AMENDMENT 16A

TO THE

FISHERY MANAGEMENT PLAN

FOR THE REEF FISH RESOURCES OF

THE GULF OF MEXICO

(Includes Regulatory Impact Review, Initial Regulatory Flexibility Analysis, and Environmental Assessment)

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Abbreviations Used in This Document

ABC	Acceptable Biological Catch
BRD	Bycatch Reduction Device
Council	Gulf of Mexico Fishery Management Council
EEZ	Exclusive Economic Zone
F	Fishing Mortality Rate (measured as an instantaneous rate)
FMFC	Florida Marine Fisheries Commission
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
IRFA	Initial Regulatory Flexibility Analysis
ITQ	Individual Transferable Quota
NMFS	National Marine Fisheries Service
OY	Optimum Yield
RFSAP	Reef Fish Stock Assessment Panel
RIR	Regulatory Impact Review
SEIS	Supplemental Environmental Impact Statement
SMZ	Special Management Zone
SPR	Spawning Potential Ratio
SSBR	Spawning Stock Biomass Per Recruit
TAC	Total Allowable Catch
VMS	Vessel Monitoring System

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FOR REEF FISH AMENDMENT 16A

1.0 INTRODUCTION

At the Gulf Council meeting held March 9-13, 1998 in Duck Key, Florida, the Council was scheduled to take final action on Reef Fish Amendment 16. Due to time constraints and a power failure during the meeting, only Section 6.0 (Fish Trap Phase Out) was acted upon at that meeting. The portion of the amendment containing the Council's decisions for Section 6 was separated from the other issues in the amendment for submission to the National Marine Fisheries Service (NMFS) as this document, Reef Fish Amendment 16A. The remaining issues were placed into a separate amendment, Reef Fish Amendment 16B, for final action at the Council's May meeting in Destin, Florida.

This amendment is concerned with the following Issues and alternatives:

- Fish Trap Phase-Out (Section 6)
    - Shorter Fish Trap Phase-Out
    - Spiny Lobster and Stone Crab Reef Fish Trip Limit
    - Fish Trap Vessel Monitoring System
    - Additional Fish Trap Vessel Reporting Requirements

2.0 HISTORY OF MANAGEMENT

2.1 Management Activities Other Than Regulatory Amendments

The Reef Fish Fishery Management Plan (FMP) 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 NMFS has collected commercial landings data since the early 1950's, recreational harvest data since 1979, and a dockside interview program to collect more detailed data on commercial harvest since 1984. 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 FMP, 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 quota[1] 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 total allowable catch (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. 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.

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, but it does not prevent any other date for eligibility or other method for controlling fishing effort from being proposed and implemented.

At the direction of the Council, the Reef Fish Stock Assessment Panel (RFSAP) met in March 1990 and reviewed the 1990 NMFS Red Snapper Stock Assessment. The recommendation of the panel at that time was to close the directed fishery because the allowable biological catch (ABC) was being harvested as bycatch of the shrimp trawl fishery. No viable alternatives were identified that would achieve the 20 percent SSBR goal by the year 2000 without closure of the directed fishery because no means existed for reducing shrimp trawl bycatch.

Amendment 3, implemented in July 1991, provided additional flexibility in the annual framework procedure for specifying TAC by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice, except that the rebuilding period cannot exceed 1.5 times the generation time of the species under consideration. It revised the FMP's primary objective, definitions of optimum yield (OY) and overfishing, and the framework procedure for setting TAC by replacing the 20 percent SSBR target with 20 percent SPR. 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.

[1] 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 ÷ 1.18 x 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.

The 1992 commercial red snapper fishery opened on January 1 and closed after just 53 days when a derby fishery developed and the quota was quickly filled. An emergency rule, implemented in 1992 by NMFS at the request of the Council, reopened the red snapper fishery from April 3, 1992 through May 14, 1992 with a 1,000 pound trip limit. This rule was implemented to alleviate economic and social upheavals that occurred as a result of the 1992 red snapper commercial quota being rapidly filled. Although this emergency rule resulted in a quota overrun of approximately 600,000 pounds, analysis by NMFS biologists determined that this one-time overrun would not prevent the red snapper stock from attaining its target SPR.

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 exclusive economic zone (EEZ), implemented a 3-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 SMZ's; 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 total length over a period of five years, and closed the region of Riley's Hump (near the 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 are allowed a 2,000 pound possession limit of red snapper, and permitted vessels without the endorsement are allowed 200 pounds. This emergency action was initially effective for 90 days, but 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 proposed establishment of 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 4-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 from persons who contest their initial allocations of shares or the 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, pending Congressional action. In October 1996, Congress, through re-authorization of the Magnuson-Stevens Act, repealed the red snapper ITQ system and prohibited Councils from submitting, or NMFS from approving and implementing, any new individual fishing quota program before October 1, 2000.

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 included: (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. NMFS disapproved a proposal to redefine OY from 20 percent SPR (the same level as overfishing) to an SPR corresponding to a fishing mortality rate of $F_{0.1}$ until an alternative operational definition that optimizes ecological, economic, and social benefits to the Nation could be developed. In April 1997, the Council resubmitted the OY definition with a new proposal to redefine OY as 30 percent SPR. The re-submission document was also disapproved by NMFS on April 3, 1998, and is currently awaiting further review by the Council.

Following the Congressional repeal of the red snapper ITQ system in Amendment 9, an emergency interim action was published in the Federal Register on January 2, 1996 to extend the red snapper endorsement system for 90 days. That emergency action was superseded by another emergency action, published in the Federal Register on February 29, 1996, that extended the red snapper endorsement system through May 29, 1996, and subsequently, by agreement of NMFS and the Council, for an additional 90 days until August 27, 1996.

Amendment 12, submitted in December 1995 and implemented in January 1997, reduced the greater amberjack bag limit from 3 fish to 1 fish per person, and created an aggregate bag limit of 20 reef fish for all reef fish species not having a bag limit. NMFS disapproved proposed provisions for the commercial sector to cancel the automatic red snapper size limit increases to 15 inches total length in 1996 and 16 inches total length in 1998, and for the recreational sector, a proposal to include lesser amberjack and banded rudderfish along with greater amberjack in an aggregate 1 fish bag limit and 28 inch fork length minimum size limit.

Amendment 13, implemented in September 1996, further extended the red snapper endorsement system through the remainder of 1996 and, if necessary, through 1997, in order to give the Council time to develop a permanent limited access system that was in compliance with the new provisions of the Magnuson-Stevens Act.

In late 1996 the RFSAP reviewed a new stock assessment on vermilion snapper and concluded that the vermilion snapper fishery in the Gulf of Mexico, while not currently overfished, was showing typical signs of overfishing. Given that SPR was decreasing at current fishing rates and that the proposed OY level is 30 percent SPR, the RFSAP recommended that fishing mortality be reduced to a rate corresponding to $F_{30\% SPR}$, or F = 0.32. The RFSAP did not have sufficient information to assess the impact of closed seasons or other measures, but suggested that a 10-inch total length minimum size limit would be an effective intermediate measure until a new stock assessment and additional analysis could be completed. In March 1997, the Council requested that NMFS increase the minimum size limit from 8 inches to 10 inches under the new interim measures provision of the Magnuson-Stevens Act, while

a permanent increase in the minimum size limit to 10 inches total length was developed through Amendment 15.

Amendment 14, implemented in March and April, 1997, provided for a 10-year phase-out for the fish trap fishery; allowed transfer of fish trap endorsements for the first two years and thereafter only upon death or disability of the endorsement holder, to another vessel owned by the same entity, or to any of the 56 individuals who were fishing traps after November 19, 1992 and were excluded by the moratorium; and prohibited the use of fish traps west of Cape San Blas, Florida. The amendment also provided the Regional Administrator 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.

Amendment 15, implemented in January 1998, established a permanent two-tier red snapper license limitation system to replace the temporary red snapper endorsement system. Under the new system, Class 1 licenses and initial 2,000 pound trip limits were issued to red snapper endorsement holders as of March 1, 1997. Class 2 licenses, and initial 200 pound trip limits are issued to other holders of reef fish permits as of March 1, 1997 who had any landings of red snapper between January 1, 1990 and March 1, 1997. Vessels without a Class 1 or Class 2 red snapper license are prohibited from commercial harvest of red snapper, and licences are fully transferable. The commercial red snapper season was split in two, with two thirds of the quota allocated to a February 1 opening and the remaining quota to a September 1 opening. The commercial fishery will open from noon of the first day to noon of the fifteenth day of each month during the commercial season. Amendment 15 also prohibits harvest of reef fish from traps other than permitted reef fish traps, stone crab traps, or spiny lobster traps; permanently increases the vermilion snapper size limit from 8 inches to 10 inches total length; removes black sea bass, rock sea bass, bank sea bass, and all species of grunts and porgies from the Reef Fish FMP; closes the commercial greater amberjack fishery Gulfwide during the months of March, April, and May; and removes sand perch and dwarf sand perch from the recreational 20-reef fish aggregate bag limit.

2.2 Regulatory Amendments

A March 1991 regulatory amendment reduced the red snapper TAC from 5.0 million pounds to 4.0 million pounds to be allocated with a commercial quota of 2.04 million pounds and a 7-fish recreational daily bag limit (1.96 million pound allocation) beginning in 1991. This amendment also contained a proposal by the Council to effect a 50 percent reduction of red snapper bycatch in 1994 by the offshore shrimp trawler fleet, to occur through the mandatory use of finfish excluder devices on shrimp trawls, reductions in fishing effort, area or season closures of the shrimp fishery, or a combination of these actions. This combination of measures was projected to achieve a 20 percent SPR for red snapper by the year 2007. The 2.04 million pound quota was reached on August 24, 1991, and the red snapper fishery was closed to further commercial harvest in the EEZ for the remainder of the year. In 1992, the commercial red snapper quota remained at 2.04 million pounds; however, extremely heavy harvest rates resulted in the quota being filled in just 53 days. The commercial red snapper fishery was closed on February 22, 1992.

A July 1991 regulatory amendment provided a one-time increase in the 1991 quota for shallow-water groupers from 9.2 million pounds to 9.9[2] million pounds. This action was taken to provide the commercial fishery with an opportunity to harvest 0.7 million pounds that went unharvested in 1990 due to an early closure of the fishery in 1990. The NMFS had projected that the 9.2 million pound quota would be reached on November 7, 1990, but subsequent data showed that the actual harvest was 8.5 million pounds.

A November 1991 regulatory amendment raised the 1992 commercial quota for shallow-water groupers from 8.2 million pounds to 9.8 million pounds, after a red grouper stock assessment indicated that the red grouper SPR was substantially above the Council's minimum target of 20 percent. The Council concluded that the increased quota would not materially impinge on the long-term viability of at least the red grouper stock.

An October 1992 regulatory amendment raised the 1993 red snapper TAC from 4.0 million pounds to 6.0 million pounds to be allocated with a commercial quota of 3.06 million pounds and a recreational allocation of 2.94 million pounds with a 7-fish recreational daily bag limit. The amendment also changed the target year to achieve a 20 percent SPR for red snapper from 2007 to 2009. This action was based on the Plan provision that the rebuilding period may not exceed 1.5 times the potential generation time of the stock and an estimated red snapper generation time of 13 years (Goodyear 1992).

A withdrawn 1993 regulatory amendment would have moved the longline and buoy gear restricted area boundary off central and south-central Florida inshore from the 20 fathom isobath to the 15 fathom isobath for a one-year period beginning January 1, 1994. It was withdrawn at the industry's request in January 1994 amid concerns that it would lead to a quota closure and a concern by the NMFS Southeast Fisheries Science Center that there were inadequate experimental controls to properly evaluate the impact of the action.

An October 1993 regulatory amendment set the opening date of the 1994 commercial red snapper season at February 10, 1994, and restricted commercial vessels to landing no more than one trip limit per day. The purpose of this amendment was to facilitate enforcement of the trip limits, minimize fishing during hazardous winter weather, and ensure that the commercial red snapper fishery is open during Lent, when there is increased demand for seafood. The TAC was retained at the 1993 level of 6 million pounds, with a 3.06 million pound commercial quota and a 2.94 million pound recreational allocation. The shallow-water grouper regulations were also evaluated, but no change was made. The shallow-water grouper TAC, which previously had only been specified as a commercial quota, was specified as a total harvest of 15.1 million pounds (with 9.8 million pounds allocated to the commercial quota) and a 20-inch total length minimum size limit for gag, red, Nassau, yellowfin, and black grouper.

An October 1994 regulatory amendment retained the 6 million pound red snapper TAC and commercial trip limits and set the opening date of the 1995 commercial red snapper fishery at February 24, 1995. However, because the recreational sector exceeded its 2.94 million pound red snapper allocation each year since 1992, this regulatory amendment reduced the daily bag limit from 7 fish to 5 fish, and

[2] The corrected 1991 quota, using the revised conversion factor, was 8.8 million pounds. The corrected 1990 actual harvest was 7.6 million pounds.

increased the minimum size limit for recreational fishing from 14 inches to 15 inches total length a year ahead of the scheduled automatic increase.

