomic Consequences:

Adoption of **Alternative 1**, which is the no action alternative, will 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. Fishermen may consider **Alternative 4** to be the most equitable because the advisory panel would be composed of IFQ shareholders. The difficulty **Alternative 4** is the protection of confidential data. In order for a fisherman to participate in the appeals process, he or she would have to sign an agreement to allow the advisory panel to view his or her records. None of the alternatives provide for hardship arguments, which could be detrimental to fishermen who wanted to file an appeal based on this criterion. **Preferred Alternative 5** would enhance implementation of the IFQ program

by reducing the possibility that existing IFQ shareholders would be significantly adversely affected by the identification of new IFQ shareholders through the appeals process. At the same time, it also would help to ensure the commercial red snapper quota would not be exceeded the first year of the IFQ program in the event a large number of appeals are settled in favor of fishermen toward the end of the fishing year.

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. One important feature of an appeals process is it provides the potential participants an avenue to resolve transfers of Class 1 and Class 2 licenses and the associated landings history for each license. This record is particularly important when an IFQ program has a long-term duration.

An IFQ program assigns specific fishing privileges to individuals based on some past participation and, therefore, many points of contention are bound to arise and thus social and potentially legal considerations demand the establishment of an appeals process. An appeals process provides an avenue for limiting the initial social and legal costs that may arise from an IFQ program. Hence, net benefits from **Alternative 1** may be ranked lowest. Among the other alternatives, **Preferred Alternative 2** is probably the least costly from an administrative standpoint but at the same time provides the same benefits as the other alternative. **Preferred Alternative 5** is not directly comparable to the other alternatives. However, it does directly mitigate the negative consequences the appeals process might have on the allocation of shares.

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

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

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 used worldwide allow transferability. Transferability of shares is one of the most contentious issues in IFQ management but is frequently supported as a means to improve economic efficiency. However, transfer of quota shares can lead to a concentration in the ownership of quota, which may have undesirable side effects. Transferability can create unemployment in isolated communities where there are limited economic alternatives to replace the loss of employment caused by a reduction in harvesting and processing capacity. However, by not allowing for transferability of IFQ shares, the goals and objectives of the Council 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, would not be met. Additionally, under provisions of the Magnuson-Stevens Act, IFQs are considered permits, and, if sanctioned for program violations, transferability could be restricted.

The issue of transferability and the concentration of IFQ shares (Ownership Caps see Action 3) must be considered in the context of balancing two opposing goals: economic efficiency and social equity. Economic efficiency is maximized when the following occur: Quota shares are freely transferable, in the long and short term; quota shareholders are allowed either to sell their quota shares permanently or to rent them out for any period of time; quota shares are divisible as possible; that is, a quota share holder is able to sell or rent out any portion of his or her quota share; the tenure of the quota share is either long term or permanent, in order to minimize uncertainty in the fishing industry and encourage long term planning and stewardship among quota holders.

Transferability of IFQ shares has two main, and related purposes: Achieving rationalization of the industry by allowing some participants to leave the fishing industry with a compensation financed by the industry itself that is to be bought out by other industry participants; and ensuring the IFQs are held by those willing to pay the highest price for them. This promotes efficiency in the industry because those willing to pay the highest price for quotas will normally be those who expect to utilize them most profitably, either by doing so at a lower cost than others or by transforming the fish into a more valuable product.

Free transferability of quota shares is likely to have a range of social implications. Freely transferable quota shares may concentrate over time in some communities while others lose part of their entire quota. It is difficult to predict the pattern and overall movement of quota in advance since these will depend on the design features of the IFQ program adopted by the Council.

Alternative 1, the no action alternative, does not limit persons to whom shares/allocations can be transferred and is the most liberal of the alternatives. It would enhance the market for such IFQ shares and allocations. It would also allow transfer to foreign persons and corporations, whereas **Alternatives 2-6** would limit such transfer to only U.S. citizens and permanent resident aliens.

Alternative 2, which was the preferred alternative of the Council and AHRSAP, provides shares and allocation could be transferred only to U.S. citizens or permanent resident aliens who also have a valid commercial reef fish permit. This is intended to give preference to reef fish commercial fishery participants in entering the IFQ fishery. It would also limit the universe of persons eligible to participate in the IFQ market to about 1,100 persons. This may have an adverse impact on the market for IFQ shares when compared to **Alternative 1**.

Alternative 3 provides IFQ shares and annual allocations can be transferred only to IFQ shareholders. This would limit the universe of eligible persons initially to about 600 persons, assuming the inactive red snapper license owners do not become IFQ holders. This is too small a universe for the IFQ market to function as effectively as it would with a larger universe. However, it may be reasonable to allow the IFQ shareholders an exclusive opportunity to purchase shares for several years. This would reward the initial IFQ shareholders who have operated under restrictive quotas since 1990.

Alternative 4 allows IFQ shares/allocations to be transferred only to U.S. citizens and permanent resident aliens. It would greatly expand the universe of eligible participants and enhance the market for such IFQ shares and allocations.

Alternative 5 provides IFQ shares and annual allocations may be transferred only to the initial IFQ shareholders for the first 5 years, and, thereafter, only to persons holding valid commercial reef fish permits. This would result in an initial universe of about 600 persons followed by a universe of about 1,100 persons. There are grounds for giving preferential treatment to both of those groups; however, eventually the general public should have the opportunity to participate in the market for IFQ shares and allocations.

Preferred Alternative 6 limits the universe eligible for the first 5 years to persons in the commercial reef fish fishery, followed by opening it up to all U.S. citizens and permanent resident aliens. This alternative would seem to be the most equitable, giving an initial opportunity to commercial reef fish fishermen followed by allowing the general public opportunity to enter the fishery.

Summary Comparison of Physical, Biological, and Ecological Consequences:

The IFQ system of quota share allocations is an economic solution to the race for fish. If TAC remained the same, the initial transfer eligibility requirements for IFQ shares would not have any direct effects on the physical, biological, and ecological environment. However, should the alternatives restricting transfer eligibility favor fishermen who are more efficient at catching red snapper, this could indirectly benefit the biological, physical, and ecological environment. Fishermen who are more efficient would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish

stocks. Conversely, fishermen who are less efficient would spend more time fishing, which increases gear interaction with the benthic habitat and raises the level of regulatory discards and bycatch. This would have a negative impact on the physical, biological, and ecological environment. In terms of favoring efficiency, the net effects of **Alternative 3** are better than **Alternative 5**, followed in descending order by **Preferred Alternative 6,** and **Alternatives 4, 2**, and **1**. However, **Alternatives 1, 4, and 6** could have a beneficial biological effect since they do not restrict the shares from being purchased by individuals not intending to use them for fishing. Not using shares would reduce fishing effort, and thus reduce the directed catch below the quota, the amount of bycatch and regulatory discards, and the amount of interactions between fishing gear and the physical environment.

Summary Comparison of Socioeconomic Consequences:

If **Alternative 1** is chosen, the transfer of shares would not be constrained, which may be beneficial to those wishing to buy a share. This alternative would allow for organizations such as conservation groups to buy shares and not use them in order to protect the species from harvest, which would not provide for OY. **Alternative 2** would reward fishermen with reef fish permits because they would be the only ones allowed to buy shares as they become available. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited, which may keep the price for shares at a lower cost. **Alternative 3** would reward the IFQ participants because they would be the only ones allowed to buy shares as they become available. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited which would keep the price for shares at a lower cost. It would not allow fishermen who do not currently hold a reef fish permit to enter into the fishery and would prevent all other new entrants from obtaining IFQ shares. If **Alternative 4** is chosen, shares could be transferred to anyone who is a citizen or permanent resident alien of the United States. This alternative would be beneficial to people who are not current participants in the red snapper fishery, but who would like to participate in that they would be allowed to buy shares as they become available. Under this alternative, open market shares may obtain a very high value that may make it too expensive for most fishermen who are currently in the fishery to buy more shares but would be beneficial for the fisherman wishing to sell their shares. **Alternative 5** would reward IFQ participants because they would be the only ones allowed to buy shares as they become available for the first five years of the program. During those five years, IFQ shareholders may be able to buy more shares at a lower cost than they would be if shares were available to more people. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited which would keep the price for shares at a lower cost. **Preferred Alternative 6** would reward participants in the reef fish fishery because they would be the only ones allowed to buy shares as they become available for the first five years of the program. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited and would keep the price for shares at a lower cost. This alternative would not allow for the transfer of shares from a fisherman to family members who were not reef fish permit holders, which would not allow for a fisherman to pass on his or her fishing privileges to their children, a common practice within fishing families. However, reef fish permit are fully transferable which should help to alleviate this problem.

Transfer restrictions are usually developed to address concerns that implementing the IFQ program would change the status quo 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 this program 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.

Economists would argue the free flow of quota across sectors would produce the highest overall profits (producer surplus) 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 red snapper 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 that foreign ownership may bring, such as supplying capital so that domestic capital can be used more efficiently elsewhere.

Persons arguing against the free transfer of quota are often concerned with resource rent distributions after the transfers. Persons that want to sell quota shares would likely prefer to have few, if any limits, placed on transfers to increase the quota prices. Limiting restrictions on transfers would also result in larger windfall profits for the persons receiving an initial allocation. Buyers will tend to want the competition for shares limited, to keep the price lower. The actual change in price that would result from the various alternatives being considered cannot be estimated.

Transferability of shares is a very crucial aspect of any IFQ program in achieving its economic objectives. The less restriction there is on transfer of shares, the more effective an IFQ program becomes in realizing its objectives. Hence, net benefits from **Alternative 1** may be ranked highest, followed in descending order by **Alternative 4**, **Preferred Alternative 6**, **Alternative 2**, **Alternative 5**, and **Alternative 3**. One note regarding **Alternative 1** is the possibility non-U.S. citizens (other than permanent resident aliens) may possess and benefit from an IFQ program. If such benefits are considered not part of net National benefits, then an IFQ program may not realize its full benefits for the sake of the nation. This condition may be partly alleviated by the fact that with the entry of foreign capital into the country, domestic capital may be used elsewhere more efficiently.

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]

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 the IFQ program, the use requirement serves to reduce the number of speculators and those receiving IFQ shares beyond their current harvesting capacity. Marginally efficient operators may 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 the IFQ program, the use requirement would compel fishermen to consolidate IFQ shares mainly to the extent of matching their catch capacity. It would also reduce the number of shareholders who buy shares without the intent of using them, such as fishermen seeking to monopolize ownership. The Council selected **Preferred Alternative 1** because it imposes no use restriction on IFQ shares. If fishermen choose not to harvest under IFQ shares in any year this would benefit restoration of the stock and promote the Council's efforts in achieving OY.

Preferred Alternative 1. The no action alternative would not require IFQ share certificate holders to participate in the fishery in order to retain their quota share. This was the preferred alternative of the Council, and could benefit stock recovery by allowing individuals or corporations to purchase and not use IFQ shares.

Alternative 2 and **suboption 2A** was the preferred alternative of the AHRSAP who felt if the IFQ shareholder was inactive for three years their share should be proportionately redistributed to the other shareholders. They did exempt shareholders or their heirs in the event death or disability caused the inactivity.

Alternative 3 provides for a range of inactivity over 5 years for consideration by the Council. It should achieve the goal of the AHRSAP of preventing persons from purchasing an IFQ share and not fishing it.

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

Summary Comparison of Physical, Biological, and Ecological Consequences:

The disadvantages of the use requirement are the instability it brings 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 are not fished (e.g. held by lending institutions) the effect is more rapid restoration of the red snapper stock. Although IFQ shareholders are assured of a certain amount of catch, they can minimize harvest costs by fishing during the height of the red snapper season. To a large extent, cost minimization is still a major objective in red snapper fishing even under the IFQ program, because ex-vessel price is largely influenced by imports. The derby nature of the fishery may still be present during the months of higher red snapper abundance, and this would likely be accentuated by the use requirement. Additionally, if an IFQ share is not fished, other fishermen may benefit in terms of higher catch rates. The net effects of **Preferred Alternative 1** are better than **Alternative 2 suboptions A** and **B**, followed by **Alternative 3 suboptions A** and **B.** By not requiring a "use it or lose it" provision for IFQ shares or allocations, restoration of the red snapper stock may be accelerated by allowing individuals or corporations to purchase and retire IFQ shares which would also reduce impacts on the benthic habitat.

Summary Comparison of Socioeconomic Consequences:

Commercial fishermen are expected to use quota shares they hold to generate revenue, and hopefully profit. It would be irrational for a commercial fisherman to forgo potential income from quota shares they own, especially with liberal leasing provisions. Given that assumption, the use it or lose it provision is designed to prevent persons from acquiring quota shares for the sole purpose of not fishing them.

Preferred Alternative 1 would allow people to hold quota but not use it. Fishermen can either fish the quota themselves or lease/sell the quota to another fisherman to generate revenue. Even when a quota holder is facing some type of physical or mechanical hardship, they will still be allowed to lease/sell the quota to generate revenue. These provisions make it likely the vast majority of the quota will be harvested if economic incentives exist to do so. If the red snapper stock decreases to a level that makes harvesting the fish too costly, fishermen would be expected to leave quota unused. Regulations requiring harvesters to catch a portion of their allocation would result in a long-term disruption in the efficient operations of some harvesters.

Alternatives 2 and **3** would implement a use it or lose it provision. If either option were selected and actually prevented people from buying 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 will probably not have a great impact on people's actions. Second, the alternatives only require 30 or 50 percent of a person's quota be fished on average over the most recent three-or five-year period. People trying to limit red snapper harvests would still be able maintain their IFQ shares while harvesting only one or two of every three years or three or four out of every 5 years. This would reduce producer surplus, given the assumption the change in quantity on the market will not substantially change the price.

Preferred Alternative 1, which does not require minimum annual landings to retain IFQ shares, may be ranked first for net benefits on two complementing grounds. First, certain conditions in the fishery or the general economy may warrant IFQ shares not be fished in a season or two. Under these conditions, fishing for IFQs may only result in negative profits due to lower revenues and/or higher costs. If IFQ owners are compelled to go on a fishing trip just to retain their shares, their overall profits over time would not be as high as when they are afforded the flexibility to adjust their operations downward as conditions warrant. Second, IFQs not fished would likely translate into savings in fish. Since unused IFQs shares would not be applied to the following fishing year, those landings forgone in one season would not be recouped in the succeeding seasons. Regardless of how small that saving may be, it does add up over time and helps in rebuilding the red snapper stock faster. **Alternative 3** may be ranked higher than **Alternative 2** because it 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 quota, or 51 percent of whatever TAC has been selected as the Preferred Alternative by the Council and submitted to the Secretary. Any quota 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.

1 Preferred Alternative of Council (11/0

2 Preferred Alternative of AHRSAP (10/04)

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. Management alternatives need to provide the basis for actions that can be taken in the event an adjustment (reduction or increase) in the commercial quota is necessary and such adjustments must be proportionately fair to all IFQ participants. In general, there are two broad sets of options that can be instituted to handle adjustments in commercial quota within an IFQ framework. First, individual quota shares among all IFQ shareholders can be adjusted proportionately on a percentage basis. Second, individual shares can be adjusted at disproportionate rates based on some prescribed set of criteria.

Alternative 1 does not provide an approval policy on how to adjust the IFQ shares, if needed, and would require development of addition FMPs to determine how quota adjustments are determined.

Preferred Alternative 2 was the preferred alternative of the Council and AHRSAP. It appears to be the most equitable of the alternatives as it proportionally distributes the increase or decrease in the commercial quota between shareholders based on their percentage share of the commercial quota.

Alternative 3 would be considered unfair by the IFQ shareholders who initially harvested the greatest amount of red snapper in that only 50 percent of the increase of the commercial quota would be proportionally distributed among them. Should the commercial quota be reduced, the IFQ shareholders who initially harvested the least amount of red snapper would consider it unfair in that 50 percent of the reduction would be proportionally distributed among them.

Alternative 4. Those IFQ shareholders with the most shares would likely consider this alternative unfair in that all IFQ shareholders would equally share increases in the commercial quota and reductions in commercial quota would be distributed only over their shares. Neither this alternative nor **Alternative 3** are supportive of allowing the IFQ program to reduce excess fishing capacity in the fishery, as they reward the group most likely to sell their share.

Preferred Alternative 5. This alternative may be chosen in addition to any of the other alternatives. **Preferred Alternative 5** provides for CY 2007 NMFS would issue either 51 percent of 5mp (2.55 mp) or 51 percent of the TAC selected for red snapper as the Council's preferred alternative for submission to the Secretary in a forthcoming amendment. Any quota share balance resulting from a Council decision to specify a larger TAC would be proportionately distributed after the final rule setting the TAC is published, but no later than July 1, 2007. The Council proposed this action because the stock assessment under the SEDAR process suggests a TAC less than the current 9.12 mp likely would be needed to achieve the red snapper rebuilding plan within the schedule in Reef Fish Amendment 22. Some of the recent management scenarios provided by the Southeast Fisheries Science Center (SEFSC) indicates a TAC on the order of 7 mp may be the most reasonable level. However as a precautionary measure, the 5-mp level in **Preferred Alternative 5** was specified by the Council to prevent the scenario of having to retrieve quota shares due to a subsequently reduced TAC.

