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AMENDMENT 15
TO THE
FISHERY MANAGEMENT PLAN
FOR THE
REEF FISH FISHERY OF THE GULF OF MEXICO
(Includes Regulatory Impact Review, Initial Regulatory Flexibility
Analysis, and Environmental Assessment)
JUNE 1997

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
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CONTENTS

REEF FISH AMENDMENT 15

1.0 INTRODUCTION 1

2.0 HISTORY OF MANAGEMENT 4

3.0 PURPOSE AND NEED FOR ACTION 8

4.0 PROBLEMS IN THE FISHERY AND MANAGEMENT OBJECTIVES OF THE FMP
..... 9

 4.1 Problems 9

 4.2 Management Objectives of the Fishery Management Plan 10

5.0 PROPOSED ACTIONS 12

6.0 LICENSE LIMITATION SYSTEM ALTERNATIVES 15

 6.1 Basic Initial Allocation and Bycatch 15

 6.2 Licenses Initially Issued to Persons or Vessels 33

 6.3 Historical Captains 37

 6.4 Transferability of Licenses 39

 6.5 Number of Licenses That Can Be Owned by One Entity 41

 6.6 Transferability of Landing Records Related to Initial Eligibility for Licenses
..... 42

 6.7 Fishing Seasons 45

 6.8 Duration of License Limitation System 53

 6.9 Bycatch During the Closed Season 54

7.0 APPEALS BOARD FOR LICENSE ELIGIBILITY 56

 7.1 Establish an Appeals Board 56

 7.2 Structure and Function of Appeals Board 57

8.0 NON-FISH TRAP HARVEST ALLOWANCE
..... 59

9.0 VERMILION SNAPPER SIZE LIMITS 61

10.0 REMOVAL OF SEA BASS, GRUNTS AND PORGIES FROM FMP MANAGEMENT
..... 64

11.0 GREATER AMBERJACK SPAWNING SEASON CLOSURE 66

12.0 EXCLUSION OF SPECIES FROM THE AGGREGATE BAG LIMIT 69

13.0	<u>REGULATORY IMPACT REVIEW</u>	70
13.1	<u>Introduction</u>	70
13.2	<u>Problems and Objectives</u>	71
13.3	<u>Methodology and Framework for Analysis</u>	71
13.4	<u>Impacts of Proposed Alternatives</u>	71
13.5	<u>Private and Public Costs of Regulation</u>	72
13.6	<u>Summary of Expected Impacts</u>	72
13.7	<u>Determination of a Significant Regulatory Action</u>	75
13.8	<u>Initial Regulatory Flexibility Analysis</u>	75
14.0	<u>ENVIRONMENTAL ASSESSMENT</u>	79
14.1	<u>Effects on Physical, Human, Fishery and Wetlands Environments</u>	79
14.2	<u>Human Environment and Social Impact Assessment of Red Snapper License Limitation Alternatives</u>	79
14.3	<u>Effect on Endangered Species and Marine Mammals</u>	93
14.4	<u>Conclusion</u>	93
14.5	<u>Finding of No Significant Environmental Impact</u>	93
15.0	<u>OTHER APPLICABLE LAW</u>	94
15.1	<u>Habitat Concerns</u>	94
15.2	<u>Vessel Safety Considerations</u>	94
15.3	<u>Coastal Zone Consistency</u>	94
15.4	<u>Paperwork Reduction Act</u>	94
15.5	<u>Federalism</u>	95
16.0	<u>LIST OF AGENCIES AND PERSONS CONSULTED</u>	95
17.0	<u>PUBLIC HEARING LOCATIONS AND DATES</u>	96
18.0	<u>LIST OF PREPARERS</u>	96
19.0	<u>REFERENCES</u>	97

1.0 INTRODUCTION

This document principally includes alternatives for creating a license limitation system for the commercial red snapper fishery. Additional alternatives were considered by the Council in September 1996 and deleted. These deleted alternatives and the reason for deletion are contained in the Appendix to the Options Paper for Amendment 15. Alternatives for defining harvest allowances of reef fish from traps, other than permitted fish traps, stone crab traps and lobster traps, are included in Section 8.0. Size limits for vermilion snapper, removal of grunts, porgies, and sea bass from the FMP, greater amberjack seasonal closure, and 20-fish aggregate bag limit modifications are in Sections 9.0 through 12.0, respectively.

Background: The Council has been reducing participation to the commercial reef fish and red snapper fisheries since the implementation of Amendment 1. Since these Council actions affected decisions on allocations in this amendment, this summary is provided to facilitate understanding of the following sections (see Section 4 and 5.2 in Amendment 8 for additional detail). In the transition from open access, the Council under Amendment 1, implemented restrictive levels of harvest through specification of TACs, commercial quotas, recreational allocation, and size and bag limits (Section 11 - Amendment 1). Because of the very restrictive commercial quota on commercial red snapper harvest and a restrictive quota on grouper harvest, the Council felt it was not fair for recreational fishermen to sell their fish; therefore, such sale was prohibited. The Council also limited persons on board vessels with trawling gear, entangling nets, and longline gear (fished in other fisheries such as shark fishery) to a bag limit that could not be sold. Basically this gear was prohibited in directed fisheries for reef fish. The Council also provided for a vessel permit for fishing under the commercial quota and for sale of reef fish. To qualify for a permit the owner or operator must demonstrate that at least 50 percent of his earned income was derived from commercial or charter/head boat fishing. Charter and head boats were included since they traditionally fished commercially in their off-season. The intent of the Council was to limit access to the commercial fishery to commercial fishermen historically dependent on the resource. The Council also published a control date for the commercial fishery in 1989. The effect of the Amendment 1 actions was the elimination of participation in the commercial fishery of recreational fishermen who sold their catch under open access and part-time commercial fishermen, not significantly dependent on commercial fishing.

Under Amendment 4 (see Section 5 of that amendment), the Council established a moratorium on the issuance of additional reef fish vessel permits effective on date of implementation (5/92) for a three-year period (subsequently extended eight-months by Amendment 9). Transfer of permits was allowed by transfer of the vessel, i.e., the moratorium functioned as a temporary license limitation system. The Council's intent was to prohibit further access to the fishery by additional commercial participants during the moratorium while the Council evaluated a more comprehensive controlled access system (see Amendment 4 and SEIS on the fishery in Amendment 5 for discussion of overcapitalization). The moratorium was subsequently extended through 1999 by Amendment 11.

Because a derby developed in the commercial red snapper fishery, the Council by emergency rule (effective 12/30/92) created the red snapper endorsement system limiting permitted vessels, whose owners or operators could demonstrate landings of at least 5,000 pounds in two of the years 1990-1992, to vessel trip limits of 2,000 pounds and all other permitted reef fish vessels to trip limits of 200 pounds. Amendment 6 (6/93) extended the reef fish endorsement system, that was subsequently extended through 1995 by Amendment 9 and through 1997 by Amendment 13. The intent of the Council was to further restrict access to the commercial red snapper fishery to primarily those persons with a demonstrated dependence on the fishery (i.e., to endorsement holders) while the Council completed Amendment 8. In the process of developing this amendment and determining who would be eligible for participation, the Council determined that there was a class of vessel operators (called "historical captains" by Council) defined by U.S. courts as independent contractors² because they leased vessels from the owners under share agreements (see minutes of Ad Hoc Allocation AP). The Council, after review by Reef Fish and Ad Hoc Red Snapper APs and SSC, included historical captains¹ as participants who would be eligible under the limited access systems.

Amendment 9 provided for collection of the landings information from owners and operators who would provide information necessary to determine their eligibility for license limitation system alternatives and their shares under ITQ alternatives selected by the Council. These persons were provided landings information by trip from NMFS logbook and Florida trip ticket computer files for verification. They were also provided totals of landings for each qualifying year, 1990-1992, and information on how to compute what their ITQ share would likely be. All operators were provided the opportunity to provide documentation that might qualify them as "historical captains" (see 59 FR 39301, August 2, 1994 for legal definition).

Amendment 8 Actions:

In 1992, the Council began development of a limited access system for the commercial red snapper fishery with a series of three sets of workshops with the industry. Ten workshops were conducted during each set at ports along the central and western Gulf. During the first set, fishermen were asked to identify the problems and issues associated with the fishery. During the second set, they evaluated the effectiveness of both limited- and open-access alternatives in solving these problems. During the third set, they reviewed the results of

¹ Historical captains are classified as captains operating continuously in the red snapper fishery under a verbal or written agreement with an owner from prior to the control date of November 7, 1989 set for the reef fish fishery, who have landed at least 5,000 pounds of red snapper in two of the three years 1990, 1991, and 1992 and who can meet the more than 50 percent earned income requirement from the year of the control date (1989) to present. The agreement must provide that the captain is responsible for hiring the crew who were paid from the share under his control.

² The legal status of historical captains as independent contractors is based on federal court decisions in *Star Fish and Oyster Co. vs. USA* (Southern District of Alabama) and in *Gulf Coast Oyster and Shrimp Fishermen's Assoc. vs. USA* (Southern District of Mississippi).

opinions gathered in the previous workshops and selected management options that were subsequently presented to the Council.

In 1993, based partly on this information, the Council developed Draft Amendment 7 which included an individual transferable quota (ITQ) and license limitation system, and open access alternatives, with the ITQ system being the preferred alternative.

In the fall of 1993, following public hearings on Draft Amendment 7, the Council decided to subdivide that amendment creating Draft Amendment 8 which contained only license limitation and ITQ systems for further public review. They also decided to implement Amendment 9 in the interim period to collect landings data from vessels for the 1990-1992 period to be used as a basis for informing vessel owners and operators what their share would be under an ITQ system and for determining eligibility for ITQ and license limitation systems. Amendment 9 was approved by the Council in March, 1994. Additional reviews and revisions of Draft Amendment 8 were conducted during 1994. Public hearings were held in December, 1994 on this amendment that listed the Council's preferred alternative as the ITQ system.

In January, 1995 the Council heard public testimony and took action to select a license limitation system as their preferred alternative. The revised Draft Amendment 8 license limitation system was mailed to all holders of commercial reef fish vessel permits (about 1,500) to solicit their comments before final action was taken. In May, 1995 the Council took final action after hearing public testimony and selected the ITQ system as the preferred alternative. The amendment was submitted to National Marine Fisheries Service (NMFS) for implementation.

NMFS approved the amendment and published the final rule in the Federal Register on November 29, 1995 for implementation of the ITQ system in April 1996. Subsequent to that time, both House and Senate bills proposed amending the Magnuson Act to include moratoriums on ITQ systems for several years with retroactive dates on the moratorium that would preclude implementation of the red snapper ITQ system. The fiscal year (FY) 1996 congressional appropriations act included language that would prevent the expenditure of federal funds by National Oceanic and Atmospheric Association (NOAA) for implementing ITQ systems during the fiscal year.

In 1995, the Council had requested by emergency rule that the fishery be reopened under the red snapper endorsement system on February 1, 1996 with a one million pound quota, with the remainder of the quota becoming available under the ITQ system in April, 1996. Because of the pending congressional moratorium on ITQs, the Council developed and submitted to NMFS, for implementation, Amendment 13 which would extend the red snapper endorsement system through December 31, 1997 while the Council developed an alternative limited access system for the fishery.

2.0 HISTORY OF MANAGEMENT

Management actions, exclusive of those relating to the setting of total allowable catch (TAC), are listed below. The Reef Fish Fishery Management Plan was implemented in November 1984. The regulations, designed to rebuild declining reef fish stocks, included: (1) prohibitions on the use of fish traps, roller trawls, and powerhead-equipped spear guns within an inshore stressed area; (2) a minimum size limit of 13 inches total length for red snapper with the exceptions that for-hire boats were exempted until 1987 and each angler could keep 5 undersize fish; and, (3) data reporting requirements.

The National Marine Fisheries Service (NMFS) has collected commercial landings data since the early 1950's, recreational harvest data since 1979, and in 1984 initiated a dockside interview program to collect more detailed data on commercial harvest. The first red snapper assessment in 1988 indicated that red snapper was significantly overfished and that reductions in fishing mortality rates of as much as 60 to 70 percent were necessary to rebuild red snapper to a recommended 20 percent spawning stock potential ratio (SPR) - (See Section 5 below). The 1988 assessment also identified shrimp trawl bycatch as a significant source of mortality.

Amendment 1 to the Reef Fish Fishery Management Plan, implemented in 1990, set as a primary objective of the FMP the stabilization of long-term population levels of all reef fish species by establishing a survival rate of biomass into the stock of spawning age to achieve at least 20 percent spawning stock biomass per recruit (SSBR), relative to the SSBR that would occur with no fishing. It set a red snapper 7-fish recreational bag limit and 3.1 million pound commercial quota that together were to reduce fishing mortality by 20 percent and begin a rebuilding program for that stock. This amendment also established a 5-fish recreational bag limit and 11.0 million pound commercial quota³ for groupers, with the commercial quota divided into a 9.2 million pound shallow-water quota and a 1.8 million pound deep-water quota. A framework procedure for specification of TAC was created to allow for annual management changes, and a target date for achieving the 20 percent SSBR goal was set at January 1, 2000. This amendment also 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. Subsequent changes to the longline/buoy boundary could be made through the framework procedure for specification of TAC.

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

³ These values have been subsequently modified to correct for revisions adopted in the gutted to whole weight ratio. Historically, the conversion ratio used was 1.18, subsequently, the ratio has been corrected and 1.05 is used. This results in these values being 9.8, 8.2 and 1.6 million pounds respectively, for total, shallow-water and deep-water grouper quotas (e.g., $11.0 \div 1.18 \times 1.05 = 9.8$). There is no impact on the commercial fishery from the revision as fish have always been reported in gutted weight and that data is transformed to whole weight for NMFS records.

Amendment 3, implemented in July 1991, provided additional flexibility in the annual framework procedure by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice, except that the rebuilding period cannot exceed 1.5 times the generation time of the species under consideration. The amendment also transferred speckled hind from the shallow-water grouper quota category to the deep-water grouper quota category and established a new red snapper target year of 2007 for achieving the 20 percent SPR goal established in Amendment 1.

In November, 1990, NMFS announced that anyone entering the commercial reef fish fishery in the Gulf of Mexico and South Atlantic after a control date of November 1, 1989 may not be assured of future access to the reef fish fishery if a management regime is developed and implemented that limits the number of participants in the fishery. The purpose of this announcement was to establish a public awareness of potential eligibility criteria for future access to the reef fish resource, and it does not prevent any other date for eligibility or other method for controlling fishing effort from being proposed and implemented.

Amendment 4, implemented in May 1992, established a moratorium on the issuance of new reef fish permits for a maximum period of three years. The moratorium was created 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. It allows the transfer of permits between vessels owned by the permittee or between individuals when the permitted vessel is transferred. Amendment 4 also changed the time of the year that TAC is specified from April to August and included additional species in the reef fish management unit.

Amendment 5, implemented in February 1994, established restrictions on the use of fish traps in the Gulf of Mexico EEZ; implemented a three year moratorium on the use of fish traps by creating a fish trap endorsement and issuing the endorsement only to fishermen who had submitted logbook records of reef fish landings from fish traps between January 1, 1991 and November 19, 1992; created a special management zone (SMZ) with gear restrictions off the Alabama coast; created a framework procedure for establishing future SMZs; required that all finfish except for oceanic migratory species be landed with head and fins attached; established a schedule to gradually raise the minimum size limit for red snapper to 16 inches over a period of five years; and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations.

An Emergency Rule effective December 30, 1992 created a red snapper endorsement to the reef fish permit for the start of the 1993 season. 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. For the duration of the emergency rule, while the commercial red snapper fishery is open, permitted vessels with red snapper endorsements were allowed a 2,000 pound possession limit of red snapper, and permitted vessels without the endorsement were allowed 200 pounds. This emergency

action was initially effective for 90 days, and it was extended for an additional 90 days with the concurrence of NMFS and the Council. A related emergency rule delayed the opening of the 1993 commercial red snapper season until February 16 to allow time for NMFS to process and issue the endorsements.

Amendment 6, implemented in June, 1993, extended the provisions of the emergency rule for red snapper endorsements for the remainder of 1993 and 1994, unless replaced sooner by a comprehensive effort limitation program. In addition, it allowed the trip limits for qualifying and non-qualifying permitted vessels to be changed under the framework procedure for specification of TAC.

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

Amendment 8, which established a red snapper Individual Transferable Quota (ITQ) system, was approved by NMFS and final rules were published in the Federal Register on November 29, 1995. This amendment provided for an initial allocation of percentage shares of the commercial red snapper quota to vessel owners and historical operators based on fishermen's historical participation in the fishery during the years 1990-1992; set a four-year period for harvest under the ITQ system, during which time the Council and NMFS would monitor and evaluate the program and decide whether to extend, terminate or modify it; and established a special appeals board, created by the Council, to consider requests of contestants of initial allocations of shares or determination of historical captains. The appeals board was originally scheduled to meet during January 1996, with the ITQ system itself to become operational in April 1996. However, the federal government shutdown of December 1995-January 1996 forced an indefinite postponement of the appeals board meetings, and concerns about Congressional funding of the ITQ system made it inadvisable for the ITQ system to become operational at that time.

Amendment 9, implemented in July 1994, provided for collection of red snapper landings and eligibility data from commercial fishermen for the years 1990 through 1992. The purpose of this data collection was to evaluate the initial impacts of the limited access measures being considered under Amendment 8 and to identify fishermen who may qualify for initial participation under a limited access system. This amendment also extended the reef fish permit moratorium and red snapper endorsement system through December 31, 1995, in order to continue the existing interim management regime until longer term measures could be implemented. The Council received the results of the data collection in November 1994, at which time consideration of Amendment 8 resumed.

Withdrawn Amendment 10 would have extended the validity of additional fish trap endorsements for the duration of the fish trap moratorium that was implemented under Amendment 5. These additional endorsements were to have been issued under an emergency rule, requested in March 1994, to alleviate economic hardships after the Council heard from fishermen who entered the fish trap fishery after the November 19, 1992 cutoff date and stated that they were unaware of the impending moratorium. The Council rejected the proposed amendment in May 1994 after NMFS stated that it had notified fishermen of the pending moratorium and fish trap endorsement criteria during the time between Council final action and NMFS implementation if they asked about fish trap rules or if they requested application materials, and NMFS was aware that it was for purposes of entering the fish trap fishery. The Council also considered arguments that the change in qualifying criteria circumvented the intent of the fish trap moratorium to halt expansion of the fish trap fishery at the November 19, 1992 level. After the Council rejected Amendment 10, NMFS subsequently rejected the emergency request.

Amendment 11 was partially approved by NMFS and implemented in January 1996. Approved provisions were: (1) limit sale of Gulf reef fish by permitted vessels to permitted reef fish dealers; (2) require that permitted reef fish dealers purchase reef fish caught in Gulf federal waters only from permitted vessels; (3) allow transfer of reef fish permits and fish trap endorsements in the event of death or disability; (4) implement a new reef fish permit moratorium for no more than 5 years or until December 31, 2000, while the Council considers limited access for the reef fish fishery; (5) allow permit transfers to other persons with vessels by vessel owners (not operators) who qualified for their reef fish permit; and (6) allow a one time transfer of existing fish trap endorsements to permitted reef fish vessels whose owners have landed reef fish from fish traps in federal waters, as reported on logbooks received by the Science and Research Director of NMFS from November 20, 1992 through February 6, 1994. A number of additional issues that were originally in Amendment 11 were not addressed by the Council when it approved the amendment. Those issues have been placed in Amendment 12.

Amendment 12, partially disapproved by NMFS, and implemented in January 1997, reduced the recreational bag limit to one fish for greater amberjack and provided an aggregate reef fish bag limit of 20 for unregulated species. In addition, a disapproved provision in Amendment 12 to redefine optimum yield (OY) has been resubmitted to NMFS defining OY as 30 percent of SPR.

Amendment 13, implemented by NMFS in September 1996, extended the commercial red snapper endorsement system through 1997 while the Council considers alternative limited access systems for that fishery.

Amendment 14, implemented in March 1997, provided for a ten-year phase-out for the fish trap fishery; allowed transfer of fish trap endorsements for the first two years; and prohibited the use of fish traps west of Cape San Blas, Florida. The amendment also provided the

Regional Administrator (RA) of NMFS with authority to reopen a fishery prematurely closed before the allocation was reached and modified the provisions for transfer of commercial reef fish vessel permits.

3.0 PURPOSE AND NEED FOR ACTION

The current red snapper endorsement system, which was originally intended as an interim system of short duration, is essentially a closed access system. Transfer of the endorsement is allowed only on death or disability of the endorsement holder or to another vessel owned by the endorsement holder. General Counsel has indicated that a closed system created by a moratorium can exist only for a limited period without providing for transfer. Proceeding with a license limitation system that allows less restrictive transfer of endorsements or licenses would rectify this problem by allowing the opportunity for new participants to enter the fishery.

A license limitation system, as contrasted to the ITQ system under Amendment 8, will solve fewer of the problems in the fishery and achieve fewer of the objectives set forth by the Council for Amendment 8. However, failure to proceed with such a system allowing transfer will result in the necessity of returning to open-access management allowing all participants equal access to the annual commercial quota. This is anticipated to have effects on the industry that are more adverse than the current system, especially on the segment of the industry that historically was more dependent on access to the red snapper resource and was given preferential treatment for such access through the red snapper endorsement system.

The Council grandfathered in the current holders of reef fish trap endorsements through Amendment 14 included provisions to phase-out the trap fishery in ten years and limited the range of the fishery during this period to the west Florida shelf from the Keys to Cape San Blas. One of the difficulties in regulating this fishery is that there are no federal rules regulating harvest of reef fish in traps other than fish traps, creating a means to circumvent rules regulating trap harvest of reef fish. Alternatives for regulating this harvest are proposed.

The most recent stock assessments for vermilion snapper indicated that the stock was not overfished, but the current fishing mortality rate was so high that, if not reduced, it would eventually result in an overfished state (RFSAP, November 1996). Length-frequency information on recreational and commercial landings (Figure 31 from Schirripa, September 1996) indicated an increase in the minimum size limit would reduce this fishing mortality rate for an initial interim period and would increase yield-per-recruit (YPR).

The directed fisheries for sea bass, grunts, and porgies in the Gulf of Mexico occur predominantly off the Florida shelf with portions of that catch occurring within the nine-nautical-mile state fishery jurisdiction. Other than a size limit for black sea bass, the FMP has no rules regulating these species. The directed black sea bass commercial and recreational fisheries occur entirely off Florida. If these stocks were not included in the FMP, they could be more effectively managed by Florida.

Recent anecdotal and statistical information on the greater amberjack stock in the Gulf suggest the stock is declining in abundance. The Council, because of concern over the status of the stock, reduced the recreational bag limit from 3 fish to 1 fish through Amendment 12. This amendment proposes a similar reduction for the commercial fishery through the implementation of a spawning season closure.

Amendment 12 provided for a 20-fish aggregate bag limit for species of reef fish without bag limits. The regulations implementing this measure (15 January 1997) inadvertently included all species listed as occurring in the fishery rather than listing species in the FMP management unit. This created unanticipated adverse impacts on the recreational vessel for-hire sector and fishermen who use small unregulated reef fish as bait.

4.0 PROBLEMS IN THE FISHERY AND MANAGEMENT OBJECTIVES OF THE FMP

4.1 Problems

The following specific problems were identified for Amendment 15 for the red snapper fishery. Most, but not all, of these problems were also identified in Amendment 8, and many are related to the situation whereby the present quota management system creates a derby fishery.

- P-1 The harvest capacity of the current red snapper fleet is larger than necessary to produce the commercial quota in an industry-wide, economically efficient manner.
- P-2 The derby fishery compromises vessel safety by encouraging fishermen to begin or continue trips under adverse weather conditions.
- P-3 Total revenue derived from current landings is not reaching the highest level possible because the quota system creates a derby that tends to depress the average price paid to the fishermen.
- P-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.
- P-5 The release mortality associated with the incidental bycatch of red snapper after (and during) the commercial season adversely impacts restoration of the stock.
- P-6 The red snapper stock rebuilding program could be impacted by possible quota overruns associated with the derby fishery.

- P-7 User conflicts are being exacerbated by differential trip limits under the endorsement system and by the short red snapper quota seasons, that favor those fishermen who are closer to the resource, or have vessels that can operate in inclement weather.
- P-8 Net economic benefits are being eroded due to the market glut from the derby fishery and the inability of the industry to provide a red snapper product year round.
- P-9 The red snapper endorsement system will terminate in 1997 and cannot be extended because it is a system closed to new entrants. Unless replaced by a license limitation system, management will revert to open access with equal trip limits for each vessel and harvest allowed until the commercial quota is reached. This will exacerbate the derby fishery.

Problems related to management issues in Sections 8.0 through 12.0 are contained in the discussion for each section.

Discussion: As indicated above, most of the problems are related to the derby fishery as it affects the current harvesting sector. Another major problem is that recreational landings have been significantly exceeding the recreational allocation. This indirectly affects the commercial sector through the effect on recovery of the stock.

Although license limitation will probably not be as effective or efficient as ITQs, in reducing fleet capacity and addressing the adverse effects of the derby fishery, license limitation can certainly be structured to reduce the size or harvest capacity of the fleet. However, Roberts (1996) noted that in deciding on the level of reduction, if any, the Council should take into consideration a longer view of the status of the red snapper stock, i.e., as the stock is restored a larger total allowable catch (TAC) will become available for harvest. A too stringent reduction would reward the few participants allowed while requiring payment for future access for persons initially excluded. However, such a reduction would likely make the fishery economically more efficient. Another consideration in limiting participants should be the duration of the license limitation system. (See Section 6.8).

Under the license limitation system management measures can be included that spread out landings of the commercial quota over longer periods of time (e.g., multiple fishing seasons) that may alleviate some of the adverse economic effects of the derby fishery, but probably at a higher enforcement cost. This approach may reduce some of the adverse vessel safety effects.

4.2 Management Objectives of the Fishery Management Plan (FMP)

The original management objectives of the FMP are as follows:

Overall Goal: To manage the reef fish fishery of the United States within the waters of the Gulf of Mexico Fishery Management Council jurisdiction to attain the greatest

overall benefit to the nation with particular reference to food production and recreational opportunities on the basis of the maximum sustainable yield as reduced by relevant ecological, economic, or social factors.

Objectives shown in the original FMP:

FMP-1. To rebuild the declining fish stocks wherever they occur within the fishery.

FMP-2. To establish a fishery reporting system for monitoring the reef fish fishery.

FMP-3. To conserve and increase reef fish habitats in appropriate areas and to provide protection for juveniles while protecting existing and new habitats.

FMP-4. To minimize conflicts between user groups of the resource and conflicts for space.

Amendment 1 added the following objectives:

A1-1. The primary objective of the FMP shall be to stabilize long term population levels of all reef fish species by establishing a certain survival rate of biomass into the stock of spawning age to achieve at least 20 percent spawning stock biomass per recruit (SSBR).

A1-2. To reduce user conflicts and nearshore fishing mortality.

A1-3. To respecify the reporting requirements necessary to establish a database for monitoring the reef fish fishery and evaluating management actions.

A1-4. To revise the definitions of the fishery management unit and fishery to reflect the current species composition of the reef fish fishery.

A1-5. To revise the definition of optimum yield to allow specification at the species level.

A1-6. To encourage research on the effects of artificial reefs.

A1-7. To maximize net economic benefits from the reef fish fishery.

Amendment 15 broadened the objectives as follows:

A15-1. To increase the stability of the red snapper fishery in terms of fishing patterns and markets.

- A15-2. To avoid to the extent practicable the "derby" type fishing season.
- A15-3. To promote flexibility for the fishermen in their fishing operations.
- A15-4. To provide for cost-effective and enforceable management of the fishery.
- A15-5. To optimize, to the extent practicable and allowed by law, net benefits from the fishery.
- A15-6. To reduce the harvesting capacity of the red snapper fleet in an equitable manner utilizing demonstrated historical dependence on the red snapper resource as a criterion.

Discussion: Although the management measures of this amendment will contribute toward achieving the overall goal and many of the objectives of the original FMP and Amendment 1, the primary thrust of this amendment should be toward achieving the objectives listed for Amendment 15 that more specifically address a problem.

Under a license limitation, the benefits probably can not be optimized to the extent that they would have been under ITQs, but some management measures could improve the net economic benefits. The Council felt objective A15-5 would be related to allowing a bycatch during the closed season and did not specify a separate objective related to this problem.

5.0 PROPOSED ACTIONS

The following actions are proposed:

License Limitation Alternatives (Section 6.0)

- **(Section 6.1) Modify the eligibility criteria and initial trip limits to provide for two classes of licenses as follows:**

License Class	Qualification	Initial Trip Limit
1	Endorsement holder on March 1, 1997 and historical captains	2,000 lbs
2	Other reef fish permit holders on March 1, 1997 with red snapper landings between January 1, 1990 and March 1, 1997	200 lbs

Two classes of red snapper licenses will be issued. A Class (1) license will be issued to an income-qualifying owner or income-qualifying operator that had a commercial reef fish permit with a red snapper endorsement on March 1, 1997, and to qualifying historical captains (see Section 6.3). In the event of the death or disability of such owner or income qualifying operator between March 1, 1997 and

the date licenses are issued, the Class (1) licenses will be issued to the owner or operator to whom the red snapper endorsement was transferred and is currently issued. Each Class (1) license will entitle a permitted vessel using it to an initial trip limit of 2,000 pounds. A Class (2) license will be issued to the income qualifying owner or income qualifying operator that had a commercial reef fish permit on March 1, 1997 and had recorded landings of red snapper prior to March 1, 1997. Each Class (2) license will entitle a permitted vessel using it to an initial trip limit of 200 pounds. There will be no bycatch allowance, and no commercial harvest will be allowed for vessels without a red snapper license.