A rejected December 1994 regulatory amendment would have reduced the minimum size limit for red grouper from 20 inches to 18 inches total length in response to complaints from the commercial sector that regulations were too restrictive to allow them to harvest their quota of shallow-water grouper. NMFS rejected the proposed action because of concern that it would result in the recreational sector exceeding its allocation. In March 1995 a revised regulatory amendment was submitted to NMFS that would reduce the red grouper size limit to 18 inches total length for only the commercial sector. That regulatory amendment was rejected by NMFS because newly discovered biases in the growth rate data collected in recent years resulted in uncertainty about the current status of the red grouper stock. Further analysis by NMFS biologists and the RFSAP reduced that uncertainty to the point where the status of red grouper stocks was determined to be most likely at or above 27 percent SPR, which is well above the overfishing threshold. In September 1995 a second revised regulatory amendment was submitted to NMFS to reduce the commercial red grouper size limit to 18 inches total length. This second revision was rejected by NMFS because they felt it would create user conflicts, produce long-term economic losses to commercial fishermen, allow the harvest of juvenile fish, and potentially lead to a derby fishery with the commercial quota being filled early.

A December 1995 regulatory amendment raised the red snapper TAC from 6 million pounds to 9.12 million pounds, with 4.65 million pounds allocated to the commercial sector and 4.47 million pounds allocated to the recreational sector. Recreational size and bag limits remained at 5 fish and 15 inches total length respectively. The recovery target date to achieve 20 percent SPR was extended to the year 2019, based on new biological information that red snapper live longer and have a longer generation time than previously believed. A March 1996 addendum to the regulatory amendment split the 1996 and 1997 commercial red snapper quotas into two seasons each, with the first season opening on February 1 with a 3.06 million pound quota, and the second season opening on September 15 with the remainder of the annual quota.

A March 1997 regulatory amendment changed the opening date of the second 1997 commercial red snapper season from September 15 to September 2 at noon and closed the season on September 15 at noon. Thereafter, the commercial fishery opened from noon of the first day to noon of the fifteenth day of each month until the 1997 quota was reached. It also complied with the new Magnuson-Stevens Act requirement that recreational red snapper be managed under a quota system by authorizing the Regional Administrator of NMFS to close the recreational fishery in the EEZ at such time as it is projected to be necessary to prevent the recreational sector from exceeding its allocation.

Subsequently, the recreational red snapper fishery filled its 1997 quota of 4.47 million pounds and closed on November 27, 1997 for the remainder of the calendar year.

A November 1997 regulatory amendment canceled the planned increase in the red snapper minimum size limit to 16 inches total length that had been implemented through Amendment 5, and retained a 15-inch total length minimum size limit.

A rejected February 1998 regulatory amendment proposed retention of the red snapper TAC of 9.12 million pounds and a status quo recreational red snapper bag limit of 5 fish per person except for-hire

vessels. A zero red snapper bag limit for the captain and crew of recreational for-hire vessels was proposed to extend the recreational red snapper quota season. The status quo TAC proposal was based on an assumption that shrimp trawl bycatch reduction devices (BRDs) would be implemented in 1998 and would effectively reduce juvenile red snapper bycatch in shrimp trawls to a level that would allow the red snapper stock to be rebuilt to 20 percent SPR by 2019 under a 9.12 million pound TAC. The shrimp trawl BRD regulations were implemented by NMFS in May 1998. NMFS was concerned about the effectiveness of the BRDs and released only 6 million pounds of the 9.12 million pound TAC, and established a BRD monitoring program. The remaining red snapper TAC would be released on September 1 provided that the BRDs achieved a 60 percent bycatch reduction rate; a portion of the remaining TAC would be released if BRDs achieved between a 50 to 60 percent bycatch reduction; and none of the remaining TAC would be released if BRDs achieved a 50 percent reduction or less. NMFS also reduced the recreational red snapper bag limit to 4 fish per person and did not implement the zero bag limit for captain and crew of for-hire recreational vessels.

3.0 PURPOSE AND NEED FOR ACTION

Fish Trap Phase-Out

A 10-year phase-out of fish traps in the Gulf of Mexico was implemented through Amendment 14. The purpose for phasing out fish traps is discussed in Amendment 14. A 10-year time frame was adopted to give fish trap fishermen an opportunity to reduce adverse economic impacts on the existing participants. In addition, some trap fishermen testified that they would be willing to work with enforcement officials to stop illegal trapping activities. However, the Council has continued to receive reports of fish trap violations, and enforcement officers have reported difficulties, particularly in the Keys, in monitoring and apprehending violators and getting sanctions imposed when violators are prosecuted. Because these problems are more acute in the Florida Keys and there are increasing reports of conflucts with aquarium-trade fishermen, the Council has concluded that additional actions are needed in this area to respond to these problems.

4.0 PROBLEMS REQUIRING A PLAN AMENDMENT

Fish trap fishing violations are continuing to be reported, particularly in the area south of 25.05 degrees north latitude, despite the implementation of a moratorium and 10-year phase-out of fish traps in the EEZ, and more effective measures are needed to address these violations and to provide more effective monitoring and reporting.

5.0 PROPOSED ACTIONS

FISH TRAP PHASE-OUT (Section 6)

6.1 Shorter Fish Trap Phase-out

The use of fish traps will be prohibited beginning February 7, 2001, south of 25.05 degrees north latitude. In the remaining area where fish traps are allowed north of 25.05 degrees north latitude, the status quo 10-year phase-out will be maintained.

6.2 Spiny Lobster and Stone Crab Trap Reef Fish Trip Limit

A vessel with a reef fish permit that is fishing spiny lobster or stone crab traps can retain the same quantities of reef fish as other reef fish permitted vessels; however, the possession of reef fish exhibiting the condition of trap rash on board any such vessel is prima facie evidence of illegal trap use and is prohibited except for vessels possessing a valid fish trap endorsement.

6.3 Fish Trap Vessel Monitoring System

NMFS will establish a system design, implementation schedule, and protocol to require implementation of a vessel monitoring system (VMS) for vessels engaged in the fish trap fishery, with the cost of the vessel equipment, installation, and maintenance to be paid or arranged by the owners as appropriate. Prior to implementation, the system design, including costs, and implementation schedule would have to be approved by the Council. The implementation would be done through a proposed and final rule.

6.4 Additional Fish Trap Vessel Reporting Requirements

Require fish trap vessels to submit trip initiation and trip termination reports as described in the discussion for Section 6.4. Prior to implementing this additional reporting requirement, there will be a one-month fish trap inspection/compliance/education period, at a time determined by the NMFS Regional Administrator and published in the Federal Register. During this window of opportunity, fish trap fishermen will be required to have an appointment with NMFS enforcement for the purpose of having their trap gear, permits, and vessels available for inspection.

6.0 FISH TRAP PHASE-OUT

6.1 Shorter Fish Trap Phase-Out

Proposed Alternative: The use of fish traps will be prohibited beginning February 7, 2001, south of 25.05 degrees north latitude. In the remaining area where fish traps are allowed north of 25.05 degrees north latitude, the status quo 10-year phase-out will be maintained.

Rejected Alternative 1: Possession or use of fish traps in the Gulf of Mexico EEZ east of Cape San Blas, Florida will be prohibited two years after the implementation of this amendment.

Rejected Alternative 2: Status Quo: The 10-year phase-out program remains in place. Fish traps will be banned from the Gulf EEZ east of Cape San Blas, Florida after February 7, 2007.

Rationale: In public testimony presented to the Council at its March 1998 meeting there were numerous allegations of continuing fish trap violations in the Gulf waters off of the Florida Keys since implementation of the 10-year phase-out. Testimony opposing the use of fish traps recorded in the minutes of the March 1998 meeting included:

- A Florida Marine Patrol officer related that in the past year he prosecuted about four cases resulting in 35 traps being taken from the water. He considered this past year to be one of his busiest years. The majority of illegal gear was found in the Gulf, west of the Dry Tortugas.

- A Dry Tortugas National Park ranger stated that in the past week he found two traps that had been stolen from a legal trap fisherman and used illegally inside the park.

- One person testifying noted that two fish trappers had been cited by NMFS for committing numerous trap violations. One was no longer a trap fisherman, and the other trap fisherman was facing up to $50,000.00 in trap-violation fines.

- A commercial hand line fisherman testified that fish traps interfered with hand line fishing in the Tortugas area.

- A scuba diver reported seeing illegal traps without tags on the wreck of the Kendrick, as well as several illegal traps at Riley's Hump.

- The operator of dive business on a live-aboard dive boat witnessed several illegal fish traps in the Tortugas and an increase of traps in the last two years.

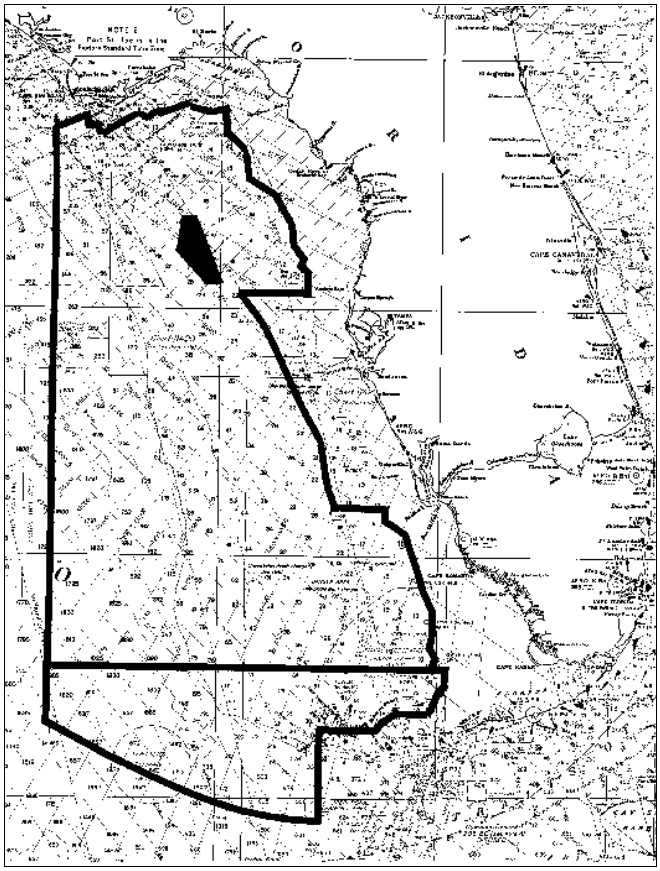
- A commercial fish trap fisherman testified that he has come across illegal traps while he was fishing, although the traps he saw were old and tangled up.

In addition, testimony expressed concern about the impact of fish trap fisheries on ornamental fish stocks:

- A tropical fish collector related that his industry just experienced the largest (natural) angelfish kill in recorded history that extended from Venezuela, up through the Antilles, into the Gulf of Mexico. He was monitoring this situation to see if it affected future recruitment, but felt that the angelfish population (not part of the Reef Fish FMP) was impacted by fish trapping.

- A former commercial fish trap fisherman stated that fish trap bycatch consisted of hundreds and hundreds of angelfish, parrotfish, and tangs. Since ornamentals were no longer allowed, they were now used for bait. He informed the Council that he had never seen a legal trap as they all either had monofilament line or rubber tubing instead of bio-degradable doors. He further stated that the fish traps destroyed coral as the fishermen used a six foot grapple made out of rebar and ibeam metal to grapple trawl lines.

As a result of this new anecdotal information, the Council concluded that it is necessary to shorten the phase-out period in the affected area, i.e., the federal waters of the Gulf of Mexico off of the Florida Keys.



Allowed fish trap areas. Fishing with lawfully permitted fish traps is allowed in the Gulf of Mexico EEZ, from the outer boundary of the Stressed Area westward to 85°30' west longitude, until February 7, 2007. The lower area is where traps are proposed to be phased out after February 7, 2001. The black spot in the upper area is the Florida Middle Grounds Habitat Area of Particular Concern, where traps are currently prohibited.

Discussion: Amendment 14 implemented a 10-year phase-out of fish traps, from February 7, 1997 to February 7, 2007. No new fish trap endorsements are to be issued during the phase-out, but existing fish trap endorsements are transferable until February 7, 1999. The number of endorsements, as of May 1998, stands at 86 (personal communication, NMFS Southeast Regional Office). Since implementation of the phase-out, the Council has continued to receive reports of ongoing fish trap violations from the Florida Marine Patrol, Dry Tortugas National Park Service, and Florida Marine Fisheries Commission (FMFC). These reports have come entirely from the waters off of the Florida Keys. The Florida Marine Patrol has related difficulties with enforceability of fish trap rules. Since traps are underwater and not visible to enforcement officers, officers are dependent upon anonymous tips to identify violators, and must then catch them in the act. Because of the ongoing enforcement

problems, the FMFC has asked for a more immediate end to the use of fish traps. In consideration of the economic investment that fish trap fishermen have made and the lack of reported violations in waters north of the Keys, the FMFC has specifically not asked for an immediate Gulf-wide ban. The FMFC's request and the Council's proposal would shorten the phase-out in federal waters south of 25.05° north latitude to February 7, 2001 and continue the phase-out after 2007 elsewhere, where currently allowed, to allow fishermen to recover their economic investment and convert to other fisheries. Within this southern area, the phase-out of fish trap use (not possession) would be shortened from 10 years to 4 years.