Summary Comparison of Physical, Biological, and Ecological Consequences:

Alternative 1 would not provide the Council any direction on how to treat changes in the TAC and would likely result in continued overcapitalization of the fishery resulting in negative effects on the physical, biological, and ecological environment. **Preferred Alternative 2** would provide for adjustments in the commercial quota that would result in positive effects on the physical, biological, and ecological environments by rewarding the most efficient fishermen. Fishermen who are more efficient would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. **Alternatives 3** and **4** would likely limit consolidation of shares because less efficient fishermen may delay their sale. Reduced consolidation will perpetuate excess harvesting capacity in the fishery. Fishermen who are less efficient would spend more time fishing, which increases gear interaction with the benthic habitat and raises the level of regulatory discards and bycatch. This would have a negative impact on the physical, biological, and ecological environment and does not achieve the one of the goals of the IFQ program which is to address overfishing by reducing the rate of discard mortality that normally increases with increased fishing effort in overcapitalized fisheries**. Preferred Alternative 5** specifies a moderate level for initially specifying TAC. Such a level would enhance the physical, biological, and ecological consequences by reducing the current effects of fishing at a 9.12 mp TAC. The subsequent readjustments of TAC anticipated to a higher level on the order of 7 mp would also be a reduction in current effects over those for the status quo.

The net effects of **Preferred Alternative 2** are better than **Alternatives 3** and **4**. **Preferred Alternative 2** promotes efficiency in the fishery by rewarding the more efficient fishermen. **Alternative 1** may be ranked lowest because it does not provide guidance in treating changes in commercial TAC for red snapper. As compared to **Alternatives 1** through **4**, **Preferred Alternative 5** is rated the highest because of the potential reduction in negative physical, biological, and ecological effects.

Summary Comparison of Socioeconomic Consequences:

Alternative 1 would not provide NMFS any direction on how to treat changes in the TAC**. Preferred Alternative 2** results in a straightforward method for calculating each IFQ shareholder's share when TAC changes occur. Under this method, big shareholders would experience larger increases in quota shares when TAC rises as well as larger decreases when TAC is decreased. Alternatives that divide the allocation equally among the quota shareholders (50 percent of TAC changes under **Alternative 3** or 100 percent of TAC changes under **Alternative 4**) would benefit those individuals holding smaller than average amounts of quota. An equal allocation method will also tend to limit consolidation, because holders of small amounts of quota may decide to retain those shares with the expectation they will be much more valuable if the commercial red snapper TAC increases in the future. Therefore, this TAC distribution method may result in lower producer surplus and less consolidation than a proportional allocation method. This affect is expected to be even more pronounced if decreases in TAC are completely funded from the allocations of the largest shareholders. **Preferred Alternative 5** affects the timing of quota issuance for the 2007 season. As the IFQ program is

tentatively scheduled to begin in January 2007, this alternative would reduce some complications in the implementation of the IFQ program. Although it would restrict the planning activities of fishermen, it would ensure fishermen would not have to give up some portion of their IFQ quota shares when the eventual TAC and quota adopted for the 2007 season could be substantially lower.

Alternative 1 may be ranked lowest for net benefits because it does not provide guidance in treating changes in commercial TAC for red snapper. Among the other alternatives, **Preferred Alternative 2** may be ranked highest. This alternative promotes efficiency in the fishery by rewarding the more efficient operators. An equal allocation scheme, such as in **Alternative 3** for 50 percent of the TAC change and **Alternative 4** for 100 percent of TAC change, tends to limit consolidation because less efficient operators may hold off selling. **Preferred Alternative 5** has similar effects as **Preferred Alternative 2** when taken in the context of effects of the other alternatives. However, **Preferred Alternative 5** does stand out as different from the other alternatives in the sense it applies only to the 2007 season and affects mainly the timing of quota issuance.

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.*

suboption→ 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;

d) 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:

With overcapitalization identified in many fisheries in the United States and elsewhere there is a drive to promote fishing schemes, which effectively rationalize fishing effort. IFQs and associated individual quota derivatives have been identified as viable options. A recurring theme within current literature is the necessity of adequate enforcement to ensure the success of any

such paradigm. Enforcement, in general, is seen as costly, so the application of law enforcement within a regime in which enforcement is deemed essential is viewed by some as troubling. Commercial fishing is deemed a highly regulated industry. A commonly held belief is commercial fisheries enforcement is, by function, obstructive to commerce. However, the application of VMS as a cost effective law enforcement tool would provide maximum commercial participation while achieving acceptable levels of compliance. The use of VMS in the proposed red snapper IFQ would facilitate commercial sales, allow fishers to be more competitive over a broader geographic area, enhance the identified potential for larger profits while concurrently meeting law enforcement mandates in enforcing conservation restrictions and other regulatory measures already in effect in the GOM.

As pointed out above the action under **Alternative 2** may be unnecessary if Reef Fish Amendment 18A VMS requirements are adopted. Currently the preferred alternatives in Reef Fish Amendment 18A would require VMS on commercial reef fish vessels of any gear type, including charter vessels with a commercial reef fish permit. This amendment was approved for submission to the Secretary at the September 2005 Council meeting

Preferred Alternative 2 includes four suboptions related to the costs of purchase and operation of the VMS. **Suboption 2a** provides all costs will be paid by the IFQ shareowner. **Suboption 2b** provides all the costs will be paid by NMFS. **Suboption 2c** provides NMFS and the owner of the IFQ shares will jointly share the costs. A major disparity exists in the IFQ shareowners. Those owners who previously held a Class 1 license should easily be able to pay the VMS cost, whereas owners who previously held a class 2 license are unlikely to have sufficient landings to easily pay those costs. **Suboption 2d** provides the costs of the VMS will be paid by NMFS while ensuing communication costs will be paid for by the owner of the IFQ shares. If standardized fishery quotas, gear and fishery declarations, and consistent closed areas/times are implemented in the red snapper IFQ program and integrated with VMS monitoring, the fishery and enforcement program managers will be able to easily recognize and document those vessels which violate the following potential regulatory requirements:

- $ Fishing over quota
- $ Closed area/time activity
- $ Stringent position reporting 24 x 7 throughout area/time openings
- $ Transshipments
- $ Selling to unauthorized dealers

The use of VMS (**Preferred Alternative 2; suboptions a, b, c, and d**) would enable enforcement to be alerted to be at the dock prior to vessel landing for cooperative agency inspections of documented violations. A simple enforcement example would be for a red snapper IFQ vessel having already met their quota and perhaps declaring they were engaging in another permitted fishery, having VMS would allow enforcement to meet the vessel at the dock for landing inspection of catch to: 1) Confirm the fishing activity they declared; 2) confirm the catch on board for IFQ management; 3) assure they are landing at an authorized dealer for the fishery declared; and 4) no transshipment may have potentially occurred at sea.

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

Closed Seasons: VMS can determine seasonal closure compliance (if any) based upon VMS-IFQ participants without the need for random surface or aerial patrols;

Prior Notice of Landing: The time required for each vessel operator to notify NOAA-Office of Law Enforcement (OLE) of the designated landing site prior to offloading can be reduced to three hours. This requirement is normally six hours or more;

Vessel Clearances: This is a requirement where a vessel operator is going to land the catch at any other location other than in an IFQ regulatory area. Normally this regulation is required to be in writing. With VMS, the requirement to be in writing will be suspended.

Primary Ports: Normally, clearance is provided from an authorized NOAA-OLE agent/officer in a primary port. With VMS, this requirement can be eliminated.
Closed Areas: VMS can determine area closure compliance (such as marine protected areas or 50 fathom depth contour restrictions) based on VMS-IFQ participants automated responses without the need for random surface or aerial patrols.

High Grading: VMS allows surface patrols to locate vessels and randomly check boats for high grading.

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

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

This cost reduction translates as 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 which will need to be bolstered because of the IFQ regime, without concern for offshore regulatory compliance.

Summary Comparison of Physical, Biological, and Environmental Consequences:

Establishment of a VMS requirement (**Preferred Alternative 2**, **suboptions 2a, b, c, and d)** would have direct and indirect positive effects on the physical, biological, and ecological environment. Because VMS tracks where fishermen deploy their gear, making violations more easily detectable, it would decrease illegal activity including fishing in closed areas, reducing the number of interactions between gear and the physical environment. Fishermen not actively using their IFQ shares may reconsider whether to continue holding these shares if they are required to pay for VMS (**Preferred Alternative 2 suboption 2a**). If shares were transferred to more efficient fishermen, this would reduce overcapitalization in the fishery benefiting the physical and biological environment. Fishermen who are more efficient would spend less time fishing and reduce the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish

stocks. Additionally, VMS allows surface patrols to locate vessels and randomly check boats for high grading and quota busting, which both result in increased fishing mortality. Therefore, the net effects of **Preferred Alternative 2 suboptions 2a, b, c**, and **d** are greater than **Alternative 1.**

Summary Comparison of Socioeconomic Consequences:

Alternative 1 would benefit IFQ shareholders by not requiring a VMS system and alleviating concerns regarding cost, maintenance, and perceived intrusive monitoring. However, it would be detrimental to the IFQ program from an enforcement perspective, as those vessels participating in the red snapper fishery could not be monitored. **Preferred Alternative 2** would require all fishing vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS. If some (**suboption 2c**) or all (**Preferred suboption 2a**), of the costs of installing and maintaining the VMS system are the responsibility of the shareholders, it may create a financial hardship for some of the fishermen, especially the Class 2 license holders who will be making less income from participating in the red snapper fishery. Some fishermen may consider the requirement of a VMS to be an intrusion on their privacy and their autonomy as an independent fisherman.

Implementing a VMS program (**Preferred Alternative 2**) will increase the costs of operating the vessels in the commercial red snapper fishery. Those costs will either be borne by the fleet (**Preferred suboption 2a**), NMFS (**suboption 2b**) or by both groups (**suboption 2c, d**). Depending on the number of vessels in the fleet at the time of initial allocation the first year cost of the program would range from less than $0.5 million to about $2.7 million. The communication costs in future years are projected to be from about $58,000 to $470,000. The replacement and maintenance costs, in future years, will be in addition to the communication costs. Those costs cannot be estimated with existing information. If the fleet pays the cost of VMS, the producer surplus would be expected to decrease by the variable component of the total VMS costs, since VMS is expected to neither increase revenue nor decrease fishing costs not associated with the VMS. If NMFS pays for the cost of the VMS system it will not change producer surplus, because transfer payments are excluded from the calculation. Implementing a VMS system would most likely reduce other costs associated with monitoring and enforcement of the IFQ program. The net effects of **Alternative 1**, which does not require VMS, may be ranked higher than **Preferred Alternative 2** from the standpoint of vessel operations. There would be no additional costs to be expended by vessel owners under **Alternative 1**. Under **Preferred Alternative 2**, the cost of a VMS program if fully or partially borne by vessel owners, would reduce the producer surplus of vessel operations. Suboptions under **Preferred Alternative 2** requiring lower burden on vessel owners would provide better economic outcome for vessel operations. Certainly, the VMS requirement can enhance the monitoring and enforcement of the IFQ program. These benefits cannot be quantified to be more than the cost of VMS, but as more fisheries adopt IFQ programs, the VMS requirement may provide benefits that would outweigh the cost.

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.

suboption→A The collected fees would be submitted by the IFQ dealer/processor to NMFS
suboption→(i) quarterly.
(ii) by (enter date).

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

suboption→ 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:
suboption→(i) required.
(ii) not required.

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

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

Discussion and Rationale:

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.

Alternative 1. The no action alternative would not be allowed under Section 304(d)(2)(A) of the Magnuson-Stevens Act which 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.

Both **Alternative 2** and **Preferred Alternative 3** provide that all IFQ cost recovery fees shall be the responsibility of the recognized IFQ shareholder. **Alternative 2** and **Preferred Alternative 3** differ only in who has the responsibility for fee collection and submission. Under **Alternative 2** the fee collection and submission will reside with the recognized IFQ shareholder whereas with **Preferred Alternative 3** the fee collection and submission reside with the recognized IFQ dealer/processor. **Suboption 3A** would require the collected fees be submitted by the IFQ dealer/processor to NMFS on a quarterly basis (**Preferred suboption 3A(i**). Further, 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 required (**Preferred suboption C (i)**).

Summary Comparison of Physical, Biological, and Environmental Consequences:

Establishing a cost recovery program for an IFQ program is an administrative action. Therefore, none of the alternatives in Action 11 would have any environmental consequences.

Summary Comparison of Socioeconomic Consequences:

Alternative 1 does not provide for a cost recovery program while **Alternative 2** and **Preferred Alternative 3** 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 resides on the IFQ shareholder under **Alternative 2** and on the IFQ dealer/processor under **Preferred Alternative 3**.

NMFS would determine the percentage of the ex-vessel value of red snapper landings that will 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

There are certain considerations that need to be recognized with respect to **Preferred Alternative 3.** Under the envisioned IFQ monitoring system, IFQ dealers have to obtain a specific red snapper IFQ dealer endorsement in addition to the gulf reef fish dealer permit, and they must have the necessary electronic capability to input red snapper purchase information such as pounds and ex-vessel values. Although IFQ shareholders pay the cost recovery fees, dealers have the responsibility to collect the fees and remit the money to NMFS. Dealers must also submit a year-end report on the total ex-vessel value of red snapper they purchased from fishermen. These requirements would impose monetary and non-monetary costs on dealers. There is some possibility that dealers would pass on the cost to the next market level (retailers/consumers, for example) or 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.

The net effects of **Alternative 1,** which does not impose a cost recovery fee, may be ranked first from an economics standpoint. Imposing a fee, as in **Alternative 2** or **Preferred Alternative 3**, would tend to distort the net benefits and economic impacts of the IFQ program. Such a fee, being an additional cost, would encourage fishing operations as a whole to operate possibly above and beyond what may be economically optimal for the fishery, in an almost analogous way that an open access system promotes fishing operations beyond what is economically optimal for the fishery. **Alternatives 2** and **Preferred Alternative 3** have similar effects, except with respect to who bears the direct cost of collecting the fee and remitting it to NMFS. Additionally, **Alternatives 2** and **Preferred Alternative 3** would recover some of the administrative and enforcement costs associated with the IFQ program.

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, anticyclonic gyre in the western Gulf. Gulf water temperatures range from 12º C to 29º C (54º F to 84º F) depending on time of year and depth of water. 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.

Thirteen species of fish in the GOM are currently on the candidate list, three of which are reef fish. For more complete descriptions, 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). These reports contain the most updated information on GOM protected species at this time.

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. This fishery is classified in the 2004 List of Fisheries as a Category III fishery. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to one percent of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. However, an incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures deemed necessary and appropriate to minimize the impact of these takes. Terms and conditions to address reporting requirements identified as reasonable and prudent measures will not require any additional regulatory action because existing NMFS monitoring and reporting programs and associated regulations are adequate. However, measures are needed to ensure any caught sea turtle or smalltooth sawfish incidentally caught by the fishery is handled in such a way as to minimize stress to the animal and increase its survival rate. The Council addressed these measures in Reef Fish Amendment 18A.

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

The CEQ regulations (40 CFR 1508.8) define direct effects as those "which are caused by the action and occur at the same time and place." Indirect effects are defined as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." Cumulative effects are defined as "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions."

6.1 Action 1. IFQ Program

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

Currently, the commercial red snapper fishery as managed under status quo (**Alternative 1**) is regulated with trip limits (2,000 pounds for Class 1 license holders; 200 pounds for Class 2 license holders), a 15-inch minimum TL size limit, closed seasons, closed areas, gear restrictions, and a license limitation system. The primary effects of these regulations on the physical environment are generally from fishing gear interactions with the sea floor. Fishing gear can damage or disturb bottom structures by entanglement of the gear during normal fishing operations or when the gear is retrieved. The degree to which the red snapper commercial fishery directly or indirectly affects bottom habitat is unknown, but likely depends on the vulnerability of the affected habitat to disturbance, and on the rate the habitat can recover from disturbance (Barnette, 2001). Corals are more vulnerable to adverse impacts from fishing gear and slower to recover from such impacts than sand, mud, and hard bottom habitat (Barnette, 2001).

Several marine protected areas, HAPCs, and gear-restricted areas directly or indirectly protect red snapper EFH in the northern and western GOM where the commercial red snapper fishery primarily occurs. These regulations help to reduce impacts to red snapper, other reef fishes, and their habitats, and are described in Section 5.1.1. Anecdotal information from fishermen and law enforcement reports indicate some vessels illegally fish in these areas, therefore reducing benefits to the physical, biological, and ecological environment from the previously mentioned regulations.

The primary gears used to harvest commercial red snapper are bandit rigs, handlines, and longlines. Bandit rigs and handlines account for 95.9 percent of the commercial red snapper harvest, longlines account for 3.6 percent, and other gears account for 0.5 percent of the commercial landings (2000-2003 data; Poffenberger, 2004).

Vertical-line gear can snag and entangle bottom structures and cause tear-offs or abrasions (Barnette, 2001). If lost or improperly disposed, vertical lines may cause long-term damage to habitat by entangling marine life, such as corals (Hamilton, 2000; Barnette, 2001). However, vertical lines are less likely to damage bottom habitat than longlines or traps, which are less selective gears. Longline gear is deployed over sand, mud, and hard bottom habitats using weights to keep the gear on the bottom. This gear can abrade, snag and dislodge smaller rocks, corals, and sessile invertebrates when retrieved (Bohnsack in Hamilton, 2000; Barnette, 2001). The damage this gear causes is dependent on the substrate it is deployed on, as well as currents and the amount of line swept across the bottom by hooked fish (Barnette, 2001). Gears such as fish traps set on live substrate, can also cause damage to corals, gorgonians, sponges, and submerged aquatic vegetation. Divers can also cause damage to habitat if they come in contact with the bottom while spearfishing.