- (Section 6.2) A red snapper license is a license for a specified vessel that is issued to the qualifier for the license, i.e., an owner, income-qualifying operator, or historical captain. The vessel for which the license is issued will be specified by the qualifier. If issued to an income-qualifying operator or historical captain, the license is valid only when that operator or historical captain is aboard, until it is transferred to a new owner (Section 6.4). Such license is transferable independently of a reef fish vessel permit.
- (Section 6.3) In instances where the catch records of a vessel upon which a historical captain served were used to qualify a vessel for a license, the historical captain and owner would be issued separate class (1) licenses.
- (Section 6.4) Licenses may be transferred without restrictions.
- (Section 6.5) Place no limitation on the ownership of licenses by one entity of each class of license.
- (Section 6.6) Transferability of landing records related to initial eligibility for licenses are as follows:
 - (1) The landings records for the 1990-1992 period (or subsequent period, if applicable) are retained by the permittee if the permit was transferred to additional vessels owned by the permittee.
 - (2) The landing records for the 1990-1992 period (or subsequent period, if applicable) will be transferred to the new permit holder, if the vessel permit was transferred through sale of the vessel or transferred due to death or disability, unless there is an agreement under which the original permit holder retained such landing records.
 - (3) Notwithstanding other alternatives of this section that may be selected, an owner of a currently permitted vessel will retain the landings record for a vessel that was substantively controlled by him even though the ownership of such

vessel was in the name of a different legal entity. “Substantively controlled” means that the same entity had at least a 50 percent interest in the vessel immediately before and after the change of ownership or the change of ownership was from one to another of the following: husband, wife, son, daughter, brother, sister, mother, or father. The owner of a currently permitted vessel has the burden of proof of substantive control.

- **(Section 6.7.1) Annual Fishing Season Opening Dates - No Proposed Action.**
- **(Section 6.7.2) The commercial red snapper season will be opened at noon on the first day of each month and close at noon on the fifteenth day of each month until the commercial quota is reached and the season closed. Split the fishing season into two time periods with the first period to begin on February 1 with two-thirds of the quota and the second period on September 1 with the remainder of the quota.**
- **(Section 6.8) Extend the term of the red snapper licensing system indefinitely or until replaced by an alternate license management system.**
- **(Section 6.9) Status Quo - No allocation for bycatch.**

Appeals Board for License Eligibility (Section 7.0)

- **(Section 7.1) Create an appeals board to hear disputes and render an opinion.**
- **(Section 7.2) A special board composed of the state directors or their designees will review and evaluate appeals. Members of the board will forward their individual recommendations to the RA, who will render the final decision on the appeal.**

Non-Fish Trap Harvest Allowance (Section 8.0)

- **A vessel that has on board or is tending any trap other than a permitted reef fish trap, a stone crab trap, or spiny lobster trap may not possess in excess of the recreational bag limit of reef fish, which cannot be sold.**

Vermilion Snapper Size Limits (Section 9.0)

- **Increase the minimum size to 10 inches (TL).**

Removal of Sea Bass, Grunts, and Porgies from FMP Management (Section 10.0)

- **Remove sea bass (Centropristis sp.), grunts, (Haemulidae) and porgies (Sparidae) from management under the FMP.**

Greater Amberjack Spawning Season Closure (Section 11.0)

- **Close the commercial greater amberjack fishery during the months of March, April, and May in the Gulf EEZ.**

Exclusion of Species from the Aggregate Bag Limit (Section 12.0)

- **Remove from the species of reef fish subject to 20-fish aggregate bag limit those species that are in the reef fish fishery but not in the FMP management unit.**

6.0 LICENSE LIMITATION SYSTEM ALTERNATIVES

6.1 Basic Initial Allocation and Bycatch Provisions

See the background portion of Section 1.0 for discussion of previous actions taken by the Council to limit access to the fishery. These actions are related to the selection of alternatives in this section. **In this, and subsequent sections, “preferred alternative” is equivalent to “proposed action”.**

Notes: All weights used for allocation and for landings are whole weights of red snapper. It will be a condition of a commercial permit for reef fish, without regard to where red snapper are harvested or possessed, that a vessel with such permit: (1) may not possess red snapper in or from the Gulf of Mexico in excess of the applicable trip limit, and (2) may not transfer at sea red snapper in or from the Gulf of Mexico. All alternatives under 6.1 provide that initial trip limits could be modified for participating vessels under the framework procedure for TAC which provides that authority to the Council. For example, the trip limits could be initially set at 2,000 pounds for the Class (1) licenses and could be gradually increased annually as the stock recovers. NMFS may charge an administrative fee for the cost of issuing any licenses under this section. If landing records are used as a basis for determining eligibility under a license limitation system, only landings in the years 1990 through 1992 as collected by Amendment 9 and only vessel logbook records for subsequent years will be used. The preferred alternatives under Section 6.6 shall govern transfer of such records related to eligibility.

Preferred Alternative: Provide for two classes of licenses as follows:

License Class	Qualification	Initial Trip Limit
1	Endorsement holder on March 1, 1997 and historical captain	2,000 lbs
2	Other reef fish permit holders on March 1, 1997 with red snapper landings between January 1, 1990 and March 1, 1997	200 lbs

Two classes of red snapper licenses will be issued. A Class (1) license will be issued to an income-qualifying owner or income-qualifying operator that had a commercial reef fish permit with a red snapper endorsement on March 1, 1997, and to qualifying historical captains (see Section 6.3). In the event of the death or disability of such owner or income-qualifying operator between March 1, 1997 and the date licenses are issued, the Class (1) licenses will be issued to the owner or operator to whom the red snapper endorsement was transferred and is currently issued. Each Class (1) license will entitle a permitted vessel using it to an initial trip limit of 2,000 pounds. A Class (2) license will be issued to the income-qualifying owner or income-qualifying operator that had a commercial reef fish permit on March 1, 1997 and had recorded landings of red snapper prior to March 1, 1997. Each Class (2) license will entitle a permitted vessel using it to an initial trip limit of 200 pounds. There will be no bycatch allowance, and no commercial harvest will be allowed for vessels without a red snapper license.

Discussion: After reviewing all public testimony, the Council felt that all endorsement holders should be treated equally, rather than being divided into two license classes with different trip limits, as proposed in Rejected Alternative 10 (which was the Preferred Alternative of the draft amendment). This was partly due to the fact that in the five years of operation under the endorsement system, many fishermen had purchased larger, more efficient vessels and would have financial difficulties in operation of those vessels under a reduced trip limit, as proposed under Rejected Alternative 10. Another consideration was that the Magnuson-Stevens Act requires the Council to consider “present participation” in developing a limited access system. During that five years, the fishery had changed and the current endorsement holders represented the “present” participants and will be issued Class (1) licenses.

The Council selected the qualification for a Class (2) license as a compromise between allowing all vessels with reef fish vessel permits to have Class (2) licenses with an initial trip limit of 200 pounds, (as in Rejected Alternative 2), and allowing only a limited number to have such licenses, (as in Rejected Alternative 1). Under the Preferred Alternative, all vessels with current reef fish vessel permits without an endorsement that landed any red snapper in the period January 1, 1990 through March 1, 1997, (provided

those landings were documented in the data collected under Amendment 9 or in logbooks) would qualify for the Class (2) license. It is estimated that approximately 700 vessels may qualify (see Table E-2, as follows). Other participants on vessels not qualifying for the Class (2) license could purchase the license for this bycatch allowance. Non-endorsement holders landed only 5.6 percent of the total landings in 1996 (Table E-3).

Rejected Alternative 1: Two classes of red snapper licenses will be issued. A Class (1) license will be issued to an income qualifying owner or income qualifying operator that had a commercial reef fish permit with a red snapper endorsement on March 1, 1997, and to qualifying historical captains¹ (See Section 6.3). In the event of the death or disability of such owner or income qualifying operator between March 1, 1997 and the date licenses are issued, the Class (1) licenses will be issued to the owner or operator to whom the red snapper endorsement was transferred and is currently issued. Each Class (1) license will entitle a permitted vessel using it to an initial trip limit of 2,000 pounds. A Class (2) license will be issued to the income qualifying owner or income qualifying operator that had a commercial reef fish permit on March 1, 1997 whose vessel(s) landed at least 500 pounds in each of two of the years 1990 through 1992, as determined by the data collected under Amendment 9. Each Class (2) license will entitle a permitted vessel using it to an initial trip limit of 200 pounds. There will be no bycatch allowance and no commercial harvest will be allowed for vessels without a red snapper license.

Rejected Alternative 2: Issue the class (1) license to income-qualifying owners and/or operators who held an endorsement and historical captains as above, but issue the class (2) license to all other persons that had a commercial reef fish vessel permit on March 1, 1997 (approximately 1,225 additional persons) who will get an initial vessel trip limit of 200 pounds.

Rejected Alternative 3: Red snapper licenses will be issued to the current holders of red snapper endorsements (endorsees). Trip limits and other framework measures for red snapper license holders will be set through the framework procedure for setting TAC. There will be no bycatch allowance, and no commercial harvest of red snapper will be allowed for vessels without a red snapper license.

Rejected Alternative 4: Red snapper licenses will be issued to the current red snapper endorsees. Trip limits and other framework measures for both red snapper license holders and a bycatch allowance for permitted reef fish vessels without a red snapper license will be set through the framework procedure for setting TAC.

Rejected Alternative 5: Red snapper licenses will be issued for permitted reef fish vessels where the vessel (or its predecessor operating under another permit, if the

permit was transferred) had landings of at least 1,000 pounds in one of the three years 1990, 1991 or 1992. Trip limits and other framework measures for red snapper license holders will be set through the framework procedure for setting TAC. During the commercial season a possession and daily vessel landing limit of 50 pounds of red snapper will be allowed as a bycatch for permitted reef fish vessels without a red snapper license.

Rejected Alternative 6: If the Council changes the vessel trip limits in setting TAC, the ratio between trip limits for persons with a class (1) license and other persons with a Class (2) or (3) license will remain the same as the ratio for initial trip limits.

Rejected Alternative 7: Issue Class (2) licenses to all eligible applicants who, based on the historical catch records of vessels they owned or operated, had red snapper landings between 1990 and 1992, and who had the requisite eligibility status on:

- a. March 1, 1997, or,
- b. Upon implementation of the amendment (fall of 1997).
- c. Upon publication of proposed rule for the amendment.

Discussion of Rejected Alternatives: The date March 1, 1997 is included in the alternatives because it occurred when the commercial fishery was open. If the eligibility date occurred when the fishery was closed, then some of the current endorsement holders would be left out, as endorsement holders frequently lease vessels during the season. Alternative 1 was recommended by the Ad Hoc Red Snapper AP in 1994 because demonstrated landings of at least 500 pounds of red snapper in two of the three years, 1990-1992, was a minimal indication of dependence on the fishery and because the other persons should be excluded from participation in the commercial fishery. Therefore, a higher initial vessel trip limit is proposed for those persons with endorsements. Alternative 1 would essentially be similar to the current red snapper endorsement system, but would be more restrictive in terms of number of participants in the fishery. The number of licenses issued under Alternative 1, based on landings records collected under Amendment 9, would be between 225 and 266. The number of Class (1) licenses issued would be between 125 and 137, of which 4 to 5 would be historical captains and approximately 3 would be income-qualifying operators. The number of Class (2) licenses issued would be between 100 and 129 (James Davis-Martin, NMFS, personal communication).

Alternative 2 was recommended by the Reef Fish AP in 1994 who felt all persons with vessel permits should be allowed to participate. Part of their rationale was that this would allow Florida-based vessels to participate as the stock recovered off that state. This alternative would increase potential participants by approximately 1,225 although many of these are based in Florida and would not have access to red snapper. It would be essentially the same as the current red snapper endorsement system except that historical captains are included, and the license would be transferable. Of the approximately 1,450

vessels to which reef fish vessel permits were issued in 1995 and 1996, approximately 5 to 6 percent are issued to an income qualifying operator, i.e., 72 to 87 vessels. The percentage of such vessels has declined from 14.8 percent in 1990.

Alternatives 3, 4, and 5 were in the original draft Amendment 7 and were presented at public hearings, as were the two APs' 1994 alternatives. These alternatives ranged from the most restrictive (Alternative 3) to least restrictive (Alternative 5), allowing alternatives to be set between these extremes. All three alternatives exclude historical captains. Alternatives 3 and 4 provide that licenses be issued only to holders of red snapper endorsements; whereas Alternative 5 provides issuing a license to vessels that had records of landing 1,000 pounds in 1 of the 3 years 1990-1992, i.e., approximately 522 vessels. Alternative 4 and 5 provide for a trip limit for non-license holders to serve as a bycatch level while the season is open and is set initially at 200 pounds under Alternative 4, but could be adjusted in subsequent years. Under Alternative 5 this trip limit would remain at 50 pounds during the open red snapper season, and the level could be changed by amending the FMP or through the framework procedure for TAC.

Alternative 6 would provide for a constant ratio between endorsees and other persons licensed for trip limits specified in setting TAC; otherwise, the Council will have the flexibility under the TAC procedure to set trip limits for the two classes (or more) of licensees at levels they feel are more appropriate each year. Current is defined to mean upon implementation of this amendment unless otherwise specified.

Alternative 7 would provide (as does Alternatives 1 and 2 under Section 6.1) that the eligible persons must have had landings in 1990-1992, but current owners or operators would mean as of March 1, 1997 (during 1997 fishing season), or upon implementation of the amendment (fall of 1997), or date the proposed rule is published.

Rejected Alternative 8: Modify the eligibility criteria and initial trip limits of Alternative 1 to provide for up to 5 classes of licenses as follows:

License Class	1990-1992 Landings in 2 Out of 3 Years	Initial Trip Limit
1	More than 20,000 lbs.	2,500 lbs.
2	15,000 but less than 20,000 lbs.	2,000 lbs.
3	10,000 but less than 15,000 lbs.	1,500 lbs.
4	5,000 but less than 10,000 lbs.	1,000 lbs.
5	500 but less than 5,000 lbs.	500 lbs.

Other eligibility provisions of Rejected Alternative 1 will apply, including issuing licenses to qualifying owners and operators and to historical captains, as well as date

for eligibility under "current" permit or endorsement. No vessel will be issued more than one license.

Discussion of Rejected Alternative 8: Any multi-tiered allocation system could be selected from the alternative, ranging from 2 to 5 tiers of license classes. The estimated number of vessels that would qualify for each class of license is as follows:

Class	Number of Vessels
1	26.
2	10.
3	25.
4	64.
5	136.

As with Alternative 1, there would be no bycatch allowance (see Section 6.9), and no commercial harvest would be allowed for vessels without a red snapper license. Alternative 8 would result in a higher trip limit level for vessels landing more than 500 pounds in two of the qualifying years (1990-1992) than Alternative 1 (i.e., 500 vs. 200 pounds). Twenty-one percent of the red snapper endorsement holders would get higher trip limits (2,500 vs. 2,000 pounds), and 71 percent would get lower trip limits than under Alternative 1. Assuming that each vessel in each license class caught its limit on each trip, the potential change in total landings per trip for each class of license would be as follows:

Class	Change in Total Landings/Trip for all Vessels in Class (lbs.)
1	+13K
2	No change
3	-12.5K
4	-64K
5	+40K
Total	-23.5K

The net effect on overall landings for the fleet on a single trip basis would be a slight reduction (-8.5 percent) to no change over that for Alternative 1. This alternative would largely redistribute more of the allowable harvest capacity to vessels in the highest and lowest license classes.

Rejected Alternative 9: A single class of red snapper license will be issued to (1) current endorsement holders whose vessel(s) landed at least 10,000 pounds in one of the three years, 1993-1995 and to (2) other current reef fish vessel permit holders whose vessel(s) landed at least 2,000 pounds in one of the three years, 1993-1995 and, (3) eligible historical captains. Each license will entitle a permitted vessel using it to an initial trip limit of 2,000 pounds and all other permitted vessels are entitled to an initial bycatch allowance of 50 pounds per trip during the fishing season.

Discussion of Rejected Alternative 9: The effect of the eligibility provisions of this alternative would be to remove non-productive endorsement holders from the fishery and add reef fish vessel permit holders who meet the specified criteria.

Waters (1996a) randomly sampled permitted reef fish vessels in 1993 and classified 18 percent of the vessels with red snapper endorsements as low-volume producers. In examining the logbook data, Steven Atran (unpublished data) (Table 1), found that only approximately 73 percent of endorsement holders had red snapper landings in each of the three-years, 1993-1995. Fourteen percent had red snapper landings in only one year of the three-year period. During the three-year period 1993-1995, total red snapper landings increased for 77 percent of the endorsed vessels and declined for 23 percent, as compared to their total landings for the 1990-1992 period. Data from Table 2 indicates that of the 562 permitted vessels with some landings of red snapper in 1990-1992, 185 had no subsequent landings in 1993-1995. Of the remaining 377 vessels, 53 percent had increased landings in the 1993-1995 period, and the remainder decreased landings.

Based on logbook records for 1993-1995, the number of endorsement holders that would qualify under the criteria are 114 (91 percent). The number of other reef fish vessel permit holders that would qualify are 82 or 22 percent of vessels landing some red snapper during 1993-1995, if the landings criteria is 2,000 pounds in 1 of 3 years. The bycatch allowance of 50 pounds is provided to other vessels excluded by the criteria to reduce wastage of fish caught incidentally when targeting other species.

Rejected Alternative 10: Provide for three classes of licenses as follows:

License Class	1990-1992 Landings in 2 out of 3 years	Initial Trip Limit
1	More than 10,000 lbs. or more	2,000 lbs.
2	5,000 but less than 10,000 lbs.	1,000 lbs.
3	2,500 but less than 5,000 lbs.	500 lbs.

Class (1) or Class (2) licenses will be issued to an income qualifying owner or an income qualifying operator that had a commercial reef fish permit with a red snapper endorsement on March 1, 1997, and to qualifying historical captains. Class (3) licenses will be issued to an income qualifying owner or an income qualifying

operator that had a commercial reef fish permit without red snapper endorsement on March 1, 1997 and who had landed 2,500 pounds or more in 2 of the 3 years, 1990-1992.

In the event of the death or disability of such owner or income qualifying operator between March 1, 1997 and the date licenses are issued, the Class (1) or Class (2) license will be issued to the owner or operator to whom the red snapper endorsement was transferred and is currently issued while Class (3) license will be issued to the owner or operator to whom the commercial reef fish permit without red snapper endorsement was transferred and is currently issued. There will be no commercial harvest allowed for vessels without a red snapper license and no bycatch allowance.

Discussion: The estimated number of vessels that would qualify for each class of license is as follows:

Class	Number of Vessels
1	61
2	64
3	67
Total	192

The Ad Hoc Red Snapper AP (in 1996) recommended this as their preferred alternative: One of the principal reasons for recommending the eligibility and initial trip limit levels is that the current endorsement system created an inequity that resulted in the lower producers getting a significant wind-fall profit. Vessels with historical annual landings of 5,000 to 10,000 pounds were able under the endorsement system to increase landings to 20 to 25 thousand pounds; whereas, the highliners with annual landings equivalent to 72 to 80 percent of total landings were limited by the system to annual landings equivalent to 54 to 60 percent of total landings (Table 4). The AP proposed to reduce the trip limit for Class (2) licenses to correct this inequity. They also felt that the change in trip limit to 1,000 pounds would extend the duration of the commercial season. They limited the minimum eligibility level to 2,500 pounds in two of the years 1990-1992, feeling this was a minimum level for any dependence on the red snapper fishery. They raised the initial trip limit for that class of license (3) to 500 pounds, principally because it is not usually possible to make a profitable trip with the trip limit set at 200 pounds. The date, March 1, 1997, occurs during the commercial season prior to the date of implementation of the rule. If the eligibility date occurs when the fishery is closed, then some of the current endorsement holders would be left out, as endorsement holders frequently lease vessels during the season.

Economic Impacts

This particular set of measures, consisting of 11 alternatives, addresses the issue of allocation of licenses at the inception of the license limitation program. These alternatives determine

who will initially receive licenses and what type of licenses they receive. Licenses are differentiated by their associated initial trip limits, which can range from 200 pounds to 2,500 pounds (depending on the alternatives). Initially, there are three groups of individuals that may receive licenses: owners, operators, and historical captains. Eligibility to receive a certain type of license is based on two major conditions: 1) possession of valid reef fish permit and/or endorsement at some recent date, and 2) have a certain level of participation in the fishery, over the 1990-1992 period in most alternatives, 1993-1995 period in some cases, and 1990-1997 in one alternative. Eligibility for historical captains is specified in a different way, as discussed above.

There are three major issues to consider in assessing alternatives regarding initial distribution of licenses, namely, economic efficiency, equity, and potential success in achieving FMP objectives. A general discussion of these issues are discussed before assessing each alternative on the initial distribution of licenses.

The concept of economic efficiency can be related to the rationalization of harvesting capacity in the red snapper industry. Given a relatively open access type of fishery management, an over-commitment of labor and capital generally characterizes the fishery, and this problem has been manifested in the red snapper fishery through the emergence of a derby-type fishery. Table E-1 below shows the length of the commercial red snapper season over the years. Undoubtedly, the imposition of a restrictive quota in order to rebuild the red snapper stock provided the impetus for the derby-like fishery. Nevertheless, increases in quota in 1993 and 1996, coupled with the endorsement system and restrictive trip limits implemented in 1993, have not substantially lengthened the season. This condition merely underscores the presence of overcapitalization in the fishery, especially given a restrictive quota designed to rebuild the red snapper stock.

An effort limitation program can correct the problem of overcapitalization in the fishery. In such a program wherein there is a relatively free transfer and aggregation of fishing privileges, the initial determination of the recipient of fishing privileges plays a relatively minor role in eventually achieving economic efficiency. The basic rationale for this is that all major factors of production will be appropriately priced and thus are considered by business entities in deciding their most profitable type and level of operation. In the process of adjusting business operations, the value of the resource would be reflected in the price of those fishing privileges.

Table E-1. Commercial Red Snapper Fishing Season

Opened	Closed	Re-opened	Closed
01/01/90			
01/01/91	08/24/91		
01/01/92	02/22/92	04/03/92 ¹	05/15/92
02/06/93	05/21/93		
02/10/94	04/28/94		
02/24/95	04/15/95	11/04/95 ²	11/05/95
02/01/96	04/05/96	09/15/96 ³	10/07/96
02/01/97	03/26/97	09/02/97 ⁴	

¹Re-opened under a 1,000-pound trip limit for all permitted vessels.

²Re-opened for 36 hours due to pre-mature closure of the fishery on April 15, 1995.

³Second part of the split season under an increased quota of 4.65 million pounds.

⁴Proposed first start of the second season. Fishery will reopen to the 15th of each month until quota is taken.

In the present case, i.e., Amendment 15, the conditions are different in such a way that the initial distribution of licenses has some bearing on the eventual achievement of economic efficiency. While licenses may be transferred with relatively few restrictions, aggregation of licenses (even if allowed) would not bring about a relatively efficient fleet size. Due to the fact that licenses would assume some monetary value, reduction in the number of vessels to near an efficient fleet size is very unlikely to occur. Licenses will be bought and sold, but otherwise remain in the fishery. In addition, license prices would tend toward the upper end of the price range, and thus would limit the aggregation (if allowed) of licenses and reduction in fleet size. While attrition did occur under the endorsement system, from an original 131 to about 124 or 129 endorsements, it is very unlikely to happen under license limitation, primarily because licenses can be sold for a price. Even a large discount from the upper range of the potential license price is expected not to be a trivial amount. For efficiency consideration then, the initial distribution of licenses would have to be such that the current number of vessels operating in the red snapper fishery be reduced, or at least maintained if quota increases were expected.

Equity is perhaps the most controversial issue surrounding the initial distribution of licenses. While in and by itself, the equity issue has a broad scope, the feature that needs elaboration here is the conflict it presents with the achievement of economic efficiency.

The Socioeconomic Panel (SEP) (1996) remarked that although limiting licenses to a smaller number of participants may be economically efficient, allowing diversity within a fishery may provide improved adaptation to future changes regarding resource or social environment, including management. While fishermen may have once specialized within one fishery or fishing as their sole occupation, many have had to diversify within their occupational strategies

by taking on other fisheries or other jobs. This does not mean they consider themselves not to be professional fishermen, just that they do not make a living from fishing one species or from fishing as their sole occupation.

The SEP proceeded to note that allocating licenses to gain economic efficiency is based on the notion of a professional fishery which distinguishes between full-time and part-time fishermen. Such a distinction is difficult to make. Although the overall percentage of fish caught by so-called “part-time” fishermen may be small when compared with that of full-time fishermen, the income from fishing can be a significant portion of household income for low volume producers (Waters, 1996a). Assumptions that larger producers suffer the greatest impacts from regulation may or may not be correct at the household or community level. Allocating licenses in a manner which professionalizes the fishery can lead to social and economic dislocation as it decreases labor mobility.

It may be deduced from the comments of the SEP that equity demands maintaining the presence of both small and large producers in the red snapper fishery. This is likely to be achieved by differentiating licenses according to small and large producers at the start of the license limitation program and maintaining that differentiation throughout the life of the program.

The various FMP objectives are outlined in Section 4 of this document. Each alternative will be assessed as to the extent that it addresses the various objectives. It can be expected that some measures may help in achieving some objectives at the expense of exacerbating some problems in the fishery.

The **Preferred Alternative** is estimated to allow approximately 567 to 700 vessels to receive licenses. Of these, about 129 current endorsees and 4 to 6 historical captains are qualified to receive Class (1) licenses and the rest, Class (2) licenses. Among the recipients of Class 1 licenses are 3 operators. The number of operators qualified to receive Class 2 licenses is unknown. Class 1 and Class 2 licensed vessels are allowed commercial trip limits of 2,000 and 200 pounds, respectively.

In structure, the preferred alternative is similar to the current management system for red snapper. Although maintaining the status quo would have no impacts on the fishery, there are certain nuances offered by transforming the current system into a license limitation program, especially when viewed against future management program after the ban on individual fishing quota system and/or aggregation of licenses is lifted.

The current endorsement system has been in effect since 1993, and endorsements are renewable on an annual basis. However, endorsees are given one year to renew their endorsements after the expiration date. In addition, endorsements and vessels can be transferred, or leased, subject to certain conditions.

These features have resulted in year to year variation in the number of endorsements and endorsed vessels. Table E-2 shows this variation as well as the variation in the number of vessels without endorsement that landed red snapper. Information on this table are based on the permit file and logbook data. The entry and exit columns refer to changes in vessels using the endorsement, and do not necessarily mean a change in ownership of endorsements. The

“no landings” column reports the number of vessels with endorsements that did not show in their logbooks any landings of red snapper. The last column shows the number of vessels without endorsement that landed red snapper.

Table E-2. Number of Vessels with and without Endorsement

Year	Vessels with Endorsement				Vessels without Endorsement
	Entry	Exit	Total	No Landings	
1993	131		131	7	486
1994	15	22	124	2	422
1995	14	12	126	0	316
1996	13	14	125	6	302
1997	21	17	129	n.a.	n.a.

n.a. — not available.

The table shows that while the number of endorsements varies from year to year, the variation is not wide. At the most, there are 129 endorsed vessels that would qualify for Class 1 licenses. On the other hand, the last column indicates that the number of non-endorsed vessels landing red snapper has steadily declined from 486 in 1993 to 302 in 1996. Logbook data for 1997 are not yet available for use in determining the number of vessels without endorsement that landed red snapper in 1997.

Considering that the preferred alternative renders eligible to receive a Class 2 license any vessel with valid commercial reef fish permit as of March 1, 1997 with any red snapper landings in any year prior to such date, the number of such eligible vessels would exceed the number of non-endorsed vessels landing red snapper for any one year. As of March 1, 1997, 1,295 commercial reef fish permits without red snapper endorsement have been issued. Based on logbook data for the period 1993-1996 and Amendment 9 data for the period 1990-1992, about 567 of currently permitted vessels without endorsement have had red snapper landings in at least one of the years from 1990 through 1996. Considering the transferability of permits during the endorsement period, 567 vessels may be considered the minimum number qualified to receive Class 2 licenses. As mentioned elsewhere in this document, the number of vessels qualified to receive Class 2 licenses can be as high as 700. Either number is definitely significantly larger than that landing red snapper in 1996 or earlier years as depicted in Table E-2.

In view of the fact that the preferred alternative would allow more vessels in the fishery, no gain in efficiency can be expected thereof. Potential loss in efficiency can occur if fishing effort increases, and whether or not effort increases depends largely on the behavior of those receiving licenses.

As Table E-2 shows, the number of endorsed vessels has varied only slightly while the number of non-endorsed vessels with red snapper landings has been declining through the years. Another way of characterizing the fishery is to look at landings by these two types of vessels. Table E-3, based on logbook data, presents the landing history of both endorsed and non-endorsed vessels.

Table E-3. Historical Landings of Endorsed and Non-Endorsed Vessels

Year	Pounds Landed		Percent Share	
	Endorsed	Non-endorsed	Endorsed	Non-endorsed
1993	2,734,434	383,305	87.7	12.3
1994	2,856,980	243,411	92.1	7.9
1995	2,929,856	166,243	94.6	5.4
1996*	3,832,718	227,391	94.4	5.6

*Preliminary.

Table E-3 indicates that, since the inception of the endorsement system, most of the red snapper landings have been accounted for by vessels with endorsement. The share of landings by non-endorsed vessels has been relatively low, and in fact has dropped from 12.3 percent in 1993 to 5.6 percent in 1996. If this type of behavior continues under the license limitation regime, any potential loss in efficiency from issuing more Class 2 licenses than the current number of active participants may be expected to be minimal. There is, however, good reason to believe that the expected fishing behavior of recipients of both classes of licenses would differ from the current one under certain circumstances described below.

If sometime in the future (after October 1, 2000), the license limitation program is converted into an ITQ program (with the required referenda), there is a strong possibility that landings during the license limitation period would be included in assigning various ITQ shares. That possibility presents a strong incentive for endorsees to increase their landings so as to maximize their share of the quota at the onset of the ITQ program. Less than active endorsees could pose serious competition to highly active endorsees. This could lead to an increase in overall fishing effort that may involve more capital investment, worsening in the process both the derby and overcapitalization in the fishery.

Class 2 license holders would also face a similar incentive to intensify their fishing activities. Currently active participants may intensify their fishing effort. In addition, non-active participants would either actively participate in the fishery or lease out their licenses in order to increase their chances of being allotted initial ITQ shares. They also have the option to sell their licenses to, most likely, would-be active fishery participants. Whatever is the case, their actions could only add more effort and/or capitalization in the fishery. However, such increase in effort and capital investment could partly be offset by their expectation on the type of an

ITQ system that may be developed for the fishery. The Magnuson-Stevens Act provides that in developing an ITQ system for the red snapper fishery, two referenda will have to be conducted, one before developing the specifics of the ITQ program and another before submitting the ITQ plan amendment to the Secretary of Commerce for his approval and implementation. In both referenda, only persons holding a reef fish permit with red snapper endorsement on September 1, 1996 and captains who harvested red snapper on vessels with endorsement in each fishing season between January 1, 1993 and September 1, 1996 may vote in the referenda. Owners and captains of vessels with Class 2 licenses are thus afforded limited direct participation in the determination of an ITQ program. Given that scenario, there is a strong possibility that the eventual ITQ system would contain provisions limiting the share of the commercial red snapper quota allotted to Class 2 licensees. This may partly dampen Class 2 license holders' incentive to intensify fishing or undertake capital investment during the license limitation period. It may be noted, though, that if historical share were considered, Class 2 licensees can argue for as much as 12 percent share of the commercial red snapper quota. This is still slightly more than twice their 1996 share, and could still trigger an increase in fishing effort by Class 2 licensees.