The demarcation line for the shorter phase-out is approximately the latitude of Cape Sable, Florida, the southernmost point of the Florida peninsula (excluding the Florida Keys). Fish trap vessels operating in the affected area would be prohibited from fishing with traps after February 7, 2001. To use traps, they would have to fish north of 25.05° north latitude or fish with other methods south of 25.05° north latitude.

Biological Impacts: Fish trap fishing is already prohibited in the coral reef complexes (i.e., within the stressed area). Fish traps are relatively light in weight, especially when compared to stone crab and spiny lobster traps which are weighed with concrete. (See Amendment 5 Supplemental Environmental Impact Statement [SEIS]). The Proposed Alternative may reduce trap fishing pressure on reef fish in the area south of 25.05° north latitude, but that effort will be shifted to more northern latitudes if the fishermen travel further north to fish or transfer their fish trap endorsements to a vessel based further north. Thus, aside from a geographical shift in effort, the Proposed Alternative is not expected to have any significant direct biological impact. Indirect benefits, however, may result from reduced illegal trap harvest due to improved enforcement capability in the area affected by the shorter phase-out.

Economic Impacts: The fish trap fishery is one of the most highly regulated fisheries in the Southeast. Use of fish traps has long been banned in Florida waters. Fish traps are also banned in federal waters within the area of the jurisdiction of the South Atlantic Council. Lately, the Gulf Council also banned the use of fish traps in the EEZ west of Cape San Blas, Florida, although use of fish traps in that area had been virtually absent. In addition, there is in effect a 10-year phase-out of fish traps terminating on February 7, 2007, by which time all fish traps will be banned in the EEZ within the area of jurisdiction of the Gulf Council. The alternatives to status quo considered in this section propose to shorten the phase-out period for the entire open area (Rejected Alternative 1) or a portion of the open area (Proposed Alternative).

In general, each of the alternatives to the status quo would bring about a further reduction in the profitability of fish trap vessels. A switch to other gear types or fishing areas is likely to increase cost and decrease revenues, at least over the short run. In the process of developing expertise in the use of other gear types or in fishing in other areas, both the cost and revenues from overall fishing operations would be negatively impacted. In addition, some level of vessel efficiency is lost in switching gear types, particularly for those that primarily use traps to fish in other fisheries, such as stone crabs and spiny lobster. Moreover, fish trap endorsements, fish traps, and related fishing accessories would have a reduced value eventually falling down to zero when all fish trap fishing becomes prohibited.

While the general direction of effects of all alternatives is similar, there are marked differences in terms of the extent and magnitude of effects. Rejected Alternative 1 would result in larger negative impacts

than the Proposed Alternative. The former would directly affect all fish trap vessels by closing to fish trapping all currently open areas while the latter would directly affect only 12 or so vessels with homeport in the Keys. The Proposed Alternative, in turn, would result in larger negative impacts than the status quo because it imposes additional restriction on the profitability of some vessels. In terms of least negative economic impacts on the fishery, the status quo is the most preferable alternative. Given this ranking of alternatives, what remains is the determination of their general magnitude of effects. Before proceeding further, it is instructive first to describe the economic characteristics of those vessels that would be directly affected by any of the alternatives.

As of May 1998, there were 1,306 vessels with active reef fish commercial permits. At the start of the fish trap endorsement system, 88 vessels were granted fish trap endorsements, but 2 vessels are now out of the fishery. It may be noted that active fish trap endorsements and reef fish commercial permits vary within a year and between years due in part to the process of renewing permits and endorsements. Permits and endorsements expire on the birth date of the owner, and an owner is allowed up to one year to renew an expired permit/endorsement. As of May 1998, the NMFS permit file lists 79 vessels with fish trap endorsements, of which all but one have homeports in Florida. It is likely, however, that 7 additional vessels are in the process of renewing permits, so that the total number of fish trap vessels may be placed at 86. There are 12 vessels with fish trap endorsements that are based in the Florida Keys.

An economic survey of commercial vessels in the Gulf, excluding the Florida Keys, was conducted in the fall of 1994 and spring of 1995 (Waters, 1996). This survey provides a snapshot of the population of reef fish vessels, their different kinds of fishing trips, and their financial performance on these trips in 1993. The sampling universe was stratified by area (Eastern Gulf and Northern/Western Gulf), gear type (vertical hook and lines, bottom longlines, and fish traps), and scale of operation (low-volume and high-volume[3]). At the time the survey was conducted, 25 fish trap vessels were identified as high-volume and 46 fish trap vessels as low-volume. Half of low-volume fish trap vessels and a little over one-third of high-volume vessels were sampled.

On average, high-volume fish trap vessels reported annual gross sales of $93,426, annual net income of $19,409, and boat resale value of $55,846. Net income here is taken to be gross revenue less fixed and variable costs and crew shares. The reported average figures for low-volume fish trap vessels were: $86,039 gross sales, $21,025 net income, and $48,118 boat resale value. When expanded to the universe of fish trap vessels, the corresponding numbers were $2.4 million sales, $0.5 million net income, and $1.5 million boat resale value for high-volume vessels; and $4.0 million sales, $1.0 million net income, and $2.2 million boat resale value for low-volume vessels.

The dollar figures above reflect revenues derived from all fishing activities. They include income from sales of reef and non-reef species but exclude income from other sources. For high-volume fish trap vessels, total household income consisted of approximately 70 percent from reef fish, 10 percent from other fishing, and 20 percent from other sources. The corresponding income sources for low-volume

[3]The 75th percentile of annual reef fish landings as reported on logbooks was used to categorize vessels as either high-volume or low-volume.

fish trap vessels were 25 percent from reef fish, 51 percent from other fishing, and 24 percent from other sources.

The main difference between high- and low-volume boats with fish traps lies in their overall levels of participation in the reef fish fishery. There are high-volume and low-volume fish trap boats that fish primarily for groupers as well as high-volume and low-volume fish trap boats that fish for black sea bass and grunts. An estimated 15 high-volume fish trap boats fishing for groupers averaged more than 32 trips and 125 days fished per year. On an annual basis, these boats undertaking grouper fishing trips generated an average of approximately $74,000 in total revenue (of which about 75 percent were from groupers) and $54,000 in net income[4] per boat. Low-volume fish trap boats were found to fish for stone crabs between October and May and then switch to groupers during the closed season for stone crabs. An estimated 38 low-volume vessels averaged 11 trips and 46 days fished per year for groupers. On an annual basis, these boats undertaking grouper fishing trips generated an average of $29,000 in total revenue (of which about 81 percent was from groupers) and $23,000 in net income. An estimated 18 boats (combined high-volume and low-volume) that fished primarily for sea bass averaged 65 trips and 75 days fished per year. On an annual basis, these boats undertaking sea bass fishing trips generated an average of $73,000 in total revenue (of which about 55 percent was from sea bass) and $54,000 in net income.

It should be noted that vessel "net income" referring to grouper or sea bass trips differs from an earlier measure of overall vessel net income that did not differentiate trips as to the species targeted. In the present context, net income is taken as gross revenue less routine trips costs, with no deduction made for fixed costs and crew shares. This figure then is net income to boat owner, captain and crew. The earlier measure of net income subtracted from gross revenue practically all cost items, including routine trip costs, fixed costs, and crew shares. Both measures of net income excluded deduction for income taxes. While these two measures of net income are not comparable, both are maintained to depict what may be considered as net profits to vessels and as net income to boat owners, captain, and crew. In line with this distinction and to minimize confusion, the succeeding discussions use the term "net profits" to refer to net income from vessels and "net income" to refer to net income for boat owner, captain, and crew.

A separate economic survey was conducted in the summer and fall of 1994 for commercial reef fish vessels with homeports in the Florida Keys (Waters et al., 1998 draft). The universe of boats in the survey included those with Gulf commercial reef fish permits only, South Atlantic commercial snapper-grouper permits only, and those with both types of permits. While stratification by gear types was used in the survey, the sampled fish trap boats turned out to be too small for separate reporting of their fishing activities. This is not unexpected considering that there are only a few fish trap vessels with homeports in the Keys (12 as of May 1998). At any rate, the available information indicates that boat revenue per trip ranged from about $1,500 ($400 cost) to $4,800 ($3,700 cost). These boats fished primarily for yellowtail or mutton snapper.

[4] Net income here means gross revenue less routine trip costs. No deduction is made for fixed costs and crew shares. See discussion for more clarification.

One possible way of characterizing fish trap vessels in the Keys is to use information from other vessels in the Keys. The survey (Waters et al., 1998 draft) reported financial information of vessels in the Upper, Middle, and Lower Keys. Of particular interest here are the information pertaining to vessels in the Lower Keys, where 9 of the 12 fish trap vessels in the Keys are located. Sampled boats (57) in the Lower Keys reported annual gross revenue of $28,000, net profit of $6,653, and boat resale value of $21,800. Expanded to the universe of boats (378) in the Lower Keys, the numbers were: $10.6 million gross revenue, $2.5 million net profit, and $8.2 million boat resale value. Of total fishing revenue by boats in the Lower Keys, 61.4 percent were from reef fish in the Keys, 18.9 percent from other species in the Keys, 9.7 percent from reef fish in the Gulf, 4.4 percent from other species in the Gulf, 2.4 percent from reef fish in the Atlantic, 0.8 percent from other species in the Atlantic, and 2.5 percent from charter fishing. Only 3 of the sampled boats reported charter fishing income. Total household income consisted of 35.9 percent from reef fish, 14.2 percent from other fishing, and 49.9 percent from other sources.

The survey of vessels in the Keys (Waters et al., 1998 draft) also characterized vessel operations by major species caught. Of particular relevance here would be the information from trips for yellowtail snapper, considering that this is the predominant species caught by fish trap vessels in the Keys. Trips for yellowtail snapper by boats in the Keys resulted in average annual per boat revenue of $14,000 (81 percent from yellowtail snapper) and net income of $10,000.

Given the foregoing information and additional ones introduced below as necessary, we can approximate the magnitude of economic effects of the two alternatives to status quo. For analytical purposes, it is assumed that both the Proposed Alternative and Rejected Alternative 1 would have the same termination date of February 7, 2001 for the use of fish traps. Using the status quo alternative as a benchmark for comparison of the two other alternatives, 6 year's worth of benefits from using fish traps would be forgone by adopting any of the alternatives to status quo. Loss in benefits would come in the form of reduced profitability/net income, reduced value of reef fish permits, reduced value of fish trap endorsement, reduced resale value of boats, and loss in the value of fish traps and related accessories.

At this juncture it is important to determine the financial values involved under the status quo, since it is the benchmark for determining the effects of the other alternatives. As related above, high-volume fish trap vessels north of the Keys earned an annual net profit from fishing of approximately $19,000. For these vessels, 70 percent and 10 percent of household income came from reef fish fishing and other fishing, respectively. Assuming reef fish fishing as fishing with traps, these numbers imply that as much as 87.5 percent of fishing income was derived from trap fishing. On a per boat basis then, about $17,000 may be considered net profit derived annually from reef fishing with fish traps. It may be recalled, however, that high-volume fish trap boats fishing for grouper earned an average of $54,000 annual net income. It may also be recalled that 75 percent of total revenue was derived from groupers. Multiplying the two numbers results in a net income of $41,000, which may be assumed as net income from fish trap operations potentially subject to any change in fish trap regulations. Hence, an average high-volume fish trap vessel may be considered as earning an annual net profit of $17,000 or as providing net income to boat owner, captain, and crew of $40,500. Over a period of 6 years under the status quo, an average high-volume fish trap vessel would generate a net profit of $102,000 or provide to boat owner, captain, and crew a net income of $246,000. This set of numbers may be considered as applicable to 15 fish trap vessels north of the Keys.

A similar calculation may be done for low-volume fish trap vessels north of the Keys. This calculation results in an annual net profit per boat of $7,000 or net income to boat owner, captain, and crew of $19,000. Over a period of 6 years, an average low-volume fish trap vessel would generate a net profit of $42,000 or provide to boat owner, captain, and crew a net income of $114,000. This set of revenue figures may be considered as applicable to 38 fish trap vessels north of the Keys.