The existing commercial red snapper fishery generally has minimal impacts on the physical environment (see Section 5.1) because the primary gear used is hook-and-line and the principle areas fished are over sand and mud bottom, artificial structures, and low-relief hard bottom habitat. As mentioned previously, hook-and-line gear is less damaging than other types of gears, and mud, sand, and artificial structures are less susceptible to habitat damage than corals.

Biological and ecological effects of the directed commercial red snapper fishery as currently managed (**Alternative 1**) include regulatory discards of red snapper and other reef fish species, harvest of young red snapper (ages 2-4), and quota overruns. A description of the life history and biology of red snapper is provided in Section 5.2. 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). Juvenile red snapper occupy soft bottoms and low-relief habitat after settlement and become vulnerable to the shrimp trawl fishery at approximately 4 inches TL (10-cm TL; Goodyear, 1995; Gallaway et al., 1998). They 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 which holds TAC constant at 9.12 mp until 2032 when the stock will be rebuilt to B_{MSY} (see Section 5.2.2). The plan also ends overfishing between 2009 and 2010. However, a new red snapper stock assessment was recently completed through the SEDAR process. Results from this assessment could revise the rebuilding trajectories and cause future TACs to be modified.

Species commonly caught as bycatch or as secondary target species by commercial red snapper fishermen include vermilion snapper, gag, red grouper, greater amberjack, gray triggerfish, and other groupers. Many of these species 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. Gag is considered to be fully utilized. Dead discards of these species by the directed fishery can be high. For example, approximately 23 percent of vermilion snapper are estimated to be dead discards (Poffenberger, pers comm).

Since 1996, the quota for the commercial fishery has been 4.65 mp. During this time, the quota has been filled in as few as 58 days. In 2004, 110 days were open for commercial red snapper

harvest. Overages in the commercial quota have occurred four times between 1996 and 2004. The greatest overage occurred in 2000, when more than 4.84 mp of red snapper were harvested by the commercial fishery (GMFMC, 2004b). In 2004, the commercial fishery harvested 4.62 mp of red snapper. Overages have resulted in direct negative effects on the red snapper fishery by increasing fishing mortality rates and potentially slowing the time frame in which red snapper may rebuild.

The 15-inch TL minimum size limit was implemented in 1996 to reduce commercial harvest and ameliorate the effects of a derby fishery. However, the derby fishery, in conjunction with the current minimum size limit has resulted in high discard mortality rates (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 1 percent by vessels using bottom longlines (Poffenberger and McCarthy, 2004). Regulatory discards were identified as the primary reason for most discards. Approximately 19 percent of red snapper were discarded when the fishery was closed and Class 1 license holders accounted for a majority of the discards (83 percent). Four percent of all discards were by fishermen not possessing a red snapper endorsement. Predation by dolphins and seabirds has been indicated as one factor contributing to high red snapper discard mortality rates.

Commercial fishermen primarily harvest red snapper 2 to 4 years of age, even though red snapper 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 don't reach maximum fecundity until approximately 15 to 20 years of age (Fitzhugh et al., 2004). Current fishing practice directly affects the reproductive potential of the stock since red snapper are primarily caught well below the age at maximum fecundity. 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 1 up to 57 years (Allman et al., 2004).

Red snapper are gonochrists and possibly aggregate, or at least form schools, when spawning (Dormeier and Colin, 1997). They spawn from April to October, with peak spawning occurring in June, July, and August. Currently, the commercial fishery opens in February each year and remains open for the first 10 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 10 days each month during fall until the fall quota is met. These closures and openings were established to prevent market gluts and improve market prices. A secondary benefit of the closures is fishing pressure during the spawning season has been reduced, allowing a greater number of red snapper to spawn before being harvested.

Implementing an IFQ program (**Preferred Alternative 2**) would regulate how catch is distributed among fishermen and thus, does not directly affect the physical, biological, or ecological environment. However, implementation of an IFQ program would allow fishermen to become more efficient in their harvest practices because they would have more flexibility to

choose when, where, and how long they want to fish. On average, 4,075 trips, harvesting 100 pounds or more of red snapper, are made annually. These trips are made during the first 10 days of each month beginning in February until the spring quota is met and the first 10 days of each month beginning in October until the fall quota is met. An IFQ program would allow fishermen additional flexibility to fish in more optimal weather conditions and when catch rates are higher. This could result in indirect positive benefits to the physical environment by reducing the amount of gear used or trips made. Choosing where to fish could also reduce gear interactions with habitat and bycatch, because fishermen could target more favorable fishing areas that would result in less time and effort spent fishing to catch the same amount of fish. Additionally, the IFQ program would eliminate trip limits, which create inefficiency and may affect where a fishermen chooses to go fishing. Most IFQ managed fisheries are successful at maintaining catch below TAC (NRC, 1999).

An IFQ program (**Preferred Alternative 2**) provides shareholders with incentives to ensure fishery conditions remain productive (NRC, 1999). Providing shareholders with a percentage of the annual harvest could encourage behavior to conserve the resource, by increasing cooperation with management, enforcement, and researchers. An increased conservation ethic could allow fishermen opportunities to develop practices that would reduce bycatch, and also provide for greater "self-policing", because the shareholder has a personal stake in the fishery. Assisting with enforcement and monitoring would result in additional indirect benefits to the biological and ecological environment, by helping to reduce illegal take and increasing overall fishery compliance. However, inaccurate reporting can result in negative biological and ecological effects because it can lead to underestimates of catch levels and fishing mortality rates.

An IFQ program, as proposed in **Preferred Alternative 2**, could also result in negative indirect effects to the biological and ecological environment if the program increases the incentive to discard and high-grade fish (NRC, 1999). High grading typically occurs in fisheries with significant price differentials between sizes of fish and result in additional discard mortality as fishermen try to obtain the most desirably priced fish. Generally, the IFQ program is expected to increase fishermen's incentive to high grade. The fish most preferred by dealers and consumers are smaller fish of one to two pounds (14-16 inches TL). Consumers prefer this size fish because it yields portions for a two-person dinner and is less expensive than a larger fish (B. Antozzi, pers.comm.). Therefore, these smaller fish command the highest market prices per pound and are primarily targeted by the commercial fishery. The Council is currently evaluating in Amendment 27 to the Reef Fish FMP alternatives that would mitigate the adverse effects of any high grading activity by eliminating the existing red snapper minimum size limit and requiring all red snapper captured be landed.

An IFQ program would not reduce the biological and environmental effects on other species, such as vermilion snapper, gray triggerfish, or groupers. Commercial red snapper fishermen could continue to target these species as long as they possess a commercial reef fish permit. However, these stocks may benefit from an IFQ program if commercial fishermen chose to fish in more favorable red snapper areas, where less vermilion snapper, gray triggerfish, and grouper occur. Increased efficiency resulting from an IFQ program (reduced number of trips to catch the same amount of fish) could provide fishermen additional time to target species other than red snapper. This would result in increased fishing pressure on non-quota managed species.

Groupers would not be affected because quotas are in place to restrict the total annual commercial harvest.

6.1.2 Direct and Indirect Effects on the Social and Economic Environment

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 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 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 will depend on several factors such as the amount of initial quota allocated; the malleability of capital; opportunities outside the fishery; vessel markets for those wishing to sell and exit the fishery; transferability rules; and availability of credit. In fisheries where earnings outside the fishery covered by IFQs are low, the vessel owner will probably continue fishing with an old boat as long as it covers its variable costs. Therefore, significant changes in fleet size and structure may take longer as vessels reach the end of their economic lives (Geen et al, 1990). Conversely, if there are significant earning possibilities in other fisheries, the structural change under IFQs will be faster (Grafton, 1996).

One other aspect of costs for an IFQ program is employment losses and increased management, monitoring, and enforcement costs. Consolidation of IFQ shares would result in fewer vessels and reduced crew requirements. These employment losses would have adverse trickle down effects on small fishing communities where job opportunities are scarce or skills of displaced fishermen are low. In addition, there is always the danger of high grading and quota busting, resulting in potentially higher fish mortality and even lower profits for the industry as a whole.

6.1.3 Direct and Indirect Effects on the Administrative Environment

Initiation of an IFQ program would add an administrative burden. The following new tasks would be adopted by administrative bodies under **Preferred Alternative 2**: Issue endorsements; maintain landings records; track transfers of quota shares; ensure no shareholder holds more shares than allowed; compare declared landings to those reported by dealers and those allowed by the IFQ program; and investigate discrepancies and potential fraud. All these tasks would be carried out by staff from NMFS and NOAA Office of Law Enforcement (NOAA OLE), who would participate with the IFQ shareholders and dealers in an electronic accounting/reconciliation process. Details of this process, including the types of data collected, can be found in Section 4.1.1. NMFS would not allow transfers in December, to allow the time

necessary for end-of-year program management, which indicates the agency anticipates considerable staff time requirements for the program. NOAA OLE would be required to report to specific offloading sites within three hours of calls from fishermen notifying them of an upcoming sale. This would require law enforcement staff to be available between 6 am and 6 pm every day to document red snapper sales at any designated offloading site, which could occur in Florida, Alabama, Mississippi, Louisiana, or Texas. Tracking and accounting for landings and share transactions through the electronic system, along with monitoring of each red snapper sale, would, therefore, constitute a considerable administrative cost in staff time. The expense of **Preferred Alternative 2** would be somewhat reduced when the trip limit and license system currently in place ended, eliminating the administrative costs of issuing and transferring the license and enforcing the trip limit. Litigation costs could result if fishermen sue over the initial share allocation from the IFQ program described in **Preferred Alternative 2**. A cost recovery plan would at least partially mitigate the administrative burdens exclusive to the IFQ program described in **Preferred Alternative 2**. Overall, **Preferred Alternative 2** would entail more administrative costs than **Alternative 1**.

6.2 Action 2. Duration of IFQ Privileges

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

The duration of IFQ privileges would have no direct effects to the physical, biological, and ecological environment. However, should the IFQ program prove successful, the longer the duration, the longer the positive indirect benefits to the physical, biological, and ecological environment (as described in Section 6.1.1) would extend into the future. **Alternative 1** and **Preferred Alternative 2** would allow the program to continue indefinitely until the Council decides to revise, substitute, or terminate the proposed IFQ program. **Alternative 2** differs from **Alternative 1** in that it requires reviews at either 5- (**Preferred suboption 2a**) or 10-year intervals (**suboption 2b**). However, this difference is administrative and would not affect the physical and biological environments. **Alternative 3** specifies the duration of the program would be either 5 (**suboption 3a**) or 10 years (**suboption 3b**). These more limited time periods would constrain the benefits of the program to either 5 or 10 years unless the Council extends the program through future amendments. While the alternatives specify a range from 5 years to an indefinite time period for the duration of IFQ privileges, it is important to note the IFQ program could be changed or terminated by the Council in any future amendments.

6.2.2 Direct and Indirect Effects on the Social and Economic Environment

The length of the IFQ program will influence the program's effectiveness in achieving its intended objectives of addressing derby fishing conditions and overcapitalization. A permanent or long-term privilege (**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 and provide incentives to invest in the resource.

A sunset provision for an IFQ program (**Alternative 3**) would reduce the overall efficiency of the harvesting sector. Quota values are determined based on the present value of the stream of net revenues derived from owning the quota. Decreasing the number of years (**suboptions 3a, b**)

the program would be in place decreases the stream of net revenue. Sunsetting the program also increases the uncertainty associated with the program. This uncertainty would weaken the market for permanently transferable shares. Buyers would not want to purchase quota if they cannot recoup the cost before the program expires. Sellers would not want to sell quota below its value. Given the uncertainty of the programs duration it would make reaching a market price difficult. Constraints on the free transfer of quota would slow the pace of quota being purchased by more efficient operations. That would reduce producer surplus and net National benefits, unless quota leases are able to redistribute quota to the most efficient operations. The market for annual quota leases should still function under a program of limited duration. However, it is not known if the lease markets would be as efficient in redistributing quota as permanent transfers, but it is likely lease markets would not reduce fishing capacity as much as a permanent program would.

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 initial allocation, maintaining the existing fleet configuration for distributional issues, and providing the industry with the opportunity to examine the 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 extension or evaluation of the IFQ program. **Alternative 3** would have the greatest effect on the administrative environment, because it would require review and re-evaluation of the program after a certain number of years. Even if the program were extended indefinitely through a future amendment, choice of this alternative would require preparation of at least one amendment after this one to continue the IFQ program. This administrative burden would occur sooner under **suboption 3a** (5 years) than **suboption 3b** (10 years). **Preferred Alternative 2** would carry an intermediate level of administrative burden. Although a new amendment would not be required under this alternative to continue the IFQ program, staff and Council time would be required to conduct a periodic review of the program. **Preferred suboption 2a** would require this review twice as often as would **suboption 2b**.

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

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

Placing ownership caps and restrictions on IFQ share certificates and allocations would not have any direct effects on the physical, biological, and ecological environment. However, if limiting the consolidation of shares distributes shares to less efficient fishermen, then **Alternative 2 suboptions a, b, c,** and **d** and **Preferred Alternative 3** could have a negative effect compared to status quo (**Alternative 1**). Fishermen who are less efficient would spend more time fishing for the same catch of fish increasing the amount of interaction between gear with the bottom, and would have higher levels of regulatory discards and bycatch providing reduced protection to red snapper and other reef fish stocks. Additionally, limited consolidation would result in more vessels in the fishery.

6.3.2 Direct and Indirect Effects on the Social and Economic Environment

Ownership caps limit consolidation. While consolidation might be favored on economic efficiency grounds (e.g., for exploiting economics 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 could harm some participants in a fishery (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.

Ownership caps being considered would allow the fleet to reduce from 136 Class 1 license holders and 480 to 628 Class 2 license holders to 50 (2 percent cap; **suboption 2a**), 20 (5 percent cap; **suboption 2b**), about 15 (cap based on largest allocation; **Preferred Alternative 3**), 10 (10 percent cap; **suboption 2c**), or 7 (15 percent cap; **suboption 2d**). Currently about 10 permit holders possess more than the 2 percent cap and only 1 or 2 permit holders exceed the 5 percent cap, depending on the allocation years selected. These cap levels would facilitate a substantial amount of consolidation in the fleet and may provide the appropriate balance between efficiency and consolidation. **Alternative 1** does not cap the ownership of shares by any IFQ participant, so it affords the most efficient operations to expand to a level that provides the best profit scenario for owners of IFQ shares.

6.3.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not require additional administrative effort, as it would not require tracking of the number of shares held by each shareholder versus the number allowed. In contrast, **Alternative 2** and **Preferred Alternative 3** would have similar levels of direct administrative effects. Under each of these alternatives, NMFS staff would be required to track the number of shares held by each participant and determine when and if the number of shares exceeded that allowed by law. There may also be indirect administrative effects. **Suboptions 2a-d** specify the percentage of total shares any one participant may own. The greater the percentage of shares allowed for each participant, the smaller the expected number of participants in the fishery. The administrative burden of tracking would be expected to decrease with fewer participants, although the likelihood of lawsuits may be highest when the most people are subject to caps. The probability of litigation may also increase as the size of the cap decreases. **Suboption 2d** would, therefore, have the least indirect administrative effects, and **suboption 2a** would have the most. The indirect administrative effects of **Preferred Alternative 3** relative to **suboption 2a-2d** would depend on the percentage ultimately chosen for **Preferred Alternative 3.**

6.4 Action 4. Eligibility for Initial IFQ Allocation

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

Determining eligibility for initial IFQ shares would not have any direct effects on the physical, biological, and ecological environment. **Alternative 1** would allow anyone to be eligible to participate in the IFQ program. This would not be an effective way to reduce capacity in the

fishery and would have negative indirect effects on the physical, biological, and ecological environment. Persons with little experience in the fishery would be less efficient and spend more time fishing for the same catch of fish. This would increase the amount of interaction between gear and the benthic habitat, increase regulatory discards and bycatch, and reduce protection to red snapper and other reef fish stocks. However, should Class 2 license holders be excluded from eligibility, as proposed in **Alternative 2**, there would be a negative indirect effect on the biological and ecological environment. The Class 2 license was originally established as a "bycatch" license allowing fishermen to keep red snapper incidentally caught during the red snapper season openings. Without some IFQ shares, these fishermen would be forced to discard red snapper. The discard mortality rate is approximately 70-80 percent (SEDAR, 2005). Those fish that could have been kept but were released would add to the total mortality applied by the commercial fishery. **Preferred Alternative 3** would allow Class 2 license holders to keep red snapper and avoid the discard mortality that would occur under **Alternative 2**. Additionally, if previous Class 2 license holders are able to obtain additional shares (purchase or lease), they could further reduce the number of red snapper they would need to discard once they had used 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 associated with the IFQ program. Windfall profits are those profits that are realized when a person sells quota shares they did not purchase (NRC, 1999). The revenue generated from the sale of initially allocated quota, is the windfall profit. These profits are not available to subsequent owners of quota because they must purchase their shares. **Alternative 1** is very broad and does not provide sufficient guidance for purposes of initially allocating IFQ shares. This alternative would allow anyone to be eligible for IFQ share allocation, regardless of whether or not they fish for red snapper now or in the past. There is a chance non-user groups, or others wishing to preserve the species, would apply for shares and not use them, which would not make optimal use of the fishery.