While the foregoing discussion has demonstrated that the Preferred Alternative would not reduce fleet size or effort in the red snapper fishery, and in fact may even increase fishing effort or capital investment, it may be expected to prevent an increase in fleet size when contrasted with an open access system. Under an open access system with relatively unrestricted entry into the fishery, the derby and overcapitalization problem would only worsen. Seen against this backdrop, the Preferred Alternative may be viewed as a measure that can prevent a substantial erosion of economic efficiency in the fishery.

The two-tier system under the Preferred Alternative would allow small fishing operations (Class 2 licensees) to remain in the fishery or even increase their presence. This condition, coupled with the same trip limits, would not tend to professionalize the fishery. The SEP has noted that, in general, a professionalization of the fishery could lead to social and [short-term] economic disruption as it decreases labor mobility. Such disruption would be minimized especially for those whose red snapper income forms a significant portion of their total income.

A similar absence of disruption among Class 1 license recipients may be expected. Throughout the course of the endorsement system, they are likely to have become dependent on red snapper for a good portion of their income. Maintaining the same trip limits and number of participants for this class of licenses would tend to protect their investment and profitability. Considering, however, a possible scenario regarding future allocation of individual shares under an ITQ program, competition within this license class would stiffen and could pose potential disruption in the participants' fishing operations.

The Ad Hoc Red Snapper AP has suggested that the endorsement system has created an inequity by allowing low producers to increase their landings share at the expense of highliners. This type of inequity will be maintained under the preferred alternative, although such change in shares has not necessarily translated to reductions in landings for the highliners

partly because the commercial quota has been increased in 1996 and the share of non-endorsees has decreased over the years.

There are certain objectives of this amendment that have direct relevance to the consideration of license limitation in general and the Preferred Alternative in particular. The establishment of a license limitation program in the red snapper fishery addresses Objective A15-2, that is, to avoid to the extent practicable the derby type fishing season. This program would not eliminate the derby problem but would contain the worsening of the derby effect relative to an open access system, by restricting entry into the fishery. The Preferred Alternative would provide that effect, but would not meet Objective A15-6 in a meaningful way, since no vessel reduction would be introduced and in fact fishing effort may increase, as discussed. To some extent, the Preferred Alternative would provide some level of stability in the red snapper fishery (Objective A15-1), since the number of vessels in the fishery would be limited to the number of original licenses issued. But it cannot be expected to increase stability, since a likely increase in effort may be expected. Objective A15-3, which is to promote flexibility for the fishermen in their fishing operations, would be addressed, in a limited way, mainly through the permanency of licenses that would assure license holders some level of participation in the fishery. Derby fishing would still characterize the red snapper fishery.

With certain differences noted below, the described impacts of the Preferred Alternative may also be expected of the rejected alternatives, except Rejected Alternative 6. This particular alternative refers mainly to the ratio of trip limits allowed between license classes. There also are some differences noted in the discussion of Rejected Alternative 10.

Rejected Alternative 1 differs from the Preferred Alternative only with respect to eligibility requirement for Class 2 licenses which is more restrictive under the latter. Considering that this alternative would allow fewer vessels to remain in the fishery, its efficiency feature may be considered superior to that of the Preferred Alternative. It does, however, increase the potential social and economic disruption to the extent that current landing distribution would likely be altered. Much like the Preferred Alternative, Rejected Alternative 1 would maintain the type of inequity introduced by the endorsement system regarding the relative share of the quota landed by highliners and other endorsed vessels.

Rejected Alternative 2 also provides for two classes of licenses, but the number of vessels granted Class 2 licenses would be significantly greater than that under the Preferred Alternative. The approximate number of Class 2 licenses to be issued would be 1,295 under Rejected Alternative 2 and 567 to 700 under the Preferred Alternative. Economic efficiency would tend to worsen under this alternative, but to a large measure, the social disruption created would be less as labor and vessel mobility would be slightly enhanced.

Rejected Alternative 3 would limit initial participation in the license limitation program only to those with current endorsements. The efficiency aspect of this alternative appears to be better than that of the Preferred Alternative for two reasons. First, the uniformity of trip limits

for all license holders would not tend to increase the average cost of any licensed vessel. Second, the number of vessels would be significantly reduced. As can be gleaned, however, from Table E-3, the vessels that would be forced out of the fishery are mainly those that have small and dwindling level of participation. In which case, effort would not necessarily decrease. This alternative's equity aspect would be worse than that of the Preferred Alternative, since labor mobility would now be severely restricted by disallowing part-time fishermen access to the fishery, except through lease or purchase of licenses.

Rejected Alternative 4 has virtually the same efficiency and equity effects as Rejected Alternative 3.

Rejected Alternative 5 provides for only one type of license in the same way as in Rejected Alternatives 3 and 4. However, the number of licenses, particularly of Class 1 type, issued would be significantly greater, since any permitted vessel with 1,000 pound landing in only one the years 1990, 1991, and 1992 could qualify for the license. This is bound to introduce further inefficiencies into the fishery by attracting more capital to harvest a given amount of quota. While the equity aspect relative to the past distribution of landings may appear better than that of the Preferred Alternative, the potential level of trip limits imposed may obviate the potential enhancement of the equity feature of the license limitation program.

Rejected Alternative 6 proposes to maintain the same trip ratio(s) among the various license classes throughout the duration of the license limitation program. By maintaining such ratio, the relative impacts on efficiency and equity would not significantly differ from those of the initial impacts whatever alternative for differentiating trip limits would be adopted at the start of the license limitation program.

Rejected Alternative 7 may be considered to fall between Rejected Alternatives 1 and 2 in terms of the number of Class 2 licenses that would be issued. Its consequent impact on efficiency and equity would fall in between the two rejected alternatives.

Rejected Alternative 8 provides for 5 license classes. This alternative would allow for significantly fewer number than the Preferred Alternative, but its overall effect on efficiency would possibly be lower than that of the Preferred Alternative. About 20 percent of endorsed vessels would qualify for larger trip limits, 8 percent with the same trip limits, and the rest with lower trip limits. Efficiency improvements among the 20 percent recipients of larger trip limits are bound to be more than negated by the inefficiency introduced on most endorsed vessels. The overall profitability of vessels with endorsements would likely fall as average costs for those with lower trip limits would increase especially if they had made significant investments in the fishery in order to compete with vessels that were more efficient at the start of the endorsement program. On the other hand, those qualified to fish for the same or higher trip limits would not experience significant reductions in average costs. There would ensue, in the process, a different configuration of landing distribution in favor of the highest and lowest license classes. To some extent, this redresses the inequity introduced by the

endorsement system, as pointed out by the Ad Hoc Red Snapper AP, but at the expense of introducing another inequity against some of the endorsed vessels and non-endorsed vessels that depend on red snapper for a good portion of their total income.

Rejected Alternative 9 provides for one type of license, similar to Rejected Alternatives 3, 4, and 5. This alternative is likely to result in fewer number of licenses than Rejected Alternative 5. Some of the endorsement holders would be ineligible while some non-endorsees would be eligible to receive licenses. The efficiency aspect of this alternative may be better than that of Rejected Alternative 5, but its equity aspect appears to be worse.

Rejected Alternative 10 is estimated to allow 192 vessels to receive licenses, based on landings history for the period 1990-1992. As in the case with the Preferred Alternative 4 to 5 historical captains and 3 operators would qualify to receive Class 1 licenses. About half of the qualified endorsees would retain their 2,000-pound trip limits, and the rest would experience a 50 percent reduction in trip limits. It is not known at present how many vessels would actually be granted Class 3 licenses, since one requirement is that they qualify based on their 1990-1992 landings and they have valid commercial reef fish permit as of March 1, 1997. At any rate based on 1990-1992 landings alone, about 67 out of 300 or so vessels without endorsement would qualify to access the red snapper fishery at the start of the license limitation program. These 67 vessels would be granted a 150 percent increase in their trip limits.

Providing for a multi-tiered license limitation program is unlikely to bring about a more efficient fishery relative to the current endorsement system unless some reduction in vessels is effected. Rejected Alternative 10, with its three tier system of licenses, does not materially reduce the fleet; it merely changes the distribution of commercial quota among the vessels already in the fishery. Any potential gain in efficiency from fewer rivals among the Class 1 licensees is easily eroded by the inefficiency introduced on Class 2 licensees. The presence of Class 3 licenses further complicates the attainment of efficiency. The objective of this latter group of fishermen is different from that of the other groups. Being mainly part-timers, their major decision involves maximizing the number of trips in the red snapper fishery. Considering the increase in trip limits for Class 3 licensees, there would arise within this group the incentive to introduce more capital into the fishery. On the other hand, Class 2 licensees would not have the incentive to reduce their capital. Any investments they have already made under a 2,000-pound trip limit are unlikely to be liquidated under a lower trip limit. Their total average cost would simply increase with the reduction in trip limits. It would appear that the condition for receiving a Class 3 license would reduce effort in the fishery, since there is the potential for a large reduction in fleet size. If such were the case, this rejected alternative may be adjudged superior to the current endorsement system from an efficiency standpoint. Such reduction in fleet size, however, does not translate to significant effort reduction, since non-endorsed vessels play a relatively small part in fishery, as can be inferred from Table E-3.

While, as contended, Rejected Alternative 10 would not reduce fleet size or effort in the red snapper fishery, it may be expected to prevent an increase in fleet size. In addition, it may

prevent an increase in effort when contrasted with the option of managing the red snapper fishery under an open access system. Under this system, the non-endorsed vessels could readily compete with the currently endorsed vessels in the harvest of red snapper. The derby problem would only worsen in the process.

The three-tier system under the Rejected Alternative 10 would allow small fishing operations (Class 3 licensees) to remain in the fishery, but the number of these entities would be substantially reduced. This condition, coupled with an increase in trip limits for the remaining non-endorsed vessels, would tend to professionalize the fishery. The SEP has noted that, in general, a professionalization of the fishery could lead to social and [short-term] economic disruption as it decreases labor mobility. Such disruption would particularly hit hard those fishing operations whose red snapper income forms a significant portion of their total income.

A similar disruption among Class 2 license recipients may be expected. Throughout the course of the endorsement system, they are likely to have become dependent on red snapper for a good portion of their income. The proposed 50 percent reduction in their trip limits would have more than an inconsequential adverse impact on their profitability.

The above-described inequity introduced by the Rejected Alternative 10 may partly be offset by taking account of past participation in the fishery, and thus correcting the type of inequity claimed by the Ad Hoc Red Snapper AP. The creation of Class 1 and Class 2 licenses has been deemed to restore, in part, the past distribution of landings.

From an equity standpoint then, Rejected Alternative 10 offers a trade off between past and present distribution of landings, with slight bias in favor of past distribution. Placing more weight on past over current landing distribution has been a hallmark of Council decision on catch allocation. In this sense, the public has been made aware of Council predilections, and this ought to have been factored in the fishing public's decision to participate in the red snapper fishery. Thus, while Rejected Alternative 10 would introduce some inequity into the potential distribution of landings, that inequity would partly be offset by a move toward the past distribution of landings.

Rejected Alternative 10 shares many of the aspects of the other alternatives, including the Preferred Alternative, in addressing the objectives of this plan amendment. The major differences are noted below.

Rejected Alternative 10, by imposing a license limitation program for the red snapper fishery, would not eliminate the derby problem but would contain the worsening of the derby effect, by restricting entry into the fishery (Objective a15-2). It would not meet Objective A15-6 in a meaningful way, since the potential vessel reduction would affect mainly the vessels that have small participation in the fishery. In addition, as discussed earlier, there arises the tendency for Class 3 licensees to increase their capacity to take advantage of the increased trip limits while there is no incentive for Class 2 licensees to reduce their capacity. To some extent, this alternative would provide some level of stability of the red snapper fishery

(Objective A15-1), since the number of vessels in the fishery would be limited to the number of original licenses issued. But it cannot be expected to increase stability, since a likely increase in effort may be expected from Class 3 licensees. Objective A15-3, that is, to promote flexibility for the fishermen in their fishing operations, would be addressed in a limited way, mainly through the permanency of licenses that would assure license holders some level of participation in the fishery. As in the case with the Preferred Alternative, derby fishing would still characterize the red snapper fishery under Rejected Alternative 10.

Environmental Consequences (See Section 14.2 for additional discussion)

Physical Environment: The alternatives in this section will have no impact on the physical environment.

Human Environment: The alternatives in this section principally affect the human environment in that they relate to who can participate in the commercial red snapper fishery and the initial trip limits allocated to eligible participants. The public hearing minutes and May 1997 Council minutes constitute the SIA on the allocation issue. The most liberal in terms of participation is Rejected Alternative 2 (approximately 1,450 vessels). The most restrictive in terms of participants is Rejected Alternative 3 (approximately 125-130 vessels). The most liberal in terms of initial trip limits is Rejected Alternative 5 (equal trip limits for up to 533 vessels). The Preferred Alternative will limit participation to endorsement holders and historical captains who are most dependent on the resource historically (about 134 vessels), and provide a 200-pound bycatch allowance to about 700 vessels.

Fishery Resources: In general, the alternatives of the section will have little impact on the red snapper resources since commercial harvest ceases when the quota is harvested. The alternatives restricting participation may have a slightly beneficial effect in that the number of vessels able to possess commercial quantities of red snapper will be reduced, possibly enhancing enforcement.

Other Fishery Resources: The alternatives significantly reducing participation in the red snapper fishery would have probably resulted in excluded vessels targeting other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.2 Licenses Initially Issued to Persons or Vessels

Preferred Alternative: A red snapper license is a license for a specified vessel that is issued to the qualifier for the license, i.e., an owner, income qualifying operator, or historical captain. The vessel for which the license is issued will be specified by the qualifier. If issued to an income qualifying operator or historical captain, the license is valid only when that operator or historical captain is aboard, until it is transferred

to a new owner (see Section 6.4). Such license is transferable independently of a reef fish vessel permit.

Rejected Alternative 1: It is the intent of the Council that licenses be issued to persons. (In the event that a license is issued to a vessel owner, the term "person" specifically includes a corporation or partnership.) A license issued to a vessel owner may be used by any permitted vessel owned by the owner, without regard to who operates the vessel. A license issued to an operator is valid only aboard a permitted vessel when the named operator is aboard and in charge of the vessel. In any case, a license must be aboard the vessel. Historical captains are included as eligible persons.

Rejected Alternative 2: A red snapper license is issued to a person. That person (or his/her operator) must be aboard any federally permitted reef fish vessel in order to harvest red snapper under the license:

- a. Person is defined as the vessel owner, or
- b. Person is defined as the person (vessel owner or operator) whose income was used to qualify for the vessel permit, or
- c. Person is defined as the person (vessel owner or operator) whose income was used to qualify for the vessel permit, and historical captains.

Rejected Alternative 3: A red snapper license is a vessel license issued to a federally permitted reef fish vessel, and may be renewed, transferred, or revoked separately from the reef fish permit. A license that is issued based on the qualification of an operator or that is issued to a historical captain would be valid only when the operator or historical captain¹ was aboard and in charge of the vessel.

Discussion: The Preferred Alternative was proposed by NMFS because if a license is usable when carried aboard any vessel permitted in the reef fish fishery, a single permit could be in use virtually constantly during the open season. Each license could be put aboard another vessel immediately after offloading fish from a trip. This would exacerbate the derby nature of the fishery and shorten the fishing season. The regulations would have to ensure that the license remain on board a vessel while red snapper are on board. Otherwise, an enforcement officer would have no way to ascertain the vessel's appropriate trip limit other than by being present when the vessel landed. Also, a list of vessels with red snapper endorsements would never be available, thus complicating enforcement.

Similarly, if a license is issued to a person and is usable when that person and the license are aboard any vessel permitted in the reef fish fishery, special provisions would have to be made for licenses issued to owners, who could not reasonably be expected to accompany each of his/her vessel's trips. Even so, the "ownership" of a license would likely be transferred prior to the open season to an individual who would be able to take his/her license aboard another

vessel immediately upon completion of a trip. The effects on the length of the fishing season and on enforcement would be the same as described above.

A red snapper license issued for a vessel, and specifically to the qualifier for that license, as is the case with the current red snapper endorsements, would ensure that enforcement officers and dealers would know which vessels are authorized to take the appropriate trip limit. Such issuance would not preclude the license being transferable independently of a reef fish vessel permit. Permit/endorsement transfers are given priority treatment by NMFS and properly completed requests for transfer are normally processed and mailed within 3 working days of receipt. A similar time frame for transfers of red snapper licenses would be expected.

Discussion of Rejected Alternatives: Alternative 1 provides that persons rather than vessels be licensed to harvest red snapper. This is typical of many other state or foreign license limitation programs and appears to more readily facilitate transfer of licenses in the marketplace than is the case for licenses for vessels. Persons licensed included vessel owners and operators whose income qualified for the vessel permit and historical captains.

Alternative 1 requires that initial operators of a vessel with license issued to historical captains or qualifying operators be by that person. Following transfer, under Section 6.4, the new license holder may use an operator. NMFS considers a lease as temporary ownership of a vessel.

Under Alternatives 1 and 2, the red snapper license is not tied to any vessel. The license holder or their designated operator would be able to fish on any permitted reef fish vessel. Under Alternative 3, the license would be associated with a specific vessel, but could be used by any person authorized to operate that vessel.

Under Sub-alternative (2) (a) the license would be issued to the vessel owner whose name is on the vessel permit application at the time licenses are issued. Under Sub-alternative (2) (b) the license would be issued to the income qualifier of record. Currently, about 6.1 percent of the reef fish vessel permits are based on records of income qualifications of operators rather than owners. That percentage for vessels currently holding a red snapper endorsement is 2.5 percent. If a sub-alternative defining a person only as an operator was included and selected, it would adversely affect owners by depriving the income qualifying owner from continuing to fish for red snapper, if the operator left the vessel.

In some instances, captains operate vessels under vessel lease agreements with the owners where the captain is classified as a self-employed independent contractor⁴. Under these agreements (which may be written or verbal) the captains pay the owner for use of the vessel

⁴ The legal status of historical captains as independent contractors is based on federal court decisions in *Star Fish and Oyster Co. vs. USA* (Southern District of Alabama) and in *Gulf Coast Oyster and Shrimp Fishermen's Assoc. vs. USA* (Southern District of Mississippi).

through a share of the catch landed and hire and pay the crew. Under such agreements, the success of the fishing venture is largely based on the captain's expertise as a historical participant dependent on the fishery. Alternative 1 and sub-alternative (c) under Alternative 2 would allow these captains to be eligible to be issued a license in addition to persons in sub-alternative (a) or (b). These captains may remain on the owner's vessel, but if they did not, then they could utilize their license for an additional vessel under some alternatives in Section 6.3. In the data collected under Amendment 9, only 27 persons submitted applications for historical captain status, and only 4 to 5 persons may qualify under the definition.

Economic Impacts

The decision as to whom the license shall be issued, i.e., whether to persons or vessels, has economic implication to the extent that it affects the cost of fishing operations and of administering and enforcing the license limitation program. The more readily a license can be transferred from one fishing operation to another, the lower would be the accompanying cost. In this sense, issuing the license to a person, as in the Preferred Alternative and Rejected Alternatives 1 and 2, would be preferable to issuing the license to a vessel (Rejected Alternative 3). But the cost saving from issuing the license to a person may have to be tempered with the difficulty of administering and enforcing the license limitation program. When issued to a person, a license can be used by any permitted reef fish vessel, so that tracking of license ownership and landings by vessels would be difficult. It would also present some complexity in enforcing the program, since more than a vessel identification would be needed to determine that the commercial quantity of red snapper on board was not illegally harvested. Differential trip limits for various license types would only add more complication to the enforcement activity. The Preferred Alternative probably addresses the two issues more adequately than the other alternatives, since both the owner and vessel to which a license is issued would be identified at the start of the fishing season.

Environmental Consequences

Physical Environment: The alternatives in this section will have no impact on the physical environment.

Human Environment: There is little difference in impact between the Preferred Alternative and Rejected Alternative 1, other than licenses may be more easily transferred under the latter. Rejected Alternatives 2 and 3 may limit persons eligible and/or require certain persons to be aboard the vessel while in operation, but that requirement would not apply after the license was transferred.

Fishery Resource: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.3 Historical Captains

If historical captains are allowed to participate the following alternatives would apply: Such licenses would be fully transferable and could be traded or sold.

Preferred Alternative: In instances where the catch records of a vessel upon which a historical captain served were used to qualify a vessel for a license, the historical captain and owner each would be issued a separate Class (1) license.

Rejected Alternatives 6.3.1

In instances where the catch records of a vessel upon which a historical captain¹ served were used to qualify a vessel for a license, rejected alternatives are as follows:

- a. The license would be shared between the owner and historical captain¹ based on the shares in their vessel agreement, or**
- b. The historical captain and owner each would be issued a separate license equivalent to one-half a vessel license, or**
- c. A single license would be issued in names of both the owner and historical captain, or**
- d. Qualifying historical captains will be issued a separate license but can only use the license on a vessel he buys and operates.**

Rejected Alternatives 6.3.2

If licenses are shared between historical captain and owners (as in 6.3.1 a or b, above), rejected alternatives are as follows:

- a. For a vessel to land red snapper, the equivalent of 100 percent of a license must be aboard, or**
- b. The owner and historical captain may fish for and land red snapper from separate vessels, but the trip limit that each is allowed will be equivalent to their respective share of the license.**

No Action Alternative: Licenses are not subdivided, each vessel gets a single license issued to the vessel permit holder whose income was used to qualify for the permit.

Discussion: Under the landings data collection through Amendment 9, persons were given the opportunity to submit records that would qualify them as historical captains. Only 4 to 5 individuals submitted records that may qualify under the definition. The Preferred Alternative under Section 6.3 would grant each of them a separate license from that of the

owner. The Ad Hoc Red Snapper AP recommended this as their Preferred Alternative. In review of Amendment 8 in 1994, the Ad Hoc Red Snapper and Reef Fish APs had recommended alternative 6.3.1(d) granting them a license only for a vessel they purchased and operated, but the APs had assumed that the 27 persons submitting records might qualify as historical captains. Under the Preferred Alternative, qualifying historical captains would get a Class (1) license entitling them to an initial trip limit of 2,000 pounds. Data collected under Amendment 9 indicated, in four incidences, both the owner and historical captain would have qualified for a Class (1) license based solely on the lading criteria (i.e., more than 5,000 pounds each). Rejected Alternatives (a) and (b) under 6.3.1 would prorate the value of a license between historical captains and owners with each receiving a license worth a percentage of the vessel's license. These alternatives and Rejected Alternative 6.3.1(c) would likely not result in additional vessels or at least result in licenses that if fished on other vessels would entitle them only to a trip limit equivalent to their share of the license value (see Section 6.3.2). For example, a captain leaving a vessel with a license valued at 50 percent could land a trip limit equivalent to 50 percent of a 2,000 pound trip limit level or 1,000 pounds. Since the licenses can be traded or sold, if this occurred or if a captain left a vessel, the owner may not be able to operate the vessel on a fiscally sound basis, unless he obtained another captain with a prorated license. Rejected Alternative (c) under Section 6.3.1 would prohibit separation of the license and provide security to the captain. The owner and captain would have to agree on their respective shares of landings under the license. However, the captain would not be precluded from selling his share possibly resulting in the owner having another partner or captain not of his choice. This would result in the defacto acquisition of a share of the value of the earning power of the owner's vessel by the captain.

Alternatives rejected under Section 6.3.2 address the issue of whether such shared licenses can be separated and fished on separate vessels. Both alternatives limit the allowable vessel catch to the trip limit existing at the time. For example, under Sub-alternative (b) each vessel would be limited to landing only one-half the trip limit, which should not adversely affect other fisherman with a single, full-valued license. In addition, under Sub-alternative (b), the 50 percent share of the trip limits may not be combined with another, but separate, trip limit. For example, if an owner buys another license in addition to his 50 percent share of the initial license, he/she cannot use 150 percent of the trip limit when fishing only one vessel. The same restriction applies to historical captains.

The no action alternative has the effect that licenses would not be shared with or issued to historical captains.

Economic Impacts

This set of alternatives, except the no action alternative, pertains mainly to the nature of licenses that historical captains may receive. The Preferred Alternative potentially would add vessels to the existing number of vessels operating in the red snapper fishery, since

licenses can be sold apart from the vessels that the historical captains are working on. Mainly because only a few individuals (4 to 5) can qualify as historical captains, the impact on economic efficiency is likely minimal. Also because of the small number of eligible historical captains, the determination of trip limits for a license received by historical captains has minimal impact on economic efficiency. But for vessels operated by historical captains, the various alternatives would have different effects on distribution of income. Rejected Alternatives 6.3.1 and 6.3.2 could reduce the income accruing to owners of vessels on the basis that captains can now share in what used to be mainly the owner's income. The Preferred Alternative would not change the distribution of income from vessel operation, but would allow the captains to generate additional income through lease or sale of their permits.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The alternatives address the special case of whether and how historical captains would participate in the fishery. The Preferred Alternative allows those qualifying as historical captains to participate on the same basis as qualifying owner/operators, owners and income-qualifying operators, i.e., be issued a license. This may seem inequitable to other operators who cannot qualify as historical captains; however, landing records of vessels upon which qualifying historical captains served were high enough that both the owner and captain would have qualified for endorsement. Based on this fact, and the fact that only about 5 persons may qualify for historical captain status, the Council felt the action allowing their participation was equitable. The Preferred Alternative was recommended by the Ad Hoc Red Snapper AP, Red Snapper AP, and Reef Fish AP. If a much larger number had qualified and were thereby eligible for a separate license, it is likely that most of the owner/operators and the Council would have considered the action inequitable.

Fishery Resources: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.4 Transferability of Licenses

This section governs transferability of licenses, after they have been initially allocated. Transfer under this section applies to licenses sold and to licenses leased. NMFS considers leasing as temporary ownership.

Preferred Alternative: Licenses may be transferred without restrictions.

Rejected Alternatives:

- a. **If licenses are issued to persons, they may be transferred only to owners or income-qualifying operators of permitted reef fish vessels.**
- b. **If licenses are issued to vessels, they may be transferred only to other vessels with valid reef fish permits.**

Note: All transfer of licenses shall be registered by NMFS and be subject to an administrative fee for the Federal cost of the transfer.

Discussion: Under the Preferred Alternative licenses to fish commercially for red snapper can be freely traded in the marketplace with the only requirement that such transfers be registered by NMFS. Under the provisions of the FMP such fishing must be upon a vessel with a reef fish vessel permit and rules for such permits will apply to the fishing operation. For example, operators whose income was used to qualify for the permit must be on board the vessel. However, upon transfer of a license issued to such an operator or historical captain, the new owner of the license may use any other operator provided that either the owner or the operator selected qualifies for the reef fish vessel permit. The Preferred Alternative would allow transfer without restrictions, providing the greatest flexibility to persons exiting or entering the red snapper fishery. The two sub-alternatives under the rejected alternatives would provide preferential opportunity to persons in the reef fish fishery (other than red snapper) to enter the red snapper fishery.

Economic Impacts

Transferability of licenses is a very vital feature of any license limitation program in order to bring about a more efficient industry. The SEP (1996) noted that transferability facilitates the development of a market in which licenses are traded or leased. After the initial allocation of licenses, access to the fishery would be determined by market forces. Newcomers would buy or rent licenses to enter the fishery, and retirees would be paid to leave. Competition in the market for licenses ensures that those most willing or able to buy or lease licenses, usually the most efficient and profitable fishermen, would eventually acquire or lease them, whatever the initial distribution.

The less restriction imposed on transfer of licenses, the better the chance for fishing entities to evolve into a more efficient operation. In this regard, the Preferred Alternative may be deemed superior to the rejected alternatives.

Environmental Consequences

Physical Environment: The alternatives have no impact on the physical environment.

Human Environment: The Preferred Alternative provides the opportunity for any person to enter the red snapper fishery by obtaining a license through lease or purchase. The Rejected Alternative would have limited such entry to persons in the reef fish fishery at the time of the transfer. However, since reef fish vessel permits have been transferable since January 1996 and since commercial quantities of any reef fish may be possessed only on such a permitted vessel, the effect of the two alternatives is nearly the same.

Fishery Resources: The alternatives have no impact on the red snapper resource.

Other Fishery Resources: The alternatives have no impact on other fishery resources.

Effect on Wetlands: The alternatives have no effect on wetlands.

6.5 Number of Licenses That Can Be Owned by One Entity

Preferred Alternative: Place no limitation on ownership on each class of license.

Rejected Alternative 1: Limit the percentage of red snapper licenses owned by a single entity to 5 (or 10) percent of each class of license.

Rejected Alternative 2: Limit the percentage of Class (1) red snapper licenses owned by a single entity to 5 or 10 percent of the Class (1) licenses, and place no restriction on ownership of Class (2) licenses.

Rejected Alternative 3: Reserve 30 or 40 percent of red snapper Class (1) licenses for individually owned, single vessel operations.

Discussion: If a market-driven system allowing purchase or transfer of harvesting privilege is utilized, it raises the question of whether some limitation should be placed upon the percentage of all licenses that can be legally held by one entity to prevent monopolies from controlling production. If a market-driven system is utilized, over time the number of persons owning vessels, but not necessarily the number of vessels, will be reduced. If eventually a few operations control the license market, the harvesting sector of the industry could be made more efficient. Nonetheless, such control may result in control over the price of licenses. It is also possible in a license limitation system that small producers would be removed from the industry. If they sell out, the small number of controlling entities could quote prices substantially lower than the true value of the licenses due to the reduced competition to purchase the licenses. To a large extent, the issue is, from a social/cultural standpoint, whether it is beneficial to retain a diversified harvesting sector that assures individually-owned, single-vessel operations are a component of that sector. Likely such individually owned operations will continue to dominate the fishery.