An estimate of the net profit cannot be derived for fish trap vessels that reported sea bass as their number one species from a total revenue standpoint. It may be recalled, however, that these vessels derived about 55 percent of their trap fishing revenues from sea bass. Under any of the fish trap phase-out alternatives, sea bass fishing would virtually remain unaffected since the Reef Fish FMP considers this fishing operation as separate and distinct from reef fish trap fishing. The remaining 45 percent of income was derived from sale of other species caught in sea bass traps or fish traps. But the exact amount or percentage of income directly attributable to the use of fish traps by these vessels is unknown. The best then that can be said given the information is that at a maximum 45 percent of sea bass vessels' trap fishing income would be potentially subject to any change in fish trap regulations. When this latter percent is applied to their net income, an average fish trap boat primarily targeting sea bass would provide to boat owner, captain, crew an annual net income of $24,000 from fish trap fishing for species other than sea bass, or $144,000 over 6 years. There are 18 vessels north of the Keys that may be described by this revenue stream.

In the absence of better information, financial information from other vessels in the Keys would be used to generate a comparable income stream for fish trap vessels in the Keys. Since 35.9 percent of total household income for vessels in the Lower Keys was derived from reef fish and 14.2 percent from other fishing, then 72 percent of total fishing income may be deemed to have been derived from reef fish. Applying this percentage to net profit of $6,653 results in $4,790 of net profit derived from reef fish. Also vessels in the Keys fishing for yellowtail generated a net income to boat owner, captain, crew of $10,000 per boat. Since 81 percent of total revenue came from yellowtail snapper, which is a major species for fish trap vessels in the Keys, a net income of $8,100 may be considered as derived from yellowtail snapper. Thus, a fish trap vessel in the Keys may be deemed to generate an annual net profit of $5,000 or provide to boat owner, captain, and crew a net income of $8,000. Over 6 years, an average fish trap vessel in the Keys would generate $30,000 of net profit or $48,000 of net income to boat owner, captain, and crew. There are about 12 vessels that may be characterized by this income stream.

A summary of the profit and net income characteristics of fish trap vessels under the status quo is presented below. This summary depicts the financial performance of vessels with particular regard to their fish trap operations. These numbers provide the benchmark opportunity cost of adopting any of the alternatives to the status quo phase-out of 10 years.

Boat Class	Number of Boats	Annual Revenue Per Boat ($1,000)		Six-year Revenue Per Boat ($1,000)	
		Boat Profit	Owner/Captain/Crew Net Income	Boat Profit	Owner/Captain/Crew Net Income
High-volume (grouper)	15	17	40	102	246
Low-volu(grouper)	38	7	19	42	114
High- and low-volume (Sea bass)	18	n.a.	24	n.a.	144
Keys	12	5	8	30	48

n.a. - not available.

There is no adequate information regarding the value of reef fish permits and fish trap endorsements. The only available source of information is the sale price of permits and endorsements as reported in public testimonies to the Council. These testimonies indicated some purchased only trap endorsements while others purchased trap endorsements together with reef fish permits and boats. The reported purchase price for trap endorsement ranged from $2,500 to $7,500. There was one instance in which an individual reported a $5,000 purchase of a reef fish permit.

To some extent the value of permits and endorsements would depend on the profitability of the vessels and on the regulations affecting these permits and endorsements. The general commercial reef fish permit system has been under a moratorium since 1992 and is set to expire on December 31, 2000. While this moratorium had been extended on several occasions in the past, there is no guarantee it will be extended again. One possible course of action that may be considered by the Council is to convert this moratorium into a license limitation program. In the event the reef fish permit moratorium is allowed to expire on the mentioned date, all the alternatives considered inclusive of the status quo would have similar effects on the value of the reef fish permit. If the moratorium is extended or converted into a license limitation system, the alternatives would have varying impacts on the value of the permits.

The fish trap endorsement system will expire on February 7, 2007. At the end of the moratorium, or probably a year or two before the end of the moratorium, the value of fish trap endorsements would likely fall down to zero. Under this condition, the various alternatives would have different impacts on the value of trap endorsements.

Public testimonies indicated fish traps cost from $30 to $60 apiece. While each holder of fish trap endorsement is entitled to a maximum of 100 traps, the number of traps actually used for fishing is less. Logbook records indicate that the average number of traps used is approximately 50, although there is a good possibility that at any one time the number of traps held by a fisherman averages at greater than 50 so as to provide some buffer in the event some traps are lost or damaged. In addition, some individuals testified using 80 to 100 traps in their fishing operation. At the maximum number of traps allowed, total investment in traps per endorsement holder could range from $3,000 to $6,000. Given the information described above, it is likely that actual investments in traps would be lower than this given range. Palmer (1998) reported the lifetime of traps to range from 3 to 7 years. One fisherman testifying recently before the Council reported that he replaced 10 to 15 traps since 1992, implying

probably a 6-year or longer life span of some of his fish traps.

Public testimonies to the Council also revealed other fixed investments made by some fishermen, both directly related to fish trap operations such as trap pullers and assorted boat improvements and indirectly related to fish trap operations such as freezers installed by dealers in contemplation of receiving fish from fish trap operations. While many of these other fixed investments can also be utilized for non-fish trap operations, they would still be affected by changing fish trap regulations.

Before proceeding with the determination of the impacts of the alternatives to status quo, a note is in order regarding permits, endorsements, traps, and other investments related to fish trap operations. Basically, these items comprise as part of the fixed cost of fish trap operations, and thus the annual amortized value of these items should be included in the determination of annual fixed cost and eventually net profit. The estimated net profits presented in the table above probably include the amortized cost of traps and other investments but likely exclude the cost of permits and endorsements. NMFS (1998) recorded 15 transfers of endorsement, most likely through sales. The remaining 71 secured their endorsements at the start of the fish trap endorsement moratorium. An unknown number of permits associated with fish trap operations has been transferred most likely through sales. For the 15 who purchased endorsements, the cost of the purchase, as amortized, may be considered part of annual fixed cost. For the other 71 vessels, the value of their endorsements may be considered as one-time increase in revenue at the time of sale or decrease in revenue at the termination of the endorsement system.

Among the alternatives considered here, Rejected Alternative 1 imposes the most stringent restrictions on fish trap operations. The income stream fish trap vessels could generate over a period of 6 years under the status quo represents the opportunity cost of adopting Rejected Alternative 1. Just to break even, a fish trap vessel of a particular category has to generate the corresponding net profit or net income over a period of 6 years as shown in the summary table above. High-volume fish trap vessels targeting groupers would be the ones hit the hardest. Under Rejected Alternative 1, they have to generate approximately 86 percent of their fishing income from fishing alternatives other than traps. Each of the 15 boats belonging to this category has to earn at least $102,000 of net profit over a period of 6 years from other fishing alternatives in order to recoup losses. More telling perhaps is the consideration that owners, captain, and crew of these vessels would have to generate approximately $246,000 of net income over a period of 6 years from other income generating alternatives, including non-fishing activities. Low-volume vessels would have to generate at least 33 percent of their fishing income from other fishing alternatives under Rejected Alternative 1. Each of the 38 boats belonging to this category has to earn at least $42,000 of net profit over a period of 6 years from other fishing alternatives. Fish trap vessels primarily targeting sea bass would probably have to generate a maximum of 45 percent of their fishing income from other fishing alternatives. Each of the 18 boats belonging to this category would have to earn at the most $144,000 of net income from other fishing alternatives in order to recoup losses from the shortened phase-out period. Fish trap vessels in the Keys would have to generate 70 to 80 percent of their fishing income from other fishing alternatives. Each of the 12 fish trap vessels in the Keys would have to earn $30,000 of net income from other fishing alternatives in order to recoup losses. While it is highly possible that fish trap vessels can recoup some of their losses by shifting to other fishing alternatives, it remains highly likely that a good portion of their forgone net income from trap fishing would remain as losses. A similar statement can be said of the net income to boat owner, captain, and crew.

In addition to forgone revenue, fish trap vessels regardless of any category would incur losses approximately equivalent to the non-depreciated value of their traps and non-amortized value of fish trap endorsements. These are the values not included in the fixed cost when estimating net profits. These dollar amounts cannot be adequately estimated using available information. Moreover, some fixed costs may have to be incurred to refit vessels for other fishing alternatives. Finally, there is a good possibility that reselling fish trap vessels would not be as attractive without the endorsement. This could eventually translate to lower resale value of fish trap vessels. Again, this value cannot be estimated given available information.

The impacts of the Proposed Alternative would be less negative than those described for Rejected Alternative 1. Approximately 12 vessels would be directly affected by this alternative. In addition, these vessels would not necessarily cease to operate as fish trap vessels. They could still fish in open areas, albeit at higher operating costs if they choose to remain in the Keys or higher fixed costs if they decide to relocate. Whatever the choice taken by owners of these vessels, it is likely that a large portion of their forgone net income would not be recouped. Considering the already low profitability of these vessels, there is a good chance that forgoing their entire revenue from fish trap fishing would appear as an attractive choice. This does not necessarily mean that fishing operations would entirely cease. Many of these vessels also fish using other gear types for reef or non-reef species, and use traps to supplement their income from these other sources. In this event, they could sell their traps and fish trap endorsements in order to partially offset forgone income.

One other important issue to consider here is enforcement. In fact, it is only in this area that some benefits may possibly arise from imposing more restrictive regulations on the fish trap fishery. Addressing the economic content of this issue in the light of the considered alternatives involves ascertaining what types of “enforcement” benefits may come about from any of the alternatives to the status quo.

There are generally two sources of benefits that may be associated with a shorter phase-out of fish traps. First is the cost saving from enforcement activities. While no actual reduction in enforcement cost may be expected since both fixed and variable costs would still be expended by enforcement agencies, activities directed at enforcing fish trap rules may be redirected to other activities. In a sense this enhances other enforcement activities. Another source of benefit is the possible reduction in illegal trap activities. Since the implementation of the 10-year phase-out of fish traps, several violations have been documented. To date only a handful of fishermen have been prosecuted and penalized. This situation partly exemplifies the difficulty of enforcing fish trap rules, although we may hasten to add that the enforcement of other fishing rules is also associated with its own degree of difficulty. A shorter phase-out has the potential to address this particular issue. It may be noted here that the cost of illegal activities is implicit in the sense that resources producing goods and services elsewhere in the economy are directed to the fishery, and this cost has no net offsetting benefits (Anderson, 1987). In this case then, the benefits from reducing illegal activities come in the form of implicit cost reduction.

Among the alternatives considered here, Rejected Alternative 1 offers the best scenario for realizing the mentioned benefits from an enforcement aspect. The Proposed Alternative does not clearly rank higher than the status quo. While it does prohibit fish trapping in areas where most of trap violations have been found to occur, it also creates an additional enforcement burden especially around the line of prohibition. In addition, it still allows transit of vessels with traps on board across a closed area. Although, as argued earlier, many of the fish trap vessels in the Keys may entirely forgo trap fishing,

one or two of these fish trap vessels may still continue to use traps and pass through the closed area. These vessels may not illegally fish, but their presence could be used by others as a cover for their own illegal activities. Probably a more important consideration is the additional enforcement cost that the Proposed Alternative would necessitate. In order to bring into full compliance with fish trap rules, it has been estimated that 60 enforcement patrol trips per year would have to be made in the Keys at a cost of $1,000 to $5,000 per trip, or a total of $60,000 to $300,000 (Proulx, pers. comm., 1998).

Considering both costs and benefits, it is very likely that both the Proposed Alternative and Rejected Alternative 1 may be ranked lower than the status quo in terms of net economic impacts to the fishery.

Environmental Consequences

Physical Environment: A description of the fish trap fishery and its impact on the environment is fully discussed in Amendment 5/SEIS (GMFMC 1993). Fish traps operate in physical contact with the ocean bottom. Although anecdotal testimony to the Council has indicated the possibility of physical damage due to fish traps, the environmental analyses in Amendment 5 concluded that trap fishing was having little impact on the physical environment or on the resource, particularly in comparison to shrimp trawls used on the bottoms in the same general areas of the trap fishery. Based on the Amendment 5 analyses, removal of fish traps in the area south of 25.05° north latitude six years sooner than under the status quo alternative will have little direct impact on the physical resource. However, if removal of fish traps makes additional areas available to shrimp trawls and the fish trap fishery is replaced by the shrimp trawl fishery, there could be a resulting net adverse impact on the physical environment. Anecdotal testimony to the Council indicated the possibility of physical damage due to fish traps.

Human Environment: Amendment 14 (GMFMC 1996) reported that, as of August 1996, 13 of 95 fish trap endorsements (14 percent) were held by persons who reside in the Florida Keys. Fish trappers in the Florida Keys will be adversely affected by the Proposed Alternative. They will either have to travel a longer distance to reach legal fish trapping grounds or leave the fish trap fishery and transfer their endorsements under the two-year transferability provision of the fish trap phase-out. However, once traps are no longer allowed in the affected area, enforcement of illegal fish trapping activity will be enhanced. This alternative will negatively impact fish trap fishermen in the affected area who had anticipated a 10-year phase-out when investing in fish trap gear or purchasing fish trap endorsements, but will benefit those fishermen and recreational users who have other means to utilize the resource

Fishery Resources: The Proposed Alternative will have little impact on the reef fish resource. The fish trap fishery primarily targets red grouper, which are not considered to be overfished. In addition, most fish trap fishermen are not full-time reef fish fishermen. They participate in a variety of other fisheries, including other trap fisheries (e.g., lobster and stone crab), and the elimination of the fish trap fishery from the area south of 25.05° north latitude will have a correspondingly lesser impact than if the affected fishermen were full-time participants. Furthermore, fish that are caught in the directed fish trap fishery can be caught by other means. Fish trap caught reef fish accounts for just 12 to 14 percent of reef fish landings reported in Florida. The Proposed Alternative will have little or no impact on the directed fishery resources other than to redistribute harvest in the affected area to other gear types.