Alternative 2 would allocate quota shares only to Class 1 license holders, while **Preferred Alternative 3** would broaden the initial allocation to also include Class 2 license holders. **Preferred Alternative 3** would allow for the continued participation by fishermen who have been active in this fishery by limiting the allocation to people who own Class 1 and Class 2 licenses. Depending on the years selected, Class 2 license holders combined would probably receive about 5 to 8 percent of the initial allocation, if they were included in the initial allocation (**Preferred Alternative 3**). The current preferred alternative in Action 5 of the initial apportionment of IFQ shares would result in Class 2 license holders receiving about 7.8 percent of the quota. If they were not included in the initial allocation (**Alternative 2**), that percentage of the TAC would be redistributed among the remaining participants**.** Net effects cannot be estimated at this time, as there is no way of identifying the universe of recipients. Without specifying initial recipients, everyone interested would apply for inclusion in the program. If **Alternative 1** is chosen, the IFQ program cannot be established. If **Alternative 2** is chosen, receiving and reviewing applications from those without Class 1 licenses would be simplified but it would only increase the administrative cost without providing any benefits.

6.4.3 Direct and Indirect Effects on the Administrative Environment

The greatest number of people would enter the fishery if initial participation in the program were not restricted **(Alternative 1).** If **Alternative 1** were chosen, IFQ shares would be thinly spread across all applicants. This would introduce inefficiency into the fishery at the very start of the IFQ program by penalizing the more efficient operations. It would also slow down the consolidation process of the IFQ program. **Preferred Alternative 3** would allow more permit holders to participate in the IFQ program than would **Alternative 2**. Therefore, **Alternative 1** would have greater direct negative administrative effects than would **Preferred Alternative 3** and **Alternative 2**. The administrative burden would come from the expense of enforcement, tracking of shares, changes of address, and transfers for more people. The likelihood of lawsuits from people initially excluded from the IFQ program would be least under **Alternative 1**, intermediate for **Preferred Alternative 3**, and highest for **Alternative 2**.

6.5 Action 5. Initial Apportionment of IFQ Shares

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

Determining the initial apportionment of IFQ shares would not have any direct effects on the physical, biological, and ecological environments. However, should the time periods and resulting catch histories (**Preferred Alternative 2**) chosen favor fishermen who are more efficient at catching red snapper, this could indirectly benefit the physical, biological, and ecological environment (effects are described in Section 6.1.1). Fishermen who are more efficient would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. However, because catch histories follow the permit, not the individual or vessel, it is difficult to determine the number of years of data (**Preferred Alternative 2A, suboptions i - iii; Preferred Alternative 2B, suboptions i-ii; Preferred Alternative 4)** or time periods (**Preferred Alternative 2B, suboptions iv – ix; Preferred Alternative 2B, suboptions iii-v)** that would provide the greatest protection to the physical, biological and ecological environment compared to status quo (**Alternative 1**) or equally dividing shares (**Alternative 3**).

6.5.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 is not a viable alternative, as it would essentially prevent the establishment of an IFQ program. **Preferred Alternative 2** would base the initial allocation on relative historic catch levels of the permit holders while **Alternative 3** would give equal shares of the fishery to all persons eligible for an initial allocation. **Preferred Alternative 2** would benefit those harvesters having the largest historic catch. If these harvesters are 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 quota shares equally (**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 is redistributed to the more efficient operations this allocation would likely result in lower producer surplus and net benefits to the Nation.

Preferred Alternative 2, **suboptions A** and **B,** and **Preferred Alternative 4** contain options that would allow permit holders to choose which years of catch would be considered in determining their initial allocation. Dropping years of catch tends to benefit harvesters that have not fished every year during the qualifying period and individuals that have more than average variation in their catch history. If the most efficient operations consistently harvest larger amounts of fish, this option would reduce producer surplus. A benefit of allowing permit holders to drop years of data is it diminishes the argument for needing hardship provisions. Limiting the appeals process to those cases of inaccurate data or similar appeals would reduce the implementation costs but would not impact producer surplus. **Preferred Alternative 4** addresses the particular circumstance of Class 1 historical captain permit holders. Since these licenses were issued in 1998, landings data for these permits are available starting 1998. This alternative would allow Class 1 historical captain permit holders to receive higher quota allocations than if they were combined with all the other Class 1 license holders. By doing so, other Class 1 license holders would face some reductions in their allocations.

The initial allocation can be particularly difficult because management actions have to be perceived as fair and equitable by the industry. From an economic perspective, the initial distribution of privileges has little significance on the long-term efficiency of the industry as long as restrictions on transferability or ownership are minimal. Thus, the initial allocation of fishing privileges is largely a political decision, not an economic or biological one.

6.5.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would not provide a mechanism to fairly allocate shares, which would undermine the effectiveness of the IFQ program and cause direct negative administrative effects on staff, which would spend time resolving the issue before implementing the IFQ program. The number of eligible participants would not differ across alternatives. A similar amount of staff time would be required for **Preferred Alternatives 2** and **4** and for **Alternative 3** to calculate landings history by year for each shareholder. These alternatives therefore, have greater administrative requirements than **Alternative 1**. **Alternative 3** could benefit eligible shareholders who were not previously making enough money from the red snapper fishery, because it would give them a greater percentage of quota shares than they would receive under **Preferred Alternative 2**. The number of participants still in the fishery several years later may therefore, be higher for **Alternative 3** than for **Preferred Alternative 2**, which would bring greater indirect negative administrative effects from the expense of enforcement, tracking of shares, and changes of address. The suboptions that allow the least number of participants would carry the least administrative burden. However, there is no predictable difference in the average landings for all shareholders depending on the number of years or particular range of years selected, therefore, it is impossible to know which of **suboptions 2Ai-ix** or **2Bi-v** and **Preferred Alternative 4** would result in the greatest number of participants and what the differences in administrative costs would be among those suboptions. Overall, the administrative expenses are expected to be highest for **Alternative 3**, intermediate for **Preferred Alternatives 2** and **4**, and least for **Alternative 1**.

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 would likely involve only a small portion of the total shares. Therefore, none of the alternatives in Action 6 are expected to significantly affect the physical and biological environments. However, the Council's preferred Alternative 5 would likely benefit the environment to some degree by reducing the possibility the commercial red snapper quota would be exceeded during the first year of the program.

6.6.2 Direct and Indirect Effects on the Social and Economic Environment

Adoption of **Alternative 1**, the no action alternative, would not establish an appeals process under the IFQ program. All the remaining alternatives 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** serves to smooth the implementation of the IFQ program by reducing any adverse effects of the appeals process on existing IFQ shareholders. At the same time, it also helps to ensure the commercial red snapper quota would not be exceeded the first year of the program in the event many appeals are settled in favor of fishermen toward the end of the fishing year. Setting aside a relatively small portion of IFQ shares for appeals purposes limits the possibility and amount of additional share adjustments. Small reductions would be more acceptable than large reductions in share allocations during the first fishing season.

The establishment of an appeals process and the design of its structure have mainly equity effects. None of the alternatives are 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. One important feature of an appeals process is it 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. This record is particularly important when an IFQ program has a long-term duration. **Preferred Alternative 5** could be chosen in addition to **Preferred Alternative 2** or **Alternatives 3** or **4**. **Preferred Alternative 5** provides a total of three percent of the IFQ shares be set aside and used to resolve disputes regarding eligibility for IFQ shares until the appeals process is completed. Any amount remaining in the set-aside after the appeals process is completed would be proportionately distributed back to the initial recipients. The NMFS RA estimated the three-percent set-aside should be adequate to make the adjustments for the appeals. However, if the adjustments should exceed that amount, the excess can be obtained by proportionately charging the excess against all the IFQ shares. The set-aside principally allows the appeals process to be completed more expeditiously.

6.6.3 Direct and Indirect Effects on the Administrative Environment

Alternative 1 would cause direct negative administrative effects because it would not establish an appeals process to resolve IFQ program disputes after implementation. Even if an appeals process were not established, administrators would likely still hear from IFQ program participants who wanted resolution. Establishment of an appeals process through **Preferred Alternatives 2**, and **Alternatives 3**, or **4** would carry greater direct administrative costs than would **Alternative 1**. The amount of time allowed for appeals increases from **Preferred Alternative 2** to **Alternative 4**. **Alternatives 3** and **4** would require appointment of a special board of state directors, and an advisory panel of IFQ shareholders, respectively, which would require additional administrative time, costs, and effort. Overall, the administrative burden of establishing and structuring an appeals process would be greatest for **Alternative 4**, intermediate for **Alternative 3** and least for **Preferred Alternative 2**. **Preferred Alternative 5** could be selected in addition to any of the other alternatives and could increase the burden of administrating the appeals process. This alternative would require separate administration of the set-aside and may require later adjustments of all individual IFQ shares once the appeals is completed. However, the set-aside principally allows the appeals process to be completed more expeditiously.

6.7 Action 7. Transfer Eligibility Requirements

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

Determining the transfer eligibility requirements would not have any direct effects on the physical, biological, and ecological environment as this is mostly an administrative action. However, should the alternatives restricting transfer eligibility favor fishermen who are more efficient at catching red snapper (**Alternatives 2, 3, 5**, and **Preferred Alternative 6)**, this could indirectly benefit the biological, physical, and ecological environment. Fishermen who are more efficient would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. Conversely, fishermen who are less efficient would spend more time fishing, which increases gear interaction with the benthic habitat and raises the level of regulatory discards and bycatch. This would have a negative impact on the physical, biological and ecological environment. Further, **Alternatives 1, 4, and 6** could have a beneficial biological effect since they do not restrict the shares from being purchased by individuals not intending to use them for fishing. Not using shares would reduce fishing effort, and thus reduce the directed catch below the quota, the amount of bycatch and regulatory discards, and the amount of interactions between fishing gear and the physical environment.

6.7.2 Direct and Indirect Effects on the Social and Economic Environment

If **Alternative 1** is chosen, the transfer of shares would not be constrained, which may be beneficial to those wishing to buy a share. This would not protect fishermen who are citizens of the United States or permanent resident aliens. This alternative would allow for organizations such as conservation groups to buy shares and not use them in order to protect the species from

harvest, which would not provide for OY. **Alternative 2** would reward fishermen with reef fish permits because they would be the only ones allowed to buy shares as they become available. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited, which may keep the price for shares at a lower cost. **Alternative 3** would reward the IFQ participants because they would be the only ones allowed to buy shares as they become available. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited which would keep the price for shares at a lower cost. It would not allow fishermen who do not currently hold a reef fish permit to enter into the fishery and would prevent all other new entrants from obtaining IFQ shares. If **Alternative 4** is chosen, shares could be transferred to anyone who is a citizen or permanent resident alien of the United States. This alternative would be beneficial to people who are not current participants in the red snapper fishery, but who would like to participate the fishery when shares become available. Under this alternative, shares on the open market may obtain a very high value that would benefit fishermen wishing to sell shares, but would make it too expensive for most fishermen who are currently in the fishery to buy more shares. **Alternative 5** would reward IFQ participants because they would be the only ones allowed to buy shares as they become available for the first five years of the program. During those five years, IFQ shareholders may be able to buy more shares at a lower cost than if shares were available to more people. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited, which would keep the share price at a lower cost. **Preferred Alternative 6** would reward participants in the reef fish fishery because they would be the only ones allowed to buy shares as they become available for the first five years of the program. It may not be beneficial to the person wishing to sell their shares because the number of people who would be eligible to buy the shares would be limited, which would keep the price for shares at a lower cost. This alternative would not allow for the transfer of shares from a fisherman to family members who were not reef fish permit holders, which would not allow for a fisherman to pass on his or her fishing privileges to their children, a common practice within fishing families.

Transfer restrictions are usually developed to address concerns that implementing the IFQ program would change the status quo 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 this program 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.

Economists would argue the free flow of quota across sectors would produce the highest overall profits (producer surplus) 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 red snapper 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 foreign ownership may bring. For one, foreigners would be supplying capital so domestic capital can be used more efficiently elsewhere.

Persons arguing against the free transfer of quota are often concerned with resource rent distributions after the transfers. Persons that want to sell quota shares would likely prefer to have few, if any limits placed on transfers to increase the quota prices. Limiting restrictions on transfers would also likely result in larger windfall profits for the persons receiving an initial allocation. Buyers would tend to want the competition for shares limited, to keep the price lower. The actual change in price that would result from the various alternatives being considered cannot be estimated.

6.7.3 Direct and Indirect Effects on the Administrative Environment

The direct administrative burdens of the alternatives for Action 7 are similar. In all cases except no action (**Alternative 1**), eligibility must be verified. Depending on the alternative, potential recipients of transferred shares must demonstrate U.S. citizenship or resident alien status, possession of a reef fish permit, or current possession of quota shares. To the extent the size of the applicant pool affects the number of people in the IFQ program and the likelihood and frequency of transfers, alternatives that only allow transfer of shares between current shareholders (**Alternatives 3** and **5**) would have less administrative impacts than would alternatives that may result in more participants (**Alternatives 1, 2, 4**, and **Preferred Alternative 6**). **Alternative 3** would have the least potential administrative impact from an increased number of shareholders, and **Alternative 1** would have the greatest potential administrative impact from this factor. Program complexity could also influence the administrative burden. **Alternative 1**, the least complicated, would bring the smallest burden. **Alternatives 5** and **Preferred Alternative 6** would be the most complicated, and cost more to administer, because eligibility criteria would change after five years. The size of the pool of eligible recipients of transferred shares would vary across alternatives. Overall, the administrative burden of establishing transfer eligibility requirements would increase across alternatives, in the following order: **3, 5, 2, 6, 4**, and **1**.

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

The disadvantages of the use requirement are the instability it brings to the harvest sector and the indirect negative effects on the physical, biological, and ecological environment by forcing IFQ shareholders to harvest red snapper (**Alternative 2, suboptions A** and **B**, and **Alternative 3**, **suboptions A** and **B**) they might not have otherwise harvested in order to maintain eligibility. If some IFQ shares are not fished (e.g. held by lending institutions; **Preferred Alternative 1**) the effect is more rapid restoration of the red snapper stock. Although IFQ shareholders are assured of a certain amount of catch, they can minimize harvest costs by fishing during the height of the red snapper season. To a large extent, cost minimization is still a major objective in red snapper fishing even under the IFQ program, because ex-vessel price is largely influenced by imports. The derby nature of the fishery may still be present during the months of higher red snapper abundance, and this would likely be accentuated by the use requirement. Additionally, if an IFQ share is not fished, other fishermen may benefit in terms of higher catch rates. By not requiring a "use it or lose it" provision for IFQ shares or allocations, restoration of the red snapper may be

accelerated by allowing individuals or corporations to purchase and retire IFQ shares, which would also reduce impacts on the benthic habitat.

6.8.2 Direct and Indirect Effects on the Social and Economic Environment

Commercial fishermen are expected to use quota they hold to generate revenue, and hopefully profits. It would be irrational for a commercial fisherman to forgo potential income from quota shares they own, especially with liberal leasing provisions. Given that assumption, the "use it or lose it" provision is designed to prevent persons from acquiring quota shares for the sole purpose of not fishing them. Non-consumptive users of the resource and conservationists are the most likely targets of this action. **Alternatives 2** and **3** would implement a "use it or lose it" provision. If either option were selected and actually prevented people from buying share 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 shares to fish them, so the action would probably not have a great impact on people's actions. Second, the alternatives only require 30 **(Alternative 2 suboption A** and **Alternative 3 suboption C**) or 50 percent (**Alternative 2 suboption B** and **Alternative 3 suboption D**) of a person's quota be fished on average over the most recent three- (**Alternative 2**) or five-year period (**Alternative 3**). Fishermen trying to limit red snapper harvests would still be able to limit harvest for two out of every three years or three out of five years. This would reduce producer surplus, given the assumption that the change in quantity on the market will not substantially change the price.

6.8.3 Direct and Indirect Effects on the Administrative Environment

Revocation of unused quota shares would not directly affect the administrative environment, since the shares would remain in the system and eventually be allocated to another shareholder, who would incur the same administrative costs as the former shareholder. **Preferred Alternative 1**, which would not require tracking of quota share usage, would require the least administrative burden. **Alternatives 2** and **3** would require administrative tracking of the "expiration date" of unused quota shares, and the average percentage of quota caught, for each shareholder. This requirement could indirectly affect the administrative environment by requiring significant administrative monitoring effort. The differences in the administrative burden between **Alternatives 2** and **3** are small. Since monitoring of landings would be based on a moving average for both alternatives, administrators will carry out the same tasks for each alternative, regardless of the number of years being averaged. The only differences between them would occur in the first three to five years of the program. **Alternative 2** would require administrative action to revoke unused quota shares in the first three years of the program, while **Alternative 3** would not require revocation until the first five years had elapsed. However, the likelihood shares would be allowed to expire is low given their economic value, and given that expired quota shares would be allocated to someone else, negating any conservation value from "retired" shares. **Suboption 2A** and **suboption 3C** require 30 percent of allotted shares be harvested and **suboption 2B** and **suboption 3D** require 50 percent of allotted quota shares be harvested. Because **suboptions 2B** and **suboption 3D** require more of the allocated quota be landed, it could result in more revocations of quota shares (and associated administrative costs)

than **suboption 2A or suboption 3C**, which have a lower landings threshold to retain valid quota shares.