Economic Impacts

With a heterogeneous fleet generating inframarginal rents, market concentration could occur over time as the more efficient producers buy the licenses from less efficient fishermen. Since the fishery is overdeveloped, some concentration of the harvesting sector would be economically efficient. However, none of the applied literature cites a case where the number of fishing entities declined as a result of the purchase of licenses by existing license holders. Without limitations on ownership, the greatest number of buyers would be allowed into the market for licenses, license prices would reflect the value of the red snapper resource, redundant capital growth would be slowed the most, and administrative costs would be minimized relative to the other alternatives that impose some form of limitation on ownership of licenses.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: It seems very unlikely that either a monopoly would develop or any entity would purchase large numbers of licenses to fish vessels in an already overcapitalized fishery; therefore, none of the alternatives are likely to affect the human environment.

Fishery Resource: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.6 Transferability of Landing Records Related to Initial Eligibility for Licenses

Alternatives under Section 6.1 create two (or more) classes of persons eligible for licenses: (1) for holders of red snapper endorsements, and (2) for other eligible persons. Persons granted licenses under (1) are easily identified since the red snapper endorsement is not transferable except for death or disability during the 1993-1997 period. Data were collected through Amendment 9 to determine other persons eligible for licenses based on 1990-1992 landings. However, many vessels and permits have been transferred since 1992 when the permit moratorium was implemented. The issue of transfer of the 1990-1992 landing records with these vessels needs to be resolved. Basic principles of the alternatives of this section are as follows: (1) A vessel's catch history cannot be split between partners or among corporate shareholders of the owning entity; and (2) except as authorized for historical captains and their vessel owners, no individual vessel's landings will apply for eligibility of more than one vessel. **The Preferred Alternative selected by the Council under Section 6.1 simplifies this section. Since all endorsement holders qualify for Class (1) licenses, it would apply only to the Class (2) licenses.**

Preferred Alternative 1. The landings records for the 1990-1992 period (or subsequent period, if applicable) are retained by the permittee if the permit was transferred to additional vessels owned by the permittee.

Preferred Alternative 2. The landings records for the 1990-1992 period (or subsequent period, if applicable) **will be transferred** to the new permit holder if the vessel permit was transferred through sale of the vessel or transferred due to death or disability, **unless there is an agreement** under which the original permit holder retained such landing records.

Preferred Alternative 3. Notwithstanding other alternatives of this section that may be selected, an owner of a currently permitted vessel will retain the landings record for a vessel that was substantively controlled by him even though the ownership of such vessel was in the name of a different legal entity. "Substantively controlled" means that the same entity had at least a 50 percent interest in the vessel immediately before and after the change of ownership, or the change of ownership was from one to another of the following: husband, wife, son, daughter, brother, sister, mother, or father. The owner of a currently permitted vessel has the burden of proof of substantive control.

Rejected Alternative 1. The landings records for the 1990-1992 period (or subsequent period, if applicable) **will be transferred** to the new permit holder if the vessel permit was transferred through sale of the vessel or transferred due to death or disability.

Rejected Alternative 2. The landing records for the 1990-1992 period (or subsequent period, if applicable) **will not be transferred** to the new permit holder, if the vessel permit was transferred through sale of the vessel or transferred due to death or disability, **unless there is an agreement** for such transfer, i.e., the permit holder of record in 1990-1992 (or subsequent period, if applicable) will retain such records for purposes of a red snapper license in the absence of an agreement.

Rejected Alternative 3. The landings records for the 1990-1992 (or subsequent period, if applicable) **can be transferred** to the new permit holder if the vessel permit was transferred through sale of the vessel or transferred due to death or disability.

Rejected Alternative 4. Landings records (for eligibility purposes) cannot be transferred, except in cases of vessel replacement by the permittee of record in 1990-1997.

Rejected Alternative 5. If a current red snapper endorsement holder received the endorsement under the death or disability transfer provisions, the landings record of the deceased or disabled person will be used for the determination of the class of license to be issued.

Rejected Alternative 6. If a current red snapper endorsement holder received the endorsement under the death or disability transfer provisions, the current holder will be issued either a [Class 1] or [Class 2] license.

Rejected Alternative 7. If a current red snapper endorsement holder received the endorsement under the death transfer provisions, the landings record of the deceased person will be used for the determination of the class of license to be issued and, if received under the disability transfer provisions, the current holder will be issued a Class 2 license.

Discussion: The Council contemplates that "substantive control" by "the same entity" in this transfer context means that the successor in interest received a 50 percent interest in the vessel as a result of the change of ownership, whether the transfer was: (1) from a closely-held corporation to an individual or vice versa, or (2) between successor corporations, or (3) between individuals within the familial relationships listed. (See Preferred Alternative 3).

Preferred Alternative 1 would allow the permittee who replaced a vessel to retain the landings record for eligibility purposes. The Council originally allowed replacing vessels under a permit because it would have created an undue hardship, if a vessel sank or became inoperable. Similarly, preventing transfer of the landings records from the previous vessels would create an unnecessary hardship. Preferred Alternative 2 and Rejected Alternatives 1 through 3 relate to transfer of landings records for license eligibility for a reef fish vessel permit transferred through sale of the vessel or transfers due to death or disability. Since the vessel permit may have enhanced the sale price of the vessel, it seems equitable that the landing records for eligibility be included with the sale. Some purchasers have indicated that this was a major consideration in purchasing a vessel with a permit. Rejected Alternative 1 provides that such records will be transferred. Preferred Alternative 2 provides that the records will be transferred unless an agreement existed whereby the original permittee retained the right to use such records for eligibility. Rejected Alternative 3 provides that such records may be transferred, leaving the original and new permittees to resolve the issue (in court if necessary). Rejected Alternative 2 provides that such records will be retained by the original permit holder of record in 1990, 1991, and 1992 (or subsequent period, if applicable), unless an agreement existed whereby the original permit transferred the record on sale of the vessel. However, these persons would be excluded for holding licenses unless they were the operator or owner of a currently permitted vessel as in Section 6.1. Rejected Alternative 4 provides such records cannot be transferred except in cases where the permittee of record in 1990, 1991, and 1992 (or subsequent period, if applicable) replaced the vessel with an additional vessel owned by that permittee. Preferred Alternative 3 addresses the issue of instances when the 1990-1992 (or subsequent period, if applicable), landings records for a vessel controlled by a single owner were submitted by more than one operator or in the name of more than one owner. The latter case may have occurred when recorded ownership of the vessel

under the permit changed by incorporation of the vessel or within a family or by shareholder/corporate officer name within a corporation.

Rejected Alternatives 5, 6, and 7 apply only to the special case of red snapper endorsements that were transferred under the death or disability clause of the FMP allowing such transfers. The alternatives provide for granting a Class (1) or Class (2) license to persons to whom such an endorsement was transferred and would apply only if there are two classes of licenses for red snapper endorsement holders. (See Rejected Alternative 10).

Economic Impacts

This set of alternatives mainly pertains to the determination of individuals receiving certain types of licenses in the initial distribution of licenses. Since this does not materially affect the number of licenses issued, its economic effect is minimal. Once the licenses are issued and less restriction on transfer and ownership are imposed, the change in ownership or use of licenses would tend toward the more efficient operations.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: These records are very important in determining who will be able to participate in the fishery and what class of license and initial trip limit will be granted to the participants. However, these records were collected by NMFS under Amendment 9 in 1994 for determining eligibility in an ITQ or license limitation system. Therefore, it seems unlikely that the alternatives will create much of an impact on the affected public. This is especially true for the holders of the red snapper endorsement, since the endorsements have been non-transferable since 1993. Other persons who transferred their reef fish vessel permit and are no longer in the fishery would not be eligible for the reef fish vessel license and would gain nothing by retaining the 1990-1992 landings records.

Fishery Resources: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.7 Fishing Seasons

6.7.1 Annual Fishing Season Opening Dates (*Preferred Alternative - see Section 6.7.2)

Alternative 1: The season will begin each year in February:

- a. 5 days before the start of the Lenten season, or**
- b. on February 1.(*)**

Alternative 2: The season will begin each year on April 1.

Alternative 3: Status Quo: The season will start January 1 or as specified in the regulatory amendment setting TAC.

Alternative 4: If the season is split into two time periods, the second portion on the season will begin:

- a. September 1, (*)**
- b. September 15.**

Discussion: The Council, under Section 6.7.2, selected a split season with opening dates of February 1 and September 1. The difficulty in specifying the season opening date by regulatory amendment is that the Council is setting TAC in November, which does not allow adequate time for review and implementation of the regulatory amendment prior to February. This delay does not affect the commercial quota in that the quota level from the previous year is used until modified by rule. The Council shifted its TAC actions from September to November since certain landings and other data for the previous calendar year were not available in time to complete the stock assessment by August 1 (rather than October 1).

If Alternative 3 is selected the Council and NMFS would need to shift the completion date for the stock assessment back to August 1. The dates in Alternative 1 have been the traditional dates for opening under the endorsement system. During 1996, the season was split into two time periods. The dates under Alternative 4 are the opening dates considered for the second portion of that season. Opening April 1 (Alternative 2) may reduce the effects of bad weather on vessel safety.

Economic Impacts

In a derby-type fishery like the red snapper fishery, choice regarding the start of the fishing season assumes particular economic significance. An appropriate choice can provide opportunity for fishermen to supply red snapper at a time when demand is relatively high, affording fishermen higher revenues. Such choice also affects the ability of fishing vessels to operate in more favorable weather conditions, thus reducing fishing cost. In general, a season when demand is high does not coincide with more favorable weather conditions, so that there is often involved in the choice of a season the tradeoff between high revenues and low cost. The red snapper fishery does not appear to be an exception to this general condition.

Since 1993, the season has been opened sometime in February, and this choice has allowed fishermen to take advantage of higher demand during Lent and more favorable weather conditions than the January opening date. Late spring and summer could probably afford better weather conditions, but then demand for fish is not as high. The Preferred Alternative would continue to afford fishermen the opportunity to fish during high demand

and relatively favorable weather conditions. Alternative 2 would compel vessels to forgo benefits from a relatively high demand during Lent, although it would allow fishermen to operate during better weather conditions. Alternative 3 would be relatively costly to small vessels due to weather conditions in January, although it would still allow taking advantage of higher demand for fish during Lent. Alternative 4, including the preferred sub-alternative, is unlike the other alternatives since it addresses only the opening date for the second fishing season in the event of a split season, similar to that in 1996 and 1997. Considering both revenues and costs, the preferred alternative regarding the opening of the first sub-season may be deemed superior to other alternatives.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: Alternative 2 for opening the season on April 1 may, in some years, have a beneficial effect on vessel safety because of more favorable weather.

Fishery Resources: Alternative 2, in years where a strong year class is just entering the fishery (i.e., attained legal size), may have a minor biological beneficial effect over opening earlier in the year. This is because the fish would be larger and the quota would be filled with less fish, leaving more to spawn. In most years, the alternatives are unlikely to have any measurable impact on red snapper resources.

Other Fishery Resources: The opening date (as well as the closing date) will affect the time of each year that persons target species other than red snapper.

Effect of Wetlands: The alternatives will have no effect on wetlands.

6.7.2 Fishing Seasons

Preferred Alternative 1: The commercial red snapper season will be opened at noon on the first day of each month and close at noon on the fifteenth day of each month until the commercial quota is reached and the season closed.

Preferred Alternative 2: Split the fishing season into two time periods with the first period to begin on February 1 with two-thirds of the quota and the second period on September 1 with the remainder of the quota.

Rejected Alternative 1: The commercial red snapper season will be opened for the first 7 days of each month until the commercial quota is reached and the fishery closed.

Discussion: The intent of the Preferred Alternative 1 and Rejected Alternative 1 would be to spread out landings over a greater portion of the year, alleviating to some extent the

economic effects of the derby fishery. Preferred Alternative 2 subdivides the quota into two portions: two-thirds for the season beginning February 1, and the remainder for the season beginning September 1. Each season would be open for the first 15 days of each month until that portion of the quota is taken. The alternatives would likely create a series of mini-derbies for the weekly or biweekly periods. Fishermen would have to make a decision whether to fish in each of these periods if there is inclement weather. Rejected Alternative 1 for weekly periods is more likely to encompass occasional periods of weather when vessel operation at sea is not safe. The Preferred Alternative 1 for biweekly periods was suggested because inclement weather should moderate allowing offshore operation sometime during the period. Conversely, it would reduce the number of months over which harvest will occur. In 1996, the commercial quota of 3.17 million pounds was harvested in 64 days (February 1 - April 4). The season reopened on September 15 and closed October 6 (22 days) when the remaining portion of the 4.65 million-pound quota was taken. If inclement weather is not a factor and if the 1997 TAC results in a commercial quota of 4.65 million pounds, then Rejected Alternative 1 may result in the season being open monthly all year (but, if opened in February, would preclude harvesting all the quota as 12 months are required). Preferred Alternative 1 would result in the season being open during about 7 months. If the Council were to select an intermediate number of days, such as 10 per month, the season would be open during about 9 months. More recent anecdotal information contained in public testimony on Amendment 15 indicates these time periods would be shorter. This testimony indicates the industry has adjusted its operations so that the duration of trips has become progressively shorter, i.e., more trips are made before the season closes each year. Waters and Antozzi (1997a) predict that 1 million pounds would be landed in each two-week mini-derby, indicating the quota would be harvested in less than five months. They also predict that industry revenues and ex-vessel price will decline from the mini-derbies of Preferred Alternative 1 over the revenue and ex-vessel prices under the status quo. They attribute this to repetitive gluts of red snapper and sharp declines in wholesale and ex-vessel price following the opening of each mini-season.

The Socioeconomic Panel (SEP) (1997) did not reach any conclusions regarding the potential economic effects of mini-derbies, but did mention some points regarding the consideration of mini-derbies. The SEP noted that the more appropriate objective of an economic analysis is the determination of changes in consumer and producer surpluses. The NMFS manuscript did not reach a conclusion in this regard. The SEP also noted that, from a single species perspective, the mini-derbies could reduce tangible and intangible costs, but given the multi-species nature of this fishery, such expectation is unlikely. Fishers would divert effort to other fisheries during the latter half of each month and increase overall fishing costs instead of remaining at home with family or repairing their vessels. On revenue effects, the simple regression analysis does not seem to support the possible revenue reduction in mini-derbies, since it is not known how price would respond to changes in supply.

In a subsequent analysis, Waters and Antozzi (1997b) postulated that mini-derbies of one-week duration would promote a better economic outcome than either the Preferred

Alternatives or status quo. If this proves to be true, the Council can modify the seasonal openings through the framework procedures when specifying TAC.

To enhance enforcement, all vessels would be required to land by the end of the weekly or biweekly period. Waters (1996a) randomly surveyed endorsement holders and non-endorsement holders targeting red snapper in 1993. The average fishing trip was about 2.6 days duration for endorsement holders and about 1.5 days for non-endorsement holders (Tables 7 and 8 from Waters 1996a, attached).

Rejected Alternative 2: Subdivide the fishing year into up to six bimonthly periods with an equivalent portion of the commercial quota allocated to each period.

Discussion: If less than six periods are selected, the fishery would be closed for some bimonthly periods, e.g., every other bimonthly period if three open periods are selected. The options under this alternative are proposed as a method of spreading out the landings over a greater portion of the year, perhaps alleviating to some extent the market glut and possibly increasing the price paid to fishermen.

The alternatives will result in a series of mini-derbies as fishermen compete to get "their share" of each suballocation of the commercial quota. Monitoring and enforcement costs would increase as a function of the number of bimonthly periods the fishery is open.

Rejected Alternative 3: Split the fishing season into two time periods, to begin as under Section 6.7.1.

Discussion: Splitting the season into two time periods may have a very minimal benefit in increasing ex-vessel prices. Economic data for the 1996 season are not available to assess this. Taken alone, the split season will result in two derby fisheries, but would provide, in some years, more favorable fishing weather in the second period.

Rejected Alternative 4: Each license holder may complete one (to five) trip(s) during the first 15 days of each month and one (to five) trip(s) during the remainder of the month while the commercial red snapper season is open.

Discussion: The intent of the alternative is that the trip(s) be initiated and completed within the first 15 days and within the remainder of the month. If each vessel eligible under Rejected Alternative 10 of Section 6.1 made two trips each month total landings per month would be on the order of 440 thousand pounds and the season would last approximately 10.5 months. Under the Preferred Alternative and Rejected Alternative 1 of Section 6.1 and two trips per month total landings per month would be on the order of 540 thousand pounds and the season would last approximately 8.6 months. In both examples the quota would be exceeded (by 13.5 and 41 percent, respectively) if the fishery was open for 12 months. If two trips was allowed in one portion of each month along with one trip in the other portion (i.e., 3 trips per month) the quota would be exceeded (by 70 and 109 percent,

respectively) if the fishery was open for 12 months. Under this scenario the season would be open for 7.0 and 5.7 months, respectively, for the two examples. If 4 trips per month was allowed for each vessel the season would be open for approximately 5.3 and 4.3 months, under allocations for the two alternatives of Section 6.1, respectively.

Rejected Alternative 4, like the Preferred Alternative 1 of this section, was proposed as a measure to extend the season to reduce the adverse effects of the derby fishery. Since it allows fishing to occur throughout each month, it likely would be more effective than the Preferred Alternatives in reducing the economic effect of the derby fishery but enforcement may be more difficult than for the Preferred Alternatives. In order to enforce it at all, each participant must be issued monthly landing vouchers (or landing permits) that must be surrendered to the dealer with the landings and mailed to NMFS for each trip. This alternative would also greatly enhance vessel safety.

Rejected Alternative 5: Status Quo - Retain a single fishing season beginning as under 6.7.1, Alternatives 1-3.

Discussion: Derby fishing would likely continue with the season being closed most of the year, prices being depressed, and endorsement holders relocating to other fisheries (see Section 4.0).

Note: It is Council's intent that the remaining unharvested portion of the quota be allocated in the final period under each of the alternatives and the season remain open until it is projected to be harvested. During a seasonal or quota closure of the commercial red snapper fishery, the possession of red snapper on board a vessel for which a commercial permit for reef fish has been issued, without regard to where such red snapper were harvested, will be limited to the bag and possession limits.

Economic Impacts

Multiple seasons have the tendency to increase the number of fishing days for a given year. If the multiple seasons are spaced in such a way that the next sub-season opens with low red snapper inventory (domestically produced and imported) in the possession of dealers and institutional consumers, fishermen could potentially face relatively higher prices for their fish. In addition, if the next opening is also certain, fishermen can adjust their fishing operation, including repair and maintenance of vessels, before the next sub-season opens.

Waters and Antozzi (1997a, 1997b) conducted an analysis on multiple seasons, comparing the economic effects of maxi-derby, mini-derby, and micro-derby. Maxi-derby refers to one single open season, mini-derby an open season every first half of the month, and micro-derby to an open season every other week of the month. While not all alternatives under consideration perfectly match with the three types of derbies discussed in the cited paper, the following discussion on the economic implications of the three types of derbies by Waters and Antozzi is helpful in comparing the relative economic stature of the alternatives.

An important advantage of the mini-derbies and micro-derbies is their likelihood of reducing certain tangible and intangible costs of fishing. Both types of derbies would allow fishermen to rest, spend time with their families, and perform preventive maintenance and minor repairs during each closed period. The prolonged and intense fishing associated with a maxi-derby eventually leads to fatigue that can reduce productivity and alertness, increase the likelihood of accident or injury, and increase incidence of vessel and gear breakdowns that result in higher repair costs when normal, preventive maintenance is postponed.

The experience in maxi-derby has shown a sharp drop in prices followed by a price recovery when landings decline later in the season. Weekly estimates of red snapper landings from the quota monitoring efforts of NMFS indicate that red snapper production usually was greatest during the first two weeks of each season. As each derby progressed, total catch per week tended to decline from the initial high levels, and prices recovered. Average monthly dockside prices from the NMFS general canvass data base tend to support this observation. Reports received from snapper dealers in the Gulf of Mexico indicate that during the 1997 season just concluded, prices fell during the first week, stayed low for most of February, recovered in March and finished at or above the season's opening price. In addition, wholesale selling prices recorded at the New York Fulton Fish Market exhibited a resurgent price trend over the time frame of the spring open season. In mid-January, before the season opened, the price for fresh Mexican snapper was \$4.00 per pound. During the open season, prices recorded for fresh red snapper from Florida and Louisiana in February ranged from \$2.50 to \$2.75 per pound, while prices in March ranged from \$3.25 to \$4.00.

Ex-vessel prices under a mini-derby would also decline but may not recover because of the heavy landings and each open period's short duration. Because each two-week closed period would offer fishermen an opportunity to rest and perform maintenance on their boats, the quantities of fish to be landed during each mini-derby probably would mimic the first two weeks of a single, longer-lasting maxi-derby. Based on the quota monitoring reports, it can be anticipated that the industry would land about 1 million pounds, whole weight, of red snapper during each two week mini-derby, except for occurrences of poor weather. This would result in repetitive gluts of red snapper and sharp declines in wholesale and ex-vessel prices following the opening of each two-week mini-season.

Derby fishing also would exist with a series of one-week micro-derbies because of the continued uncertainty about when the quota will be filled and the season closed for the remainder of the year. But production would be spread out under a micro-derby, thus averting a market glut and ensuing price collapse. By comparison, the current maxi-derby results in high production over a short period of time: about one million pounds during the first two weeks. The two-week mini-derby also could yield one million pounds in two weeks. Micro-derbies, however, could reduce production rates to one-half million pounds in two weeks.

Fish caught during the micro-derby would continue to supply the market through the seven days of the intermittent closed interval. Based on discussion with wholesalers, red snapper have sufficient shelf life to bridge the gap until the next micro-season opened. Continuity of supply would keep imports to a minimum. By comparison, the two week closed period that would occur under a mini-derby is too long, supply would be interrupted and wholesalers would be forced to turn to imports to assure that they maintained a large enough supply of red snapper to meet the needs of their customers.

The general outcome from the foregoing discussion is that micro-derbies would promote a better economic outcome than mini-derbies or macro-derby. Both mini-derbies and micro-derbies would allow fishermen to rest and repair their boats. However, only the micro-derbies seem likely to alleviate market gluts and declining prices as experienced with the maxi-derby. Total industry revenues from a maxi-derby probably would exceed the total revenues generated by mini-derbies because of the price increases brought about by declining catches during the latter portions of the longer derby. In addition, although both mini- and micro-derbies would lengthen the amount of calendar time between the dates of first opening and final closure, the actual number of days fished probably would decline compared to the single-season maxi-derby because mini- and micro-derbies alleviate the prolonged and intense fishing that eventually leads to fatigue and reduced productivity.

Relative to the various alternatives in consideration, maxi-derby may be taken to refer mainly to Rejected Alternative 5 (Status Quo) and in effect also to Rejected Alternative 3 and Preferred Alternative 2, although in the present context both Preferred Alternative 1 and Preferred Alternative 2 are taken as one for purposes of analysis. Mini-derby would refer to Preferred Alternatives 1 and 2 and Rejected Alternative 2. Rejected Alternative 1 may also be considered similar in nature to a mini-derby while Rejected Alternative 4 may partly be considered a maxi-derby case, except that it does attempt to limit the number of trips per half month. Micro-derby has no equivalent among the current alternatives, although the Council can adopt this type of derby in conjunction with the seasonal framework adjustment for red snapper.

On the basis of the Waters and Antozzi analysis, Rejected Alternatives 3 and 5 would be superior to the other alternatives, including the preferred alternatives, in generating economic benefits to the fishery participants. Between the two, Rejected Alternative 3 would probably be better, since it affords a better combination of relatively higher demand and lower cost. While the other alternatives are deemed inferior, a possible exception is Rejected Alternative 4. This alternative has mixed results depending on the number of trips allowed per period. The more trips allowed, the shorter the season becomes; conversely, the fewer the trips, the longer the season. While a longer season is preferable, Alternative 4 buys this advantage by introducing inefficiency into the fishing operations of vessels through a restriction in the number of trips per period. One way this number of trip restrictions mitigates the introduction of inefficiency is to assign the number of trips according to the capacity of the vessels. Considering the various potential vessel configurations in the fishery, however, this approach is very difficult to implement.

A note of importance in the cited two papers by Waters and Antozzi is that the analysis focused mainly on the relative performance of the fishery with respect to total revenues and prices. While costs were also mentioned, a net revenue analysis was not undertaken, or at best no conclusion was made as to which type of derby generated the highest net economic benefit. In reviewing the paper (Waters and Antozzi, 1997a), the SEP(1997) concluded in effect that net benefit (consumer and producer surpluses) analysis should have been conducted. In addition, they noted that the analysis did not incorporate other important information, such as effects of substitution, effects on fresh market, increased catchability, imports, and other related factors. On this basis, the SEP did not reach a conclusion regarding the potential economic effects of mini-derbies. It should be pointed out, though, that as Waters and Antozzi (1997b) indicated the main intent of their analysis was to determine mainly the revenue and price consequences of the various types of derbies.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The Preferred Alternatives and Rejected Alternatives 1 and 4 are the only measures that are likely to reduce the problems (Section 4.1) associated with the derby fishery. These measures should spread out fishing and landings over most of the year, which should enhance vessel safety and reduce the market glut resulting in higher ex-vessel values to the fishermen. Consumers would benefit by having fresh product over a greater part of the year, but the cost may be higher. Enforcement costs are likely to be somewhat higher for the Preferred Alternative than status quo.

Fishery Resources: The alternatives should have little effect on the red snapper resource.

Other Fishery Resources: The Preferred Alternative should have some beneficial effect on other fishery resources. This will occur only if the duration of the season is fairly long, because fishermen will target red snapper rather than, for example, king mackerel. This would relieve some of the fishing pressure on those resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.8 Duration of License Limitation System

Preferred Alternative: Extend the term of the red snapper licensing system indefinitely or until replaced by an alternative license management system.

Rejected Alternative: Extend the term of the red snapper licensing system for 5 years during which the system will be evaluated and may be extended.

Discussion If the Council selects alternatives under Section 6.4 to allow transfer, then this is likely to be more effective under the Preferred Alternative. Persons are unlikely to risk

capital for purchasing licenses if the system is likely to end in a short period. The Council always retains the right to modify any system by subsequent plan amendment.

Economic Impacts

The value of transferable licenses depends on the rents, discounted to a present value, generated by the harvesting of fish over the lifetime of the license. The size of the fish stock, the ex-vessel price received by fishermen for red snapper, the costs of harvesting the fish, the applicable discount rate, and the duration of the license determine the value of the license. Given those other determinants, the shorter the duration of the licensing system, the lower would be the value of the license. While available at a lower price when sold, licenses with short duration create a higher level of uncertainty in the production process. Economic efficiency is unlikely to be met with a licensing system of short duration. One reason for this is that the planning horizon for a business entity becomes short; adjustments to an efficient level of operation would likely not be undertaken. Even if adjustment to an efficient level takes a shorter time, it will not be undertaken because the potential benefits would unlikely be sufficient to cover costs within a short time. In this event, the Preferred Alternative may be deemed superior to the Rejected Alternative, if this latter is interpreted to mean that, following an evaluation the program, may be terminated.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The alternatives will have no impact on the human environment, other than cited in the discussion.

Fishery Resources: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

6.9 Bycatch During the Closed Season

Preferred Alternative: Status Quo - No allocation for bycatch.

Rejected Alternatives: Allocate a portion of the commercial quota for bycatch allowances during the closed season. Red snapper endorsement holders with licenses (or persons to whom that license was transferred) would have a bycatch allowance of red snapper per trip, provided that the poundage of other reef fish are landed on that trip. After the portion of the commercial quota allocated for bycatch is taken, no vessel can land or possess a bycatch allowance of red snapper. Alternatives are as shown in the following table:

Landing of Other Reef Fish Required (pounds)	1995 Trips ¹	Red Snapper Allowance (pounds)	Portion of TAC (1000's pounds)	Portion of TAC ² (1000's pounds)	Percent of Quota ³
2,000	282	1,000	282	423	9.1
		750	212	317	6.8
		500	141	211	4.5
		250	71	106	2.3
1,000	470	1,000	470	705	15.2
		750	353	528	11.3
		500	235	353	7.6
		250	118	176	3.8
		200	94	141	3.0
500	899 ⁴	500	450	674	14.5
		400	360	540	11.6
		300	270	405	8.7
		200	180	270	5.8
		100	90	135	2.9

¹ Number of trips during the closed season that had landings of other reef fish at least equivalent to, or more than, the red snapper allowance.

² Assumes the number of trips would increase by 50 percent.

³ Assumes commercial quota of 4.65 MP and trip increase of 50 percent.

⁴ Total number of trips by endorsed vessels during the closed season in 1995.

Discussion: Only the red snapper endorsement holder (or persons to whom their license was transferred) are included for eligibility for the bycatch allowance because they are currently (1993-1995) landing approximately 95 percent of the red snapper quota. Alternatives are designed to reduce the release mortality and waste associated with incidental bycatch of red snapper when these vessels are targeting other reef fish species, during the closed commercial red snapper season. The percentage of quota to be allocated is based on the assumption that trips would increase by 50 percent over the 1995 level, if red snapper bycatch is allowed. Enforcement would be effective only at dockside on completion of trips.

Economic Impacts

Adoption of the Rejected Alternative would tend to obviate some of the beneficial effects of the license limitation program. Harvest capacity in the fishery would not be constrained, and enforcement cost would tend to rise.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The alternatives will have no impact on the human environment.

Fishery Resources: The rejected alternatives may have some beneficial impact on the red snapper resource, in that fish taken as incidental bycatch in targeting other species would have been retained and counted against the quota. However, during periods when commercial red snapper fishing is prohibited, crew members aboard commercial red snapper vessels may each retain a bag limit (which cannot be sold). This likely will include severely injured fish that would not survive.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

7.0 APPEALS BOARD FOR LICENSE ELIGIBILITY

Regardless of the type of system implemented, disagreements are likely to arise over certain aspects of the operation of the system. A large portion of these disagreements will occur when the system is first implemented and will be related to establishing the eligibility to participate in the system. Even though the criteria established by the amendment will regulate these issues, there will be gray areas where a judgment is required on whether certain criteria are met.

7.1 Establish an Appeals Board

Preferred Alternative: Create an appeals board to hear disagreements and render an opinion.

Rejected Alternative: Do not create such a board (i.e., agency resolves disagreements.)

Discussion: A number of limited access systems have appeals boards that are largely composed of members of the industry being regulated (e.g. such a board was used for spiny lobster). For the Alaskan halibut and sablefish fishery ITQ system, officials within NOAA/NMFS reviewed the disagreements and advised the Regional Administrator of

NMFS. The board hears the disagreements and renders an opinion. The opinion is a recommendation to the agency that makes the final decision. The use of such a board is generally more acceptable to the fishermen. The board would not hear disagreements related to hardship or violations and will only hear disagreements referred to it by NMFS to provide for an orderly process.