Other Fishery Resources: Representatives of the tropical marine life fishery expressed concern that fish traps have a detrimental affect on the angelfish fishery from incidental trapping of spawning age adult angelfish. An observer study of fish trap catches was conducted by NMFS during 1993-1995 (NMFS 1995). Only 2 percent of the observed fish trap sets occurred in the Florida Keys area. Of 23 angelfish that were observed in the fish trap catch, 18 (78 percent) were released alive and 5 (22 percent) were released dead. This sample size is not sufficient to draw any conclusions about the impact of fish traps on the angelfish resource; however, the release mortality percentages are comparable to those reported or inferred in other shallow water reef fish fisheries, such as the recreational red snapper fishery. If these percentages are correct, then the fish trap fishery could be having a minor adverse impact on the angelfish resource, and the Proposed Alternative could benefit that resource. The Proposed Alternative should, over a shorter time period than the status quo, result in greater enforcement and elimination of illegally fished traps along with the attendant bycatch and ghost fishing mortality. However, if removal of fish traps makes additional areas available to shrimp trawls, and the fish trap fishery is replaced by the shrimp trawl fishery, there could be a resulting net adverse impact on other fishery resources from increased shrimp trawl bycatch mortality.

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

6.2 Spiny Lobster, Stone Crab, and Other Non-fish Trap Reef Fish Trip Limit

<u>Proposed Alternative</u>: A vessel with a reef fish permit that is fishing spiny lobster or stone crab traps can retain the same quantities of reef fish as other reef fish permitted vessels; however, the possession of reef fish exhibiting the condition of trap rash on board any such vessel is prima facie evidence of illegal trap use and is prohibited except for vessels possessing a valid fish trap endorsement.

<u>Rejected Alternative 1</u>: A vessel with a reef fish permit that has on board or is tending a spiny lobster trap or stone crab trap is limited to a bycatch trip limit of reef fish of (select a sub-option):

- **a. 100 pounds**
- **b. 200 pounds**
- **c. the recreational bag limit of reef fish, which cannot be sold**
- **d. the possession of reef fish in any quantity is prohibited**

<u>Rejected Alternative 2</u>: A vessel with a reef fish permit that has on board or is tending a spiny lobster trap or stone crab trap is limited to a bycatch trip limit of reef fish species for which there is a commercial quota of (select a sub-option):

- **a. 100 pounds**
- **b. 200 pounds**
- **c. the recreational bag limit of reef fish, which cannot be sold**
- **d. the possession of reef fish in any quantity is prohibited**

<u>Rejected Alternative 3</u>: The possession of reef fish in any quantity on board any vessel which is tending any crustacean trap or any non-regulated species trap is prohibited.

Rejected Alternative 4: Status Quo: A vessel with a reef fish permit that is fishing spiny lobster or stone crab traps can retain the same quantities of reef fish as other reef fish permitted vessels.

NMFS Enforcement Definition of Trap Rash

> Trap rash is a term used to identify physical damage to fish caused by the fish rubbing or scraping against, running into, butting, and/or biting the wire mesh used to construct wire fish traps. Diagnostic characteristics include broken spines or rays in the fins; cuts and abrasions on the head, snout, and mouth of the fish; broken teeth; visually obvious loss of scales; and abrasions on the snout and body of the fish. Normally, trap rash becomes more obvious as the time a fish spends in a wire trap increases.

Rationale: NMFS enforcement suggested using the condition of "trap rash" to identify reef fish caught in a trap, and to limit their possession to fishermen fishing lawfully permitted reef fish traps. Trap rash refers to abrasions on a fish caused by contact with a wire trap. By using this condition to identify wire-trap caught fish, NMFS enforcement feels that it can effectively enforce a prohibition on the use of traps to harvest reef fish, other than by legally permitted fish trap endorsement holders, yet still allow the harvest of reef fish using hook and line on spiny lobster and stone crab trap vessels.

Discussion: Injuries to fish resulting from capture in fish traps have been described by the Florida Marine Research Laboratory (Sutherland and Harper 1983, Taylor and McMichael 1983), and form the basis of NMFS Enforcement's trap rash definition. Sutherland and Harper, reporting on observations of the fish trap fishery off Dade and Broward Counties, Florida (Atlantic coast), reported that 1,232 of 5,984 fish, or 20.6 percent, were found to have sustained injuries. However, nearly three quarters of those injuries were due to gas expansion. Injuries caused by physical contact with the fish traps (broken fin spines or rays, snout damage, scale loss, cuts and scratches, gilled fish, broken teeth) accounted for about 17.5 percent of injured fish, or about 3.6 percent of all fish caught. Taylor and McMichael reporting on the fish trap fisheries operating off Monroe and Collier Counties (Gulf coast), observed that injured fish (including injuries from gas expansion) made up 3.1 percent of fishes caught in observed trap fisheries. However, few injuries occurred to fish captured in the Collier County fishery where fishing depths were 45 to 60 feet and 90 percent of the traps soaked less than one hour.

Prior to implementation of Amendment 15, there were no restrictions on harvest of reef fish in traps other than fish traps, provided the vessel had a reef fish permit and abided by size limits, quotas, etc. A loophole was created for harvest of reef fish by other trap gear. Amendment 14 stated (Section 6.4), "Both NMFS and the Law Enforcement Advisory Panel have stated that the Reef Fish FMP contains a significant loophole in fish trap regulations by allowing harvest of reef fish taken as incidental catch in other trap fisheries from reef fish permitted vessels. This can reduce the impact of both current and proposed regulations."

Amendment 15 restricted commercial harvest of trap caught reef fish to permitted fish traps, spiny lobster traps, or stone crab traps. A new Florida Marine Fishery Commission rule, effective January

1, 1998, prohibits the harvest of blue crabs with a trap in federal waters adjacent to Florida, effectively prohibiting the use of blue crab traps to target finfish in federal waters (states have the authority to extend their regulations into federal waters for species that are not under federal management). However, anecdotal information suggests that some fishermen have fished illegally with fish trap lines alongside legal lobster trap lines, so that an enforcement officer coming upon them would only see the legal lobster trap line. In addition, this leaves open the possibility of a fisherman circumventing restrictions on fish traps by targeting reef fish using spiny lobster or stone crab traps. Florida state regulations require the opening of a lobster or stone crab trap to be in the top rather than the side, which reduces the likelihood of a finfish entering the trap. Federal trap specifications contain no such requirement.

One way that was considered to prevent these lobster and stone crab traps from being used as part of a directed reef fish fishery might be to set a reef fish trip limit on spiny lobster and stone crab trips. However, this type of restriction could discourage multi-fishery trips of this type and force fishermen to concentrate their effort during a given trip on either the spiny lobster/stone crab fishery or the hook and line reef fish fishery, but not both. The Council felt that spiny lobster and stone crab fishermen are economically dependent on being able to participate in multiple fisheries during a trip. In addition, NMFS enforcement commented that options to limit the amount of reef fish that could be caught on spiny lobster and stone crab vessels presents considerable enforcement difficulties (see NMFS enforcement discussion, below). Consequently, the Council rejected alternatives that would restrict the amount of reef fish that could be caught.

The percentage of fish that develop trap rash while in a trap probably depends on several factors, such as the amount of time that the fish are in the trap, how crowded the trap is, and whether events occur to cause the fish to panic and attempt to escape. Some fish may escape from a trap and display the trap rash condition, even if subsequently caught by hook and line. In addition, a condition similar to trap rash may occur as a result of fish being caught and stored in ice-slush and sliding about due to boat motion. For these reasons, fish suspected of being caught in traps due to the presence of trap rash would need to be subject to forensic analyses for confirmation.

Note: The "trap rash" provision of the Proposed Alternative, Sub-option (d) in Rejected Alternatives 1 and 2, and Rejected Alternative 3 were recommendations of the NMFS Southeast Enforcement Division. The discussion below has been provided by NMFS Enforcement.

NMFS Enforcement Discussion: Too often in the regulatory process we focus all our attention on the regulated fishers within a particular fishery and forget that there is an entire community of poachers that unfortunately works completely outside all existing regulations. With regard to unlawful fish trapping, a roll of wire can be taken offshore by any poacher formed into wire traps and deployed in a hidden fashion. Investigation of this type of poaching has been particularly difficult because the only moment that the poacher is vulnerable is the moment in which the unlawful trap is hanging alongside or on the deck of the fishing vessel. The poacher has only to check the horizon and radar before hauling the unlawful trap aboard and dumping its contents into the fish box. Upon return to port enforcement officers have often noted a condition know as trap rash on the anterior area of snappers and groupers. Trap rash is caused by the abrasion of the snapper's skin on the wire surface of the fish trap. Trap rash is an identifiable condition. The NMFS Southeast Enforcement Division in cooperation with the Charleston laboratory is beginning forensic studies on trap rash on reef fish.

Historically, councils have addressed the use of bangsticks or powerheads by making the possession of mutilated fish prima facie evidence of having used a powerhead to kill the fish. This regulation works. The NMFS Southeast Enforcement Division requests the Council enact a regulation which would prohibit the possession of reef fish exhibiting the condition of trap rash on board any vessel within the Council's management area except vessels possessing a valid Gulf of Mexico Reef Fish Management Plan fish trap endorsement. The discovery of reef fish exhibiting trap rash would be prima facie evidence of having fished with the use of a wire trap.

This regulation would also have the additional benefit of defeating the poaching tactic of utilizing two vessels to land unlawfully caught reef fish. In this tactic one larger vessel tends the unlawfully deployed traps and the second smaller vessel merely lands and sells the catch unconnected with the first vessel. The tactic is currently effective.

The reef fish management plan establishes a stressed area in federal waters immediately adjacent to state waters. Fish trapping is unlawful within the stressed area. However, a very significant problem arises from crustacean fisheries which also regulate and utilize some form of trap which is successful in capturing reef fish. Blue crab traps have been a significant problem since at least 1993. The state of Florida recently enacted a regulation which prohibits the use of blue crab traps in the EEZ, effective January 1, 1998. It is the position of NMFS Southeast Enforcement that this will only partially address the problem. Those using blue crab traps will only look for some way to rename the traps so that they are within some other legal loophole which will allow their continued deployment. Perhaps they will be called octopus traps. With the removal of sea basses, grunts, and porgies from the Gulf reef fish management plan through Amendment 15, the traps could be called "grunt traps" targeting these "non-regulated" species.

This Section contains options to limit the amounts of reef allowed on board reef fish permitted vessels tending spiny lobster and stone crab traps. The options attempt to establish an amount of reef fish that is appropriate and lawful to be retained by these vessels. These options present significant enforcement difficulties and make the unlawful tending of unlawfully deployed fish traps that much easier. These options promote unlawful activities with fish traps.

It is the position of NMFS Southeast Enforcement Division that the possession of reef fish in any quantity on board any vessel which is tending *any* crustacean trap or *any* non-regulated species trap should be prohibited, and that the possession of reef fish in any quantity on board any Gulf reef fish trap endorsed vessel that is tending and retaining crustaceans from any spiny lobster or stone crab trap should be prohibited (Rejected Alternative 3). Enacting these prohibitions will make the crustacean fisheries separate and distinct from the reef fish trap fisheries. Enforcement of fish trap regulations will be greatly facilitated. The reef fish stressed area will enjoy further protection. These regulations will also work with the requested prohibition on the possession of reef fish exhibiting the condition of trap rash on vessels other than permitted reef fish trap vessels.

Biological Impacts: Reducing illegal fish trap fishing will provide some reduction in fishing pressure on reef fish; however, because fish traps are a minor component of the reef fish fishery, this impact will likely be small. There may be a more significant impact from a reduction in bycatch mortality associated with illegal fish traps. The NMFS bycatch characterization study (NMFS 1995) showed that

in the observed, legally fished traps, which were tended frequently, bycatch mortality was extremely low. Since an illegal fisherman's greatest risk of being caught occurs while tending his traps, illegal traps are probably tended less frequently than legal traps. Longer soak times can result in increased bycatch, and in a greater likelihood of trapped fish being injured and displaying the condition of trap rash. If the Proposed Alternative succeeds in reducing the incidence of illegal traps, bycatch mortality of nontargeted species may also be reduced.