6.9 Action 9. Adjustments in Commercial Quota

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

Alternative 1 would not provide the Council any direction on how to treat changes in the TAC and would likely result in continued overcapitalization of the fishery resulting in negative effects on the physical, biological, and ecological environment. The rapid growth and overcapitalization of the red snapper fishery have intensified the race for fish. The harvesting capacity in the red snapper fishery exceeds the amount necessary to efficiently prosecute the fishery. The races for fish and shortened seasons have resulted in other resource conservation and management issues, including bycatch of non-targeted species and high discard mortality. **Preferred Alternative 2** provides for adjustments in the commercial quota that would result in positive effects on the physical, biological, and ecological environments by rewarding the most efficient fishermen. Fishermen who are more efficient would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. **Alternatives 3** and **4** would likely limit consolidation of shares because less efficient fishermen may delay their sale. Reduced consolidation would perpetuate excess harvesting capacity in the fishery. Fishermen who are less efficient would spend more time fishing, which increases gear interaction with the benthic habitat and raises the level of regulatory discards and bycatch. This would have a negative impact on the physical, biological and ecological environment and does not achieve the goals of the IFQ program, which is intended to help the Council address overfishing by reducing the rate of discard mortality that normally increases with increased fishing effort in overcapitalized fisheries. **Preferred Alternative 5** specifies a moderate level for initially specifying TAC. Such a level would enhance the physical, biological, and ecological consequences by reducing the current effects of fishing at a 9.12 mp TAC. The subsequent readjustments of TAC anticipated to a level on the order of 7 mp would also be a reduction in current effects over those for the status quo.

6.9.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would not provide NMFS any direction on how to treat changes in the TAC. **Preferred Alternative 2** would result in a straightforward method for calculating each shareholder's share when TAC changes occur. Under this method, the largest shareholders would experience larger increases in quota shares when TAC rises as well as larger decreases when TAC is reduced. Alternatives that divide the allocation equally among the quota shareholders (50 percent of TAC changes under **Alternative 3** or 100 percent of TAC changes under **Alternative 4**) would benefit those individuals holding smaller than average amounts of quota. An equal allocation method would also tend to limit consolidation, because holders of small amounts of quota may decide to retain those shares with the expectation they would be much more valuable if the commercial red snapper TAC increases in the future. Therefore, this TAC distribution method may result in lower producer surplus and less consolidation than a proportional allocation method. This affect is expected to be even more pronounced if decreases in TAC are completely funded from the allocations of the largest shareholders. **Preferred**

Alternative 5 affects the timing of quota issuance for the 2007 season. The IFQ program is tentatively scheduled to begin in January 2007. Therefore, this alternative would introduce some complications in the program implementation. Also it would tend to restrict the planning activities of fishermen who may want to buy or sell quotas to achieve certain efficiency targets. At the same time, however, this alternative would enable fishermen to fish their allocations throughout the year. Although, they may be forgoing some profits during the Lenten season, they may properly schedule their fishing activities throughout the year.

6.9.3 Direct and Indirect Effects on the Administrative Environment

Not specifying a method for increases or decreases in quota across shareholders (**Alternative 1**) would increase the administrative burden because administrators or the Council would have to decide how to distribute shares in a later plan amendment if the quota is changed. Choice of this alternative could increase the administrative burden from rebuilding efforts, because disposition of increases or decreases in quota, even if not addressed in this amendment, would eventually need to be resolved to allow management to improve stock status. Specifying distribution of increases in quota across shareholders (**Preferred Alternative 2**, **Alternatives 3**, and **4**) would not change the number of quota shares available, and would therefore, not directly affect the administrative environment. Administrators would already be monitoring ownership of quota shares, so little additional analysis would be needed to determine quota increases for each shareholder, and this analysis would be similar across **Preferred Alternative 2**, **Alternatives 3**, and **4**. Identification of the overall increase or decrease in TAC/quota would already be necessary as part of stock rebuilding efforts and requires no additional effort. The administrative effort required to calculate share amounts would be similar across **Alternatives 1** through **4.** 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.

Choice of **Alternative 1** could increase the administrative burden of rebuilding efforts, because disposition of increases in quota, even if not addressed in this amendment, would eventually need to be resolved once the stock began to rebuild. This disposition would likely require another, later Council action, which would require additional administrative resources. The number of participants in the IFQ program after a number of years may differ across alternatives, as would the administrative burden for those participants. **Preferred Alternative 2** would not benefit struggling participants, or penalize the most successful ones, and would therefore, have the least administrative costs from increased participation. **Alternative 3** may allow participants to remain in the fishery that otherwise could not, by giving them more quota share than they would be entitled to under **Preferred Alternative 2**. **Alternative 4**, which would disproportionately reduce quota for those participants with the most shares while helping struggling fishermen as described in **Alternative 3**, is the most likely to increase the number of participants in the program and, therefore, the administrative costs. Overall, the administrative costs of specifying a method for quota adjustment would be lowest for **Preferred Alternative 2**, second lowest for **Alternative 3**, second highest for **Alternative 4**, and highest for **Alternative 1**. Selection of **Preferred Alternative 5** in addition to **Alternative 1**, **Preferred Alternative 3**, or **Alternatives 3** and **4**, would entail additional administrative costs, as described above.

6.10 Action 10. Vessel Monitoring Systems

Note -The Council has approved Amendment 18A to require VMS for all commercial reef fish vessels. Therefore, this action may be unnecessary

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

The degree the alternatives affect the physical and biological environments can be related to fishing effort as summarized in Section 6.1.1. For this action, **Alternative 1** (status quo) would not require VMS on IFQ shareholders vessels and so would not change fishing behavior.

Because VMS tracks where fishermen deploy their gear, VMS would prevent or reduce gear types from being deployed within marine reserve areas (See Section 5.1.1 for a list of areas). While most fishermen respect these prohibited areas, some fishermen do not. Keeping prohibited gears out should decrease the number of interactions between gear and the physical environment of these areas. Also, this action would protect species that reside in these marine reserves, particularly those where all fishing gear is prohibited. Several of these sites were created specifically for protecting specific species. For example, the Madison-Swanson and Steamboat Lump marine reserves were established to protect gag spawning aggregations and male gag. Requiring VMS would also reduce the illegal harvest of red snapper by fishermen ineligible to participate in the IFQ program and would assist in enforcement of gear boundaries (i.e., 20- and 50-fathom boundaries for longline deployment).

Should **Preferred Alternative 2** be selected, fishermen who are not actively using their red snapper IFQ shares or allocation may reconsider whether to continue holding the shares if required to pay for VMS on their vessels. Depending on whom those shares are transferred to, those transfers could indirectly effect the physical, biological, and ecological environment. Should they go to more efficient fishermen, these fishermen would spend less time fishing for the same catch of fish reducing the amount of interaction between gear with the bottom, and would have lower levels of regulatory discards and bycatch providing added protection to red snapper and other reef fish stocks. If the shares went to less efficient fishermen, then the effects would be reversed. **Suboptions 2a, b, c**, and **d** indicate who would pay for the VMS and, therefore, would not affect the physical, biological, and ecological environment.

6.10.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 would benefit IFQ shareholders by not requiring a VMS and alleviating concerns regarding cost, maintenance and perceived intrusive monitoring. However, it would be detrimental to the IFQ program from an enforcement perspective, as those vessels participating in the red snapper fishery could not be monitored. **Preferred Alternative 2** would require all fishing vessels engaged in harvesting red snapper under the IFQ program be equipped with VMS. If some (**suboption 2c**) or all (**suboption 2a**), of the costs of installing and maintaining the VMS are the responsibility of the shareholders, it may create a financial hardship for some of the fishermen, especially the Class 2 license holders who will be making less income from participating in the red snapper fishery. Some fishermen may consider the requirement of a VMS to be an intrusion on their privacy and their autonomy as an independent fisherman.

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 fleet (**suboption 2a**), NMFS (**suboption 2b**) or by both groups (**suboption 2c**, and **d**). Depending on the number of vessels in the fleet at the time of initial allocation the first year cost of the program would range from less than $0.5 million to about $2.7 million. The communication costs in future years are projected to be from about $58,000 to $470,000. The replacement and maintenance costs, in future years, would be in addition to the communication costs. Those costs cannot be estimated with existing information. If the fleet pays the cost of VMS, the producer surplus would be expected to decrease by the variable component of the total VMS costs, since VMS is expected to neither increase revenue nor decrease fishing costs not associated with the VMS. If NMFS pays for the cost of the VMS it would not change producer surplus, because transfer payments are excluded from the calculation.

6.10.3 Direct and Indirect Effects on the Administrative Environment

Implementation of an IFQ program without a VMS (**Alternative 1**) could likely result in violations by IFQ shareholders, but **Preferred Alternative 2** would likely result in less violations (and less enforcement costs) because shareholders would know their vessels were being monitored. Implementation of a VMS (**Preferred Alternative 2**) would directly affect the administrative environment, because it would require verification of ongoing possession of an operational VMS by each IFQ shareholder. It would also require continuous monitoring of the position of participants to determine compliance with fishery regulations. As described above, enforcement costs related to prosecution of violations may be reduced due to greater compliance once a VMS program was implemented. Overall, the costs of operation of the VMS program could still be large. To the extent NMFS funds the purchase, installation, and maintenance of the VMS and the communication costs, administrative effects would also accrue from direct monetary costs and administration of payments to vendors or IFQ shareholders. The administrative burden would be the least under **suboption 2b**, which would not require NMFS to pay any costs for VMS implementation and operation. The greatest administrative burden would be required under Preferred **suboption 2a**, in which NMFS would pay for all initial and ongoing costs of the VMS and its operation. These costs could range from $0.5 to $2.7 million for initial VMS installation, and from $58,000 to $470,000 annually for communication costs. Additional un-quantified and ongoing maintenance costs would also be borne by NMFS. **Suboption 2d**, which would require NMFS to pay the $0.5 to $2.7 million initial costs of the system, would be intermediate in administrative cost. Depending on how NMFS and IFQ shareholders share the initial and ongoing expenses, **suboption 2c** could be more or less expensive for NMFS than **suboption 2d**, but it would be more expensive than Preferred **suboption 2a** and less expensive than **suboption 2b**. **Suboption 2c** would also require additional administrative action to determine the terms of the "joint" payment arrangement.

Indirect administrative effects could result from these alternatives if they affect the number of participants in the program. Suboptions where NMFS pays for some or all of the initial and operating costs of the VMS would tend to have more participants, as they would not be required to pay for the systems and more businesses could remain viable. Alternatively, if shareholders must pay some or all of the costs of VMS installation and operation, this economic burden could put them out of business, reducing the number of shareholders. Administrative costs due to the

number of participants would therefore be highest for **suboption 2b** (NMFS pays all expenses) and lowest for Preferred **suboption 2a** (IFQ shareholder pay all expenses). Overall, the administrative costs of implementing an IFQ program with VMS would be lowest for **Alternative 1**, which would not implement such a program. If a program were implemented, Preferred **suboption 2a** would have the lowest cost, **suboption 2c** would cost the second lowest, **suboption 2d** would have the second highest cost, and **suboption 2b** would cost the most.

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 and should not affect current fishing practices. Therefore, none of the alternatives in Action 11 would have any direct or indirect effects on the physical, biological, and ecological environment.

6.11.2 Direct and Indirect Effects on the Social and Economic Environment

Alternative 1 does not provide for a cost recovery program while **Alternative 2** and **Preferred Alternative 3** 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 resides on the IFQ shareholder under **Alternative 2** and on the IFQ dealer/processor under **Preferred Alternative 3**.

NMFS will 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

There are certain considerations that need to be recognized with respect to **Preferred Alternative 3.** Since dealers/processors are charged with the responsibility of submitting collected fees to NMFS, they would incur additional costs. The general tendency for these dealers would be 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.

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, partly because the plan would at least partially pay for itself. The direct effect of **Alternative 1** (no action) would be NMFS would assume all administrative, enforcement, and monitoring costs for the IFQ program as it is defined by the Council. Direct expenses related to tracking

payments would accrue for **Alternative 2 suboption A** and **Preferred Alternative 3 suboption A**, and these expenses are not expected to differ between **Alternative 2 suboption A** and **Preferred Alternative 3 suboption A**, because the administrative costs of these alternatives are not affected by whether the shareholder or the dealer/processor collects and submits the fees. **Suboptions B** and **C** are the same for **Alternatives 2** and **Preferred Alternative 3**. Processing payments four times per year **(suboption 2A(i))** and **suboption 3A(i)**) would require more administrative effort and would not integrate as well with current federal budget processes compared to **suboption 2A(ii)** and **suboption 3A(ii)**. **Suboption B** specifies terms for calculating the cost recovery fee. **Suboption 2B(ii)** and **suboption 3b(ii)** which would require NMFS to calculate the standard ex-vessel price each year, would cost somewhat more than would **suboption 2B(i)** and **suboption 3b(i)**, which would allow ex-vessel prices to be used directly when calculating cost recovery fees. 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 ex-vessel value. Regardless, NMFS may adjust the percentage billed in the event that recovered fees exceed the management and enforcement costs in the fishery. **Suboption 2C(i)** and **suboption 3C(i)** would require a greater administrative cost because they would require collection, examination, and verification of annual buyer reports, whereas **suboption 2C(ii)** and **suboption 3C(ii)** would not. However, possession of these reports could simplify the administrative effort needed to carry out **Alternative 2**. Administrative costs would be highest overall for **Alternative 1** but equal for **Alternative 2** and **Preferred Alternative 3**. Suboption **2A(ii)** and **suboption 3A(ii)**, **suboption 2B(i)** and **suboption 3B(i)** and **suboption 2C(ii)** and **suboption 3C(ii)** would have lower administrative costs than would **suboption 2A(i)** and **suboption 3A(i)**, **suboption 2B(ii)** and **suboption 3B (ii)**, and **suboption 2C(i)** and **suboption 3C(i**).

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
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
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
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
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
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 Class 1 and 2 endorsements and respective trip limits	Begin derby fishery
1993-1998	3.06 mp commercial quota	Continue to slow rate of overfishing
1994	Increase minimum size to 14 inches in the commercial and recreational fisheries	Increase yield per recruit, increase the 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
1997-2005	Reduce recreational season length	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
1999-2005	Raise total quota to 9.12 mp	Reduce rebuilding rate for 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 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 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.	Alternative 1: No action. Do not specify a methodology for allocating initial IFQ shares.
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 the duration of the IFQ program.	Alternative 3a: 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 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 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 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	Alternative 1: No action. No IFQ cost recovery

	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)	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 multispecies 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. 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 480 out of 628 Class 2 license holders have a landings record. The other 148 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 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

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

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.

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 480 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	480	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.

Table8.4.4. 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	480	636	0.42	8,084
Best 6 years	480	723	0.50	9,152
Best 5 years	480	824	0.60	9,532

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 fish stock would be reserved for each fisherman with IFQs, 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 IFQs were issued in relatively small denominations, the investment in IFQs 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. 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 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. 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 IFQs are 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[4.] With the reduction in overcapacity and consolidation of effort following the implementation of an IFQ, 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 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 IFQs. In order to maximize the net value of their IFQ shares, fishermen have a vested interest in discarding less desirable fish and only keep the part of the catch that can fetch the highest price (Copes, 1986).

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 the quota and how it is 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

4 Cost recovery issues are discussed in Section 8.5.11 of this amendment.

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**)[5,6];
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. Quota assigned 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 quota values below their optimum social value. The reduction in value would reflect the risk associated with purchasing in the shares. The lower the uncertainty, the closer the quota value would be to its optimum amount. Stewardship of the resource is affected by uncertainty because quota holders would want to extract the most value from their shares before they expire. This could

5 Preferred Alternative of the Council.
6 Preferred Alternative of the AHRSAP.

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). Quota 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 quota 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 quota 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 quota 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)[7] has indicated the true market value of quota 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 shares would decline as the sunset date approaches. The value of 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 quota 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. 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.).

7 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.

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 quota, given the uncertainty of how management may evolve. If buyers were risk averse, they would apply very large discount rates to the value of quota after the sunset date. Sellers may assume the quota 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 quota 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 quota 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 lease quota. Because the price of leases would be determined based on the expected returns in only that year, the duration of the program would not impact those values. Therefore, the lease market should function fairly normally even when the duration of the program is limited.

The temporary transfer (lease) market could be impacted by the quantity of quota being leased. If the supply of quota in that market is large enough to exceed the demand of the most efficient operations, it could reduce the price of leased quota. It is not possible to determine the demand for leased quota or the supply that would be available. Supply would depend on who has excess quota or does not have to fish in a given year; demand would depend on who is in the market to lease quota 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[8]. 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 quota to buy any 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;
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

8 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.

the Council. The number of participants that would remain in the sector if all participants buy or lease 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 allocations might be a reflection of historic participation, the number of persons that would receive allocations 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 480 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 shares of the fishery until they reach the cap. At that time NMFS would not approve the purchase of

any additional shares by that person. The 10- (**suboption 2c**) and 15-percent (**suboption 2d**) ownership caps would allow everyone to purchase additional shares of the fishery after the initial allocation. More efficient operators could purchase 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 red snapper harvest rights, and the 10-percent option would allow 10 people to control the fishery. 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 quota 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 quota 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 quota 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 quota. It is the persons that receive the initial allocation of quota 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 quota sells their share holdings

(NRC, 1999). The revenue generated from the sale of initially allocated quota reflects those profits. These profits are not available to subsequent owners of quota 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 quota. 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 quota 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[9] 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 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].

[9] 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.