Persons will be notified of the appeals process by NMFS and persons with disagreements will be required to set forth the nature of their disagreements in a form, that should include relevant information supporting their claim (i.e., landings records). NMFS will advise them of the time and place the appeals board will hear their case.

If such a board is not created, then all disagreements will be resolved by the agency (NMFS) as is provided for in the note under Section 7.2. NMFS could also temporarily employ a trained arbitrator to hear disputes and render an opinion. Regardless of who attempts to resolve such disagreements, the final regulations will be binding until amended, and a resolution should address only the disagreements over records for eligibility. If such a board is created, members would be compensated for travel and subsistence costs.

7.2 Structure and Function of Appeals Board

Based on the Preferred Alternative selected under Section 6.1, appeals will apply only to persons who feel their landing record makes them eligible for a Class (2) license with a 200-pound trip limit and to persons who submitted records under Amendment 9 for historical captain status. All endorsement holders will be issued the Class (1) license.

The appeals board will function to ensure that the amendment criteria for eligibility and applicable landings data are applied properly. For landings in the 1990-1992 period, only landings records collected under Reef Fish Amendment 9 are acceptable. For the period January 1, 1993 through March 1, 1997 only reef fish logbook records are acceptable. If persons feel this record of their landings is incomplete, they may submit corrections to that record for consideration. Upon request, NMFS will provide eligible participants with a copy of their landings record for applicable years, prior to the publication of the final rule for this amendment. Members of the appeals board will provide their recommendation for each appeal to the Regional Administrator (RA) for final action. Those persons submitting appeals will have the opportunity to appear before the board hearing the appeal.

Notes: Persons may submit the appeal and supporting records directly to the RA rather than the board for resolution of the appeal. The board is terminated after the initial allocation of licenses is completed.

Preferred Alternative: A special board composed of the state directors or their designees will review and evaluate appeals. Members of the board will forward their individual recommendations to the RA, who will render the final decision on the appeal.

Discussion: The Federal Advisory Committee Act (FACA) applies to the board since members are non-federal employees advising the RA. Since state personnel are within the range of personnel who may have access to confidential data, no waiver of confidentiality is necessary by applicants. The meeting, or portions thereof, could be closed to the public. However, if the meetings are open to the public, then applicants should waive confidentiality of their records in their appeals application.

Rejected Alternative 1: A special advisory panel composed of five commercial industry members associated with the red snapper fishery will be appointed by the Council to review and evaluate appeals. Advisory panel members would be selected by the Council from a minimum of three recommended by each state director. The Council's representative, appointed to represent the Council, in attendance will summarize the recommendations and forward them to the RA of NMFS. The RA will render the final decision on the appeal.

Discussion: Five members are proposed to provide a geographical balance to the board and to fairly conduct the business before it. Memberships could be comprised of fishermen, dealers, fishing association representatives or others associated with the commercial red snapper fishery. The meetings of the advisory panel must be noticed and open to the public. Persons submitting appeals must waive confidentiality for their records, since industry members on the advisory panel would need access to confidential information contained in the appeals applications. If persons chose not to waive confidentiality to their records, they may submit the appeals directly to the Regional Administrator for resolution. The advisory panel may, in open session, discuss the appeals and associated records and vote on approval/disapproval of the appeal or they could also fill out individual forms with that recommendation and provide it to the Council representatives in attendance who would forward the forms for each appeals to the RA.

Rejected Alternative 2: A special board composed of five commercial industry members associated with the red snapper fishery will be appointed by the Council to review and evaluate appeals. Board members would be selected by the Council from a minimum of three recommendations by each state director. Members of the board will forward their individual recommendations to the Regional Administrator (RA), who will render the final decision on the appeal.

Discussion: In this instance, the special board would be an advisory committee to the RA and FACA applies; therefore, the members must submit individual recommendations to the RA. The meeting of the board, or portions of it, could be closed as an internal agency, pre-deliberative process; however, the proceedings could also be open to the public. Applicants would need to waive confidentiality to their records contained in the appeal applications, since the board consists of industry members. Persons not willing to waive confidentiality could submit their appeal directly to the RA for resolution.

Economic Impacts

The creation of an Appeals Board and the design of its structure has mainly equity effects. This is expected to have no noticeable effect on the benefits associated with the license limitation program. One major reason for this is that an appeals board would only marginally affect the number of persons or vessels receiving licenses. Economic changes would only be evident if the number of successful appeals were large compared to the number of qualifying persons or vessels.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: Although the appeals board will determine who will participate in the license limitation system in cases of dispute, the alternatives have no impact on the human environment.

Fishery Resource: The alternatives will have no impact on the red snapper resource.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effect on Wetlands: The alternatives will have no effect on wetlands.

8.0 NON-FISH TRAP HARVEST ALLOWANCE

Current rules set no restrictions on harvest of reef fish in traps other than fish traps, provided the vessel has a reef fish permit and abides by size limits, quotas, etc. This creates a loophole for harvest of reef fish by other trap gear. This section contains options for bycatch allowance of reef fish on vessels fishing with traps other than fish traps.

Preferred Alternative: A vessel that has on board or is tending any trap other than a permitted reef fish trap, a stone crab trap, or spiny lobster trap may not possess in excess of the recreational bag limit of reef fish, which cannot be sold.

Rejected Alternative 1: A vessel that has on board or is tending any trap other than a permitted reef fish trap, a stone crab trap, or spiny lobster trap may not possess reef fish in excess of 5 percent by weight of the vessel's total catch.

Rejected Alternative 2: Status Quo: A vessel with reef fish permit can retain commercial quantities of reef fish caught in traps for other directed fisheries.

Discussion: NMFS and NOAA enforcement personnel have suggested that fish traps be redefined so as to exclude using other traps to target reef fish. Rather than attempting to further describe fish traps, the alternatives above provide possession limits for reef fish from

traps other than stone crab traps, spiny lobster traps and "permitted reef fish traps" which means tagged traps fished by a vessel with a fish trap endorsement. Anecdotal information has indicated that some persons are fishing blue crab traps in the EEZ off the Big Bend area of Florida to target reef fish. It is believed that these persons do not possess a fish trap endorsement or a commercial reef fish vessel permit and are, therefore, illegally harvesting reef fish. Florida law allows retention of fish caught in blue crab traps, but requires the fishermen to hold a Gulf commercial reef fish vessel permit or South Atlantic snapper-grouper vessel permit to sell snappers or groupers. Blue crabs are rarely found in the EEZ off Florida and almost never found in commercial quantities. The Preferred Alternative should enhance enforcement, reducing illegal harvest of reef fish harvested by blue crab traps. As indicated under the Status Quo alternative, anyone who lands reef fish for sale, or possesses more than a bag limit of reef fish, must have the reef fish vessel permit. Since there is a moratorium on issuance of these permits, there is a control on who can land commercial quantities of reef fish through year 2000.

Florida currently regulates the allowable bycatch that can be retained from blue crab traps. Sea bass and grunts are apparently a major component of this bycatch when traps are fished offshore. The Preferred Alternative under Section 10.0 will allow Florida to regulate these species within this trap fishery.

Economic Impacts

These alternatives are designed mainly to control the violations of reef fish rules due to the use of certain types of traps for harvesting reef fish. While any of the alternatives to status quo can potentially enhance enforcement, the benefits to such actions do not necessarily translate to an increase in benefits to society. The main reason for this is that rule violations expend resources that when checked cannot be redirected to some other economic endeavor. The costs incurred by violators are essentially sunk costs that do not assist in generating benefits when violations are effectively prevented.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The effect of the Preferred Alternative would be that certain persons landing reef fish from the EEZ in traps other than reef fish, stone crab, and spiny lobster traps would no longer be able to sell the reef fish. This would likely include primarily persons fishing blue crab and black sea bass traps. The problem is compounded by the fact that approximately 215 Florida residents on the west coast of Florida are fishing under SAFMC commercial snapper-grouper permits which allow them, under state law, to commercially fish in state waters and land reef fish. The SAFMC, through Amendment 8 to their Snapper-Grouper FMP, will prohibit this practice, as will Florida on January 1, 1998. Until that occurs, enforcement will continue to be very difficult.

Fishery Resources: The alternatives may have some beneficial effect on reef fish resources.

Other Fishery Resources: The alternatives may have some beneficial effect on other fishery resources, such as the marine life complex managed by the state of Florida.

Effect on Wetlands: The alternatives will have no effect on wetlands.

9.0 VERMILION SNAPPER SIZE LIMITS

The most recent stock assessment for vermilion snapper indicated that the stock was not overfished, but that the current fishing mortality rate (F) was at a level that, if not reduced, would eventually result in an overfished state (RFSAP, November 1996). Length frequency information on recreational and commercial landings (see Figure 31 from Schirripa, 1996) indicates that an increase in the minimum size limit would increase yield per recruit (YPR) and reduce F.

Preferred Alternative: Increase the minimum size limit to 10 inches (TL).

Rejected Alternative 1: Increase the minimum size limit to 12 inches (TL).

Rejected Alternative 2: Status Quo - Minimum size limit remains at 8 inches (TL).

Discussion: Vermilion snapper females first show signs of maturity between 6.0 and 7.0 inches (TL) with most having reached sexual maturity between 8.0 and 9.0 inches (TL) (GMFMC Amendment 1, 1989 and Schirripa, 1996). Males mature later, beginning at about 10.0 inches (TL) (Nelson 1988). The minimum size at entry into the fishery that maximizes yield per recruit (YPR) is approximately 10 inches (TL) or slightly less than 10 inches (TL) at release mortalities of 25 and 33 percent, respectively. Minimum sizes set at 11.0 or 12.0 inches (TL) would result in lowering YPR, especially at 33 percent release mortality (Figures 9 and 10 - RFSAP, November 1996).

The 10-inch (TL) minimum size limit would have reduced annual commercial landings for 1993-1995 by up to an average of 5.0 percent and recreational landings by an up to an average of 22.9 percent (Revised Tables 21 and 24 from Schirripa, 1996). Presumably, the reductions in subsequent years would be similar, thereby reducing F for an interim period. The reduction in F would be greater for the recreational sector not only because a higher percentage of the landings are affected, but also because release mortality should be less than for the commercial sector that fishes in deeper water. Using Revised Table 26 from Schirripa (1996) for 1995 only, the RFSAP (1997) indicated the 10-inch size limit would only reduce overall catch by a maximum of 11 percent. If the trends reported by Schirripa (1997) continue in the fishery the Council will definitely need to take additional regulatory action to prevent this stock from becoming overfished. The Council has requested that a stock assessment on vermilion snapper be completed by SEFSC during FY 1998 in order to consider the appropriate actions.

Economic Impacts

The **Preferred Alternative** is expected to result in short-term losses to fishery participants of about an 11 percent in landings in terms of number of fish (using 1993-1995 data from the corrected numbers-at-age tables). Using Goodyear and Schirripa's (1991) length to weight conversion for vermilion snapper ($W = 5.27E-04 * TL^{2.9328}$) and the length distributions in Tables 21 and 24 of the assessment for the years 1993-95, the reduction in poundage is 3.9 percent. The reduction in landings is borne more by the recreational sector (23 percent by number, 11.2 percent by pounds; corrected Table 24 of the assessment) than by the commercial sector (5.2 percent by number, 1.6 percent by pounds; corrected Table 21 of the assessment); although about two-thirds of total landings are made by the commercial sector.

For the period 1993-1995, commercial landings of vermilion snapper averaged about \$4.42 million in value (Waters, 1996b). Applying the 1.6 percent reduction on this value means that the commercial sector would stand to lose about \$71 thousand in ex-vessel revenues. But considering the fact that demand for vermilion snapper is very likely to be inflexible, the potential revenue reduction would be less than this amount. Although it cannot be quantified, fishing cost may be expected to increase due to culling of undersized fish and possibly longer travel and/or fishing time.

The impact on the recreational sector is disproportionately shared by anglers fishing through the charter/headboat and private/rental modes. Since charter/headboats have accounted for about 90 percent of recreational harvest, they would bear most of the 23 percent reduction in harvest (in terms of number of fish) due to the 10-inch size limit. It is probably safe to conclude that private anglers would be minimally affected by the size limit.

Impacts on the for-hire vessels depend on the extent trips are affected by the size limit. The effect of a size limit on fishing trips is generally transmitted through its effect on fishing success. Fishing success, in turn, is determined by the overall quality of the fishing experience, including, among others, catching and releasing fish and keeping fish. A higher size limit may be expected to increase the catch and release experience over that of keeping fish. To the extent then that benefits from catch and release partly compensate for benefit reduction from keeping fewer fish, the impact of an increase in the size limit may be expected to be less than the mentioned reduction in catch. The extent of this compensation is currently not known, so the potential reduction in fishing trips cannot be determined. At any rate, none of the charterboat operators who testified to the Council suggested that the size limit would hurt their ability to attract customers.

Out of nine individuals who presented testimony to the Council at its March 1997 meeting on the vermilion snapper size limit, seven supported the size limit increase and two were opposed. Persons representing commercial fishing interests supported the 10-inch size limit by 2 to 1, charterboat interests supported the increase by 4 to 0, and a representative of the Center for Marine Conservation supported the increase but felt it was not enough. One person from

Pensacola who did not identify his affiliation, but appears to be charterboat, opposed the size limit increase because he felt that the 20 fish aggregate bag limit was a sufficient measure.

Rejected Alternative 1 would have similar impacts on fishing participants as the Preferred Alternative, but only greater in magnitude. Using the same assumptions as above, Rejected Alternative 1 would result in a total landings reduction of 47.7 percent in number of fish or 24.9 percent in pounds. The commercial sector would experience a 37 percent reduction in number of fish or 17.9 percent in pounds, while the recreational sector's landings reduction would be 69.3 percent in number of fish or 47.6 percent in pounds. Ex-vessel revenue loss to the commercial sector would be about \$1.64 million. Again, fishing costs may be expected to increase. On the recreational side, there is a relatively high likelihood that fishing trips would be affected by the size limit increase since the ability to keep legal size fish would be substantially reduced. Benefit losses from not being able to keep about 69 percent of catch are unlikely to be compensated by benefits from catch and release. The for-hire sector would probably experience a large amount of profit reduction as fishing trips would be relatively difficult to market, at least in the short run.

While an increase in minimum size limit for vermilion snapper may be expected to reduce benefits to both the commercial and recreational sectors, there is a possibility that benefits from reducing fishing mortality on vermilion snapper may not be realized because of some management actions on close substitute species, such as red snapper. The SEP (1996) specifically pointed out the important relationship involving the targeting behavior of fishermen for red and vermilion snapper. Waters (1996a) reported that vermilion snapper is an important alternative for red snapper fishermen in the northern and western Gulf when red snapper season is closed. To this end, the SEP (1996) recommended that the Council proceed with consideration of a joint management strategy for vermilion and red snapper, and perhaps other reef fish species.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The Preferred Alternative is projected to initially reduce recreational landings by about 23 percent and commercial landings by about 5 percent. This effect would continue until the fish have grown to a larger size[> 10 inches (TL)] or for a couple of years. If the vermilion snapper are distributed by size with water depth, fishermen may have to move further offshore to catch predominantly legal size fish. The effect of this on the recreational-for-hire sector is unknown. Rejected Alternative 1 would increase the impacts of these effects.

Fishery Resources: The Preferred Alternative, by reducing fishing mortality for several years, may help prevent the stock from reaching an overfished state. In the longer term, other management measures will be required to maintain the stock at a SPR level above overfishing. The size limit proposed will reduce recreational landings by a greater percent and fish released

in this fishery are more likely to survive since fishing occurs in shallower water than for the commercial sector.

Other Fishery Resources: The reduction in landings created by the size limit may result in fishermen, especially recreational fishermen, retaining other species they previously may have discarded.

Effects on Wetlands: The alternatives will have no effect on wetlands.

10.0 REMOVAL OF SEA BASS, GRUNTS AND PORGIES FROM FMP MANAGEMENT

Preferred Alternative: Remove sea bass (*Centropristis* sp.), grunts (Haemulidae) and porgies (Sparidae) from management under the FMP.

Rejected Alternative: Status Quo - Retain these species groups within the management unit and fishery managed by the FMP.

Discussion: Currently, the management unit of the FMP includes the following sea basses: black sea bass, rock sea bass, and bank sea bass. The only management measure applied to any of these species is a minimum size limit of 8 inches (TL) for black sea bass. There are 12 species of grunts that occur in the Gulf of Mexico (Hoese and Moore, 1977), but only the white grunt is included in the management unit of the FMP, and no specific management measures are applied to this species. Ten species of porgies occur in the Gulf of Mexico (Hoese and Moore, 1977), but only the red porgy is in the management unit of the FMP, and no specific management measures apply to this species.

Although some species within each of these species-complexes are found throughout the Gulf, typically the occurrence is rare or low, except off Florida. All of the directed commercial and recreational fisheries for these species-complexes occur off Florida. Of the sea basses, only black sea bass are targeted. The entire 1995 commercial landings of black sea bass (330 thousand pounds) came from the Florida shelf, predominantly from the Big Bend area (i.e., Dixie through Wakulla Counties) (R. Williams, FMFC, personal communication). Similarly, the entire 1995 recreational landings (356 thousand pounds) of black sea bass came from Florida waters (i.e., none reported from other states under MRFSS). NMFS head boat data for 1995 catches were predominantly from off northwest Florida (Cedar Key to Alabama).

Similarly, almost all the 1995 commercial landings of grunts (655 thousand pounds) were from off Florida and predominantly off the Big Bend area. Other major landings areas were Monroe County and Pinellas/Pasco Counties. Recreational landings of grunts in 1995 (about 2.5 million pounds) were also almost entirely from off Florida. White grunt made up nearly 88 percent of landings and they were predominantly taken off southwest Florida, while other grunts were predominantly taken off northwest Florida.

In 1995, more than 95 percent of the porgies landed by the commercial sector (500 thousand pounds) were taken off Florida. Similarly, recreational landings of porgies, excluding sheepshead and pinfish (about 326 thousand pounds), were predominantly off Florida (96 percent). Head boat landings in 1995 were predominantly off northwest Florida.

Overall, the effect of the Preferred Alternative would be to allow the state of Florida to manage state-based fishermen in these directed fisheries that occur in the Gulf only off Florida. The sea basses and grunts are largely harvested in the commercial black sea bass trap fishery that has existed in Florida waters since the 1960s. The recreational-for-hire fishery largely targets grunts from the Big Bend area south to the Florida Keys during certain periods of the year. The recently implemented aggregate bag limit of 20 fish (for reef fish with no bag limits) may adversely impact the recreational-for-hire sector, because their clientele have harvested, and expect to harvest, many more than 20 small grunts per trip. Charter trips are sold on the expectations, not the landings. Charter vessel operators from central, west Florida feel the aggregate bag limit will at least result in persons no longer booking full-day trips, during part of the year (Public Testimony at January 15, 1997 Council meeting). The Council would prefer that management of these species-complexes be accomplished by the state of Florida. The Council representative of the state of Florida indicated that the state would be managing these species (May 1997 Gulf Council minutes).

Economic Impacts

These species are mainly caught in waters off Florida within state jurisdiction and adjacent EEZ. For the period 1993-1995, commercial landings in the Gulf of grunts, porgies, and seabasses had average ex-vessel values of \$375 thousand, \$578 thousand, and \$213 thousand, respectively (Waters, 1996b). These are relatively small fisheries in the Gulf.

Removing these species from the FMP would eliminate some possible duplication of work and reduce management cost for these species, because these fisheries are relatively small. While it is recognized that state rule making may not take into account some of the national standards set forth in the Magnuson-Stevens Fishery Conservation and Management Act, the harvest of these species in state and adjacent federal waters would not preclude any state rule being consistent with the mentioned national standards.

Since the alternatives considered mainly involve the determination of a government fishing agency that would actively manage these species, both alternatives have no short-run impacts on fishing participants.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: Management of these species complexes by the state of Florida, as proposed, would likely have a beneficial effect to the persons regulated, in that state rules could be compatible for both east and west coasts of Florida. Florida is currently regulating harvest of some live, juvenile grunts through their marine life rules. They are also regulating the commercial black sea bass fishery within their jurisdiction.

Fishery Resources: The effect of the Preferred Alternative would be beneficial to management of these species-complexes, and the status of those stocks only if the State of Florida manages these stocks. Some of the stocks of species of porgies and grunts may be a single stock ranging throughout both east and west coasts of Florida, and therefore, should be managed as a single stock.

Other Fishery Resources: The alternatives will have no impact on other fishery resources.

Effects on Wetlands: The alternatives will have no effect on wetlands.

11.0 GREATER AMBERJACK SPAWNING SEASON CLOSURE

The Council, through Amendment 12, reduced the recreational bag limit for greater amberjack from 3 fish to 1 fish (effective 15 January 1997). The Council took that action because of concern that the abundance of greater amberjack was declining (see Figure 1). The Council and the Reef Fish Stock Assessment Panel felt that the 1996 stock assessment for greater amberjack, prepared by McClellan and Cummings (1996), was too imprecise to specify an ABC range and set TAC. Had that action been taken the Council would have specified a commercial quota for the fishery. In lieu of that action, the Council is proposing a seasonal closure during the spawning season for the commercial fishery in order to reduce commercial catch by an amount similar to that imposed on the recreational sector by the bag limit reduction to one fish.

Preferred Alternative: Close the commercial greater amberjack fishery during the months of March, April, and May in the Gulf EEZ.

Rejected Alternative 1: Close the commercial greater amberjack fishery during the months of March, April, and May in the Gulf EEZ off Florida (i.e., east of a line running south of the Florida/Alabama boundary to the extent of the EEZ at 87°31'06"W. longitude).

Rejected Alternative 2: Status Quo - No closure.

Discussion: The spawning season for greater amberjack is March through May. Florida rule currently closes the fishery to commercial harvest during April and May in state waters. However, this is probably largely unenforceable in that there is no closure in the Gulf EEZ. There is an April closure in the South Atlantic EEZ.

The current size limit of 36 inches (FL) is the only control on commercial landings. More recent information of sexual maturity indicate that a 100 percent of greater amberjack do not reach sexual maturity until age 4 [36 to 40 inches (FL)], but they do first begin reaching sexual maturity at age 2 [24 to 31 inches (FL)] when about 25 percent are mature. Approximately 50 percent are sexually mature at age 3 [31 to 36 inches (FL)] (RFSAP, November, 1996).

Commercial landings of greater amberjack on the Florida west coast (excluding Monroe County) averaged 55 to 65 percent annually of Gulf landings (Table 1 from McClellan and Cummings 1996). If the seasonal closure (March - May) had been effective during the 1993-1995 period, commercial landings would have been reduced by 20.3 percent. A similar closure (Preferred Alternative) for the Gulf of Mexico would have reduced landings by 22.1 percent (Table 3 from Cummings 1997). The actual reduction achieved by these alternatives would be somewhat less as fishermen adjust to the closure.

Economic Impacts

Seasonal closures may be expected to bring about a change in fishing patterns in terms of, among others, redirecting fishing effort to other species during the closure and/or bundling effort right at the opening of the fishery. In the present case, greater amberjack are harvested by vessels that find it more efficient to harvest this species at certain times of the year. By closing the greater amberjack fishery for some period of time, a shift to other fisheries means that either revenues are sacrificed or higher costs are incurred. If, on the other hand, effort lost during the closure is shifted to and bundled with effort in the open period, an increase in landings for those early months of the open season would bring about lower ex-vessel price. Overall revenues would decline; while cost may not decline and may in fact increase as vessels and crew are worked more intensively over a shorter period of time. In either case, a closure may be expected to bring about reductions in vessel profitability.

The impacts of the **Preferred Alternative** would be similar in nature to those of the Rejected Alternative 1, with the magnitude being only slightly greater, i.e., a reduction in landings of about 22.1 percent or \$444 thousand in ex-vessel revenues.

Rejected Alternative 1 is estimated to reduce landings by 20.3 percent based on the 1993-1995 average landings and assuming no effort change. For the same period, ex-vessel revenues from amberjacks averaged about \$2.01 million (Waters, 1996b). Based on these numbers, an approximate loss in ex-vessel revenue would be about \$408 thousand. Part of this revenue loss may be recouped as effort is shifted to the open season, but as noted earlier such effort shift would result in increased landings that would depress ex-vessel prices. In this case, revenue loss during the closed months would not be compensated by revenue increase after the closure.

While the estimated impacts of the Preferred Alternative are relatively small from the standpoint of the entire reef fish fishery (amberjacks comprise about 9.1 percent in pounds or 4.7 percent in ex-vessel value of total reef fishes landed in the Gulf), such impacts on

individual vessels could be relatively large. Waters (1996a) noted that amberjacks were harvested primarily by low-volume boats with vertical hooks and lines in the northern and eastern Gulf. The number of boats that fished for amberjacks ranged from 24 in February to 79 in June. These are the vessels that would probably bear the brunt of the three-month closure of the greater amberjack fishery. Being low-volume to start with, reductions in landings and revenues could comprise a large portion of their landings and revenues.

Whether or not benefit losses from the proposed three-month closure would be more than compensated for by future benefits from a more sustainable stock and potentially better fishing conditions depends on the contribution of the regulation to the maintenance of a sustainable stock. A more recent stock assessment (Cummings and McClellan, 1996) indicated that the greater amberjack stock, with an SPR of 34-36 percent is above the overfishing level of 20 percent SPR. On the other hand, some members of the Council and the general public doubt the accuracy of this assessment, noting the decline in catch and possibly abundance. The perception of a declining stock partly led the Council to reduce the recreational bag limit from 3 to 1 fish per person. This contrasting information presents some uncertainty on the future benefits of the commercial closure (and also of the recreational bag limit reduction). If the closure does not materially contribute to the abundance of the stock, the fishery will merely incur a cost without compensating future benefits. If the closure does make a difference, then there is some possibility that future benefits can ensue from the regulation that may compensate for short-run losses. Under this scenario the overall conclusion of this RIR is that short-run losses would be incurred with uncertain future benefits.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The Preferred Alternative would adversely affect commercial fishermen fishing the Gulf. Rejected Alternative 1 would adversely impact commercial fishermen off Florida. Anecdotal information suggests most of this fishing occurs south and east of the Florida Panhandle (Escambia through Bay counties). In the central and western Gulf, amberjack are targeted principally when the red snapper season is closed, and the adverse effects would likely be greater in terms of persons affected.

Fishery Resources: Both the Preferred Alternative and Rejected Alternative 1 are anticipated to have beneficial effects on the greater amberjacks resources.

Other Fishery Resources: Fishermen will probably target other species during the closure.

Effects on Wetlands: The alternatives will have no impact on wetlands.

12.0 EXCLUSION OF SPECIES FROM THE AGGREGATE BAG LIMIT

Preferred Alternative: Remove from the species of reef fish subject to the 20-fish aggregate bag limit species that are in the reef fish fishery and not in the FMP management unit.

Alternative 1: Remove from the species of reef fish subject to the aggregate bag limit the following species: [pinfish and sand perch] OR [pinfish, sand perch, and other species as may be selected by the Council].

Alternative 2: Status Quo - Continue inclusion of all reef fish species, not otherwise subject to a bag limit, in the 20-fish aggregate bag limit.

Discussion: Currently, the FMP's 20-fish aggregate bag limit for reef fish that do not have a specific bag limit applies to all reef fish. It includes two species that are commonly used as bait, pinfish and sand perch. These two species, and 9 additional species, are characterized in the FMP as species in the reef fish fishery, as opposed to species in the reef fish management unit. Species in the reef fish fishery are: hogfish, tomtate, pigfish, grass porgy, jolthead porgy, knobbed porgy, littlehead porgy, pinfish, dwarf sand perch, sand perch, and queen triggerfish. The following species would be included in the 20-fish aggregate bag limit: lane snapper, vermilion snapper, lesser amberjack, Almaco jack, banded rudderfish, gray triggerfish, and all the tilefishes.

The rationale in Amendment 12, which proposed the aggregate bag limit, stated, among other things, that the 20-fish aggregate bag limit was expected to allow a large enough recreational harvest so as not to affect most legitimate recreational fishing activities. Further, it was expected that the aggregate bag limit would not prevent fishermen from catching their own bait.

As currently implemented, the 20-fish aggregate bag limit has significant potential for adversely affecting legitimate recreational fishing activities and preventing the possession in the EEZ of more than 20 pinfish, sand perches, and/or other species, combined, for use as bait.

The status quo will continue in effect a management measure that is unnecessarily burdensome on recreational fishermen.

Economic Impacts

The Preferred Alternative and Rejected Alternative 1 would alleviate some of the unintended impacts of the 20-fish aggregate recreational bag limit, which applies to reef species not individually subject to a bag limit. Likely to be benefitted by this measure are for-hire vessels, particularly in the central and south Florida. With more stringent restrictions imposed on some major species targeted by these vessels, allowing for-hire vessel anglers to retain more of other species could partly compensate for their losses. To some extent, for-hire vessel fishing trips would become more marketable, and thus would cushion the impacts of restrictions on some major species that for-hire vessels rely on for selling fishing trips.

Due to lack of information, it is not known what this set of measures does to the sustainability of subject species. It is very likely, however, that their presence in the bag could release some of the effort expended on species that have been determined to be either overfished or nearly overfished. The nature and extent of these indirect impacts are not known.

Environmental Consequences

Physical Environment: The alternatives will have no impact on the physical environment.

Human Environment: The inclusion in the 20-fish aggregate bag limit of species listed in the fishery in addition to those in the management unit of the FMP had an unanticipated adverse effect on recreational fishermen, particularly the vessel-for-hire sector. The FMP identified species in the fishery as being included only for the purpose of collecting landing statistics; whereas, other management measures were applied to species listed in the management unit. The principal adverse impact affected the recreational, vessel-for-hire sector in central and south Florida. These persons used some of the species as bait (e.g., pinfish, sand perch). They also targeted other species (e.g., grunts) and routinely had customer landings of more than 20 fish each. They testified that the 20-fish limit would result in fishermen ceasing to book full-day trips adversely affecting their income.

Alternatives under Section 10.0, if approved, would remove grunts, porgies, and sea bass from management under the FMP partially resulting in the same effect as the Preferred Alternative.

Fishery Resources: The effect on these fishery stocks would be to allow unrestricted recreational harvest for a period until Florida develops regulations governing these stocks. Data from the NMFS headboat survey (Dixon, NMFS, Pers. Comm.) indicate individual catches of over 20 fish of these species is a relatively rare occurrence.

Other Fishery Resources: The alternatives are anticipated to have no impact on other fishery stocks.

Effects on Wetlands: The alternatives will have no impact on wetlands.