Economic Impacts: The benefits from the described illegal activities mainly come in the form of minimizing the implicit cost of rule violations. It may be noted that such cost has no compensating benefits. Although violations may generate income to some fishermen, it does so at the expense of reducing the net income of legal operations. This can happen is several ways. If illegal landings get to be counted against the quota, revenue reductions to legal operations would ensue, if the quota is reached and the fishery closes. Even if the quota is not reached and/or illegal landings fail to be counted against the quota, revenues from legal operations would still decrease through the price effects of larger combined legal and illegal landings. In addition, fishing costs would increase as relatively fewer fish would become available. If illegal landings were particularly large as to significantly affect the status of the stock with respect to overfishing threshold, future management may become more stringent, and the effects would very likely fall mainly on legal operations. In addition to the described effects on legal operations, illegal activities tend to demand more enforcement costs if only to slow down the escalation of violations.

In the present case, the various alternatives to status quo are designed to limit certain violations using certain types of traps. In this regard, the described outcome of rule violations are directly addressed. There is, nevertheless, a high likelihood that affected vessels would suffer reductions in efficiency which could affect both vessel revenues and costs. This effect tends to be relatively large on vessels that are involved in spiny lobster and stone crab fisheries but depend on reef fish for a good portion of their income. Practically all of these vessels are located in Florida. In a survey of commercial reef fish vessels in the Gulf, Waters (1996) reported that the number of reef fish vessels engaged in stone crab fishing range from 69 in May to 114 in November. One possible inference from this information is that a fairly good number of vessels would be affected by the alternatives to limit reef fish catches by vessels engaged in spiny lobster or stone crab fisheries. While the magnitude of effects is not known, some general indication of the extent of these effects may be gleaned from reef fish boats undertaking stone crab trips. Waters (1996) reported that in their stone crab trips high-volume reef fish boats generated 81 percent of their revenue from stone crabs and the rest from other species while low-volume reef fish boats earned 93 percent of their revenue from stone crab and the rest from other species. If these other species are mainly reef fish and the same percentages hold for high- and low-volume fish trap boats, boat revenue potentially affected by a change in fish trap regulations affecting stone crab trips may not be entirely insignificant.

While Rejected Alternative 1 would impose more severe impacts than Rejected Alternative 2, its accompanying benefits to vessels operating within the bounds of reef fish rules are not as clear as those from the latter alternative. In this sense, the relative net impact of Rejected Alternative 2 may be deemed better than that of Rejected Alternative 1. Naturally, this conclusion is tempered by the fact that enforcement may be more effective under Rejected Alternative 1 than under Rejected Alternative 2. Sub-options within Rejected Alternatives 1 and 2 would bring about effects of differing severity,

with Sub-option (d) being the most restrictive.

The Proposed Alternative presents a more difficult condition for enforcement and compliance purposes, since it poses the problem of defining and then actually determining on site the condition of trap rash. Reportedly, trap rash is readily identifiable. In addition, some forensic studies on trap rash on reef fish are being conducted within NMFS so that no significant additional cost may be incurred when forensic analysis is necessary. In order to minimize friction between fishermen and enforcement officers, trap rash has to be well defined in such a way that it becomes easily identifiable to both fishermen and enforcement officers. Assuming an acceptable definition is established, the regulatory impact issue becomes that of ascertaining whether the extra cost of this alternative outweighs its benefits. The cost side includes the actual cost of determining trap rash and forgone benefits from discarding fish with the identified marks. These forgone benefits arise mainly in situations in which the fish were caught through legal means, but for some reasons exhibit what may be technically considered as trap rash. The benefit side includes enhanced enforcement of fish trap rules. The resulting net effect is unclear. In and by itself, it appears that the benefits of the Proposed Alternative do not appear to outweigh the extra costs. If, on the other hand, it is used to allow a longer phase-out period for fish traps, the ensuing benefits from this alternative and from the longer phase-out period for fish traps would tend to outweigh the costs. It may be noted though that this alternative would tend to enhance enforcement once fish traps are outlawed altogether.

Rejected Alternative 3 does not impose an extra cost similar to that accompanying the Proposed Alternative, except with respect to forgone benefits from discarding reef fish. This alternative would necessarily limit the flexibility of fishermen to pursue multiple fishing operations (e.g., stone crab and reef fish fishing) within a single trip. The negative impacts on fishing operations could potentially be larger than those under the Proposed Alternative.

Environmental Consequences

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

Human Environment: The Proposed Alternative, while making it more difficult to possess or land fish that were caught in unlicenced fish traps, will continue to allow lobster and stone crab fishermen to conduct multi-fishery trips using hook and line to catch reef fish on the same trip that crustacean traps are being used.

Fishery Resources: The Proposed Alternative may reduce the illegal harvest of reef fish using traps, if the presence of trap rash proved to be an effective method for detecting trap caught fish. However, it may encourage more frequent tending of traps in order to avoid trap rash. This would result in a higher survival rate for released fish, but also decreased effectiveness of trap rash as an enforcement tool.

Other Fishery Resources: As discussed under Biological Impacts and Fishery Resources, the Proposed Alternative could result in decreased bycatch mortality from infrequently tended traps.

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

6.3 Fish Trap Vessel Monitoring System

Proposed Alternative: NMFS will establish a system design, implementation schedule, and protocol to require implementation of a vessel monitoring system (VMS) for vessels engaged in the fish trap fishery, with the cost of the vessel equipment, installation, and maintenance to be paid or arranged by the owners as appropriate. Prior to implementation, the system design, including costs, and implementation schedule would have to be approved by the Council. The implementation would be done through a proposed and final rule.

Rejected Alternative 1: Implement a remote electronic monitoring system for permitted fish trap fishing vessels.

Rejected Alternative 2: Status quo - Do not implement a remote electronic monitoring system.

Rationale: An electronic vessel monitoring system (VMS) for fish trap vessels was recommended by NMFS as a means to monitor the activity of regulated fish trap vessels and detect unlawful fish trapping activity. The device currently being evaluated by NMFS enforcement uses cellular telephone technology rather than the more expensive satellite technology to track vessels. In addition to reporting vessel location, the system can also sense engine speed and operation of fishing gear. In testimony to the Council, most fish trap fishermen who commented on this issue supported establishing a VMS if it would allow them to continue trap fishing.

Discussion: A VMS based on cellular telephone technology is currently under evaluation by NMFS Enforcement. The viability of this system appears promising, based on early results of the evaluation. However, the Council was unwilling to proceed outright with requiring a VMS for fish trap vessels without knowledge of the cost of the system to the fishermen or confirmation that the system is viable. The Proposed Alternative is worded in a way that allows NMFS to complete its evaluation and establish the method and costs for implementing a VMS, but it does not automatically authorize implementation of the VMS system. Once this additional information is known, the Council will make a decision to approve or disapprove implementation of the VMS.

A VMS system based on satellite communication is being used off of Hawaii to monitor longline vessels in the tuna and swordfish fisheries. The VMS used in Hawaii is not under consideration for the Gulf of Mexico fish trap fishery because of its increased hardware costs. However, the Hawaii VMS, which has been in place since January 1995, has proven that a VMS can be an effective means to detect and apprehend illegal harvesting operations in closed areas, at about one percent of the traditional enforcement cost using aircraft to spot violators. From 1995 through 1997, the Hawaii VMS system resulted in 13 law enforcement cases relating to closed area violations being initiated.

Note: The discussion below has been provided by NMFS Enforcement.

NMFS Enforcement Discussion: Fish trap regulations are difficult to enforce. Fish trapping, as a form of harvest, utilizes a hidden gear that is deployed and fished without attachment to the fishing vessel. The reason that fish trap regulations are so difficult to enforce results from the combination of hidden

fishing gear and the difficulty of monitoring the activity of the regulated fishers when they are associated with the fishing gear on the water in the EEZ. An officer enforcing the law must detect an unlawfully fished trap and then show a connection to the offending fisher. Detecting the unlawfully fished untagged trap without a connection to the fisher does not result in a prosecution. Detecting and confronting a fisher with reef fish on board that the officer suspects but cannot prove resulted from an unretrieved (still deployed) fish trap does not result in a prosecution. A vessel monitoring system shows the tracks of vessels when they are transiting an area and when they stop to fish. This is a permanent electronic record of vessel positions that can be used for enforcement or monitoring the position of fishing activities.

Current regulations require the permitted fisher to return to the dock with all fish traps utilized during the trip and to limit the number of deployed fish traps to regulated numbers of 100 per permit. The Southeast Enforcement Division keeps reports of traps left out by permitted fishers who are forced to return to port due to emergency. They also take reports of lost or stolen fish traps. It is unknown how often or to what extent fish traps are left deployed without the necessary report being made to enforcement. Dockside inspection of fish traps does not have any effect on the number of traps deployed by permitted fishers. There is no way for enforcement officers to determine the true number of deployed fish traps.

The Council has previously discussed the possibility of remote electronic monitoring of permitted fishing vessels deploying fish traps. A presentation on the use of a vessel monitoring system in Hawaii was given to the Council at its September 1997 meeting (and summarized in the September-October 1997 issue of the Council's *Gulf Fishery News* newsletter).

The NMFS Office of Enforcement favors the electronic vessel monitoring of permitted fish trap endorsed fishing vessels. The application of vessel monitoring should be implemented on an experimental basis utilizing six trap fishing vessels. The NMFS Southeast Enforcement Division is prepared to conduct such an evaluation. Only an actual test evaluation of vessel monitoring will answer all the questions concerning its intended use within this fishery. The experimental application will determine if electronic monitoring can answer the needs of managers and enforcers and at the same time allow permitted trap fishers to conduct their lawful activities in a productive and sustainable manner.

If vessel monitoring is adopted, all parties should be aware that the costs of the hardware would be approximately $1,000/vessel. This cost would be the responsibility of the individual vessel owners. NMFS Enforcement can conduct the evaluation and present a cost breakdown for the consideration of the Council and the permitted fishers.

Biological Impacts: The Proposed Alternative sets up a procedure for implementing a vessel monitoring system and has no biological impact by itself. The vessel monitoring system will produce no changes to harvest restrictions or gear regulations, but it may discourage permitted fish trap vessels from deploying more fish traps than they are authorized or deploying traps in prohibited areas. Although the Council received testimony from both the public and from enforcement officers concerning fish traps in closed areas, there was no indication whether these were traps set by permitted or unpermitted vessels. If the unlawfully fished traps are the result of unpermitted fish trap vessels, the Proposed Alternative and resulting vessel monitoring system will have little or no biological impact.

Economic Impacts: Both the Proposed Alternative and Rejected Alternative 1 offer the potential of tracking the fishing activities of fish trap vessels. The major difference between the two is that under the Proposed Alternative, NMFS would continue to test the system before it is implemented. Once the testing is completed and found viable for the fish trap fishery, NMFS would present to the Council for approval the implementation schedule and costs of adopting the system. At any rate, preliminary estimates place the costs per vessel of the VMS program at $1,000 for equipment and $500 for installation plus the cost for maintenance and cellular calls. Maintenance cost is not known at this stage while cellular calls (generally two per trip) cost from $0.50 to $2.50 per call. These costs would be borne by the vessels. With 86 vessels in the fish trap fishery, the total industry burden would amount to $129,000 ($1,500 x 86). NMFS' cost in establishing the VMS base station is estimated at $25,000. It needs to be stressed here that under the Proposed Alternative, NMFS will provide cost estimates when a schedule of implementation is presented to the Council.

In comparison to the reported average costs of equipping vessels for fish trap operations, including the cost of acquiring a fish trap endorsement, the above noted costs appear to be relatively small. But these costs would not enhance the fishing operations of fish trap vessels. They are, in effect, outright reductions in vessel profits. While the equipment and installation costs are one-time charges, vessels would have to incur costs for maintenance and cellular calls. Vessels in the Keys would be particularly burdened by the VMS program because of the proposed shortening of the phase-out period in this area. Since their profitability is already at low levels, these additional operating and fixed costs would likely result in the loss of economic viability of fish trap fishing in the Keys.

Preliminary testing of the VMS system on fish trap vessels has shown some potential in tracking vessel activities. If the VMS program proved to be successful, it would enhance enforcement of fishing rules governing fish trap fishing. It would particularly track activities of legal fish trap vessels, especially vessels in the Keys transiting the closed areas. The extent to which illegal activities of non-permitted vessels are tracked is not clear, although in at-sea boardings made by enforcement officers the presence of fish traps aboard vessels without the VMS equipment may provide a strong evidence of fish trap rule violations. However, the 10-year or shorter phase-out of traps would tend to discount whatever level of success the VMS program achieves. At any rate, it may benefit other fisheries in terms of enhanced enforcement if subsequently applied to these other fisheries.

Environmental Consequences

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

Human Environment: The Proposed Alternative and resulting vessel monitoring system will impose additional costs and equipment requirements on owners of permitted fish trap vessels.