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

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 480 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 480 licenses would qualify for an allocation. The 148 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 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 quota 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 the TAC among eligible participants. Finally, **Alternative 3** would allocate each program participant an equal amount of quota. The economic impacts of the alternative will be discussed under each alternative.

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)**.

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 480 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 480 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, 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. 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 red snapper IFQ, 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 commercial red snapper fishery.

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.

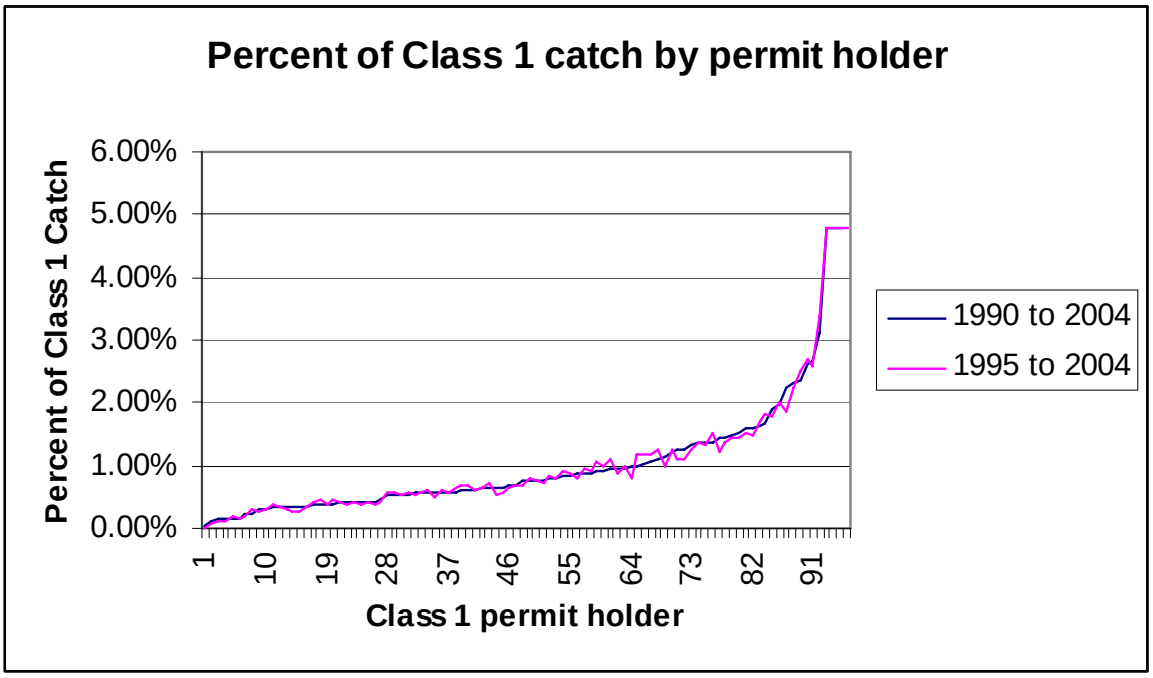

Figure 8.5.1. Percentage of the commercial red snapper fishery harvested by Class 1 license holders.

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.

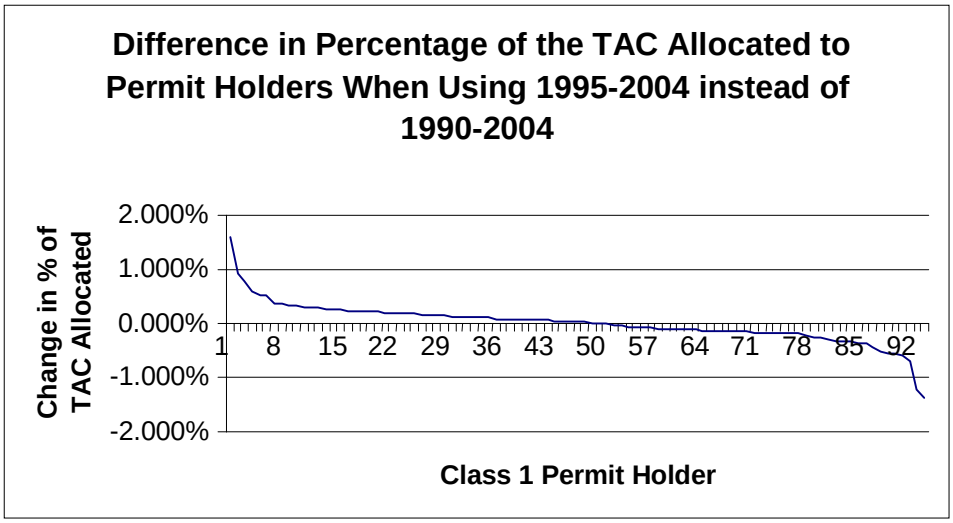

Figure 8.5.2: Changes in the percentage of TAC assigned to permit owners.

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									■	■	■		■	■		5
1										■	■	■	■	■	■	6
1									■	■		■	■	■	■	6
1									■	■	■		■	■	■	6
3									■	■	■	■	■	■	■	7
1		■	■					■	■	■	■	■	■	■	■	10
1		■	■	■	■		■	■	■	■	■	■				10
1		■	■	■	■	■	■	■					■	■	■	10
1	■		■	■	■	■			■			■	■	■	■	10
1	■		■	■	■	■	■	■	■	■	■					10
1	■	■				■	■	■	■	■	■			■	■	10
1	■	■	■	■	■	■	■	■	■	■						10
1		■		■			■	■	■	■	■	■	■	■	■	11
1		■	■			■	■	■	■	■	■		■	■	■	11
1		■	■	■				■	■	■	■	■	■	■	■	11
1		■	■	■	■				■	■	■	■	■	■	■	11
1		■	■	■	■	■	■	■	■	■	■			■		11
1		■	■	■	■	■	■	■	■	■	■	■				11
1		■	■	■	■	■			■	■	■	■	■	■	■	12
1		■	■	■	■	■	■	■			■	■	■	■	■	12
1	■		■	■	■	■	■	■	■	■	■		■		■	12
1		■		■	■	■	■	■	■	■	■	■	■	■	■	13
1		■	■	■	■	■	■	■	■	■	■	■		■	■	13
1		■	■	■	■	■	■	■	■	■	■	■	■		■	13
1	■		■	■	■		■	■	■	■	■	■	■	■	■	13
1	■		■	■	■	■	■	■	■	■	■	■		■	■	13
1	■	■			■	■	■	■	■	■	■	■	■	■	■	13
1	■	■	■		■	■	■	■	■	■	■	■	■	■	■	13
1	■	■	■	■	■	■	■	■	■	■		■		■	■	13
1	■	■	■	■	■	■	■	■	■	■	■		■		■	13
2		■	■		■	■	■	■	■	■	■	■	■	■	■	13
2		■	■	■	■	■	■	■	■	■	■	■	■	■		13
2	■			■	■	■	■	■	■	■	■	■	■	■	■	13
2	■		■	■	■	■	■	■	■	■	■	■	■	■		13
2	■	■		■	■	■	■	■	■		■	■	■	■	■	13
3		■	■	■	■	■	■		■	■	■	■	■	■	■	13
6			■	■	■	■	■	■	■	■	■	■	■	■	■	13
1	■	■	■	■	■	■	■	■		■	■	■	■	■	■	14
1	■	■	■	■	■	■	■	■	■	■	■		■	■	■	14
14	■	■		■	■	■	■	■	■	■	■	■	■	■	■	14
17	■		■	■	■	■	■	■	■	■	■	■	■	■	■	14

33																14
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. 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 consecutive years (out of 3 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 and best 5 consecutive years for each Class 2 license.

	Total Landings (million pounds)	Percent to Total	Range of Landings
Class 1	4.36	89.1	3,817 – 92,265
Class 1: Hist. Capt.	0.15	3.1	8,853 – 36,401
Class 2	0.38	7.8	0.6 – 9,530

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 the TAC 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 red snapper 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 480 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	480	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.

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 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

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

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 quota 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 commercial 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 red snapper quota 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 quota 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 quota shares 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 quota shares when it is transferred.

Restrictions on who may purchase quota 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 quota 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 red snapper 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 quota are often concerned about how resource rents would be distributed after the transfers. Persons that want to sell quota shares would likely prefer to have few, if any limits are placed on transfers. Persons wishing to buy quota would likely prefer no one outside of their "sector" be allowed to buy quota shares. The people wanting to sell the quota know more people in the market place, buying quota, would tend to drive the price up. Sellers would then make more money. Buyers would tend to want the competition for shares limited, to keep the price lower. The actual change in price that would result from the various alternatives being considered cannot be estimated. However, the directional impacts discussed above are expected to occur. The more buyers in the market would tend to create more demand and drive quota share prices up. This is a result of potentially allowing more efficient harvesters into the pool of quota share buyers. Fewer buyers in the market would generate less demand (as a result of potentially excluding more efficient harvesters) and the price of quota shares would be expected to be lower.

Higher quota share prices tend to benefit the individuals that received the initial allocation of quota shares. The value of the quota share they are issued, when sold in the market, is often referred to as "windfall profits". Alternatives that increase quota share prices also increase windfall profits for initial recipients.

Options limiting the person allowed to purchase red snapper quota 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 quota 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 quota 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 quota shares to allowing anyone to purchase shares.

Alternative 1. No action.

Alternative 1 would not restrict the category of persons who could purchase quota 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 red snapper quota shares, even if they are not resident aliens. Persons who are not U.S. citizens would be allowed to generate benefits from harvesting quota shares or having others harvest their shares. If the equity associated with IFQs 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 quota shares were purchase 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 the entire quota 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 red snapper quota shares. In reality this number would be greatly reduced because many individuals do not have the means, desire, or political status to purchase red snapper quota shares. However, it is likely some very small, but unknown, number of persons from other countries would be interested in acquiring shares. To the extent they purchase red snapper quota 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 quota shares in the future, the costs of production of firms purchasing quota 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 red snapper quota 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 quota shares, while allowing persons holding a commercial reef fish permit to buy and sell quota shares among themselves. Limiting the sale of quota 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 quota 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 red snapper quota 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 red snapper quota 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 quota shares under this option, if they cannot obtain a commercial reef fish permit. Less efficient harvesters would then bid to purchase quota shares based on their expected profits. Since those profits would be lower than 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 quota share prices would be lower under this alternative because efficient harvesters outside the reef fish fishery are precluded from buying red snapper quota 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 quota 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 red snapper quota shares would be allowed to purchase red snapper quota shares in the future. The problem with this alternative is it creates a closed class of persons that would ever be allowed to purchase red snapper quota shares. Persons would not be allowed to sell quota to anyone that was not an initial recipient of red snapper quota shares. This option would preclude persons from selling quota shares to family members or transferring quota shares as an inheritance to a person that was not an initial recipient of red snapper quota shares

Over time, people would want to sell their quota 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. Trading of quota shares would be very restrictive in the future. As shares are traded they would be consolidated among initial recipients, until all of the persons holding quota reach their ownership caps, if ownership caps are implemented. If no ownership caps were implemented, eventually only one person would own all of the shares. Once everyone reaches their use caps no quota sales would be allowed. At that point quota would be forfeited. NMFS would need direction from the Council regarding how those shares would be treated.

This alternative would tend to keep the price of quota shares lower than under any of the other alternatives. Persons buying quota 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 quota 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 quota shares but does not include the companies, corporations, and partnerships that could purchase shares.

Permanent resident aliens were included in this language because it 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 red snapper quota 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 quota shares. For example, persons from other U.S. fisheries could expand their operation to include red snapper, or other user groups could buy quota. Because the number of potential participants in the program is increased, the demand for quota shares would also likely increase. As discussed earlier, that would likely increase the market price of quota shares and increase the windfall profits of initial recipients of quota 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 quota shares. After five years anyone holding a commercial reef fish permit could buy quota shares.

It is likely the value of quota shares would be lower during the first five years of the program. Restricting the sale of quota 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 quota at what may be discounted price. This may allow persons wanting to stay in the fishery to accumulate an adequate number of 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 red snapper quota shares than they have harvested in recent years.

After five years, anyone holding a commercial reef fish permit would be allowed to purchase quota shares. At that time the demand for quota shares would likely increase and the value of 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 quota 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 quota shares. After five years all U.S. citizens and permanent resident aliens could buy quota 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 quota holdings before they are sold to persons outside the fishery. It difficult to decipher market signals for quota value 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 quota'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 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 shares and not use them. At a minimum they would forego the revenue associated with leasing the quota. If they were efficient harvesters, the value of the quota 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 shares.

Allowing persons to hold 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 quota shares and hold them would likely increase quota share prices. Fishermen would need to bid against persons who are not buying quota to make a profit, but are basing their quota share value on keeping the fish in the ocean. If the value they place on the quota 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 quota share would benefit from the higher price. Fishermen wishing to buy 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 quota shares.

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.

Preferred Alternative 1 would allow people to hold quota shares but not use them. The amount of quota shares that would go unused is expected to be small, unless the cost of harvesting quota is greater than the revenue received from the catch. Fishermen can either fish the quota themselves or lease/sell the quota to another fisherman to generate revenue. Even when a quota shareholder is facing some type of physical or mechanical hardship, they would still be allowed to lease/sell the quota 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 quota 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 quota for some other non-consumptive use. However, if the amount of quota that is 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**. Quota 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 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 shares that were not fished. It is also assumed 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 quota certificates the third year. Those shares of the fishery would be redistributed among the remaining participants to be fished the third year.

Implementing this rule would require buyers of quota 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 shares and lose them the next year because of this rule. This possibility makes it imperative buyers know the status of quota share certificates. Tracking the status of certificates would be done by NMFS. They would then provide buyers with the status of quota 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 quota shares for the purpose of not harvesting the shares. It would only force the quota shareowners to fish their quota one out of every three years under the 30 percent rule or once every two years under the 50 percent rule. Quota shareholders could meet these harvest requirements by leasing their quota to another fisherman and never actually have to fish themselves. Therefore, the provision may not be totally effective in limiting quota shareholders to persons wanting to harvest the available resource. The 50 percent requirement would make people purchase more red snapper quota to reduce the harvest a given level.

Redistributing inactive shares could benefit members of the fleet that remain active. However, a minimal number of shares are expected to be redistributed among the fleet because of this option. Fishermen that hold the share certificates would be expected to sell them before they would allow them to be revoked. Economically, it would not make sense to allow quota shares to be revoked when they can be sold for approximately the discounted value of future net revenues. Even persons that may buy quota shares for the purpose of keeping them from being fished would understand the rules for retaining the share certificates. If they did purchase the quota shares, they would likely devise a strategy that would allow them to be retained. Therefore, it is anticipated few quota 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 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 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 quota 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 quota 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 quota shares and the annual allocation of individual shares are treated under many IFQ programs. A description of the method for assigning quota

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 quota 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

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 quota 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 quota 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 quota 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.

1 Preferred Alternative of Council
2 Preferred Alternative of AHRSAP

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 quota share units outstanding would be treated in a similar manner. Assume another fisherman, holding 100,000 quota share units, violated the terms of the red snapper IFQ program and the shares assigned to that person were removed from the quota share pool. The calculation of fisherman 1's percentage of the total quota 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 quota 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 quota 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 quota 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 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 quota 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 shareholder's allocation. This number is based on an equal distribution of the 1.55 mp increase among the 1,200 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 quota 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 quota shareholders.

Table 8.5.9. Comparing the Alternative using the example allocation calculations

Alternative	Assumptions	Fisherman1 Allocation	Fisherman 2 Allocation
1 & 2	3.1 million lb. TAC, Table XX9 catch, 1,200 QS holders	13,818	94,545
1 & 2	4.65 million lb. TAC, Table XX9 catch, 1,200 QS holders	20,727	141,818
3	3.1 million lb. TAC, Table XX9 catch, 1,200 QS holders	13,818	94,545
3	4.65 million lb. TAC, Table XX9 catch, 1,200 QS holders	17,919	118,828
4	3.1 million lb. TAC, Table XX9 catch, 1,200 QS holders	13,818	94,545

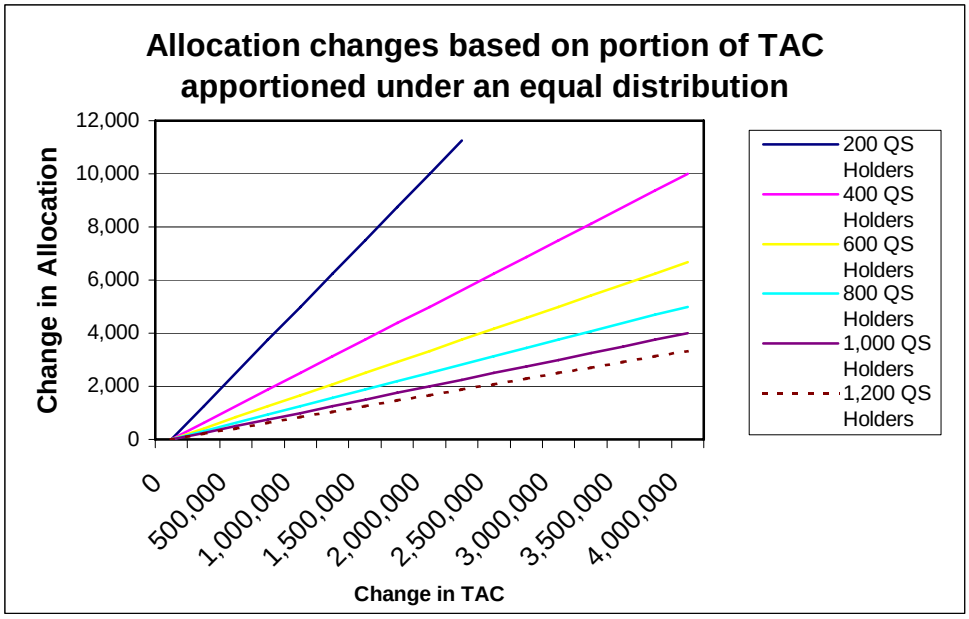

Figure 8.5.3. Individual's allocation change when the TAC is apportioned equally among all QS holders.