13.0 REGULATORY IMPACT REVIEW

13.1 Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: 1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action, 2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem, and 3) it ensures that the regulatory agency

systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

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

This RIR analyzes the probable impacts on fishery participants of the proposed plan amendment to the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico (FMP).

13.2 Problems and Objectives

The general problems and objectives are found in the FMP, as amended and Section 4.0 of this document. The purpose and need for the present plan amendment are found in Section 3.0 of this document. The current plan amendment addresses the following issues: 1) instituting a license limitation system for the commercial red snapper fishery, 2) establishing an appeals process for license eligibility, 3) limiting harvest and possession of reef fish from traps, 4) changing minimum size limit for vermilion snapper, 5) removing sea bass, grunts and porgies from FMP management, 6) closing the commercial greater amberjack fishery off Florida during March-May, and 7) excluding certain species from the 20-fish aggregate bag limit.

13.3 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects are stated in terms of producer surplus to the harvest sector, net profits to the intermediate sector, and consumer surplus to the final users of the resource.

In addition to changes in the surpluses mentioned above, there are public and private costs associated with the process of changing and enforcing regulations on the reef fish fishery.

Ideally, all these changes in costs and benefits need to be accounted for in assessing the net economic benefit from management of reef fish. The RIR attempts to determine these changes to the extent possible.

13.4 Impacts of Proposed Alternatives

The RIR accompanying Amendment 8 to the Reef Fish FMP had already dealt with some of the major implications of establishing various forms of effort limitation in the commercial red snapper fishery. Among others, that RIR compared and contrasted three

general management alternatives for the red snapper fishery, namely, no action, license limitation, and individual transferable quota. In addition, some discussions were devoted to the various features of the fishery that need to be described when considering an effort limitation program for a fishery -- fishing practices and dependence on the fishery, income and labor effects of management, demographic and social information relevant to the fishery, and economics of the fishery. These specific discussions in Amendment 8 are included, by reference, in the current RIR for Amendment 15 to the Reef Fish FMP.

The economic impacts of the individual alternatives are discussed in the main section (Sections 6.0-12.0) of this amendment under each of the alternatives. The subsection "Economic Impacts" comprises the major part of this RIR and is included herein by reference.

13.5 Private and Public Costs of Regulation

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

Council costs of document preparation, meetings, public hearings, and information dissemination	\$60,000
NMFS administrative costs of document preparation, meetings and review	22,000
Law enforcement costs	600,000
Public burden associated with licenses	35,000
NMFS costs associated with licenses	62,000
 TOTAL	 \$779,000

These costs pertain mainly to the initial implementation of the Amendment 15, primarily the license limitation program. Some cost items will be expended annually for the duration of the license limitation program. These costs include a public burden cost of \$35,000, NMFS cost associated with licenses of \$62,000, and enforcement cost of \$600,000. Enforcement cost has been determined by enforcement personnel to be the expense necessary to bring enforcement of current and proposed rules to an acceptable level. Among others, this cost includes the hiring of additional four enforcement officers, one special agent and one support position.

13.6 Summary of Expected Impacts

The following summary discusses primarily the impacts of the preferred alternatives in relation to the rejected alternatives, particularly the status quo. Refer to Section 5 of this document for an enumeration of all preferred alternatives.

Providing for the issuance of Class 1 and Class 2 licenses, with respective initial trip limits of 2,000 pounds and 200 pounds, basically transforms the current endorsement system into a license limitation system. In that vein, it shares many of the attributes of the current system, by way of preventing a worsening of the derby and overcapitalization in the fishery when contrasted with the open access system and maintaining the preferential treatment given to endorsees. Nevertheless, this alternative does not effect a reduction in overcapitalization, and may in fact increase fishing effort as competition within and among the two license classes stiffen in view of some future program, such as ITQ, in which initial allocation of harvest privileges could be based on landings history during the license limitation regime. This alternative does not address an inequity pointed out by the Ad Hoc Red Snapper AP regarding the endorsement system which effected a redistribution of landing share from highliners to other endorsement holders. But unlike Rejected Alternative 10, it does not introduce another form of inequity whereby some current endorsement holders would be relegated to a different type of license with reduced trip limits.

Issuing licenses to persons but tied to specific vessels involves a tradeoff between ease in transfer which facilitates eventual distribution of licenses to more efficient producers and enforcement cost which could be higher if licenses were not tied to specific vessels. Inclusion of historical captains as recipients of Class 1 licenses does tend to allow more fishing effort to be expended in the fishery, but there are only relatively few of these historical captains as to effect a marked increase in fishing effort. Transferability of landing records for initial eligibility of licenses has virtually no effect on efficiency, since the number of licenses issued would not increase due to such transfer of records. It does, however, address certain equity aspect relating to eligibility to receive a license after some investment has been made to secure the privilege to participate in the red snapper fishery. Creating an appeals board to hear disputes and render an opinion pertaining to initial eligibility for licenses affords fishermen an avenue to present their sides regarding some landings record that could aide in their qualification to receive a certain of license.

The preferred alternatives regarding transferability of licenses, number of licenses that can be owned by any one entity, and duration of the license limitation program enhance the effectiveness of the license limitation program in bringing about a more efficient fishery. Their corresponding rejected alternatives tend to introduce one or more features that only make the system more complex than necessary. In addition, the preferred alternative disallowing commercial harvest of red snapper during the closed season helps to ensure

that benefits from a license, limitation such as forestalling an increase in fishing effort, would not be eroded.

In their papers, Waters and Antozzi (1997a and b) indicate that revenues would be higher under a maxi-derby than under a mini-derby, and would even be higher under a micro-derby. Among the alternatives considered, there is none that approximates a micro-derby situation. The preferred alternative approximates a mini-derby case, so that in this sense it may be regarded as promoting a likely decrease in ex-vessel revenues although this conclusion has been questioned by the SEP. No conclusion, however, can be reached regarding the net economic effects of the preferred alternative or of the various derby types.

Regarding vermilion size limits, the status quo, i.e., 8-inch size limit, has been determined to allow further deterioration of the stock's status, which could have potentially significant adverse impacts on the stock and the industry over the long-run. At the other end is the rejected alternative which proposes a 12-inch size limit. This could effect an immediate and substantial revenue reduction on both the commercial vessels and for-hire vessels which, respectively, could lose as much as 25 percent and 69 percent in landings. The preferred alternative attempts to balance the short-run adverse effects and long-run beneficial effects. In the short-run this alternative adversely impact both the commercial and recreational sectors, but the latter bears most of the short-run adverse impacts.

As regards the spawning season closure for greater amberjack, the preferred alternative would have larger adverse impacts on fishing participants over the short run. The long-term scenario is unclear and depends to some extent on the current and future status of the stock. The Council's choice of the preferred alternative, despite its larger adverse impacts on small entities, has been motivated partly by concern regarding the status of the stock, that is, that the stock may be worse than what the stock assessment has portrayed. If such were the case, choice of the preferred alternative could arrest potential long-term negative impacts on the stock and on fishing participants. Otherwise, the resulting scenario would be short-run losses without compensating future benefits.

Regarding the remaining items in the amendment, the preferred alternatives are deemed to possess better features than their corresponding rejected alternatives in plugging loopholes with respect to the harvest of reef fish in traps, simplifying state and federal management of sea bass, grunts and porgies, and clarifying the type of species subject to the 20-fish aggregate bag limit.

Total cost in preparing and implementing this amendment is estimated at \$779,000. This consists of a one-time cost of \$82,000 incurred by the Council and NMFS in preparing this amendment and an on-going cost of \$697,000. It is to be noted that of the on-going cost, \$600,000 is for law enforcement which involves hiring of additional personnel to bring enforcement of current and proposed rules to an acceptable level.

13.7 Determination of a Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a "significant regulatory action" if it is likely to result in: a) an annual effect on the economy of \$100 million or more; b) a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or c) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The entire Gulf reef fish commercial harvest sector has an ex-vessel value of \$45 million. Considering this size of the fishery and the fact that the measures considered in this amendment do not significantly affect the total revenues generated by the reef fish commercial sector, a \$100 million annual impact due to this amendment is not likely to happen. Prices of reef fish to consumers are not expected to increase significantly as a result of this amendment. Cost increases to the red snapper industry are expected to be insignificant, at least at the start of a license limitation program. License prices may eventually increase, and it is expected that license prices would tend toward the upper end of the price range for the respective classes of licenses. Costs to the local and federal governments, with the exception of enforcement cost, are estimated to be relatively small. The proposed license limitation on the commercial red snapper fishery may be expected to have some adverse effects on employment, competition, and investment; on the other hand, the same measure may bring about a more rationale approach to investment, competition, and employment to the extent that some level of economic efficiency is achieved. Costs and revenue impacts of the other measures have been determined to be relatively small. Other measures in this amendment have been determined to affect revenues and costs of certain segments in the reef fish fishery. To the extent, that most of those impacts are confined mainly to those segments, such impacts are deemed to be relatively small from the standpoint of the entire industry or geographical area.

Based on the foregoing, it is concluded that this regulation if enacted would not constitute a "significant regulatory action."

13.8 Initial Regulatory Flexibility Analysis

The Regulatory Flexibility Act requires a determination as to whether or not a proposed rule has a significant impact on a substantial number of small entities. If the rule does have this impact then an Initial Regulatory Flexibility Analysis (IRFA) has to be completed for public comment. The IRFA becomes final after the public comments have been addressed. If the proposed rule does not meet the criteria for "substantial number" and "significant impact," then a certification to this effect must be prepared.

All of the commercial reef fish harvesting entities affected by the rule will qualify as small business entities because their gross revenues are less than \$3 million annually. In addition, for-hire vessels in the Gulf affected by the proposed rule generally earn less than \$5 million in annual revenues and are thus considered to be small business entities. Hence, it is clear that the criterion of a substantial number of the small business entities comprising the commercial reef fish harvesting industry and the for-hire sector being affected by the proposed rule will be met. The outcome of "significant impact" is less clear but can be triggered by any of the five conditions or criteria discussed below.

The regulations are likely to result in a change in annual gross revenues by more than 5 percent. In view of the fact that the license limitation program would initially include practically all current participants in the commercial red snapper fishery, revenues of red snapper vessels are unlikely to be decreased. There is, at any rate, a potential change in the distribution of revenues. If all eligible Class 2 participants apply for the license and very likely use the license, the overall share of the Class 2 licensees as percent of the entire commercial quota could increase in a fashion that would not materialize under the current endorsement system. Based on historical landings, this change could be higher than 5 percent relative to the 1996 share of these vessels. Among the proposed features of the license limitation program, including the creation of an appeals board, only the provision regarding fishing seasons has potential impacts on revenues. These impacts have been determined to reduce ex-vessel revenues, but the amount of reduction is unknown. Potential reduction in revenues pursuant to the provision regarding non-fish trap harvest allowance is not known, but it should be noted that this proposal is primarily intended to close a loophole in current regulations pertaining to harvest of reef fish other than fish traps, stone crab traps, and spiny lobster traps. The proposed increase in size limit for vermilion would reduce commercial ex-vessel revenues by less than 5 percent, since landings reductions have been estimated to be only about 1.6 percent. On the other hand, the impact of such size limit increase on the recreational sector would be relatively large, at about 23 percent reduction in landings. Most of this reduction would fall on the for-hire vessels, primarily because about 90 percent of recreational landings of vermilion snapper is accounted for by fishing in for-hire vessels. There are no expected revenue reductions from the proposed rules regarding sea bass, grunts, and porgies and aggregate recreational bag limit. Revenue reduction from the proposed spawning season closure for greater amberjacks could be as high as 22 percent. This reduction is small relative to the revenues from the commercial reef fish fishery, since this segment comprises only 9.1 percent in landings and 4.7 percent in revenues of the entire reef fish industry. There is a good possibility, however, that such revenue reduction on those directly impacted by the measure would be significant.

Annual compliance costs (annualized capital, operating, reporting, etc.) increase total costs of production for small entities by more than 5 percent. The public burden to comply with the provisions of this amendment has been estimated at \$35,000 annually. This is a relatively small amount relative to the total costs expended by commercial reef fish

vessels. However, entry cost of new fishermen into the red snapper fishery could be large when purchase of licenses is necessitated. The price of licenses could account for more than 5 percent of their total costs of operation.

Compliance costs as a percent of sales for small entities are at least 10 percent higher than compliance costs as a percent of sales for large entities. All the firms expected to be impacted by the rule are small entities and hence there is no differential impact.

Capital costs of compliance represent a significant portion of capital available to small entities, considering internal cash flow and external financing capabilities. General information available as to the ability of small business fishing firms to finance items such as a switch to new gear indicate that this would be a problem for at least some of the firms. The evidence is that the banking community is becoming increasingly reluctant to finance changes of this type, especially if the firm has a history of cash flow problems. Available information, however, is no sufficient to estimate the number of small business entities that would be affected in this fashion.

The requirements of the regulation are likely to result in a number of the small entities affected being forced to cease business operations. This number is not precisely defined by SBA but a "rule of thumb" to trigger this criterion would be two percent of the small entities affected. While the adoption of a license limitation would preclude vessels some from re-entering the red snapper fishery without leasing or buying licenses, it is not clear if these vessels would totally cease operation. They could still participate in other reef fish fisheries if they possess valid commercial reef fish permits. The increased size limit on vermilion snapper and three-month closure for greater amberjack would reduce revenues of some vessels, but those affected are not expected to cease operation entirely.

Considering all the criteria discussed above, the conclusion is that small businesses will be significantly affected by the proposed rule. Hence, the determination is made that the proposed rule will have a significant economic impact on a substantial number of small business entities and an Initial Regulatory Flexibility Analysis (IRFA) is required.

The full details of the economic analyses conducted for the proposed rule are contained in the RIR and some of the relevant results are summarized for the purposes of the IRFA.

Description of the reasons why action by the agency is being considered: The need and purpose of this action are set forth in Section 3 of this document.

Statement of the objectives of, and legal basis for, the proposed rule: The specific objectives of this action and the general objectives of the Reef Fish FMP are enumerated in Section 4 of this document. The Magnuson-Stevens Fishery Conservation and Management Act of 1976 provides the legal basis for the rule.

Description and estimate of the number of small entities to which the proposed rule will apply: The proposed rule will apply to all of the 1,424 (129 endorsees and 1295 non-endorsees, as of March 1, 1997) commercial reef fish harvesting firms that currently hold permits to fish in the Gulf of Mexico. According to a recent survey (Waters, 1996a), on average these small firms typically operate fishing vessels that have a length of 38 feet, have a current estimated resale value of \$52,817, provide \$52,000 in gross sales of reef fish and other species, and produce a net income of \$12,000. There are about 838 charter vessels and 92 party boats operating in the Gulf.

Description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records: The reporting, recordkeeping and other compliance requirements of the proposed rule are not materially different from the current practice, with the possible exception of license renewal. The public burden associated with this latter activity is estimated to cost the industry \$35,000 annually, but no additional professional skills are required to comply with the proposed rule.

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.

Description of significant alternatives to the proposed rule and discussion of how the alternatives attempt to minimize economic impacts on small entities: Several types alternatives have been considered as ways to meet the FMP objectives. With respect to the license limitation program, the status quo, i.e., endorsement system, is not considered a viable alternative since it is a closed system. An open access system could pose as an alternative, but it is bound to result in major adverse economic impacts on current and historical participants of the fishery. Other specific alternatives have been explored, but are generally deemed to be more costly to the current and historical participants of the fishery, although in the particular case of multi-season red snapper fishery, some unknown amount of revenue could be forgone by adopting the proposed alternative. Establishing an appeals board as part of the license limitation program affords fishermen an avenue for clarifying their sides regarding eligibility for a certain type of license. Regarding vermilion size limits, the status quo, i.e., 8-inch size limit, has been determined to allow further deterioration of the stock's status, which could have potentially significant adverse impacts on the stock and the industry over the long-run. At the other end is the rejected alternative which proposes a 12-inch size limit. This could effect an immediate and substantial revenue reduction on both the commercial vessels and for-hire vessels which, respectively, could lose as much as 25 percent and 69 percent in landings. As regards the spawning season closure for greater amberjack, both rejected alternatives would have less adverse impacts on fishing participants. The Council's choice of the preferred alternative, despite its larger adverse impacts on small entities, has been motivated partly by concern regarding the status of the stock, that is, that the stock may be worse than what the stock

assessment has portrayed. If such were the case, choice of the preferred alternative could arrest potential long-term negative impacts on the stock and on fishing participants. Preferred alternatives pertaining to other items in the amendment have better features than their corresponding rejected alternatives in plugging loopholes with respect to the harvest of reef fish in traps, simplifying state and federal management of sea bass, grunts and porgies, and clarifying the type of species subject to the 20-fish aggregate bag limit.

14.0 ENVIRONMENTAL ASSESSMENT

The purpose and need for action for this amendment are contained in Section 3, with additional discussion in Section 4. The list of proposed actions is contained in Section 5. The full list of alternatives considered, including rejected alternatives, is listed for each issue in the appropriate issue section (Sections 6.0 to 12.0).

The description of the affected environment and environmental effects of the fishery were discussed in the SEIS for Amendment 5 and are incorporated in this amendment by reference.

14.1 Effects on Physical, Human, Fishery and Wetlands Environments

Discussion of the environmental consequences of the alternatives accompanies the sections containing the alternatives (sections 6.0 to 12.0) and constitutes the bulk of the environmental assessment with respect to the specific alternatives. Additional information concerning human impacts is contained in the RIR, and in the Economic Impacts subsection under each of the sets of alternatives.

14.2 Human Environment and Social Impact Assessment of Red Snapper License Limitation Alternatives

No Action Alternative: Reverting to full open access system will bring back, possibly in a more intense manner, the many economic and social problems in the fishery. If an overall quota and good enforcement are sufficient to conserve the resource, the biological gains from management will not translate to economic gains. A rebuilding stock which either leads to less fishing cost per vessel or to increased quota and revenues will inevitably invite more effort and capital investment into the fishery, resulting essentially in a wasteful allocation of resources. The fishery would tend to become more inefficient. This problem will only be exacerbated by the increasing demand for snappers which would bring about an increase in prices. In addition, if domestic supply for red snapper becomes unstable, wholesalers will turn to imports. The competitive status of the red snapper industry will thus be jeopardized in the long run. Over a longer horizon, the net effects of the license moratorium and the endorsement may be expected to be economically negative, but not nearly as negative as will be the case under open access (i.e., no action).

A combination of trip limits and monthly season openings may initially slow down the rate of harvest of red snapper depending on the amount of trip limit chosen, but will still leave entry into the fishery open to other vessels with reef fish permits. If the chosen trip limit leads to quota underrun in one year, there will result a strong clamor for higher trip limits in the following year. With such quota underrun, vessels not currently targeting red

snapper could shift their effort to catch red snapper. This will particularly heighten if the following year's trip limits are increased. Monthly or weekly season openings even with trip limits will eventually create mini- or micro-derbies as more vessels enter the fishery. Management of the commercial fishery through input controls without quota closures would likely have similar effects as management with quota closures and input controls. In this situation, though, the likelihood to impose more input controls is relatively higher.

Not only will the economics of the fishery be adversely affected by an open access system management, but also will the social conditions. As noted above, reverting to an open access system would only tend to worsen the derby situation. In commenting on the derby problem that occurred in 1992, the SEP (1992) outlined several social disruptions caused by the derby. They remarked that the shortened season curtailed available income into a temporal window that did not allow for flexibility in fishing options. Because of equipment breakdowns or other prohibitive factors, some fishermen realized lower (or zero) income generated during the season. Due to competitive and stressful nature of the shortened season, other negative social impacts were experienced. These included increased permanent exiting from the fishery, disruption of family income and seasonal planning, and increased work stress associated with an intensified level of catch effort per unit time. An open access system may only worsen the described adverse social impacts.

Thomas et al. (1993) conducted a survey of red snapper fishermen who own and operate their own boats (owner/operators) and who were issued a red snapper endorsement, allowing trip limits of 2,000 pounds. Owner/operators consisted 72 percent of all persons holding red snapper endorsements (131). Of these, 79 percent (75 fishermen) were interviewed. The survey determined the salient attitudes, practices and beliefs the fishermen held about the fishery and regulatory effects applied to the fishery, as well as demographic information. The survey asked fishermen to contrast several social and economic indicators for periods of pre-regulation (1986- 1989) and post-regulation (after the quotas established were taken annually and the fishery closed); therefore, for purposes of this amendment most of the information is more relevant to the no action alternative (status quo) and is included here. Information relevant to other amendment alternatives is included in subsequent sections. The survey also utilized a social theoretical model to describe, explain and empirically test the decision-making processes used by the fishermen in their efforts to pursue a livelihood.

The following subsections for the No Action Alternative are based on Thomas et al. (1993). A discussion of present participation in the fishery is presented under alternatives for license limitation and ITQs.

Fishing Practices in and Dependence on the Fishery: Almost all of the fishermen (70 percent) surveyed by Thomas et al. (1993) used bandit rigs to target red snapper and other reef fish. In addition to bandit rigs, nearly half (45.9 percent) used rods and reels. Approximately 19 percent used longlines for species other than red snapper.

A comparison of fishing behavior prior to the implementation of closures in 1992 and 1993, with that after the closures, reveals that the fishery is now closed for three of the six primary months for red snapper fishing. This is a source of frustration for many fishermen.

Prior to implementation of restrictive quotas, fishermen surveyed by Thomas et al. (1993) exercised a greater degree of diversity in fishing behavior. Only 77.3 percent fished all year long for red snapper. Nearly 23 percent fished for red snapper during specific months with this period being predominantly October through March. After implementation of the quotas all fishermen target red snapper only in the months of the open season.

A consequence of the short season and derby fishery has raised concern among surveyed fishermen over safety issues. Fishermen feel that they are being forced to fish in weather they normally would avoid. Nearly half (49.2 percent) indicated weather they normally would have avoided occurred in 6 to 15 of their trips, while only 12.3 percent did not fish in such weather.

Since the implementation of regulations in the red snapper industry, a significant number of fishermen report increases in their effort directed at the harvest of triggerfish, silk snapper, vermilion snapper, and king mackerel. One of the unintended effects of regulations on red snapper may be increased stress on the stocks of these other species. This suggests that fisheries managers need to conceptualize policy not along the lines of a single fishery, but in terms of a more general fisheries management program.

Typically those fishermen that in the pre-regulation period (1986-1989) targeted red snapper all year also targeted (or caught) a greater diversity of finfish species than fishermen who targeted red snapper in certain months (Thomas et al. 1993 - Tables 10 and 11). In the post-regulation period and after red snapper season was closed a significantly greater effort was applied targeting vermilion snapper and king mackerel, with more modest increases directed at other species. Fishermen that targeted red snapper only during certain months in the pre-regulation period directed significantly greater effort at triggerfish, silk snapper, scamp, and tuna in the post-regulation period.

The great majority of respondents (over 80 percent) intend to continue fishing commercially for red snapper for the next two to three years. This is so despite the fact that most are pessimistic about the future price of fish (84 percent), many are concerned about their ability to make payments or buy supplies (58 percent), and slightly less than half (49 percent) are confident they will earn enough to support their families.

A model for decision making behavior, derived from the Fishbein-Azjen theory of reasoned action, was developed for explaining labor intentions of fishermen. The intention to remain in the fishery was found to be related to the following factors: (a) relative economic optimism for the fishery; (b) the willingness among fishermen to change fishing behavior in order to persist in the industry; (c) support of significant others for remaining

in fishing; (d) confidence that one's sons will be able to have a future in fishing; and (e) an unwillingness to move away from one's hometown.

Thomas et al. (1993) predicted that these fishermen are likely to continue fishing for red snapper long after it would appear economically rational for them to do so. Furthermore, when fishermen do decide to leave that particular fishery, it is reasonable that they will opt for other fisheries before pursuing work options on land. These social analysis indicate a major degree of dependency on the fishery.

Income and Labor Effects of Management: Thomas et al. (1993) examined economic trends and perceptions in their survey of owner/operators holding red snapper endorsements. These were examined for pre-regulation (1986-1989) and post-regulation periods and are summarized below.

Several social and economic indicators show declines for fishermen from the period of 1986-89 to the present. Fishermen report an average fall in income from the late 1980's to 1993 of \$15,836, a decline of 40 percent. During the same time period, they report an average depreciation in the value of their boats of \$29,556, a decline of 31 percent. The number of crew reported for an average trip declined by 1 crew member, a decline of 26 percent in this labor segment of the fishery. Focus group data suggest that family members are increasingly relied upon to supplement crews. Most fishermen report changes in the amount of money available for boat maintenance.

Owner/operators sampled reported that average income in the pre-regulation period was \$39,554, after regulations was \$30,768, and projected 1993 average income to be \$23,718, i.e., a significantly different change for each period. In addition to reporting an average reduction of crew from 3.8 to 2.8, 40.5 percent of them reported the effect of regulation had a large effect on their ability to maintain a steady crew. They reported a decrease in both the number of trips and length of trips after regulation. Although, the percentage of income derived from red snapper did not change materially, (i.e., from 64.0 to 59.1 percent), the value of red snapper declined.

Fishermen's beliefs about their future over the next 2 to 3 years were largely pessimistic. A fairly high percentage felt it was unlikely that they would make enough to support their family (38 percent), get a higher price for red snapper (84 percent), be able to make boat payment and buy supplies (33 percent), or have sons enter the fishery (89 percent). They believed it likely that they would fish more often for other species (64 percent) and would have to spend more time away from home (65 percent).

Despite recent economic hardship, and pessimism for the future of the industry, it appears that the majority of these fishermen will continue to fish for red snapper for as long as they possibly can. Many will adapt to stressed conditions by increasing effort in fishing for other species. Few are likely to pursue successfully non-fishing employment, at least in the near future.

Demographic and Social Information Relevant to the Fishery: Endorsed owner operators tend to be fairly old (49 years), have considerable experience as commercial fishermen (19.5 years), have paid off their boats (67 percent), and have another source of family income (51 percent). Most have no experience working on land or in fishing not involving hooks and line. This profile suggests that these men have financial and personal investments in red snapper fishing which preclude an easy movement to other lines of work.

Thomas et al. (1993) found that typically the fishermen had fished for red snapper for 16.9 years, utilizing boats averaging 46.2 feet (24-85) and had 11.4 years of education. Eighty-five percent were married. More than half (58.1 percent) had no experience working on land and more than 80 percent (83.8) lacked experience in fisheries not involving hook-and-line gear.

The majority of respondents reported increased conflict among fishermen, and a significant fraction (42 percent) reported decreased cooperation. Self ratings of quality of life show a 37 percent decline over the last five years, and most fishermen anticipate further declines in the next five years.

The decline in cooperation between fishermen was largely attributed to the red snapper endorsement system where some vessels received 2,000 pound trip limits and all others 200 pound trip limits. Thomas et al. (1993) summarized that the increased conflict serves to retard the ability of fishermen to act collectively in addressing management issues. This likely results in much testimony on issues being self-serving statements of fragmented segments of the industry.

License Limitation Alternative (Magnuson Act Considerations for Limited Access):

(A) Present Participation in the Fishery: The Gulf fishery is a multi-species fishery with two major user groups, namely, the recreational and commercial sectors. In 1990, the recreational sector caught about 106 million fish (all species) in the Gulf, of which no less than 620 thousand fish, or 1.5 million pounds (MP), were red snapper. For this same year, about 1.7 million individuals (coastal and non-coastal) participated in marine recreational fishing in the Gulf region, and made about 13.3 million fishing trips. By 1995, the recreational sector caught 136 million fish, of which no less than 1.2 million fish, or 4.5 MP, were red snapper. For this year, the number of recreational anglers rose to 1.9 million individuals who took 17.1 million trips (Holiman, 1996). There are no estimates of the economic value of the recreational reef fishery in the Gulf.

In 1990, the commercial sector landed approximately 21.1 MP of reef fish, of which 2.6 MP were red snapper. The corresponding ex-vessel values were \$37.5 million for all reef fish and \$6.6 million for red snapper. By 1995, landings of reef fish were 20.4 MP valued

at 39.3 million; red snapper landings were about 3.0 MP valued at \$5.8 million (Waters, 1996b). In 1992 when the moratorium of commercial reef fish permit was initiated, the commercial reef fish sector was composed of about 2,214 reef fish permitted vessels. This declined to about 1,424 permitted vessels as of March 1, 1997. Due to the moratorium on issuance of additional commercial permits implemented in May 1992, the number of permitted vessels could not significantly be more than the 1992 number and has significantly declined due to failure to renew permits. This moratorium is intended to remain in effect through 1996 unless earlier supplanted with a comprehensive limited access management system.

Red snapper used to be the dominant species landed in the Gulf reef fishery 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%) and recreational (49%) sectors. The TAC for 1993, 1994, and 1995 was set at 6 MP, which was 50 percent higher than the 1992 level. The TAC for 1996 and 1997 has been set at 9.12 MP.

The recreational fishery has been managed mainly through a bag limit without any closure. Pursuant, however, to the recently re-authorized Magnuson-Stevens Act, the Council has proposed that the recreational allocation be considered a quota and the fishery should close once the quota is met. A recent analysis of this proposal revealed the low likelihood of its being imposed in 1997 (GMFMC, 1997). In 1990, recreational anglers made about 109 thousand trips targeting red snapper and 200 thousand trips catching red snapper. By 1995 target and catch trips rose to 198 thousand and 331 thousand, respectively. Recreational harvest of red snapper was 1.5 MP, 2.2 MP, 2.7 MP, 5.1 MP, 4.7 MP, and 4.5 MP in 1990, 1991, 1992, 1993, 1994, and 1995, respectively (Holiman, 1996).

Since 1990, the commercial red snapper fishery has been managed under an overall quota with closure when the quota is filled. There was no closure in 1990, but the fishery closed each year since 1991 when the sector's quota was filled. Of the 2,214 reef fish permitted vessels in 1992 about 700 vessels participated in that year's red snapper fishery (NMFS, 1992). Landings of red snapper by the commercial sector in 1992 (regular and extended season) were 3.1 MP and are presented for 1993 through 1996 in Table E-3. The 1993 season opened on February 16th under a species endorsement system and closed 95 days later. In 1994 the season lasted 77 days. Those receiving the endorsement were allowed to land up to 2,000 pounds of red snapper per trip while those without the endorsement were limited to 200 pounds per trip. Out of a total 251 permits for which holders applied for the red snapper species endorsement, 131 were approved to receive the endorsement. The major motivation for the endorsement system coupled with trip limits was to avoid the derby fishery that occurred in 1992 when the quota of 2.04 MP was filled in the first 53 days of the fishing year. The 1992 derby resulted in major disruption in the fishery, which was repeated to some extent in 1993 through 1997 (Table E-2).