Fishery Resources: The Proposed Alternative will have no direct impact on fishery resources, but could have indirect benefits through improved enforcement capability of management measures. Unlawfully fished fish traps could be the result of either unpermitted fish trap vessels, which will not be monitored, or permitted vessels, which will be monitored. To the extent that it reduces the incidence of illegal use of fish traps by permitted vessels, it will reduce the illegal harvest of reef fish using traps. Unpermitted

vessels would not have VMS units on board, and therefore illegal harvest by these vessels would not be detected by the VMS system, although the absence of VMS equipment on a vessel that is tending or in possession of fish traps may help in detecting unlawful fish trapping during at-sea inspections.

Other Fishery Resources: As discussed under Fishery Resources, any impact from the Proposed Alternative on other fishery resources is expected to be small.

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

6.4 Additional Fish Trap Vessel Reporting Requirements

Proposed Alternative: Require fish trap vessels to submit trip initiation and trip termination reports as described in the discussion for Section 6.4. Prior to implementing this additional reporting requirement, there will be a one-month fish trap inspection/compliance/education period, at a time determined by the NMFS Regional Administrator and published in the Federal Register. During this window of opportunity, fish trap fishermen will be required to have an appointment with NMFS enforcement for the purpose of having their trap gear, permits, and vessels available for inspection.

Rejected Alternative 1: Require fish trap vessels to submit trip initiation and trip termination reports as described below. Prior to implementing this additional reporting requirement, there will be a one-month fish trap inspection/compliance/education closed period, at a time agreed upon by the Council and NMFS Regional Administrator and published in the Federal Register.

Rejected Alternative 2: Status quo - Do not implement additional reporting requirements.

Rationale: As described in the following NMFS discussion, the Proposed Alternative reporting requirements are a temporary measure to provide additional monitoring of fish trap vessels until a VMS is implemented. A required appointment with NMFS enforcement will establish a baseline to assure that all fish trap gear used in the Gulf of Mexico is in compliance with fish trap regulations, and that all fish trap fishermen are familiar with the regulations governing their fishery.

NMFS Enforcement originally asked for a closed period in order to assure that all legal trap gear was on shore during the inspection period. NMFS Enforcement could then perform a search for any illegal traps still in the water and remove those traps prior to the reopening of the fish trap fishery. After fishermen complained that a closed period would create a financial disruption, NMFS Enforcement agreed to conduct the inspection/compliance/education period without a closure.

Note: This section is included on the recommendation of the NMFS Southeast Enforcement Division. The following discussion was provided by NMFS Enforcement and modified to delete references to a closed period.

Discussion: Since electronic vessel monitoring cannot immediately be implemented across the fleet, additional obligations must be placed upon permitted trap fishers to notify the Southeast Enforcement

Division of the initiation and termination of each fishing trip.

This information will be used by enforcers to immediately increase the efficiency of enforcement contacts with the permitted fish trap fishers and to better insure that all fish traps that are deployed are properly constructed and deployed. Before this additional reporting requirement begins a one-month fish trap inspection/compliance/and education period is needed. During this period:

- fish trap fishermen will be required to have an appointment with NMFS enforcement, during which their trap gear, permits, and vessels will be inspected.
- a full inventory of all fish traps and fish trap tags of each permitted trap fisher will be conducted by enforcement officers.
- fishing activity by each permitted trap fisher will re-commence at the end of the inspection after the permitted trap fisher has had all gear to be deployed inspected by enforcement officers for compliance with existing trap construction and tagging requirements.
- enforcement will work with industry and other fishers to investigate and remove from the Gulf EEZ any unlawfully deployed fish traps. All fish traps removed from the EEZ will be inventoried and stored for a period of 180 days before destruction to ensure that any claims of ownership are properly investigated. The timing of this period would be most beneficial if it occurred during June or July when both the lobster and stone crab seasons are closed.

The "report of trip initiation" would be formatted as follows:

"Fishing Trip Initiation Report"
- name of vessel
- permit number of vessel
- number of traps to be deployed
- sequence of tag numbers on the traps
- time of departure
- point of departure
- intended duration of fishing trip
- latitude/longitude of the midpoint of a circle within which the traps will be deployed[5]
- intended date of termination of trip

The “trip termination report" would be formatted as follows:

- name of vessel
- permit number of vessel
- fish dealership where catch will be offloaded and sold
- notification of any lost traps
- notification of any traps left deployed for ANY reason

[5] The “Trip Initiation Report” originally proposed requiring that vessel operators report the latitude/longitude of a circle no less than 3 nautical miles within which the traps would be deployed. After hearing testimony from trap fishermen that the 3-mile radius for trap deployment was unreasonable, NMFS Enforcement agreed to drop the distance requirement.

Trip termination reports would be required immediately upon arrival in port and before any off loading of catch or traps from the returning fishing vessel. After filing the required report by phone, the trap fisher would then be able to off-load both traps and catch.

Trip initiation reports and trip termination reports will be required for all fishing trips by all permitted trap fishers until the implementation of electronic vessel monitoring. NMFS Southeast Enforcement Division will set up a toll-free telephone number to receive the required reports. Similar systems are used elsewhere in fisheries management. A call-in system has been in effect in limited entry fisheries in New England. The dial in obligation is not difficult and the information is readily available to enforcers. Both fishers and enforcement officers will be able to call into the toll- free service 24 hours a day. Professional operators can efficiently take the required information with a minimum disruption of the fishers business.

Biological Impacts: The requirement that each fisherman have his traps available for inspection during an appointment with NMFS enforcement may result in a reduction of improperly rigged traps that can continue to ghost fish if lost. However, Rejected Alternative 1, which would have required that all legal fish traps be out of the water during a predetermined period, would have allowed NMFS Enforcement to canvass the fishing grounds for illegal traps, leading to a reduction in fishing pressure. The magnitude of the effort will not be as effective under the Proposed Alternative, since legal traps will continue to be fished at all times. The reporting requirements may assist NMFS Enforcement in successfully prosecuting violators of fish trap regulations over time, leading to a long-term reduction in illegal fishing pressure. However, since this is intended to be a short-term measure until an electronic VMS is implemented, biological impacts will be negligible.

Economic Impacts: For several years now, all fish trap vessels have been required to submit logbook records whether or not they fish using traps. Most of the information to be submitted under Alternative 1 are the same as those regularly reported in logbook records, but there are several differences. The Proposed Alternative and Rejected Alternative 1 would make the submission of those reports on a timely basis. More importantly, information submitted by fishermen will be directly used for enforcement purposes. Logbook reports are mainly designed for general management purposes.

Timely reporting would cause vessels to incur an additional cost, but such cost may be deemed relatively small, especially because the mechanism to be employed would be a call-in system using a toll-free service. It would generally take about 5 minutes for fishermen to make each call, or 10 minutes per trip to make both the trip initiation and termination calls (Proulx, pers. comm., 1998). NMFS would contract out the answering service at an estimated cost of $12,000. The inspection of each fish trap vessel required under the Proposed Alternative and Rejected Alternative 1 would take about 2 to 4 hours, but this inspection would entail very minimal additional burden on fishermen. The major difference between the Proposed Alternative and Rejected Alternative 1 lies in the latter's provision for a one-month closure of the fishery. A major cost to vessels would accompany this closure as fishermen would have to forgo some income during that period.

Environmental Consequences

Physical Environment: The alternatives in this section will have no impact on the physical environment.
Human Environment: The Proposed Alternative will impose an additional reporting requirement on fish trap fishermen until an electronic vessel monitoring system is implemented. However, most of the required information is similar to information already required to be reported on logbooks, so little additional data gathering will be required.

Fishery Resources: The alternatives in this section will have no direct impact on the fishery resources, but may result in some reduction in illegal harvest of reef fish by fish traps if enforcement is enhanced.

Impact on Other Fisheries: The alternatives in this section will have no direct impact on the other fisheries, but may result in some reduction in bycatch mortality from illegal use of fish traps if enforcement is enhanced. There may also be an increase in effort in the crustacean trap fisheries by trap fishermen to offset loss of the fish trap fishery.

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

7.0 ***[Section moved to Amendment 16B]*** **MINOR AMBERJACK MANAGEMENT MEASURES**

8.0 ***[Section moved to Amendment 16B]*** **SPECIES LISTED AS NOT IN THE MANAGEMENT UNIT**

9.0 ***[Section moved to Amendment 16B]*** **FLORIDA COMPATIBLE SIZE LIMITS**

10.0 ***[Section moved to Amendment 16B]*** **FLORIDA COMPATIBLE BAG LIMITS**

11.0 ***[Section moved to Amendment 16B]*** **SPECKLED HIND AND WARSAW GROUPER**

Alternatives in Sections 7 through 11 are contained in Reef Fish Amendment 16B. The section numbers and titles have been retained in Reef Fish Amendment 16A for consistency with the section numbering used in the public hearing draft of Amendment 16.

12.0 REGULATORY IMPACT REVIEW

12.1 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.

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).

12.2 Problems and Objectives

The general problems and objectives are found in the FMP, as amended and Sections 3.0 and 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) fish trap phase-out, 2) non-fish trap trip limit, 3) fish trap vessel monitoring system, and 4) additional fish trap vessel reporting requirement.

12.3 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. Vessel net income or profit is used as an approximation of producer surplus.

In addition, there are public and private costs associated with the process of changing and enforcing regulations on the fish trap fishery and selected crustacean fisheries. A simple estimation of these costs is made in this document.

Ideally, all these changes in costs and benefits need to be quantified in assessing the resulting net economic benefit from a change in regulations. The RIR attempts to determine these changes to the extent possible.

12.4 Impacts of Management Measures

The discussions under the “Economic Impacts” sub-heading in Sections 6 through 12 comprise the bulk

of the impact analysis for RIR purposes. A summary of these impacts is developed in Section 12.6 below.

12.5 Public and Private Costs of Regulations

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	$25,000
NMFS administrative costs of document preparation, meetings and review	15,000
Law enforcement costs	60,000 - 300,000
NMFS costs for VMS base station	25,000
Industry costs associated with VMS and reporting requirements	129,000
NMFS costs associated with reporting requirements	12,000
TOTAL	$266,000 - 506,000

Except for the enforcement costs, these estimated costs pertain mainly to the initial implementation of this amendment. The specific costs associated with VMS would be incurred upon implementation of this program, but they do not include on-going vessel expenses for maintaining VMS equipment and making cellular calls to relay information on vessel fishing activities. Vessels would generally make two calls per trip at a cost of $0.50 to $2.50 per call. NMFS costs associated with reporting requirements include both the setting up of an 800 number and answering service which would be contracted out. The law enforcement costs are annual costs and quoted at a level that would result in full compliance with fish trap rules in the Keys.

12.6 Summary of Impacts

This section summarizes the discussion of the "Economic Impacts" of alternatives considered in this amendment, including public and government costs of implementing this amendment. The focus of this summary is the net economic impacts of the proposed alternatives, with the status quo considered as the benchmark for analysis.

The Proposed Alternative to shorten the phase-out period for use of traps directly affects about 12 vessels with homeport in the Keys. This alternative is determined to significantly raise the cost of

fishing for these vessels when the ban takes effect. There is a good chance that some of these vessels would cease their fish trap operations. In this event, they have the option to sell their fish trap endorsements and traps. They could also sell their boats and reef fish permits, if they choose to exit fishing entirely. Despite these possibilities, the status quo still appears to provide the least negative economic impacts.

With respect to the non-fish trap reef fish trip limit, the Proposed Alternative differs from status quo only in the provision pertaining to reef fish exhibiting trap rash. This alternative has the potential of enhancing the enforceability of fish trap rules, although it is unclear whether this type of benefit outweighs the additional cost imposed on vessels that fish for spiny lobster or stone crabs.

While the impacts of the Proposed Alternative regarding the establishment of a vessel monitoring system depends on the specific form it would assume, some general indications of its effects when implemented can be determined. In principle, a VMS program may be expected to provide an improved avenue for monitoring fish trap vessels and their activities. However, in the presence of the phase-out of fish traps, particularly the shortened phase-out in the Keys, these benefits are not bound to outweigh the cost to the fish trap industry. There is, nonetheless, the potential that if the VMS program for fish traps were successful and subsequently applied to other fisheries, its benefits in terms of improved monitoring and enforcement of fishing rules may be fully realized.

The Proposed Alternative regarding additional fish trap vessel reporting requirements provides the same type of enforcement benefits as the VMS program, although at a lower degree. The attendant cost to the fish trap vessels may also be considered lower relative the that incurred under the VMS program. The net effect of this alternative is similar to that determined for the VMS program.

Total costs in implementing this amendment are estimated to range from $266,000 to $506,000. Most of this cost estimate is associated with the assumed implementation of the VMS program and enhanced enforcement activities.

12.7 Determination of Significant Regulatory Action

Pursuant to Executive Order 12866, a regulation is considered a "significant regulatory action" if it is likely to result in a rule that may: 1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; 2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; 3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of the recipients thereof; or 4) raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive Order.