Figure 8.5.3 shows each individual's allocation change when the TAC is apportioned equally among all quota shareholders. It is obvious from this figure the number of quota shareholders is a very important variable in this calculation. If only 200 quota shareholders share a 1 mp increase, they would each receive 5,000 pounds of red snapper IFQ. However, if 1,200 quota shareholders were in the fishery, they would each be allocated 833 pounds. Given the importance of the number of quota shareholders under this alternative, it is important to consider how quota 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, quota shareholders may want to increase the number of persons holding shares. For example, it would be beneficial for a person that holds shares to transfer some of those holdings to a spouse, children, or crew so they could benefit from more shareholders receiving an equal distribution of the TAC increase. If they sold a few 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 shareholders. During years when the TAC will decline, quota shareholders would want to consolidate their holdings to decrease their quota share loses.

Assuming persons would not transfer shares just to increase or decrease their stake in the equal distribution of shares, this system would still impact transfers. If a person held a very small amount of quota share after the initial allocation, selling those 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 shares until the TAC increases they could greatly increase the value of their holdings. This would tend to limit sales of small share holdings. Those shares would be more likely to be leased. Financial risk would be relatively small under this scenario; TAC reductions would have little impact on the worth of these shares. While TAC increases could result in a substantial gain. From a buyer's perspective, they would likely have to pay more for those shares than they would for shares held by someone with more quota with less to gain from the increase. After buying the 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, the value of very small quota share holding would likely have more value per share than larger holdings when TAC increases are distributed equally. This would tend to limit consolidation of small share holdings and the number of participants in the fishery. Persons holding larger amounts of quota would be more likely to sell to other persons holding 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 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 quota are less likely to sell their shares because of the value they have when TACs increase. Shareholder face even less risk from holding these shares, relative to **Alternative 3**, because, TAC reductions are funded by holders of larger quota share amounts. If the holders of small amounts of shares lease 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 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 shares to distribute their shares to other persons, to escape funding the TAC reduction. 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 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 quota 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 quota 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 quota shares for the 2007 season. Being the first year of IFQ regime, 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 quotas. 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 quotas 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, quota prices in the second half of 2007 may not be as expensive as initially thought. They may only end up paying more for quotas 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 quota 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 quota, 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 480 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	480 to 628	616 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	$975,360 / $1,276,096	$1,251,712 / $1,552,448
Year 1 Cost for Fleet (High)	$478,312	$1,688,160 / $2,208,676	$2,166,472 / $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	$207,360 / $271,296	$266,112 / $330,048
Yearly Communication Cost for Fleet (high)	$83,896	$296,102 / $387,476	$379,998 / $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 shareholder (**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 shareholder. 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 quota 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 480[10] 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

10 Although there are 628 Class 2 license, only 480 of them have landings records for the proposed qualifying period 1998-2004.

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 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 lease 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, 148 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 or lease IFQ shares 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 or lease 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. Even though the referendum was favorable to the IFQ program, the Council may still vote not to proceed with its development and implementation. In this event, a Secretarial amendment to the Reef Fish FMP may be done. Second, there are potentially 148 Class 2 licenses that would not result in any IFQ allocation and some Class 2 licenses would receive very small amount of allocation (possibly 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 148 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, and for Class 2 license holders five years within the 1998-2004 period. Fourth, the proposed IFQ program provides for cost recovery fees to be paid by IFQ holders. 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 owners. 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 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.

Under an IFQ program, two possible additional reporting and record-keeping requirements would be introduced. The first one involves the tracking of IFQ shares and the corresponding amount of red snapper harvested and the second pertains to VMS

requirements. Currently, an electronic reporting system is being developed for dealers and IFQ shareholders but the details, particularly with respect to the sharing of cost between NMFS and the industry, have still to be worked out. However, one provision of the IFQ program requires dealer reporting. 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 GOM reef fish dealer permit and abides by all reporting and cost recovery requirements of the IFQ program. An IFQ dealer would also be required to have access to computers and the Internet for inputting, among other data, pounds and value of red snapper purchased by the dealer from an IFQ shareholder. 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 shareholders. Although IFQ shareholders 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. 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.

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 may be shared by NMFS and industry or solely borne by either entity, depending on the alternative selected.

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 480 smaller operations would receive the rest of the IFQ shares. It may be noted 148 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 148 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.

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 quota 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.

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 480 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 shareholder. 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.

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. 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.

Because marine mammals generally do not overlap geographically with the red snapper fishery, this action should not effect marine mammal populations. 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).

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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Florida SeaGrant
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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

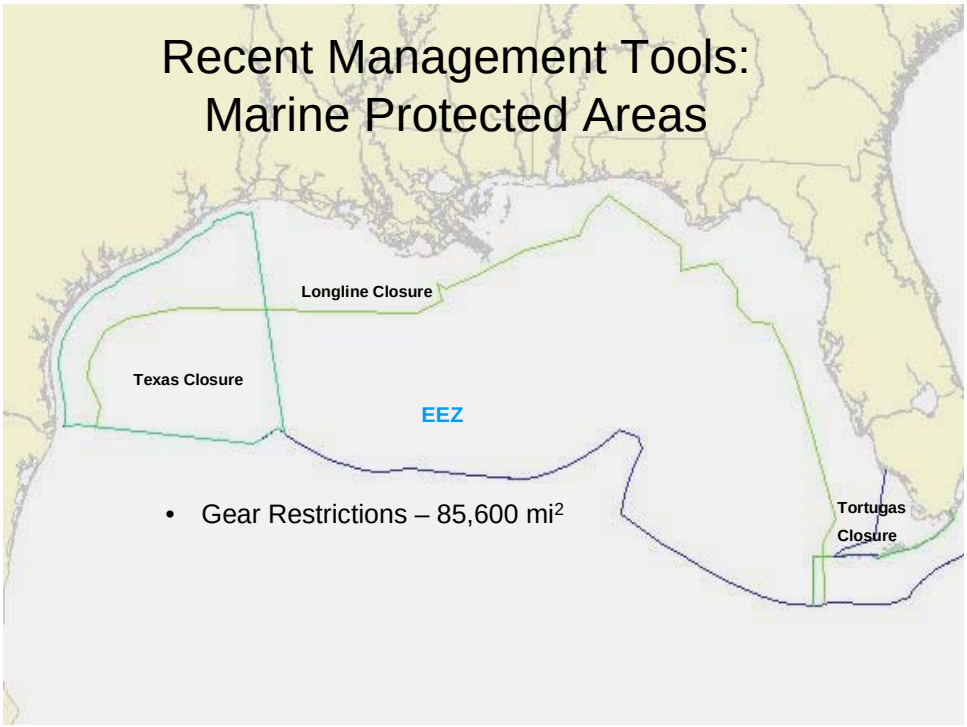

Figure 5.1.1

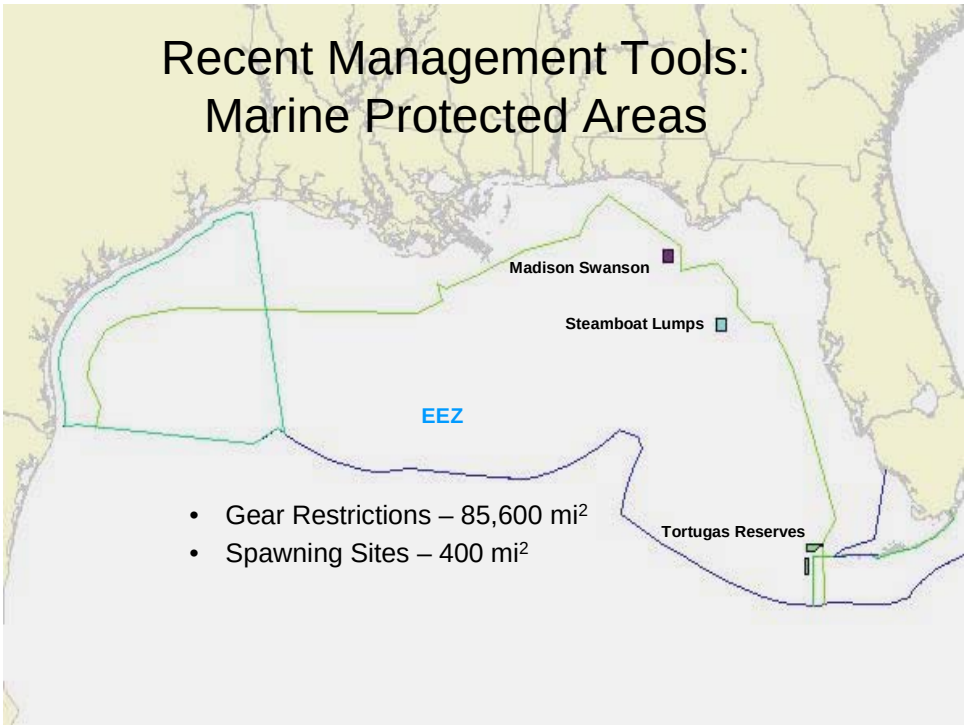
Recent Management Tools:
Marine Protected Areas
Madison Swanson
Steamboat Lumps
EEZ
Tortugas Reserves
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²

Figure 5.1.2

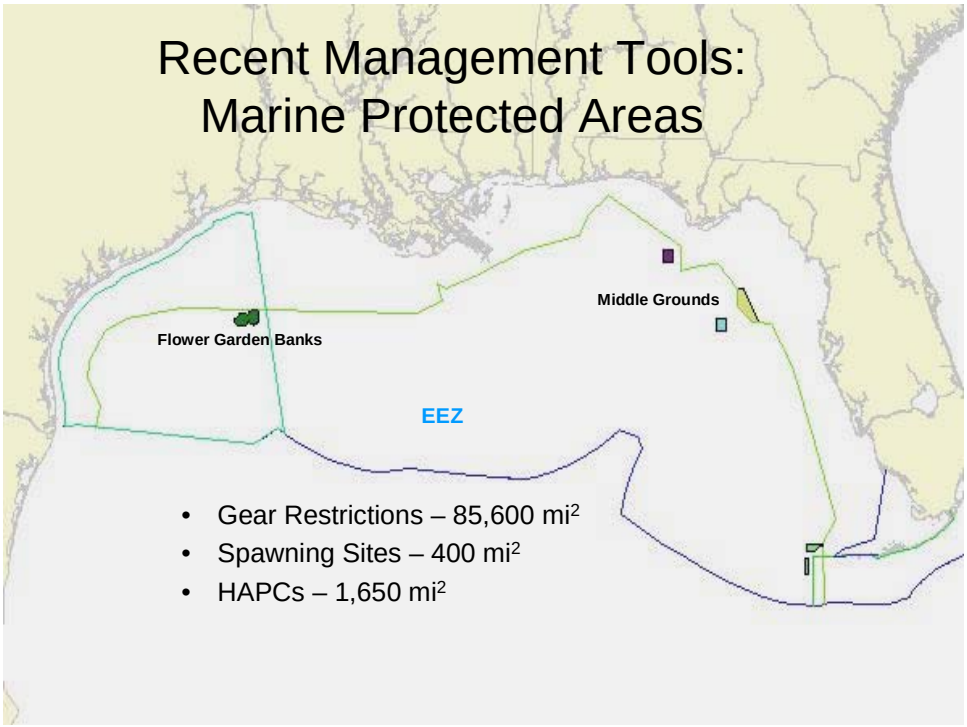
Recent Management Tools:
Marine Protected Areas
Middle Grounds
Flower Garden Banks
EEZ
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²

Figure 5.1.3

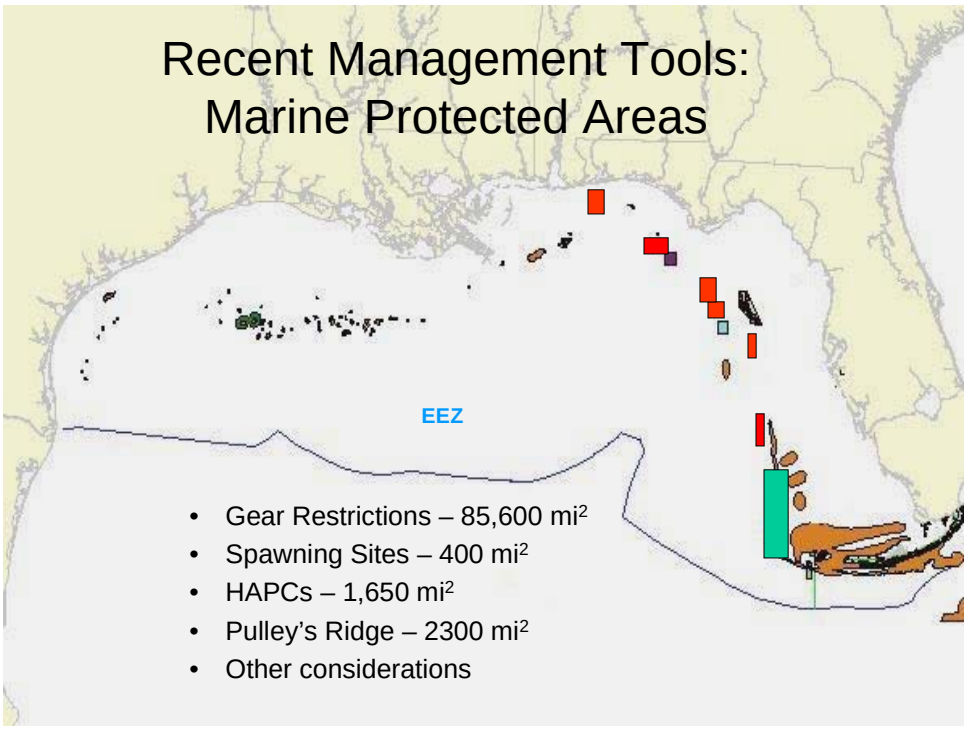
Recent Management Tools:
Marine Protected Areas
EEZ
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²
• Pulley's Ridge – 2300 mi²
• Other considerations

Figure 5.1.4

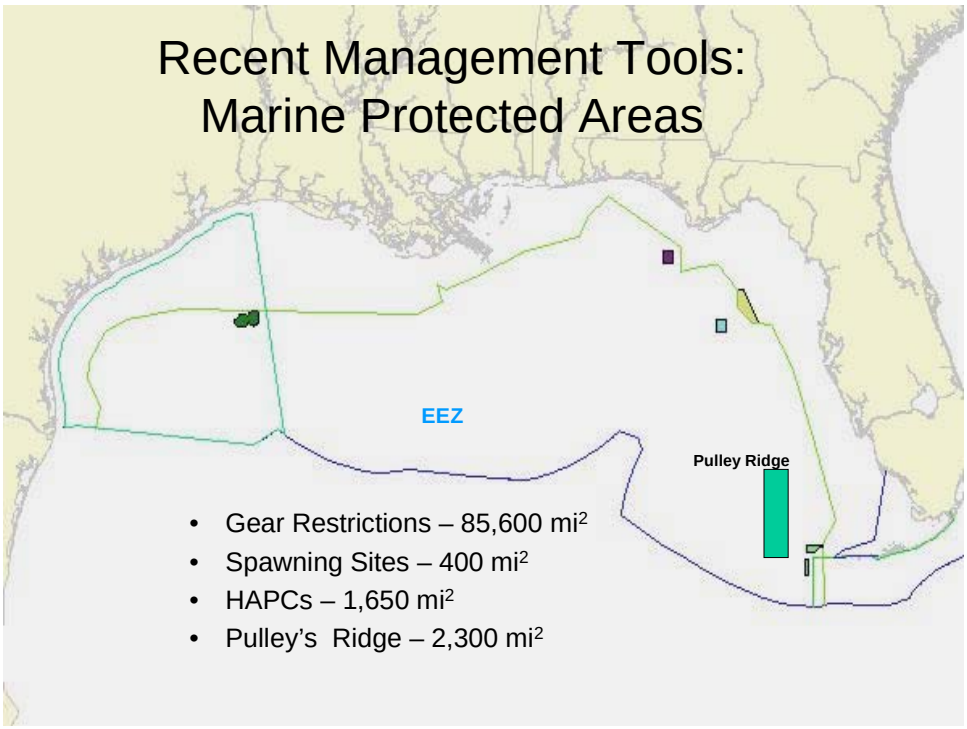
Recent Management Tools:
Marine Protected Areas
EEZ
Pulley Ridge
• Gear Restrictions – 85,600 mi²
• Spawning Sites – 400 mi²
• HAPCs – 1,650 mi²
• Pulley's Ridge – 2,300 mi²

Figure 5.1.5

16.0 APPENDICES

APPENDIX A - ALTERNATIVES CONSIDERED BUT REJECTED

This section describes alternatives considered by the Council, but eliminated from more detailed study. Many of these alternatives were not studied in detail because they were duplicative or addressed an administrative aspect of the program the Council believed should be left to NMFS' discretion. Other alternatives were eliminated because the Council determined they were not reasonable relative to the purpose and need for action, or because they were included within the scope of alternatives retained for detailed analysis. More specific rationale for eliminating each alternative is provided below.