Permitting or licensing in the commercial reef fish fishery has been in effect since 1990. The imposition of a moratorium of new issuance of commercial reef fish permits has virtually imposed a limitation on the number of participants in the reef fishery. The current species endorsement system has further curtailed the number of permit holders who can land up to 2,000 pounds of red snapper per trip. A license limitation then will not be a novel thing in the red snapper fishery. In fact the proposed license limitation shares many features of the endorsement approach, with a few changes mostly related to the transferability of the licenses.

The proposed license limitation alternative for the red snapper fishery is closely similar to the species endorsement system in terms of initial distribution of licenses. This proposal is slightly less restrictive in the distribution of Class 1 licenses to the extent that historical captains are included as eligible recipients for that type of license. It is also slightly more restrictive in the distribution of Class 2 licenses, since only those with valid permit as of March 1, 1997 would be eligible to receive this type of permit. To a very large extent then, the proposed license limitation system takes account of current participation in the fishery.

By initially limiting the number of participants, a license limitation system is more likely to alter radically the structure of fishing participation in the red snapper fishery. Eventually, any form of limited entry is bound to affect fishing participation. Those initially included in the system would be in the best position to benefit from the system, especially that a license freely (except for some minimal administrative cost) bestowed on them would acquire some economic value in the future. The better the condition of the fish stock and the market for the species, the higher will be the value associated with the license. Only the participation of commercial vessels and charter boats that commercially fish at certain times of the year would be affected by the proposed system. The recreational fishery at large will remain unaffected by the proposed management change.

(B) 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 Gulf of Mexico has been in existence for over a hundred years now, 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) and longlines have been used increasingly. Fishing effort has now become more concentrated off the Louisiana waters as the stock suffered large decline in many areas in the Gulf and as Mexican waters were closed to U.S. fishing vessels. Although there are still a number of fishing vessels mainly fishing for red snapper, fishermen have diversified to other species. 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. At the same

time, there are also vessels that target red snapper during the off season for their primary target species, like shrimp, or off season for their primary operation, like charter boats.

A license limitation system that is similar to the current species endorsement system particularly in terms of granting the same type of license to each qualified vessel is likely to compel many fishermen to deviate from their historical fishing pattern. If in addition to the licenses a trip limit per vessel is imposed over a relatively long period, e.g. during the rebuilding period for red snapper, there is an incentive for fishermen to modify their fishing operation such that they can make as many trips as possible. For those primarily targeting red snapper, such situation could lead to a downsizing of operations or less reliance on red snapper fishing. If there is no trip limit, on the other hand, such incentive could lead to an expansion of operations (mainly capital stuffing) in order to haul in as many fish as possible per trip and possibly to an increased dependence on red snapper fishing.

A license limitation system, or for that matter any form of limited entry, will close windows of opportunities for those excluded but otherwise dependent on red snapper during some part of the year. Part-time red snapper fishing in the EEZ will be closed to non-qualifying commercial fishermen engaged in other fisheries and charter boat fishermen who also commercially fish for red snapper during some part of the year. Some of these individuals could very well depend on red snapper fishing during months when their primary operations are closed.

(C) Economics of the Fishery: GMFMC (1981; 1989) and Waters (1988; 1992a; 1992b; 1996a; 1996b) 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 has been attributed to several factors, such as, a decline in catches from foreign fishing grounds, a decline in the size of domestic snapper population, and regulation. Although the quota and closure management regime for the commercial red snapper fishery started in 1990, it was not until August 24, 1991 that the quota was first filled and the fishery closed the remainder of the year. Total 1991 landings were 2.23 MP while the quota was 2.04 MP. Worth noting in this particular case is that the 1991 commercial quota was reduced from its 1990 level of 3.1 MP, and considering the 1990 catch level of 2.66 MP, closure in 1991 appeared inevitable. By maintaining the same quota of 2.04 MP for 1992, it was to be expected that early closure would occur that year, but what was surprising was the fact that the quota was filled very early in the season, with the fishery closed on February 22, 1992. Through a Council-proposed emergency action, the fishery was re-opened from April 3 through May 14, 1992 under a 1,000 pound trip limit per vessel. Total 1992 landings were estimated at 3.14 MP. The situation for later years is depicted in Table E-1.

Early closure of the red snapper fishery has been due to unusually high catch rates and a derby atmosphere. With the fishery closed for a greater portion of the year since 1992, fish tended to congregate in certain areas, thus making them highly susceptible to fishing especially at the start of the season. With prevailing derby mentality, effort could only be

expected to increase significantly at the time the season starts. The noted decline in red snapper landings and ex-vessel revenues have been more than offset by increased landings and ex-vessel revenues from grouper and other snapper species.

Red snapper landings in 1995 had a total ex-vessel value of \$5.8 million, which is only about 15 percent of total reef fish ex-vessel values for that year. This is a small and declining percentage relative to those of the previous years: 18 percent in 1990, 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 25 percent, 52 percent, 57 percent, and 61 percent relative to those of 1990, 1985, 1980, and 1970, respectively. Both inflation and decline in red snapper landings have combined to reduce the ex-vessel value generated in the red snapper fishery. Undoubtedly, the derby only intensified the decline in red snapper ex-vessel values. Gulf-wide average ex-vessel price for red snapper in 1995 was only \$1.97 per pound, which is significantly lower than the \$2.50 per pound price in 1990 before the onset of the derby fishery. Average grouper price per pound, on the other hand, rose from \$2.01 in 1990 to \$2.51 in 1995. The drop in ex-vessel prices for red snapper has also been reflected in the drop of red snapper prices at the Fulton Fish Market.

Aside from domestic landings of groupers and other snappers, imports of snapper and grouper are also close substitutes to domestic red snapper. In 1991, the U.S. imported nearly 10.8 MP of fresh snapper, 1.7 MP of frozen snapper, 5.6 MP of fresh or chilled grouper, and 3.9 MP of frozen grouper. Imports of fresh snapper and grouper steadily rose throughout the years while those for the frozen categories fell. In 1995 imports of fresh snapper and grouper, respectively, were 15.7 MP and 10.4 MP. Frozen snapper and grouper fell to 1.4 MP and 0.70 MP, respectively. Imports of the frozen category take more significance in the sense that they directly compete with domestic landings in the fresh market arena. In 1995, imports of fresh and frozen snapper, on a live-weight basis, constituted approximately 68 percent of total snapper supplies in the U.S. Imports of grouper accounted for about 53 percent of total grouper supplies in the U.S. Most imports of fresh snappers and groupers have originated from countries in the Caribbean or along the Gulf of Mexico, especially Mexico and Panama. Most imports of frozen snappers and groupers have originated from Mexico or various countries in southeast Asia.

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

A survey of the commercial reef fish fishery was conducted in the fall of 1994 and spring of 1995 (Waters, 1996a). This was designed to ask fishermen about their fishing histories,

their capital investments in vessel and equipment, and about their average catches, revenues, and costs per trip for their two most important kinds of fishing trips for reef fishes during the 1993 calendar year. Thus, the survey provides a snapshot of the population of reef fish vessels, their different kinds of fishing trips, and their financial performance on these trips. The sampling universe was stratified by area (Eastern vs. Northern and Western Gulf), gear type (vertical hooks and lines, bottom longlines, and fish traps), and scale of operation (high-volume and low-volume⁵). The following summary results of the survey is lifted from Waters (1996a).

Sampled boats were primarily of fiberglass construction and ranged in length from 19 to 75 feet. High-volume boats in the northern Gulf averaged 49 feet in length, and both low- and high-volume boats with bottom longlines averaged about 44 feet in length, but the overall average of 38 feet indicates that much of the fleet consists of relatively small boats. Only 25 out of 196 sampled boats were longer than 55 feet.

The vessels' engines ranged from 60 to 800 hp, with an overall average of 277 hp. Most (173) vessels were reported to have between 100 and 500 hp. Boats that fished traps had the most powerful engines, with high-volume boats averaging 403 hp and low-volume boats averaging 372 hp. Fuel capacity ranged from 32 to 6,000 gallons, with 159 vessels having a capacity of less than 1,250 gallons. The estimated overall average fuel capacity was 689 gallons. High-volume boats with vertical hooks and lines in the northern Gulf and high-volume boats with bottom longlines had the greatest fuel capacities, on average. All but 20 boats in the sample used diesel fuel.

Nearly all of the sampled boats were built since 1960, with the largest number having been built between 1980 and 1984. Most boats were purchased by their current owners since 1980 for an original investment ranging up to \$500,000. On average, the greatest investments were for high-volume boats in the northern Gulf, which averaged \$137,090, high-volume boats with bottom longlines, \$117,259, and low-volume boats with bottom longlines, \$115,625. Boats in other strata were smaller so that the overall average investment in boat and gear was \$86,115. Nearly all boats in all strata were equipped with LORAN-C, EPIRB, VHF radios, and some form of depth recorder or fish finder. High-volume boats, except those with fish traps, also tended to have single sideband radios. Only 24 boats navigated with the aid of GPS. The estimated replacement value of new boats, comparably equipped, averaged approximately \$146,046. On average, the most expensive boats were those with bottom longlines and those with vertical hooks and lines in the northern Gulf.

Respondents were asked to estimate the value of their boats if they were to be sold at the time of the survey. Their estimates ranged up to \$265,000, with an overall average of

⁵The survey used the 75th percentile of annual reef fish landings as reported on logbooks to categorize vessels as either high-volume or low-volume.

\$52,817. High-volume boats tended to have greater resale values than low-volume boats, especially for boats with vertical hook-and-line gear. Average resale value was about the same for high- and low-volume boats with bottom longlines. The estimated total resale value of commercial reef fish boats was slightly less than \$49 million. This is loosely interpreted as the estimated total value of capital currently invested in the commercial reef fish fishery because some boats, especially in the low-volume strata, participate in other fisheries. Boats with vertical hook-and-line gear were worth a total of approximately \$22.75 million in the northern Gulf and \$13.98 million in the eastern Gulf. Boats equipped with bottom longlines were worth \$8.57 million, and boats with fish traps were worth \$3.67 million.

Resale value depends, in part, on the expected profitability of fishing. One measure of expected future profitability is profit during the current year. Average gross revenues and net incomes for high-volume boats generally exceeded that for low-volume boats. However, average net incomes for low-volume boats with fish traps exceeded that for high-volume boats, perhaps because many of the low-volume boats fished primarily for stone crabs rather than for reef fishes. High-volume boats with vertical hooks and lines in the northern Gulf averaged about \$110,000 in gross sales and \$28,500 in net income before income taxes, and as a group received an estimated \$11 million in revenues and \$2.8 million in net income from commercial fishing. High-volume boats with bottom longlines averaged about \$117,000 in revenues and \$25,500 in net income, with estimated total revenues of \$9.9 million and net incomes of \$2.2 million. Low-volume boats with bottom longlines and boats in both strata for fish traps averaged from \$86,000 to \$93,000 in revenues and from \$15,000 to \$21,000 in net incomes. However, low-volume boats with vertical hook-and-line gear in both the northern and eastern Gulf areas reported average gross sales of only \$24,000 to \$25,000 and net incomes from \$4,400 to \$6,800. Because boats in these strata are more numerous than in other strata, their averages reduced the overall average for the entire fleet below the other individual stratum averages. Respondents reported overall average gross sales of nearly \$52,000 per boat, and overall average net income of slightly more than \$12,000 per boat. Estimated total revenues for the entire fleet were approximately \$48.1 million, with aggregate net incomes of \$11.3 million.

The derby fishing may be seen as partly indicative of the excess capacity in the red snapper fishery. Such excess capacity implies that the biological gains from rebuilding the red snapper stock would not translate in long-term economic gains since effort in the fishery can readily increase as the stock rebuilds and the market condition for red snapper improves. A license limitation, especially if relatively restrictive, can initially eliminate excess capacity. Over time, however, license holders can increase their fishing effort either by improving their capacity to catch or by fishing more intensively. This will happen more likely in a system where only one type of license is issued to all vessels, since such type of a license can be utilized more effectively with larger capacity to harvest red snapper.

Although domestic red snapper still commands a market, the increasing share of imports in the U.S. supplies of snappers necessitates that the domestic harvesting industry has to be more efficient to stay competitive. License limitation may be the initial step to improve efficiency in the industry by rooting out excess effort. However, it is unlikely to eliminate the derby fishery.

(D) The Capability of 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 reef fish or non-reef fish species. As noted elsewhere in this document, many of currently permitted reef fish vessels already target a motley of species, including non-reef species. 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, a license limitation, or any form of limited entry, is unlikely to render reef fish vessels inoperative.

(E) Cultural and Social Framework Relevant to the Fishery: Amendment 1 to the Reef Fish Fishery Management Plan (GMFMC 1989) notes that "the user groups utilizing and dependent on the reef fish resource need to be identified and their socioeconomic and socio-cultural 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" (p-7). Also, under "Research and Recommendations" it is noted that "The socio-economic and socio-cultural aspects of the reef fish fishery need to be evaluated with the purposed of examining the potential utility of a limited entry management strategy and for the purpose of allocations" (p-331). 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. The Thomas et al. (1993) study did touch upon certain, but limited, aspects of the socio-cultural trait of the fishery. The following characterization is based on generally available data on the fishery as a whole, and on information gathered during the course of the effort management workshops mentioned earlier in the document. This should be considered in addition to the findings of the Thomas et al. (1993) study whose results have been summarized in the SIA section of this document.

The 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 Gulf of Mexico. Today there are relatively few fishermen, including endorsement holders, 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 Gulf, using various ports of convenience for service and landing bases.

Historically, the commercial red snapper fishery began from ports in the eastern Gulf of Mexico, principally in Florida, with sailing schooners that fished from the northeastern Gulf of Mexico 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 Gulf to the middle and western Gulf, 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, Mobile, Pascagoula, Pensacola, and Tampa. Over time, with increasing technology and diversity in the fishery, the bases for the commercial catch have 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, Indochinese, 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 whom are part-time, either in the red snapper fishery or in fishing altogether.

Commercial red snapper fishermen have historically not been organized on a Gulf-wide basis. Some state-based organizations such as the Organized Fishermen of Florida, the Southern Offshore Fishermen's Association, the Organization of Louisiana Fishermen, the Snapper Men of Texas, Save Our Seafood Industry, and the Texas Shrimp Association have from time to time represented the interests of various constituencies on red snapper issues. In addition, groups such as the Southeast Fisheries Association or the National Fisheries Institute have periodically become involved in red snapper issues.

In the recreational area, similar to the commercial sector, most recreational fishermen in the Gulf do not identify themselves primarily as "red snapper fishermen" although red snapper is certainly a popular and sought-after fish. Red snapper has historically been very important to large segments of the charter and headboat fleet, and is often targeted by private recreational boaters as well. However, the recreational fishers for red snapper have no distinct aggregate social or cultural characteristics. In the case of reef fish anglers, Greene et al. (1994) described a typical reef angler to be a 40-year old working male, who lives in a family household with household income of approximately \$68,000. The household is near the coast, the angler owns his boat, takes an average of 11 single day Gulf reef fishing per year, and 0.69 overnight reef fishing trips per year. Recreational fishermen are organized Gulf-wide through the Gulf Coast Conservation Association, and

many recreational fishermen belong to state and local fishing groups as well as to more general wildlife and conservation organizations.

The impact on the initial recipients of the licenses would be very positive, with the effect being to focus the benefits of the commercial fishery which has recently been distributed among approximately 1,424 vessels to those 129 vessels and 3 to 4 historical captains qualified to receive Class 1 licenses and to those 567 to 700 vessels qualified to receive Class 2 licenses. In addition, the distribution of licenses which would acquire value upon sale would create some 'social security' of the recipients. The impact would be negative, however, on the owners and operators of other 1,170 vessels, with the impact varying according to the historical landing and associated dependence of each fisherman on red snapper. Worthy of note here that most of these non-qualified vessels have reported very minimal participation in the red snapper fishery for the period 1990-1996. For some, such an impact would be in the form of changing their fishing patterns and associate lifestyles. For example, exclusion from the red snapper fishery might require wider fishing migration patterns with more time away from home communities. If numbers of those excluded were from the same communities, wider community impacts might be expected.

Because the cost of obtaining a license would probably be significant, as noted above, mobility into fishing as an occupation might be affected. This is especially significant in smaller rural communities with lower levels of formal education and training and limited occupational alternatives.

Since the licenses would not be divisible -- that is, they would have to be owned by one person -- there is a potential impact on families with one or more children who wish to fish commercially for red snapper. Only one child could benefit from the parents' license, with the others left to enter the fishery through the market for license. This may have some effect on the vitality of certain fishing communities over time.

In addition, since a license limitation would probably not address the "derby" issue, some of the social problems attendant on the "derby" such as safety and social conflict would remain.

(F) Other Relevant Considerations: As noted on several occasions, the red snapper fishery is part of a multi-species reef fishery. Limiting the entry into red snapper would force fishermen to enter other segments of the reef fishery or intensify their fishing of other reef fish species. This could have adverse impacts on these other stocks and could also aggravate the excess capacity condition of these other fisheries. Social conflict in these other fisheries could also intensify.

Red snapper is harvested both by commercial and recreational sectors, with the TAC for red snapper almost evenly divided between these two groups.

The recreational sector is managed through an allocation (49 percent of TAC) and bag limits are set to attempt to limit harvest to that allocation. If the recreational sector exceeds its allocation, subsequent allocations will be adjusted to reduce harvest. This adjustment could occur by reducing the bag limit, increasing the size limit and/or imposing closed seasons or a combination of these actions to reduce recreational fishing mortality. A recent proposal by the Council prompted by recent changes in the Magnuson-Stevens Act would impose a closure on the recreational red snapper fishery if the recreational quota were met.

Although red snapper is mainly caught in the EEZ, some are caught in state waters. Depending on state rules, a license limitation in the EEZ could redirect displaced effort to state waters. Aside from enforcement complications, this possibility of redirecting effort to state waters could lessen the effectiveness of license limitation in reducing excess capacity in the red snapper fishery and in avoiding market gluts.

Red snapper passes through numerous landing ports and dealers throughout the Gulf coasts. To the extent that these major ports and dealers are not identified, license limitation may be rendered less effective in avoiding market gluts.

14.3 Effect on Endangered Species and Marine Mammals

A Section 7 consultation has been held with NMFS regarding the impact of proposed Amendment 15. The proposed action will have no adverse effect on threatened/endangered species and marine mammals.

14.4 Conclusion

Mitigation measures related to the proposed action and fishery: No significant environmental impacts are expected; therefore, no mitigating actions are proposed. Unavoidable adverse effects with implementation of the proposed actions and any negative net economic benefits are discussed in the Regulatory Impact Review. Irreversible and irretrievable commitment of resources involved with government costs are those related to permitting alternatives for which NMFS is permitted to charge its administrative costs.

14.5 Finding of No Significant Environmental Impact

In view of the analysis presented in this document, I have determined that the fishery and the proposed action in this amendment to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico would not significantly affect the quality of the human environment with specific reference to the criteria contained in NDM 02-10 implementing the National Environmental Policy Act. Accordingly, the preparation of a Supplemental Environmental Impact Statement for this proposed action is not necessary.

Approved: _____
Assistant Administrator for Fisheries Date

15.0 OTHER APPLICABLE LAW

15.1 Habitat Concerns

Reef fish habitats and related concerns were described in the FMP and updated in Amendments 1 and 5. The actions in this amendment do not affect the habitat.

15.2 Vessel Safety Considerations

A determination of vessel safety with regard to compliance with 50 CFR 600.355(d) has been requested from the U.S. Coast Guard. Actions in this amendment are expected to enhance vessel safety.

15.3 Coastal Zone Consistency

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 requires that all federal activities which directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. The proposed changes in federal regulations governing reef fish in the EEZ of the Gulf of Mexico will make no changes in federal regulations that are inconsistent with either existing or proposed state regulations.

While it is the goal of the Council to have complementary management measures with those of the states, federal and state administrative procedures vary, and regulatory changes are unlikely to be fully instituted at the same time.

This 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 was submitted to the responsible state agencies under Section 307 of the Coastal Zone Management Act administering approved Coastal Zone Management programs in the states of Alabama, Florida, Mississippi, Louisiana, and Texas.

15.4 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act is to control paperwork requirements imposed on the public by the Federal Government. The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and record keeping requirements is vested with the Director of the Office of Management and Budget. This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications.

The Council proposes, through this amendment, to establish commercial red snapper licenses. The additional public reporting burdens associated with this plan amendment are discussed in the RIR.

15.5 Federalism

No federalism issues have been identified relative to the actions proposed in this amendment. Therefore, preparation of a federalism assessment under Executive Order 12612 is not necessary.

16.0 LIST OF AGENCIES AND PERSONS CONSULTED

The following agencies have been consulted on the provisions of this amendment:

Gulf of Mexico Fishery Management Council: Standing and Special Reef Fish Scientific and Statistical Committees
Socioeconomic Panel
Reef Fish Advisory Panel
Ad Hoc Red Snapper Advisory Panel
Red Snapper Advisory Panel
Law Enforcement Advisory Panel

Coastal Zone Management Programs: Louisiana
Mississippi
Alabama
Florida
Texas

National Marine Fisheries Service: Southeast Regional Office
Southeast Fisheries Science Center

17.0 PUBLIC HEARING LOCATIONS AND DATES

Public hearings for public hearing draft Amendment 15 were scheduled at the following dates and locations during 7:00 p.m. to 10:00 p.m.:

Monday, April 14, 1997

Holiday Inn Beachside
3841 North Roosevelt Boulevard
Key West, Florida 33040

Tuesday, April 15, 1997

Golden Gate Community Center
4701 Golden Gate Parkway
Naples, Florida 33999

Wednesday, April 16, 1997

City Hall Auditorium
300 Municipal Drive
Madeira Beach, FL 33708

Thursday, April 17, 1997

County Commission Office
200 East Green Street
Perry, FL 32348

Monday, April 21, 1997

Larose Regional Park
2001 East 5th Street
Larose, LA 70373

Police Jury Annex
Courthouse Square
P.O. Box 366
Cameron, LA 70631

Tuesday, April 22, 1997

J. L. Scott Marine Education Center &
Aquarium
115 East Beach Boulevard, US Highway 90
Biloxi, MS 39530

Texas A&M Auditorium
200 Seawolf Parkway
Galveston, TX 77553

Wednesday, April 23, 1997

Holiday Inn on the Beach
365 East Beach Boulevard
Gulf Shores, AL 36547

Port Aransas Civic Center Auditorium
710 West Avenue A
Port Aransas, TX 78373

Thursday, April 24, 1997

National Marine Fisheries Service
Panama City Laboratory
3500 Delwood Beach Road
Panama City, FL 32408

Laguna Vista Civic Club
122 Fernandez
Laguna Vista, TX 78578

18.0 LIST OF PREPARERS

Gulf of Mexico Fishery Management Council

- Antonio Lamberte, Economist
- Wayne Swingle, Biologist

19.0 REFERENCES

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- Nelson, R.S. 1988. A study of the life history, ecology, and population dynamics of four sympatric reef predators (Rhomboplites aurorubens, Lutjanus campechanus, Haemulon melanurum and Pagrus pagrus) on the East and West Flower Garden Banks, northwestern Gulf of Mexico. Thesis. N.C. State Univ. Raleigh, N.C.
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- Schirripa, M.J. 1997. Status of the vermilion snapper fishery of the Gulf of Mexico. Assessment 3.0. Addendum 2. NMFS. SEFSC. Contribution MIA-96/97 .23 p.
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- Waters, J. (1988). Economic assessment of the commercial reef fish fishery in the U.S. Gulf of Mexico. NMFS Beaufort Laboratory, Southeast Fisheries Center, Beaufort, NC 28516-9722, 30p.
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The following table tracks the relative catch history permitholders of vessels that:

- a) had a red snapper endorsement during 1993 - 1995
- b) where a vessel changed hands and the original permitholder had no subsequent catch history, I assumed that the catch records would also be transferred. Where this resulted in multiple catch records for a single vessel, only the larger of the catch records for each year were counted.
- c) The permitholder of record in 1993 was used as the basis of determining landings records for 1990-1992.

Landings for the years 1993-1995 are from the logbook data for a specific permitholder for all 3 years even if the vessel changed. Since details regarding changes of ownership or allocation of harvest record among multiple vessels owned by one entity haven't yet been worked out, the numbers below should be regarded only as ballpark figures.

ENDORSED VESSELS

Number of Vessels									
Years with red snapper harvest				red snapper change in harvest from 1990-92 to 1993-95					
				Total		Annual Average			
during 1993 - 1995		during 1990 - 1992				increased	decreased	increased	decreased
		0	1	2	3				
3 of 3 years	107	2	6	53	46	93	14	86	21
2 of 3 years	14	3	2	2	7	7	7	8	6
1 of 3 years	20	7	0	8	5	11	9	14	6
0 of 3 years	6	1	0	4	1	0	5	0	5

The following table tracks the relative catch history of vessels that:

- a) were permitted in at least one of the years 1993 - 1995
- b) did not have a red snapper endorsement

Red snapper landings for the years 1990-1992 are the landings compiled for the ITQ allocation system for the individual who was the permitholder of the vessel prior to 1993. Landings for the years 1993-1995 are from the logbook data for a specific vessel for all 3 years regardless of ownership. Any changes in ownership since 1993 were not tracked, thus, the numbers below should be regarded only as ballpark figures.

NON-ENDORSED VESSELS

Number of Vessels									
Years with red snapper harvest						red snapper change in harvest from 1990-92 to 1993-95			
						Total		Annual Average	
during 1993 - 1995		during 1990 - 1992				increased	decreased	increased	decreased
		0	1	2	3				
3 of 3 years	147	29	34	45	39	84	63	65	82
2 of 3 years	169	50	32	28	59	83	86	82	87
1 of 3 years	231	91	64	42	34	122	109	134	97
0 of 3 years	1010	825	119	53	13	0	185	0	185

562 vessels had red snapper landings at some point in 1990-1992 - 185 of these had no subsequent landings in 1993-1995.
 547 vessels had red snapper landings at some point in 1993-1995 - 170 of these had no previous landings in 1990-1992.

Table 39. Frequency distributions of the species composition of trips landing red snapper by fishing season.