The entire Gulf commercial reef fish harvest sector has an ex-vessel value of approximately $45 million. The fish trap fishery comprises a relatively small segment of the commercial reef fish fishery, generating about $3 million of revenues in 1993. Considering the size of the fishery and the fact that only about 12 of 86 fish trap vessels would be directly affected by the proposed regulation, 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, since there is expected to be no substantial reduction in overall reef fish harvest. Overall cost increases to the fish trap industry are not expected to be substantial, although certain segments of this fishery, in particular the 12 vessels in the Keys, may experience relatively large cost increases once the ban on fish trap fishing in this area takes effect. Costs to the local and federal governments are estimated not to be substantial, although it should be noted that when enforcement designed to achieve full compliance is factored in, the federal costs of this amendment would range from $132,000 to $372,000. The proposed measures are expected to have some adverse, but unquantifiable, effects on employment, competition, and investment. Fish trap businesses in the Keys that recently invested in the fishery in contemplation of a 10-year phase-out would be particularly hit the hardest.

The proposed regulation does not interfere or create inconsistency with an action of another agency, including state fishing agencies. Fish traps are already banned in Florida state waters and the EEZ under the jurisdiction of the South Atlantic Council. Also, the proposed regulation does not affect any entitlements, grants, user fees, or loan programs. Finally, it is deemed that no novel legal or policy issue is raised by the proposed regulation. The issue of a phase-out of the fish trap fishery, including an immediate ban, and closure of certain areas to fish trap fishing have been previously considered by the Council in various amendments to the Reef Fish FMP.

The foregoing discussion leads to the conclusion that this regulation, if enacted, would not constitute a significant regulatory action.

12.8 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 86 fish trap harvesting entities affected by the rule will qualify as small business entities because each vessel's gross revenues are significantly less than $3 million annually. Hence, it is clear that the criterion of a substantial number of the small business entities comprising the fish trap harvesting industry 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. Among the proposed measures, the shortened phase-out for use of fish traps south of 25.05 degrees north latitude is the one that is likely to affect gross revenues of about 12 vessels with homeport in the Keys. This revenue effect would particularly occur if these vessels decide to forgo fish trap fishing in the open areas. As discussed above, there is a good possibility that this could happen due to cost increases if these vessels decide to stay in the fish trap fishery. Such revenue reduction, if not offset by fishing using other gear types, would comprise substantially more than 5 percent of the affected vessel's revenues.

Annual compliance costs (annualized capital, operating, reporting, etc.) increase total costs of production for small entities by more than 5 percent. The capital cost of complying with the proposed VMS program has been estimated at $1,500 per vessel, which if annualized over the phase-out period would be minimal relative to total costs of production by vessels north of the Keys. For vessels in the Keys, the compliance costs, consisting of annualized VMS equipment/installation cost and additional travel or relocation costs, could amount to more than 5 percent of total production costs. If these vessels cease their fish trap operations by February 2001 and assuming the VMS program starts in 1999, the annualized cost of VMS equipment/installation would be $750 ($1,500 ÷ 2). This would be approximately 16 percent of annual routine trip costs ($4,700) of an average vessel in the Keys targeting yellowtail snapper. If these vessels decide instead to continue their fish trap operation by traveling to the open area, the annualized cost would drop to about $188 ($1,500 ÷ 8), but they would also incur an additional trip cost. To exceed the 5 percent threshold, such additional trip cost would have to be at least $48. This is amount is very likely to be exceeded.

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 adversely 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. Vessels fishing for fish traps are the ones that would be affected in this fashion. Public testimonies to the Council indicated that several individuals obtained loans for undertaking investments primarily designed for fish trap operations. A shortened phase-out for trap fishing in the Keys and additional requirements on fish trap vessels are bound to affect this lending practice of banks.

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 shortened phase-out period for fish traps would bring about an end to the fish trap fishery in the Keys, it is not clear if the 12 vessels with homeport in the Keys would totally cease operation. While they are dependent on fish traps, they are also engaged in other fisheries. They could still participate in the same reef fish fisheries using different gear types so long as they possess valid commercial reef fish permits. The possibly worst situation that can happen to them would be to cease their fish trap activities.

The discussion above points to the conclusion 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 the actions 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, as amended, 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 in varying proportions to all of the 86 fish trap vessels, 12 of which have homeport in the Keys. Section 6.1 provides a description of these vessels.

Description of the projected reporting, record keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records: The nature of the reporting, record keeping, and other compliance requirements of the proposed rule are not materially different from the current practice. Fish trap vessels, however, would be required to perform additional reporting activities, but no additional professional skills are necessary to comply with this requirement.

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: In considering the phase-out period for fish traps, three measures were considered by the Council. In terms of economic impacts, the Proposed Alternative falls between the status quo (Rejected Alternative 2) and the 2-year phase out of traps (Rejected Alternative 1). While the status quo provides the least adverse economic impacts on small entities, the objective to reduce violations in the fish trap fishery without incurring larger adverse impacts on the fish trap industry would be better achieved under the Proposed Alternative. Rejected Alternative 1, which would shorten the phase-out to 2 years, would have imposed the largest negative economic impacts on the fish trap industry.

Among the four alternatives considered with respect to non-fish trap trip limits, the Proposed Alternative and status quo would provide the least adverse economic impacts. Among the two, the status quo presents a better economic environment. The main reason for this is that the Proposed Alternative adds a condition, i.e., trap rash on fish, that places the burden on fishermen to prove that fish with trap rash were not caught in fish traps. This condition is added to minimize the possibility of fish trap rule violations by vessels fishing for spiny lobster or stone crab.

On the fish trap VMS, the Council considered three alternatives. Both the Proposed Alternative and Rejected Alternative 1 would impose a vessel monitoring system on fish trap vessels. The third alternative is status quo. As with the other sets of measures, the issue at hand is enforcement. A VMS program offers the potential of tracking the activities of fish trap vessels. The Proposed Alternative

would allow the Council to evaluate the viability and costs of implementing the VMS program, whereas Rejected Alternative 1 would immediately implement such program. The choice then of the Proposed Alternative provides a means of ascertaining the likely economic impacts of the program before being implemented.

With respect to additional fish trap vessel reporting requirements, three alternatives including the status quo were considered. Both the Proposed Alternative and Rejected Alternative 1 would require additional reporting requirements on fish trap vessels. The former imposes lower costs than the latter mainly because the latter provides for a one-month closure of the trap fishery during which traps, permits, and vessels would be inspected for compliance with existing rules.

Among available alternatives considered in this amendment exclusive of the status, each of the proposed alternatives in this amendment provides the least adverse economic impacts on small entities. In each case, the status quo presents the least adverse economic impacts on affected small business entities, but it does not address the enforcement problems identified since the implementation of the 10-year fish trap phase-out.

13.0 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 (section 6.0).

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.

13.1 Effects on Physical, Human, Fishery, and Wetlands Environments

Discussion of the environmental consequences of the alternatives accompanies the section containing the alternatives (section 6.0) 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.

13.2 Effect on Endangered Species and Marine Mammals

A Section 7 consultation will be requested from NMFS regarding the impact of proposed Amendment 16A. It is not anticipated that populations of threatened/endangered species would be adversely affected by the proposed actions.

13.3 Conclusion

Mitigation measures related to the proposed action and fishery: No significant adverse 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.

13.4 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

14.0 OTHER APPLICABLE LAW

14.1 Habitat Concerns

Reef fish habitats and related concerns were described in the FMP and updated in Amendments 1 and 5. A generic amendment that will describe essential fish habitat, including reef fish habitat, is currently in preparation. The actions in this amendment do not directly affect the habitat.

14.2 Vessel Safety Considerations

A determination of vessel safety with regard to compliance with 50 CFR 600.355(d) will be requested from the U.S. Coast Guard. A vessel monitoring system (section 6.3) could enhance vessel safety by providing the location of a vessel when assistance may be needed and reducing response time. Actions in this amendment are not expected to adversely affect vessel safety.

14.3 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. This determination will be 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.

14.4 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 Budget. This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications.

The proposal to require fish trap vessels to submit trip initiation and trip termination reports would impose additional but relatively minimal public reporting burdens. This requirement has been determined to be necessary to improve enforcement of fish trap rules.

14.5 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.

15.0 LIST OF AGENCIES AND PERSONS CONSULTED

The following agencies were consulted on the provisions of this amendment:

Gulf of Mexico Fishery Management Council:
- Standing and Special Reef Fish Scientific and Statistical Committees
- Reef Fish Advisory Panel
- Law Enforcement Advisory Panel

Coastal Zone Management Programs:
- Texas
- Louisiana
- Mississippi
- Alabama
- Florida

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

16.0 PUBLIC HEARING LOCATIONS AND DATES

Public hearings for public hearing draft Amendment 16 were held at the following dates and locations from 7:00 p.m. to 10:00 p.m.. In addition, public testimony was accepted at the Gulf Council meeting in Duck Key, Florida on March 11, 1998.

Monday, February 9, 1998
Holiday Inn Beachside
3841 North Roosevelt Boulevard
Key West, Florida 33040

Tuesday, February 10, 1998
Hampton Inn
13000 North Cleveland
North Fort Myers, Florida 33903

Wednesday, February 11, 1998
Radisson Bay Harbor Inn
7700 Courtney Campbell Causeway
Tampa, FL 33607

Thursday, February 12, 1998
Plantation Inn and Golf Resort
9301 West Fort Island Trail
Crystal River, Florida 34429

Thursday, February 19, 1998
Old Post Office Building
102 East Green Street
Perry, Florida 32347

Monday, February 23, 1998 *
National Marine Fisheries Service
Panama City Laboratory
3500 Delwood Beach Road
Panama City, FL 32408

Tuesday, February 24, 1998 *
Holiday Inn on the Beach
365 East Beach Boulevard
Gulf Shores, AL 36547

Wednesday, February 25, 1998 *
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

Thursday, February 26 *
Larose Regional Park
2001 East 5th Street
Larose, LA 70373

Port Aransas Library
700 West Avenue A
Port Aransas, TX 78373

* Held in conjunction with public hearing for Draft Amendment 9 to the Coastal Pelagics (Mackerel) Fishery Management Plan.

17.0 LIST OF PREPARERS

Gulf of Mexico Fishery Management Council
- Steven Atran, Population Dynamics Statistician
- Richard Leard, Biologist
- Antonio Lamberte, Economist

18.0 REFERENCES

Anderson, L.G. 1987. A management agency perspective of the economics of fisheries regulation. *Marine Resource Economics*, 4(2): 123-131.

GMFMC. 1993. Supplemental environmental impact statement for the reef fish fishery for the Gulf of Mexico (including measures of amendment 5) and amendment 5 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico (including regulatory impact review and initial regulatory flexibility analyses). Gulf of Mexico Fishery Management Council, Tampa, Florida. 84 pages + attachments.

GMFMC. 1996. Amendment 14 to the fishery management plan for the reef fish fishery for the Gulf of Mexico (includes regulatory impact review, initial regulatory flexibility analyses, and environmental assessment). Gulf of Mexico Fishery Management Council, Tampa, Florida. 56 pages + attachments.

Goodyear, C.P. 1992. Red snapper in U.S. waters of the Gulf of Mexico. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, Florida. Contribution MIA-91/92-70. 156 p.

NMFS. 1995. Characterization of the reef fish fishery of the eastern U.S. Gulf of Mexico. National Marine Fisheries Service, Southeast Fisheries Science Center, Galveston and Miami Laboratories. 43 pages.

NMFS. 1998. Kemmerer letter to Swingle re: NMFS-SERO comments on draft amendment 16 to the fishery management plan for the reef fish resources of the Gulf of Mexico. National Marine Fisheries Service, Southeast Fisheries Science Center, Galveston and Miami Laboratories. 2 p.

Palmer, R. 1998. Review of the reef fish trap fishery in the Gulf of Mexico during development of the Gulf of Mexico Fishery Management Council Reef Fish Amendment 16. Florida Marine Fisheries Commission. 2540 Executive Center Circle West, Suite 106. Tallahassee, Florida 32301. 3 p. With table and figures.

Sutherland, D.L. and D.E. Harper. 1983. The wire fish-trap fishery of Dade and Broward Counties, Florida December 1979 - September 1980. Florida Marine Research Publication No. 40. Florida Marine Research Institute, St. Petersburg, Florida. 21 p.

Taylor, R.G. and R.H. McMichael, Jr., 1983. The wire fish-trap fisheries in Monroe and Collier Counties, Florida. Florida Marine Research Publication No. 39. Florida Marine Research Institute, St. Petersburg, Florida. 19 p.

Waters, J.R. 1996. An economic summary of commercial reef fish vessels in the U.S. Gulf of Mexico. NOAA. NMFS. Beaufort Laboratory. Beaufort, North Carolina 28516. Memo Rpt. 63 p. With Appendices A through H.

Waters, J.R., R.J. Rhodes, and R. Wiggers. 1998 (Draft). An economic survey of commercial reef fish boats in the Florida Keys. NOAA. NMFS. Beaufort Laboratory, Beaufort, North Carolina 28516 and South Carolina Department of Natural Resources, Marine Fisheries Division, Office of Fisheries Management. Charleston, South Carolina 29422. 82 p. With Appendices.