UNITS OF MEASUREMENT

1. **Denominate IFQ quota share certificates as percentages of the commercial quota, but translate these percentages into gutted weight pounds of red snapper at the start of the season.**

2. **Denominate IFQ quota shares certificates as whole and gutted weight pounds of red snapper.**

Rationale: The definition of the red snapper unit of measurement is an administrative decision that should be left to NMFS' discretion.

3. **Determine IFQ certificates in percentages terms of commercial quota set under TAC; but issue Annual Quota in terms of monetary "units" as 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

4. **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.

5. **Confer on an IFQ shareholder the privilege to harvest the specified amount for four years after inception of the program, after which the 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

6. **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 the continued opportunity to retain and sell them. The Council considers discard mortality in the fishery when defining the red snapper total allowable catch, and is currently considering in Reef Fish Amendment 27 an alternative that would further reduce the occurrence of regulatory discards by eliminating the red snapper minimum size limit.

Allocation of TAC Adjustments

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 historical captains that had been fishing 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)**

8. **As the red snapper fishery recovers and the commercial quota is increased, a certain unspecified percentage of the increased quota would be allocated to crew members that had been actively participating in the reef fish fishery for a minimum of x years. This unspecified percentage would be distributed [choose one of the following]: (a) in equal shares or (b) differentially. The basis of allocation will be [choose one of the following]: (a) lottery, (b) number of years of participation, (c) other _____**

Rationale: Alternatives 7 and 8 would require the Council to re-allocate IFQ shares 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.

9. **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. Reducing the amount of IFQ shares allocated initial participants to enable non-IFQ fishermen to enter the fishery without purchasing shares would be counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability.

Regarding the bycatch component of the Alternative 9, 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 the continued opportunity to retain and sell them. The Council considers discard mortality in the fishery when defining the red snapper total allowable catch, and is currently considering in Reef Fish Amendment 27 an alternative that would further reduce the occurrence of regulatory discards by eliminating the red snapper minimum size limit.

10. **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 who have individual 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.

11. **Divide quota increases equally among recognized IFQ shareholders (e.g., those on record at the time of the adjustment). Reductions in commercial quota will be divided among the X (specify number) recognized IFQ shareholders who hold the largest amount of IFQ shares, or among recognized shareholders who hold at least X% of the commercial quota. Such reductions will be allocated either proportionately based on the percentage of the commercial quota each holds at the time of the adjustment, or 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

12. **A person to whom a current Class 1 license has been issued and/or persons that 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.**

13. **A person to whom a current Class 1 license has been issued will be eligible for an initial allocation provided that he can demonstrate red snapper catch records (either through harvesting 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**

14. **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. 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.

15. **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.

16. **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 harvesting 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: 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. Additionally, this approach would not adequately address the Magnuson-Stevens Act requirements to consider historical fishing practices in, and dependence on, the fishery in developing limited access systems (MSA, Section 303(b)(6)).

17. **Restrict initial eligibility for 50% (or any other percent) of the total quota share as specified in Rejected Alternative #14. Distribute the balance of quota share 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

18. **Among all Class 1 and Class 2 license (see Initial Eligibility), base the initial allocation proportionately on red snapper landings for the period January 1, 1993 through September 1, 1996 (based on dates included in referendum) and provide some unspecified percent of the allocation as a set aside for historical captains**

19. **Among all Class 1 license (see Initial Eligibility), base the initial allocation proportionately on red snapper landings for the period January 1, 1993 through September 1, 1996 (based on dates included in referendum) and provide some unspecified percent of the allocation as a set aside for historical captains**

Rationale: The Council never fully developed Alternatives 18 and 19 because it views as inequitable any approach that would base initial allocations to current participants 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)).

20. Class 1 License Holders

Allocate proportionately to the holders of Class 1 red snapper license 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 the average of the landings from 1993 through 2001 (all 9 years);**
- **1/4 based on an equal portion going to each Class 1 license; and**
- **1/4 based on the average of the landings from any 3 years from 1990 through 2001, as selected by the licensee.**

Class 2 License Holders

Allocated proportionately to the holders of Class 2 red snapper license based on the average of the landings from any 3 years from 1990 through 2001, as selected by the licensee.

Rationale: The Council views this allocation scheme as too burdensome to be practicable. Additionally, there are no data associated with Class 2 licenses prior to 1998.

21. Among all Class 1 and Class 2 license, base the initial allocation proportionately on the highest 10 (out of 13) years during the 1990 through 2002 period

Rationale: There are no data associated with Class 2 licenses prior to 1998.

22. Among Class 1 license holders, base quota shares on the landings records of the eight highest (of nine) years between 1993 and 2001

23. Among all eligible Class 1 license (see Initial Eligibility), base the allocation proportionately on the highest four (out of twelve) years during the 1990 through 2001 period

24. Issue IFQ share certificates to all eligible applicants who, based on their historical catch records of vessels they owned or operated, had red snapper landings between 1990 and 1992. Valid catch records will be based on 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)).

25. One half of the total initial allocation is to be divided equally among all Class 1 and Class 2 qualifiers (during 1990-92) and the other one-half is to be allocated proportionately based on landings records during the 1990 through 1992 period

26. One half of the total initial allocation to eligible Class 1 license is to be divided equally among all Class 1 qualifiers (during 1990-92) and the other one-half is to be allocated proportionately among Class 1 qualifiers (during 1990-92) based on landings records during the 1990 through 1992 period

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.

27. Initial allocation would be based on a combination of catch history and a measure of capital investment

Rationale: It would be difficult to accurately measure capital investment in the red snapper fishery because it is 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.

28. 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)).

29. To receive an initial allocation, the eligible person (see Initial Eligibility) must have established a minimum landings record of 100 pounds (whole weight)

30. To receive an initial allocation, eligible participants must have established a minimum average landings record of 100 pounds per year during the qualifying years[11].

Rationale: The Council views Rejected Alternatives 29 and 30 as unnecessarily restrictive to current Class 1 and 2 license holders.

[11]The AP expressed desire that landings beyond 2002 should not be used in the determination of minimum harvest requirements.

31. Individuals eligible for an initial allocation will receive a minimum IFQ share equivalent to 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

32. All Initial IFQ share certificates of less than X pounds (or percent of commercial quota) will be blocked (i.e., cannot be transferred).

33. All Initial IFQ share certificates issued to Class 2 license will be blocked (i.e., cannot be transferred).

34. IFQ share certificates and annual allocations are fully transferable by sale, lease, gift, or inheritance, not withstanding any specified limitations regarding to whom transfers may occur. Full transferability would apply to: 1) 100% of IFQ share certificates and annual allocations; or 2) X% of IFQ share certificates and annual allocations.

35. IFQ share certificates are not transferable. Annual allocations are fully transferable by sale, lease, gift, or inheritance, notwithstanding any specified limitations regarding to whom transfers may occur.

36. Neither IFQ share certificates or annual allocations are transferable.

37. Any eligible individual who is allocated less than five thousand pounds in the Initial Allocation will be allowed to transfer only to other eligible individuals who have been allocated less than five thousand pounds in the Initial Allocation. Transfer is implied to be limited to natural persons who are U.S. citizens or permanent resident aliens.

38. Blocked IFQ share certificates can only be transferred to IFQ shareholders who do not possess any unblocked certificates. Furthermore, IFQ shareholders may possess a maximum of x blocked IFQ share certificates.

39. Blocked IFQ share certificates can only be transferred to reef fish permitted vessels that do not possess any unblocked shares. Furthermore, IFQ shareholders may possess a maximum of x blocked shares.

Rationale: Limiting the type or amount of share transferability would be counterproductive to the program objectives of reducing overcapacity, and improving fishery efficiency and profitability.

40. IFQ share certificates and annual coupons can be sold but not leased

41. 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, (i.e., fixed term transfers or 'leases' of IFQ share certificates and/or annual coupons will be subject to the following restrictions. Either: 1) A person may transfer no more than x% of his annual coupons resulting from the IFQ share certificate held by that person to one or more persons for any fishing year; 2) A person may transfer any amount of the total annual coupons resulting from IFQ share held by that person to one or more persons for only x fishing years out of every y years; or 3) 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.

42. IFQ share certificate and coupon transfers would remain in the commercial sector (i.e., 50% income criteria) until such time that 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.

43. There will be no transfer of IFQ share certificates and/or annual coupons 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 implied to be limited to natural persons who are U.S. citizens or permanent resident aliens

44. IFQ quota shares initially issued to Class 2 license may only be transferred to persons in the commercial reef fish fishery during the first x years (or permanently) of the red snapper IFQ program. Transfer is implied to be limited to natural persons who are U.S. citizens or permanent resident aliens

45. All IFQ shares and annual coupons can be freely transferred to any U.S. citizen

Timing of First Transfer of IFQ Share Certificates and Annual Coupons

46. Allow the transfer of annual coupons and IFQ share certificates only after the implementation of a quota tracking system under Section 4.3

47. There will be no transfer of IFQ share certificates to non-qualified participants during the first five years of the red snapper IFQ program (i.e., transfer of quota shares will be restricted to eligible participants in the fishery)

NOTE: This constraint would significantly reduce the market and, hence, premium received for the transfer of quota shares (assuming there is a demand for quota shares by individuals in the commercial reef fish fishery other than those participating in the red snapper program). Constraining the number of buyers will result in a 'buyers market' for the quota shares; i.e., buyers of the shares will be able to purchase them at a lower cost than would be the case if the market were not constrained.

48. IFQ share certificates will only be sold between shareholders during the first five years of the red snapper IFQ program

NOTE: Some panel members expressed concern with this Alternative because it would limit the ability of an IFQ system to handle red snapper bycatch during the first five years of the program. In addition, concern was expressed that such an Alternative would create an elitist commercial fishery by completely restricting participation in the red snapper fishery to current shareholders for the first five years. Presumably, however, non-IFQ shareholders would be permitted to purchase annual coupons for handling bycatch.

49. 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 eligible participants in the fishery)

50. IFQ share certificates will only be sold between shareholders during the first four years of the red snapper IFQ program

51. Place a moratorium on the transfer of IFQ shares, which will begin upon implementation of this amendment and will expire after:
Alternative2A: Six months.
Alternative B: One year.

Use it or Lose It Clause

52. No IFQ share certificate or portion thereof shall revert to the management program, except in pursuance to rule violations

Disposition of Unused IFQ Shares and Coupons

53. Any coupons that remain inactive (inactive is defined as a minimum of x% usage per year) 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 they are not used

54. Any coupons that remain inactive in a given year (inactive is defined as a minimum of x% usage in that 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 that unused portions are harvested (e.g., an IFQ shareholder does not use 5 thousand pounds of his share in year 1. He decides to harvest it in year 3. His allowable harvest associated with the 5 thousand pounds is 5000(1 + 0.05)3 given a five percent interest rate[28]

NOTE: Both of these alternatives were rejected by the AHSAP because of prevailing thought that any form of "banking" could jeopardize the long-run red snapper rebuilding program; hence potentially leading to future declines in TAC.

Disposition of IFQ Shares and Allocations that Revert to Management Agency from Sanctions

55. IFQ shares/annual allocations sanctioned by NMFS will be proportionately reissued to shareholders for the period of the sanction.
Alternative A: Shares will be reallocated prior to final adjudication.
Alternative B: Shares will be reallocated subsequent to final adjudication.

56. IFQ shares/annual allocations sanctioned by NMFS will be proportionately reissued to shareholders indefinitely.
Alternative A: Shares will be reallocated prior to final adjudication.
Alternative B: Shares will be reallocated subsequent to final adjudication.

57. IFQ shares/annual allocations sanctioned by NMFS will not be reissued to shareholders.

58. Disposition of Unused IFQ Coupons Allocations by Individuals for Reasons Other than Sanctions

59. "Banking" of annual allocations will not be allowed. All unused allocations will be forfeited at the end of the fishing year.

[28]The interest rate should be tied to the growth rate of the red snapper stock with a possible discount.

Ownership Caps and Restrictions on IFQ Share Certificates and Allocations

60. No quota holder may hold more than eight percent of all IFQ share certificates issued for red snapper. Notwithstanding any of the limitations adopted under this sub-section, any eligible person who, during the initial allocation, receives an IFQ share in excess of these selected limitations 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 8 percent of the quota.

61. No quota holder may hold more than two percent of all IFQ share certificates issued for red snapper, nor more than two percent of any distribution of annual allocations for red snapper. Notwithstanding any of the limitations adopted under this sub-section, any eligible person who, during the initial allocation, receives an IFQ share in excess of these selected limitations 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.

62. No person may fish more than x percent of the IFQ coupons (denominated in pounds) issued in any given year.

63. 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 to pounds).

64. Allow coupon shares/allocations that are greater than the share totals.

Landings Restrictions

65. No restrictions will be placed on monthly landings of shareholders if they have sufficient coupons to cover the catch

NOTE: In general, the majority of the AHRSAP members did not consider "flooding" of the red snapper market as a threat serious enough to justify additional restrictions.

66. 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 one month. New bought quota shares would be included in the next year's cumulative owner's total to be landed

Monitoring and Transfer of Share

67. Establish a "clearing house" which administers the transfer of IFQ shares. This shall be composed of representatives from the industry and state and federal fishery agencies

NOTE: This alternative was rejected by the AHRSAP because of the belief that it would create unnecessary bureaucracy and that the process would be cumbersome in a free enterprise system created by an IFQ program.

68. Require all sales and leases of IFQ share certificates to be registered with and approved by the National Marine Fisheries Service. An administrative fee will be charged to handle the cost of registering the share transfers. Such registration of transfers is allowed only during the months of January through October each year (or other ten-month period prescribed by NMFS). The agency shall deny transfer of share certificates or portions thereof that are subject to pending sanctions.

69. Allow the transfer of IFQ share certificates to transpire under the usual procedures for transfer of private properties.

Monitoring of Transfers of Annual Coupons

70. Annual coupons issued in denominations of pounds to the shareholders would be freely sold, leased or traded with no agency notification

NOTE: The AHRSAP rejected this alternative because the prevailing thought was that lack of any agency notification would seriously undermine enforcement capabilities. Without these capabilities, the probability that the IFQ program would achieve the desired goals would be greatly diminished.

71. Annual coupons issued in denominations of pounds to the shareholders would be sold, leased or traded with agency notification, provided that coupons may be transferred only to red snapper IFQ shareholders

72. Annual coupons issued in denominations of pounds to the shareholders would be sold, leased or traded with no agency notification, provided that coupons may be transferred only to red snapper IFQ shareholders

73. Annual coupons issued in denominations of pounds to shareholders would be sold, leased or traded with NMFS notification

74. Transfer of annual allocations issued in denominations of pounds to shareholders would be registered with the agency.

75. Annual allocations issued in denominations of pounds to shareholders would be sold, leased or traded with no agency notification, provided that allocations may be transferred only to federal commercial reef fish vessel permit holders.

76. Annual allocations issued in denominations of pounds to shareholders would be sold, leased or traded with agency notification, provided that allocations may be fished only by federal reef fish commercial vessel permit holders.

Quota Tracking

77. 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.

78. Implement a quota tracking system similar to that adopted in the South Atlantic wreckfish fishery.

79. Require the following persons to file reports regarding landings and other information covered by IFQ holdings:
Alternative A: vessel/boat captains
Alternative B: red snapper dealer or first buyer
Alternative C: all holders of IFQ share certificates

Establishment of an Appeals Process

80. Employ a licensed arbitrator to render an opinion

81. Develop an appeals process associated with the IFQ program.

Structure of Appeals Process

82. A special advisory panel composed of commercial industry members will be appointed by the Council to review and evaluate appeals. Recommendations by panel members 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 approval/disapproval of 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

83. 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 recommendations of the 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

84. The Council will appoint members from participants in the IFQ system

85. Allow each major red snapper association to elect or appoint a member

86. The Council will appoint members who have no association with the red snapper industry

Filing Limitations

87. Filing of an appeal must be completed within 90 days of:
Alternative A: The effective date of the final regulation.
Alternative B: The postmark date of notification of initial allocation.

88. Filing of an appeal must be completed within x days of publication of the final rule associated with this amendment.

Set Aside for Legal Disputes

89. All shares distributed during the first four years of the IFQ program will be qualified by the condition that the initial allocation may be reduced by some quantity based on the outcome of legal disputes at some further date

90. During the first five years all shares distributed by the IFQ program will be qualified by the condition that they may be reduced by some quantity based on the outcome of legal disputes at some future date.

91. There will be no set-aside or other measure applied to compensate for legal disputes that ultimately could result in increases in shares or additional shares being distributed.

92. An amount recommended by the NOAA General Counsel, Southeast Region, but not more than x percent, will be set aside during the initial allocation of shares to cover any anticipated legal disputes that might result in increased share or additional shares being distributed under the

IFQ program. Any amount remaining in the set aside after the disputes have been settled will be distributed back to the initial recipients.

Size Limit Changes

93. Under an IFQ system the minimum size limit for red snapper for harvest by the commercial fishery shall be 13 inches with no reduction in TAC. The panel also recommends that the SEFSC adjust its modeling of red snapper to more accurately reflect the impact, in real terms, of what elimination of a size limit would do to the fishery.

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 eliminate the existing red snapper minimum size limit and require all red snapper captured be landed.

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.