Species mix		Percentile of Distribution						Species mix		Percentile of Distribution					
Red S	Other	1990	1991	Jan-Feb 1992	Apr-May 1992	1993	1994	Red S	Other	1990	1991	Jan-Feb 1992	Apr-May 1992	1993	1994
1	99	12.0	13.0	6.1	8.1	5.0	4.6	51	49	69.7	69.1	28.5	51.3	30.5	21.6
2	98	21.9	21.5	11.6	11.6	8.8	7.1	52	48	70.0	69.4	28.9	51.9	30.6	21.9
3	97	27.2	27.2	12.9	13.7	11.0	8.5	53	47	70.4	69.9	29.0	52.6	30.8	22.0
4	96	31.3	31.8	14.9	16.2	12.8	9.5	54	46	70.8	70.4	29.3	53.2	31.0	22.2
5	95	34.9	34.9	15.6	18.5	14.1	10.2	55	45	71.0	70.6	29.8	53.5	31.4	22.4
6	94	36.7	37.0	16.4	20.1	15.1	10.6	56	44	71.3	70.8	30.0	53.8	31.6	22.8
7	93	38.3	39.4	16.9	22.9	16.3	11.6	57	43	71.8	71.2	30.5	54.3	31.8	22.9
8	92	40.3	41.0	17.2	24.3	17.3	12.3	58	42	72.0	71.4	30.7	54.7	32.2	23.1
9	91	42.8	42.9	17.7	25.7	18.2	12.6	59	41	72.5	71.7	31.1	55.4	32.4	23.3
10	90	44.8	45.2	17.9	27.0	18.8	12.7	60	40	73.0	71.9	31.2	56.0	32.7	23.5
11	89	46.0	46.5	18.2	28.4	19.3	13.2	61	39	73.4	72.3	31.5	56.2	33.0	23.6
12	88	47.3	48.0	19.1	29.0	20.1	13.3	62	38	74.0	72.7	32.7	56.7	33.4	23.9
13	87	48.7	48.7	19.8	30.5	20.6	13.8	63	37	74.3	73.1	33.3	57.1	33.7	24.3
14	86	50.0	49.4	19.8	31.5	21.2	14.2	64	36	74.8	73.3	33.5	57.7	33.9	24.8
15	85	51.3	50.3	19.8	32.4	21.6	14.6	65	35	75.5	73.8	33.9	58.2	34.3	25.2
16	84	52.8	50.9	20.0	33.2	22.1	14.7	66	34	76.1	74.1	34.1	58.9	34.5	25.7
17	83	53.4	52.0	20.7	35.0	22.4	15.1	67	33	76.3	74.6	34.4	59.3	35.0	25.8
18	82	54.1	52.6	21.2	35.4	22.6	15.4	68	32	76.4	74.8	34.7	60.1	35.4	26.2
19	81	54.4	53.2	21.2	35.7	22.9	15.6	69	31	77.1	75.1	35.6	60.2	35.8	26.5
20	80	55.1	53.6	21.7	36.2	23.2	15.8	70	30	77.4	75.4	36.0	60.9	36.0	26.6
21	79	55.6	54.2	22.3	37.3	23.6	15.8	71	29	77.7	75.8	36.8	61.2	36.6	27.1
22	78	55.9	55.0	22.5	38.1	24.0	16.2	72	28	77.9	76.3	37.6	61.9	37.0	27.7
23	77	56.7	56.0	22.5	39.3	24.3	16.5	73	27	78.6	76.6	38.2	62.4	37.4	28.5
24	76	57.6	56.7	22.9	39.8	24.5	16.8	74	26	79.0	77.0	38.5	63.0	37.6	28.9
25	75	58.3	57.1	22.9	41.2	24.7	16.9	75	25	79.4	77.3	39.3	63.6	38.3	30.0
26	74	58.7	58.0	23.2	41.8	25.0	17.0	76	24	80.2	78.0	39.8	64.3	38.8	30.8
27	73	59.2	58.5	23.8	42.0	25.2	17.0	77	23	80.6	78.5	40.1	64.8	39.3	31.0
28	72	59.7	58.9	23.9	42.7	25.4	17.3	78	22	81.4	78.9	40.9	65.7	39.9	31.7
29	71	60.1	59.7	24.2	43.0	25.7	17.7	79	21	81.9	79.4	41.2	65.8	40.5	32.3
30	70	60.1	60.4	24.5	43.5	25.9	17.8	80	20	82.4	80.0	42.0	66.9	41.4	33.5
31	69	60.7	60.9	24.7	43.6	26.1	17.8	81	19	83.3	80.3	43.4	67.5	42.1	34.2
32	68	61.2	61.3	24.7	44.1	26.4	17.9	82	18	83.6	80.6	44.0	68.3	42.7	35.2
33	67	61.8	61.7	24.8	44.1	26.5	18.1	83	17	84.1	81.3	45.1	69.2	43.8	36.2
34	66	62.0	62.3	25.1	44.6	26.8	18.3	84	16	84.9	81.8	46.1	70.1	44.8	37.6
35	65	62.3	62.5	25.4	45.8	27.0	18.4	85	15	85.1	82.3	46.8	70.9	45.5	38.7
36	64	62.7	62.9	25.6	46.4	27.2	18.7	86	14	85.8	82.9	47.6	72.1	46.4	40.2
37	63	63.5	63.3	25.7	46.8	27.4	18.9	87	13	85.9	83.6	48.3	72.6	47.3	41.4
38	62	63.7	63.7	25.7	47.0	27.6	19.0	88	12	86.4	84.1	49.7	73.5	48.5	43.0
39	61	64.1	64.0	25.7	47.5	27.8	19.2	89	11	87.2	85.2	52.0	75.0	50.0	45.0
40	60	64.7	64.6	26.0	48.3	28.1	19.4	90	10	87.4	85.8	53.0	75.7	51.0	46.4
41	59	65.1	65.0	26.0	48.5	28.3	19.5	91	9	88.3	86.4	54.0	77.1	52.3	48.4
42	58	65.6	65.3	26.2	48.7	28.5	19.6	92	8	89.3	87.1	55.7	78.3	53.9	50.9
43	57	66.1	65.7	26.2	48.8	28.6	20.1	93	7	90.3	88.0	57.5	79.5	55.1	52.9
44	56	66.1	66.1	26.3	49.0	28.8	20.1	94	6	90.9	88.9	59.8	81.1	56.6	55.3
45	55	66.3	66.4	26.4	49.6	29.0	20.3	95	5	92.3	89.8	63.4	82.7	58.8	58.9
46	54	66.6	66.9	26.9	49.7	29.2	20.7	96	4	93.0	90.6	65.5	83.6	60.5	61.7
47	53	67.2	67.4	27.2	50.1	29.4	20.9	97	3	94.2	91.6	68.5	85.5	63.3	65.9
48	52	67.5	67.8	27.8	50.6	29.7	20.9	98	2	95.7	92.4	72.0	86.5	65.8	69.1
49	51	68.1	68.4	28.3	50.8	29.8	21.0	99	1	96.3	93.1	76.6	86.9	68.3	73.2
50	50	69.0	68.5	28.3	51.0	30.0	21.1	100	0	96.3	93.4	78.2	87.2	70.6	75.1

Source: Goodyear 1994

TABLE 7. RED SNAPPER TRIPS WITH ENDORSEMENTS IN THE NORTHERN GULF:
ESTIMATED MEANS AND STANDARD ERRORS
WITH RED SNAPPER AS THE MAIN SPECIES WITH GREATEST REVENUE

VARIABLE	SCALE OF OPERATION	SAMPLE SIZE	AVERAGE PER BOAT PER TRIP	STD ERROR PER BOAT PER TRIP	AVERAGE PER BOAT PER YEAR	STD ERROR PER BOAT PER YEAR	ESTIMATED NUMBER OF BOATS	ESTIMATED TOTAL FOR ALL BOATS
POUNDS OF RED SNAPPER	ALL	51	1 362.02	87.42	20,846.42	2,350.79	155	3,229,241
TOTAL POUNDS, ALL SPECIES	ALL	51	1 686.53	105.37	24,196.61	2,480.14	155	3,748,206
PCT POUNDS BY RED SNAPPER	ALL	51	82.08	2.38	82.08	2.38	155	82
REVENUE FROM RED SNAPPER	ALL	51	2,713.09	168.12	41,666.53	4,704.35	155	6,454,406
TOTAL REVENUE, ALL SPECIES	ALL	51	3 226.13	202.17	47,059.03	4,940.03	155	7,289,738
PCT REVENUE BY RED SNAPPER	ALL	51	85.57	1.84	85.57	1.84	155	86
ROUTINE TRIP COSTS	ALL	51	672.19	45.90	9,237.94	927.43	155	1,431,014
COST AS PCT OF TOTAL REVENUE	ALL	51	22.45	1.11	22.45	1.11	155	22
NET TO BOAT, CAPTAIN AND CREW	ALL	51	2,553.93	173.36	37,821.09	4,116.02	155	5,858,724
PAYMENT TO BOAT OWNER	ALL	50	748.64	104.27	12,903.16	2,277.55	149	1,926,603
PAYMENT TO CAPTAIN	ALL	50	983.56	85.89	13,752.70	1,532.62	149	2,053,450
PAYMENT TO CREW	ALL	50	842.91	84.16	12,383.63	1,515.41	149	1,849,030
NUMBER OF TRIPS	ALL	51			14.18	1.16	155	2,197
DAYS FISHED	ALL	51	2.55	0.17	31.23	2.03	155	4,837
NUMBER OF PERSONS ABOARD	ALL	51	3.64	0.13				
POUNDS (ALL SPECIES) PER DAY FISHED	ALL	51	770.53	59.64				
NET REVENUE PER DAY FISHED PER TRIP	ALL	51	,176.00	93.43				
NET REVENUE PER PERSON PER DAY	ALL	51	331.19	25.39				

Source: Waters. J.R. 1996. An economic survey of commercial reef fish vessels in the U.S. Gulf of Mexico

TABLE 8. RED SNAPPER TRIPS WITHOUT ENDORSEMENTS IN THE NORTHERN GULF:
ESTIMATED MEANS AND STANDARD ERRORS WITH RED SNAPPER AS THE MAIN SPECIES WITH GREATEST REVENUE

VARIABLE	SCALE OF OPERATION	SAMPLE SIZE	AVERAGE PER BOAT PER TRIP	STD ERROR PER BOAT PER TRIP	AVERAGE PER BOAT PER YEAR	STD ERROR PER BOAT PER YEAR	ESTIMATED NUMBER OF BOATS	ESTIMATED TOTAL FOR ALL BOATS
POUNDS OF RED SNAPPER	ALL	23	218.19	39.52	2,703.41	570.12	159	429,674
TOTAL POUNDS, ALL SPECIES	ALL	23	362.06	60.85	3,999.84	669.88	159	635,725
PCT POUNDS BY RED SNAPPER	ALL	23	65.17	4.45	65.17	4.45	159	65
REVENUE FROM RED SNAPPER	ALL	23	471.79	98.50	5,803.63	1,339.44	159	922,414
TOTAL REVENUE, ALL SPECIES	ALL	23	684.86	120.11	7,726.50	1,446.14	159	1,228,031
PCT REVENUE BY RED SNAPPER	ALL	23	72.84	4.26	72.84	4.26	159	73
ROUTINE TRIP COSTS	ALL	23	228.22	40.08	2,305.84	340.35	159	366,484
COST AS PCT OF TOTAL REVENUE	ALL	23	42.19	4.77	42.19	4.77	159	42
NET TO BOAT, CAPTAIN AND CREW	ALL	23	456.64	102.11	5,420.66	1,292.28	159	861,547
PAYMENT TO BOAT OWNER	ALL	23	119.94	48.20	1,343.60	586.53	159	213,548
PAYMENT TO CAPTAIN	ALL	23	206.74	37.42	2,609.11	544.02	159	414,685
PAYMENT TO CREW	ALL	23	129.95	43.30	1,467.96	446.22	159	233,313
NUMBER OF TRIPS	ALL	23			12.38	1.47	159	1,968
DAYS FISHED	ALL	23	1.46	0.13	17.07	1.89	159	2,713
NUMBER OF PERSONS ABOARD	ALL	22	2.20	0.18				
POUNDS (ALL SPECIES) PER DAY FISHED	ALL	23	249.22	31.25				
NET REVENUE PER DAY FISHED PER TRIP	ALL	23	304.71	50.37				
NET REVENUE PER PERSON PER DAY	ALL	22	137.23	16.91				

Source: Waters, J.R. 1996. An economic survey of commercial reef fish vessels in the U.S. Gulf of Mexico

Table 21. Estimated numbers of Gulf of Mexico vermilion snapper landed by commercial fishermen by length and year for the period 1984-1995.

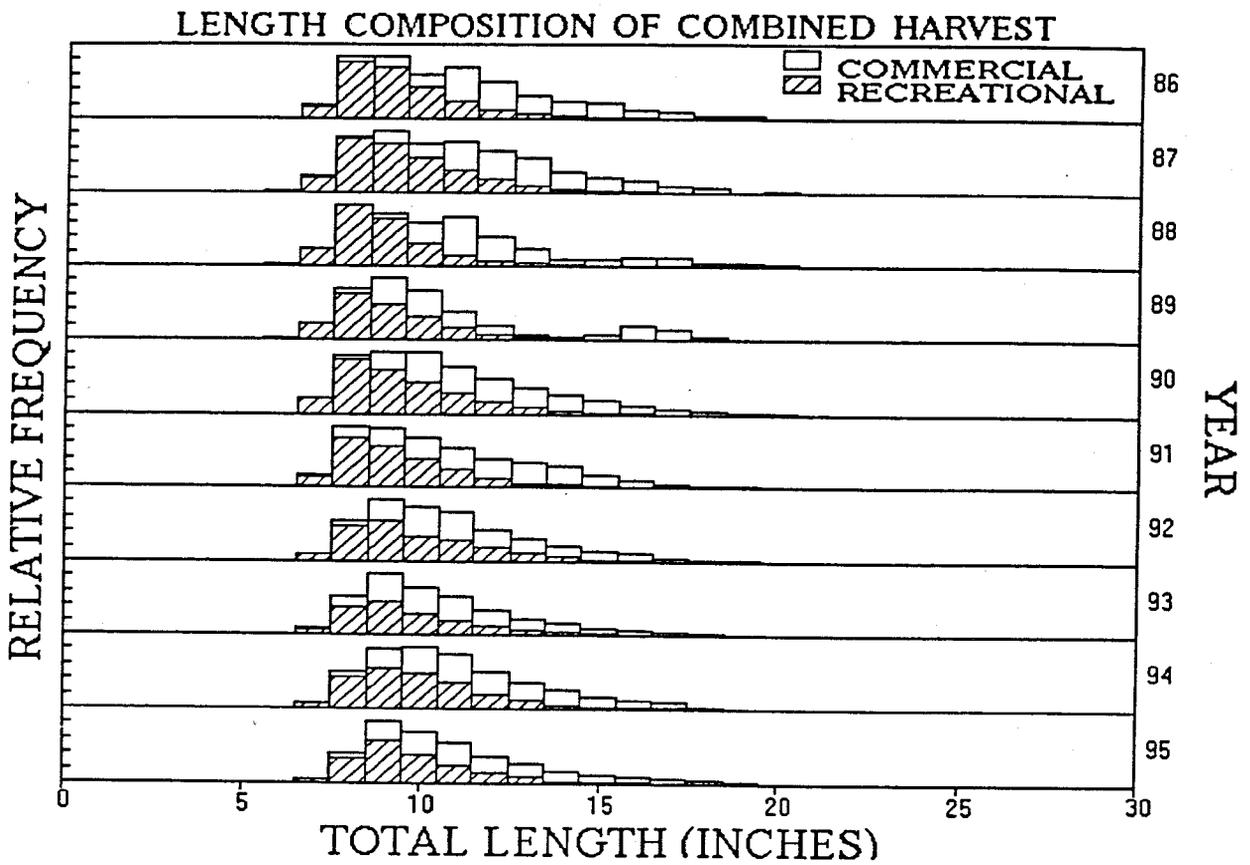
Length	YEAR											
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	3278	0	0	406	1769	0	1494	544	959
8	0	1593	4994	6556	1824	22467	10983	35119	39291	62516	29652	24450
9	21441	8962	24720	22946	24006	160742	116776	141155	175154	307267	152004	171515
10	86579	58966	122390	95609	132624	301926	293152	218267	358519	423843	303266	320210
11	193042	191376	183939	158712	225619	269871	338668	250844	422840	442821	429864	349252
12	294751	232553	291993	272092	318050	161301	307449	258020	316412	347102	376586	279497
13	232605	137854	288932	260076	173117	81844	216830	216261	251294	303576	337928	242022
14	162363	196459	238894	257072	90041	63204	211254	230284	235974	252168	285335	210752
15	126934	135803	151439	195602	112776	88615	188329	173539	169427	202975	216846	186616
16	138295	148759	163080	87693	114334	151765	148092	109002	114641	135464	179234	135041
17	132358	145750	72087	125669	130257	191044	113804	70356	97613	103415	135766	111215
18	108642	30798	55401	36880	82478	82997	79841	37572	50947	74870	76347	75082
19	61412	31795	40971	23494	57433	17566	66751	24396	24883	29972	23276	43559
20	38039	12750	13397	16938	56117	25962	41196	18484	15574	13792	14988	11418
21	7756	6354	0	0	5739	12571	14844	3608	8460	8240	4604	4590
22	2496	1025	0	0	3914	6286	6242	3958	2383	2708	2525	248
23	499	0	2349	0	0	6286	4280	2258	866	3373	947	497
24	0	0	0	0	0	3592	1945	198	217	482	316	745
25	499	0	2349	0	0	3592	2335	0	0	1927	272	1491
26	0	0	1228	3278	0	898	389	0	0	482	0	248
27	0	0	0	0	0	2694	1556	0	0	1262	272	0
28	0	0	0	0	0	898	778	0	0	482	0	248
29	0	0	0	0	0	2694	389	280	0	0	0	1114
30	0	0	0	0	0	0	75	0	0	0	0	0

Source: Schirripa, M.J. 1996. (September). Status of the vermilion snapper fishery of the Gulf of Mexico. NMFS. SEFSC. Contribution MIA-95/96-61.

Table 24. Estimated numbers of Gulf of Mexico vermilion snapper landed by recreational fishermen by length and year for the period 1981-1995.

Len	YEAR														
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	62	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	623	0	0	0	0	0	0	0	0
6	0	253	381	0	0	0	0	0	731	442	224	0	0	67	0
7	2624	1793	2437	537	0	4449	12161	10154	6624	2004	1855	264	2649	783	1683
8	0	35668	13002	22667	2918	80492	100929	150570	110188	90780	88734	53325	56022	31884	32131
9	20230	86988	29693	79865	8022	353349	342190	542305	337991	314135	424902	287021	290296	197875	207892
10	42446	90848	30332	64003	35734	319328	308397	418885	263542	257494	339783	335423	347941	260589	366616
11	24200	157797	40287	43861	50318	191624	216212	207732	163724	185774	241271	202509	213783	228105	236308
12	17183	42059	24844	18299	130534	105382	143264	101191	90512	121900	144850	172612	151115	168192	146687
13	18830	102133	20858	14675	40111	54247	86041	54227	41145	74297	73993	111380	92160	88108	85617
14	7405	27969	13078	10756	16043	34706	48507	35685	22517	44976	36860	66557	61810	58690	53089
15	2624	253	2687	7125	8751	22844	24249	15214	11931	21735	23417	38341	35920	27547	20754
16	0	1793	1530	2784	30631	8690	12432	6201	3309	13394	11561	19291	15555	16111	13467
17	295	253	598	1459	9481	6917	6587	4081	3103	5820	5710	12500	8420	11090	9280
18	0	0	202	806	2189	2135	5056	284	1065	1678	3178	3266	3482	6238	5929
19	0	0	254	537	1459	804	3863	862	49	427	1226	2812	975	1428	3486
20	0	0	127	0	0	291	877	1961	0	73	1231	2230	1279	67	1094
21	0	0	127	134	0	154	1279	57	0	415	187	923	0	704	823
22	0	0	67	0	0	35	0	0	0	0	0	283	0	358	240
23	0	0	0	0	0	0	62	0	0	0	0	0	0	67	631
24	0	0	0	0	0	682	0	0	0	0	0	0	0	637	0
25	0	0	0	0	0	0	0	0	0	0	0	61	0	0	0
26	0	0	0	0	0	0	0	0	0	397	516	215	0	346	74
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	437	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Schirripa, M.J. 1996. (September). Status of the vermilion snapper fishery of the Gulf of Mexico. NMFS. SEFSC. Contribution MIA-95/96-61.



Source: Schirripa, M.J. 1996. (September). Status of the vermilion snapper fishery of the Gulf of Mexico. NMFS. SEFSC. Contribution MIA-95/96-61.

Figure 31

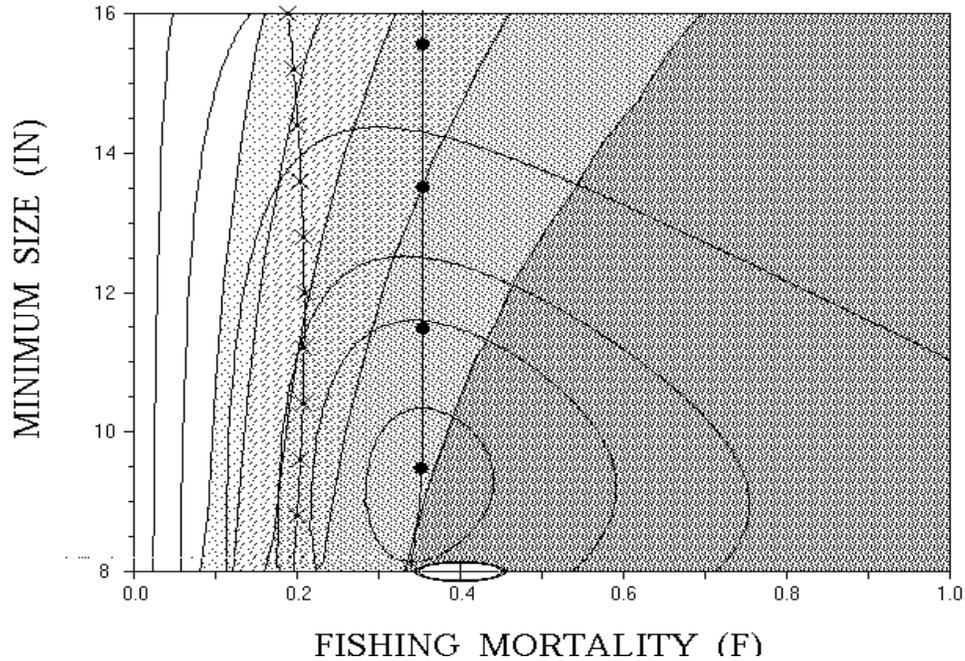


Figure 10 Yield per recruit and SPR for vermilion snapper as a function of minimum size and fishing mortality (F) assuming $M=0.25$ and release mortality of 33 percent. Yield isopleths (lines) are, from innermost out, 99%, 95%, 90%, 75%, 50% and 33% of maximum yield per recruit. SPR isopleths are, from deepest shading inward, 20%, 30%, 40%, 50% and 60% of the unfished level. The line with circles is F_{\max} , the line with x is $F_{0.1}$.

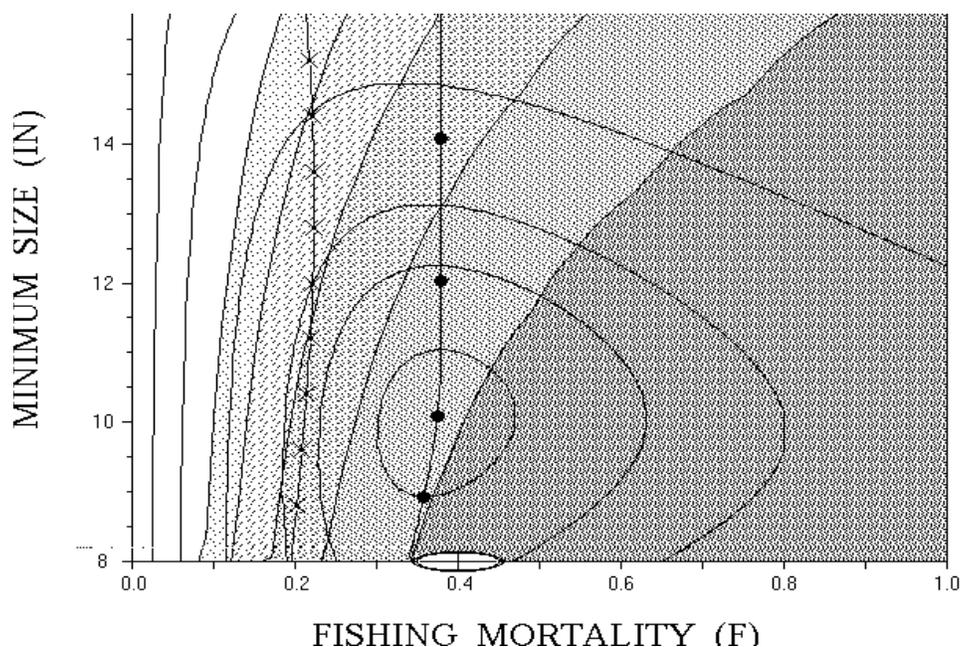


Figure 9 Yield per recruit and SPR for vermilion snapper as a function of minimum size and fishing mortality (F) assuming $M=0.25$ and release mortality of 25 percent. Yield isopleths (lines) are, from innermost out, 99%, 95%, 90%, 75%, 50% and 25% of maximum yield per recruit. SPR isopleths are, from deepest shading inward, 20%, 30%, 40%, 50% and 60% of the unfished level. The line with circles is F_{\max} , the line with x is $F_{0.1}$.

Table 1. Pounds of greater amberjack landed (whole weight) by state for Gulf of Mexico in the commercial fishery 1981-1995, excluding landings in Monroe County, Florida

Year	Florida (west)	Alabama	Mississippi	Louisiana	Texas	Total Atlantic	Total Gulf
1981	261,298						261,298
1982	244,086		4,950				249,036
1983	306,332	2,909	500	452			310,193
1984	545,367	19,279	9,336	364	13,901		588,247
1985	633,362	42,733	36,758	96,206	48,237		857,296
1986	708,492	61,949	67,403	314,057	119,796		1,271,697
1987	1,193,674	30,668	46,293	380,847	105,428	22	1,756,910
1988	1,368,482	35,951	40,461	710,752	181,677	6	2,337,323
1989	1,388,215	28,849	53,120	606,955	139,279	856	2,216,418
1990	661,981	15,206	22,535	315,395	72,511		1,087,628
1991	581,087	2,194	20,204	196,923	28,472		828,880
1992	859,573	21,432	16,909	406,802	170,026		1,474,742
1993	867,153	7,657	1,378	486,153	180,190		1,542,531
1994	727,093	5,824	275	351,935	84,113	65	1,169,240
1995	595,120	2,704	2,157	302,778		728	902,759

Source: McClellan, DB. And N. J. Cummings. 1996. Stock assessment of Gulf of Mexico greater amberjack through 1995. NMFS. SEFSC. Contribution: MIA-96/97-03. 19 p.

Table 2. Pounds of greater amberjack landed in the Gulf of Mexico by the commercial and recreational fisheries, 1981-1995, excluding commercial landings in Monroe County, Florida

Year	Recreational ¹ (%)	Commercial	Total
1981	568,103 (68)	261,298	829,401
1982	3,380,188 (93)	249,036	3,629,224
1983	2,014,583 (87)	310,193	2,324,676
1984	955,341 (62)	588,247	1,543,588
1985	1,322,599(61)	857,296	2,179,895
1986	8,291,003 (87)	1,271,697	9,562,700
1987	5,619,333 (76)	1,756,910	7,376,243
1988	2,674,524 (53)	2,337,323	5,011,,847
1989	4,766,941 (68)	2,216,418	6,983,359
1990	767,197 (41)	1,087,628	1,854,825
1991	2,900,875 (78)	828,880	3,729,755
1992	2,668,203 (64)	1,474,742	4,142,945
1993	3,508,021 (69)	1,542,531	5,050,542
1994	1,571,883 (57)	1,169,240	2,741,123
1995	820,173 (48)	902,759	1,722,932

reef\greater amb tbl 2.297 ccm

¹MRFSS and headboat data only

Table 3. Percent of Commercial Greater Amberjack Landings in the Gulf of Mexico by Month for the Period 1992-1995.

MONTH	YEARS				
	1992	1993	1994	1995	AVERAGE
January	3.76	9.82	4.99	11.82	7.60
February	4.67	7.84	6.26	9.24	7.00
March	3.53	6.70	6.14	9.47	6.46
April	5.00	4.91	6.35	6.38	5.66
May	7.68	10.33	12.75	9.83	10.15
June	9.04	7.79	9.47	11.28	9.40
July	9.84	11.33	10.81	7.90	9.97
August	12.77	10.01	15.67	6.88	11.36
September	15.63	13.44	8.36	11.33	12.19
October	9.70	6.63	6.62	3.54	6.62
November	7.59	5.29	5.46	5.52	5.97
December	10.79	5.93	7.12	6.81	7.66

Source: Cummings, N. J. 1997. Pers. Comm. Revised table from MIA - 96/97-03. NMFS SEFSC

Greater Amberjack Annual Landings

Gulf of Mexico

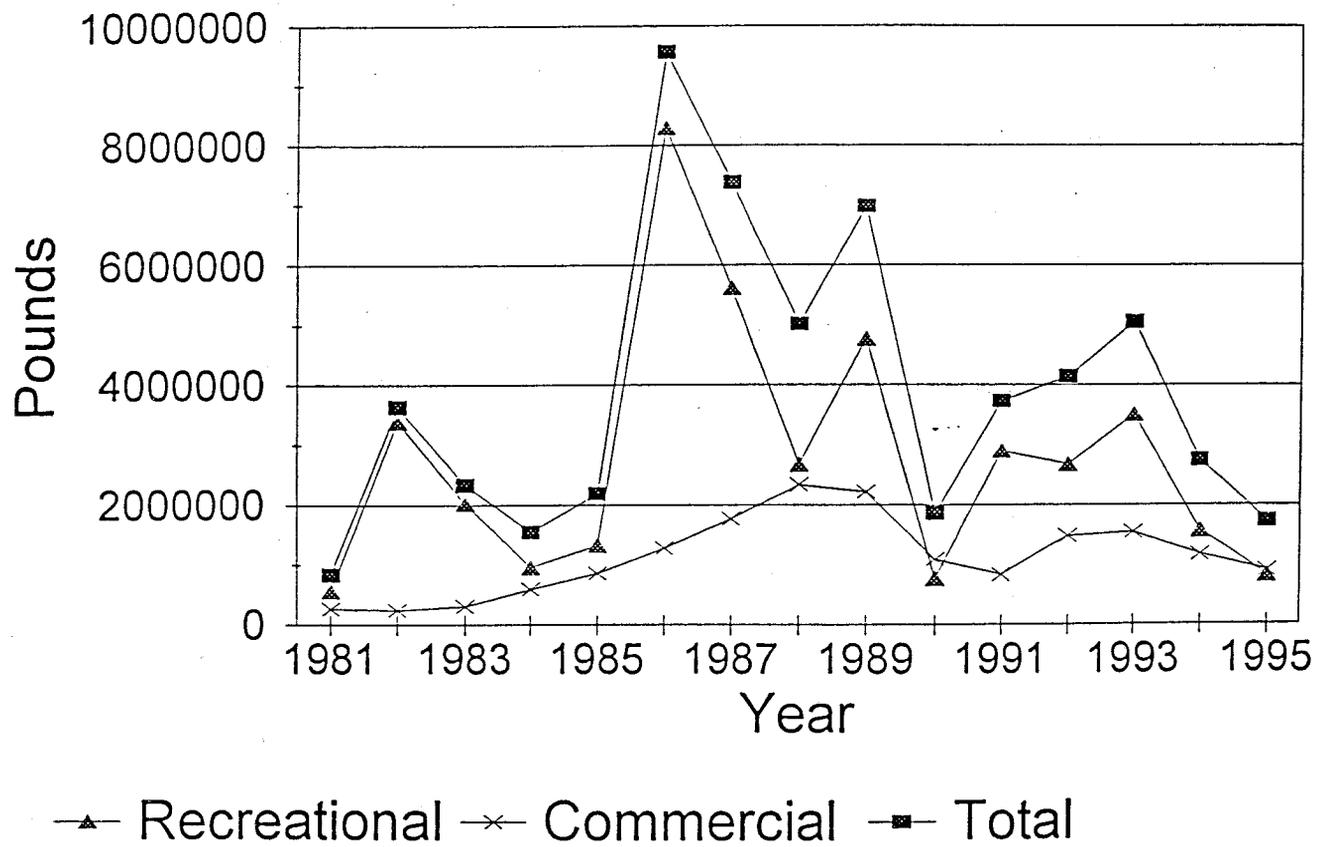


Figure 1

Table 4. Analyses of Catch for Vessel Classes in Rejected Alternative 10.

Average Annual Catch of Red Snapper by Vessels with Red Snapper Endorsement by Category

Percentage of the Total Endorsement Holders Catch of Red Snapper by top 5 and 10 Vessels with a Red Snapper Endorsement

Percentage of the Total Endorsement Holders Catch of Red Snapper by Vessels with a Red Snapper Endorsement by Class

	1990	1991	1992	1993	1994	1995	1996
Average Catch Top 5 (Pounds)	57,086	58,867	60,821	97,464	89,608	88,797	93,285
	18.5%	17.7%	15.3%	14.5%	12.3%	12.6%	10.7%
Average Catch Top 10 (Pounds)	48,848	51,440	53,437	79,857	75,578	73,043	87,663
	31.6%	30.9%	26.8%	23.7%	20.7%	20.8%	20.2%
Average Catch Class 1 (Pounds)	25,359	24,014	26,160	36,761	38,241	37,329	51,193
	80.5%	76.7%	72.3%	59%	54.4%	56.4%	60.1%
Average Catch Class 2 (Pounds)	6,408	6,452	8,462	20,586	24,194	20,961	25,477
	19.5%	23.3%	27.7%	41%	45.6%	43.6%	39.9%
Quota (Million Pounds)	3.01	2.04	2.04	3.06	3.06	3.06	4.65
Commercial Landings (Million Pounds)	2.66	2.23	3.14	3.45	3.12	3.10	4.43

Average Pounds of Red Snapper Caught per trip by Endorsed Vessels by Class

	1990	1991	1992	1993	1994	1995	1996
Class 1	1450	1948	2553	1867	1845	1921	1973
Class 2	501	619	1068	1179	1391	1566	1654